

3

Piping Inspection Requirements

CUSTOMER: Waterflood Stock

CONTACT: David Heier

L.S.D: tba

AFE / PO#: tba

WSS JOB#: 1220

PH#: 306-825-1198

FAX#: 306-825-1159

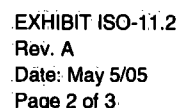
DATE REQUIRED: November 8/05

PACKAGE E#: E9-13025

WSS ENG: Carmon Lindquist

HOLD POINTS TO BE MARKED WITH *

Piping	Vessels	SECTIONS	QI	LEGIBLE INITIAL Personnel	Hold Point
	4.0	SECTION IV - Manual Control			
	4.4	Control Copy of QC manual available for all personnel - Manual is current		cl	
	5.0	SECTION V - Drawing & Design Calculations			
18.3.H		All piping systems over 0.5 cubic meters (18 cubic feet) must be registered Boilers Branch		N/A	
18.7.C	5.2.2	Design Calculations are done signed and dated		cl	
	5.2.3	The Following are listed on drawings - Title, Drawing# & Rev.#, Date, Job#, Dimensions - Bill of material with material specifications ASME II - Design Pressure & Min/Max metal design temperatures - Code edition, year and addenda - X-ray requirements - heat treatment requirements - Welding procedure specifications for each weld - Weld Detail - Hydro Test Pressure & medium, CRN# - Impact test requirements, Coating requirements - Name plate location, Design Code, Substance retaining - Aggregate volume of piping - stamped issued for construction Signed and dated		cl	
18.10.a	5.4	A Registered Professional Engineer shall stamp all design drawings for pressure piping systems exceeding 0.5 cubic meters in aggregate capacity.		N/A	
18.8	5.3	All documents are accompanied by exhibit #2		cl	
18.10.d	5.6	Latest code book are available		cl	
18.10.H		To ensure the owner's approval is obtained for any revisions and submitting the final "as built" drawing to the owner along with all pertinent records		cl	
18.10.e		To ensure a drawing index is maintained listing the drawing title, number and revision, copies issued and the name of the person to whom they were issued		cl	
18.11.a	6.0	SECTION VI - Material Control			
	6.2	All material ordered on EXHIBIT #3A,3B,3C which include the following - PO#/Req#/Material ordering-handling report # - ASME Sec II requirements. I.e. SA105N, SA106B - Request for mill test reports - Statement that all fittings are designs must be registered with Sask. boilers branch. - any other code requirements		Rm	
18.11.b	6.3	job file		Rm	
	6.5	All material received will be check against PO/Req./MOHR for: - All material will be check before received. all material not received will be ejected and returned to supplied. - All material once received that is unacceptable will be tagged with hold tag (Exhibit #18) and shall be considered a nonconformity.		Rm	
	6.5.3	Recording of all material specification number, grade thickness etc. on a Exhibit#4		Rm	
	6.6.1	All plate conforms to ASME Sec II Requirements by signing and dating mill test report		N/A	
18.17.a	6.6.6	All material marked with stamps are low impact stamps All material is marked on both pieces before cut.		N/A	



Piping Inspection Requirements - Exhibit ISO-11.2

7.0 SECTION VII - Examination Program

18.20.a	7.2.1	A job file is created with all items listed in 15.2 Hold points established. Exhibit 20 for piping All examination list on travel sheet will be signed and dated when each task is complete.
18.20.b/c	7.2.2	All applicable material is identified with specifications and/or heat numbers and that these heat numbers are transferred and remain traceable throughout construction
18.20.d	7.2.4	The material contains no visible scars or defects and is as specified on the drawings.
	7.3.1	
	7.3.4	Alignment tolerances are maintained during construction.
	7.3.5	Spool length and orientation spools prepped for coating
	7.3.6	Weld details are correct.
	7.3.8	Heat-treatment charts comply with instructions.
	7.3.9	The correct hydrostatic test pressure is applied.
18.20.f		Examine each system after completion and prior to test against design specifications and drawings using the Pressure Piping Examination Guide (Exhibit #21)
	7.4	Name plates are filled out proper & installed. Exhibit 6C
18.19.c		Forward the Completion of Construction Declaration Form (AB-81, exhibit #15) to Boiler Branch prior to operation of the piping system
18.19.d		Forward the Construction Data Report for piping systems (Exhibit #16, AB-83) to the owner with any additional records required by the contract.

9.0 SECTION IX - Welding

- 9.2.1. Prior to construct a review of weld procedures
 - Assigning welding tasks based on the qualifications and performance variables on the Welders Qualification /Continuity Log (Exhibit #10) and providing that qualifications in the process remain valid in accordance with the Welders Qualification/Continuity
- 9.4.2 Verifying that welders have valid performance qualification cards
- 9.4.3 Maintaining a Welders Log (Exhibit #10)
 - Ensuring that welding procedure are followed & copies of the procedure are available.
- 9.4.5 Visually examining all completed welds.
- 9.4.6 Verifying that all welds are identified with the welder's symbol
 - Ensuring that all tack welds are completely removed and that tack welds left in place are done by qualified pressure welders.
- 9.5.1 Verifying that purchase orders for welding consumables specify SFA specification and AWS classification.
- 9.5.2 Verifying that welding consumables are identified with the correct SFA
 - Ensuring that low hydrogen electrodes are kept in heated storage at manufacturer recommendations but not less than 150 Deg. F. and not more than 250 Deg. F. after the container seal is broken.
- 9.5.3 Ensuring that welders are issued with sufficient electrodes for a time period no longer than specified by the manufacturer for code work.
 - Electrodes that are removed from the oven for longer than this period will be discarded.
- 9.5.4

Rm

Rm

Rm

N/A

 Σm

Rm

Rm

Rm

Rm

Km

Rm

 $2m$

RM
RM

Rm

NOTE: This form should be completed in triplicate and submitted with specifications and blueprints of designs in accordance with the Regulations.

- 1.) Ultimate Owner: Waterflood Stock
(Name and Address)
- 2.) Engineering Firm or Contractor: Waterflood Service & Sales Ltd, Box 1490 Estevan, SK S4A 2L7
(Name and Address)
- 3.) Type Of Plant: Gas plant / Booster compressor
- 4.) Location of Plant: tba
- 5.) Pressure Piping to comply with ANSI/ASME CODE: B31.3 2004
(Section) (Year)
- 6.) Welding Procedure Reg. No. WP: WP542.3
- 7.) Are all fittings suitable for the specific design service conditions? YES (Yes) (No)
- Are all fittings registered with the department? YES (Yes) (No) (Pending)
- 8.) Quality Control (other than code requirements)
Specific extent or degree of supplementary type of examination, for example, 100% random radiography, magnetic particle, ultrasonics, etc. 10% Radiography
10% M.P.
- 9.) Heat Treatment: NR
- 10.) Pressure Testing:
Unless noted below, all piping shall be subjected to a hydrostatic test pressure of not less than 1.5 times the design pressure. Cold Weather & Non-Standard Testing: When conducting pressure tests at low metal temperature the possibility of brittle failure shall be considered. It is desirable that the test liquid temperature be not less than 60 Degrees Fahrenheit. When cold weather testing is unavoidable, or the testing fluid is to be other than water, the procedure and precautions to be followed shall be: 100% HYDRO

11.) Construction: Tentative start date: February 6/06 Completion date: Feb. 20/2007

12.) General Remarks: _____

SIGNATURE: [Signature]
for Engineering Firm or Contractor

DATE: 02/20/07

FOR DEPARTMENTAL USE ONLY:

DATE: _____ Accepted By: _____

Reference No.: _____

DECLARATION

NOTE: This declaration shall be completed and signed by the person responsible, in whole or in part, for the construction, installation, testing and inspection on the pressure piping system and forward to the chief inspector.

- 1.) Owner Of Plant: Waterflood Stock
- 2.) Engineering Contractor: Waterflood Service & Sales Ltd, Box 1490 Estevan, SK S4A 2L7
- 3.) Type of Plant: Gas plant / Booster compressor
- 4.) Location of Plant: tba
- 5.) Description of Pressure piping System: Oil flood screw compressor piping

STATEMENT OF COMPLIANCE

I, the undersigned, declare that the described pressure piping system, approved under reference _____ complies in all respects with the regulation for construction, installation, testing and inspection and that all pressure piping test data reports have been delivered to the owner.


(Signature)

Engineer Product
(Title)

02/20/07
(Date)

Waterflood Service & Sales Ltd.
(Company)

Box 1490 Estevan, SK S4A 2L7
(Address)

Saskatchewan

Boiler and Pressure
Vessel Safety Branch

**Construction Data Report
For Piping Systems**

Field Construction ☐ Shop Construction ☒

Our Reference Number _____

- 1.) Constructed by: Waterflood Service & Sales Ltd.
Address: Box 1490 Estevan, SK S4A 2L7
- 2.) Constructed for: Waterflood Stock Job No.: 1220
- 3.) Owner and Location of Installation: Waterflood Stock L.S.D.#: tba
- 4.) Provincial Quality Control Program Approval: QCM-542-05-04 Date: Feb. 20/2007
- 5.) Provincial Reg. Welding Proc. No's and Company WPS No.'s Use: WP542.3
- 6.) Code --- ANSI/ASME: B31.1 ☐ B31.3 ☒ B31.5 ☐ Other: _____

Drg. No. and Line No.	Process (Air/ Etc.)	Des. Press. PSI	Des. Temp. F	Test Press. PSI	Test Medium	Mat'l Spec. & Grade	Pipe Dia. & Sch.	Flange Prim. Rating	H.T./ Preheat Temp.	R.T. %	Other NDE
AUH	Natural Gas	150	225	375	Water	SA105N/SA106B SA234WPB	1,2,3" SCH80	150# ANSI	NR	10	10% MP
AFPH	Natural Gas	375	100	428	Water	SA105N/SA106B SA234WPB	2" SCH80 4" SCH40	150# ANSI	NR	10	10% MP
BFPH	Natural Gas	740	100	1110	Water	SA105N/SA106B SA234WPB	1,2,3" SCH80	300# ANSI	NR	10	10% MP
ALH	Natural Gas	375	100	428	Water	SA350LF2/SA333 SA420WPL	2" SCH80	150# ANSI	NR	10	10% MP
BLH	Natural Gas	740	100	1110	Water	SA350LF2/SA333 SA420WPL	2,3" SCH80	300# ANSI	NR	10	10% MP

Shop Constructed Data Reports are available on file for all items which form part of above piping system(s)

CERTIFICATE OF COMPLIANCE

We certify the statements in this Data Report to be correct and that piping described in this Data Report was constructed in accordance with the Provincial Boilers and Pressure Vessels Act and Regulations, and applicable ANSI/ASME Piping Code(s)

02/20/07
(Date)

Waterflood Service & Sales Ltd.
(Contractor)

[Signature]
(Authorized Representative)

CERTIFICATE OF INSPECTION

I, the undersigned, employed by _____ have inspected the piping described in this Construction Data Report and state that, to the best of my knowledge and belief, the Contractor has constructed piping in accordance with the applicable Sections of the ANSI/ASME Piping Codes and Provincial Boilers and Pressure Vessels Act and Regulations.

Date _____

Date _____

(Owner's/Client's Inspector)

PROVINCIAL INSPECTOR (Boiler External Piping Only)

EXHIBIT # 20
PRESSURE PIPING EXAMINATION
CHECKLIST

PRESSURE PIPING EXAMINATION CHECKLIST

JOB NUMBER:

1220

NO.	FUNCTION	MANUAL REFERENCE	SIGNATURE OR INITIAL AND DATE	
			Q.C. INSPECTOR	OWNERS INSPECTION
1	DRAWINGS: ABSA registration over 0.5M3. Approved by Owner. Approved for Construction (signed & dated).	21.3, 21.4	GA	
2	A.B.S.A. Safety Codes Officer and Owner's Inspector notified.	21.19, 21.20	GA	
3	Registered Welding Procedures and have valid Performance Qualification cards. Welders Log Completed. WPS reviewed with welders.	21.18	GA	
4	Welders qualified for Procedures and have valid Performance Qualification cards. Welders Log completed. WPS reviewed with welders.	11.4	GA	
5	Material checked against P.O., drawings, and specifications. Identification confirmed. Colour coding applied.	21.11-21.16	GA	
6	Sample of each welder's work examined, including root spacing, alignment, cleaning, joint preparation, preheat and electrode control.	21.19	GA	
7	Nondestructive Examination completed. Reports and radiographs reviewed, signed by Level II, Radiograph I.D. detailed on drawings.	13.3	GA	
8	Visual Examination of all completed welds. Welders I.d. stamped and recorded on drawings.	21.19	GA	
9	Heat Treatment verified and recorded on drawings.	14.6	N/A	
10	Each system checked against specifications and drawings before test, using Exhibit 21.3 and Exhibit 21.4.	21.19, 21.22	GA	
11	All deficiencies recorded and signed off by Q.C.I. And Owner's Inspector before test.		GA	
12	Pressure Test checked. Gauge calibration verified, gauge #'s recorded.	21.22	GA	
13	System checked after test. Deficiencies recorded and corrected. (Exhibit 21.4)	21.22	GA	
14	Construction and test data reports prepared and signed by Q.C.I. And Owner's Inspector.	21.19(g)	GA	
15	Declaration form submitted to ABSA.	21.18(b)	GA	
16	As built drawings accepted by Owner.	21.19(h)	GA	

REVISION 0
Jul-04

EXHIBIT # 21
PRESSURE PIPING EXAMINATION
GUIDE

SECTION XVII
PAGE 17.42

Job #: 1220

PRESSURE PIPING EXAMINATION GUIDE	
EXAMINATION PRIOR TO PRESSURE TEST (PUNCHING)	Q.C. INSP.
1 Pipe Material; schedule and specification correct.	QA
2 Flanges; ratings, schedule and material specification correct.	QA
3 Fittings; tees, return bends, reducers, couplings and weld-o-lets etc. Correct schedule and material specification.	QA
4 Valves; identification - Manufacturer's name tag, etc., correct.	QA
5 Valves; installed correctly, flow direction, accesses, rising stems free from obstructions, clearance for removal adequate.	QA
6 Lubrication fittings, drains, etc. installed as required.	QA
7 Bolts, Studs, Nuts; length and material correct. Studs at least flush with heads (max. Thread exposure beyond nut should be about 2 threads)	QA
8 Gaskets are correct type, material, size, etc.	QA
9 All welding satisfactory and traceable to welders symbol.	QA
10 Seal welding complete - all threads covered.	N/A
11 All attachment welds satisfactory.	N/A
12 All N.D.E., heat treatment complete, records filed.	QA
13 Guide anchors and shoes required installed correctly. (High temp. lines)	N/A
14 Line supports adequate - supports to be checked against drawings.	QA
15 Spring hangers - correct type, correct installation.	N/A
16 Lines have adequate allowances for expansion.	QA
17 Bellows type expansion joints - correct type, pressure rating and correct installation.	QA
18 Required cold spring applied.	N/A
19 Orifice runs have specified straight length of pipe - located correctly etc.	QA
20 All deficiencies recorded on Punch List.	QA
Q.C. Inspector Signature:  Date: 03/16/07	

Revision 0
July 27/04

Leak Test Certificate

Section XVII
Page 17.29

Date: 10/04/66

Customer Name: WATERFLOOD STOCK

Customer Location: INDUATOR

Job Number: 1220

Item Description: 300# piping

Time: Start 7:30 AM Stop 8:00 AM

Recorder Serial Number: 2371

Gauge Serial Number: WF-401 Expirary Date: 01/07 Pressure: 0-4000psi

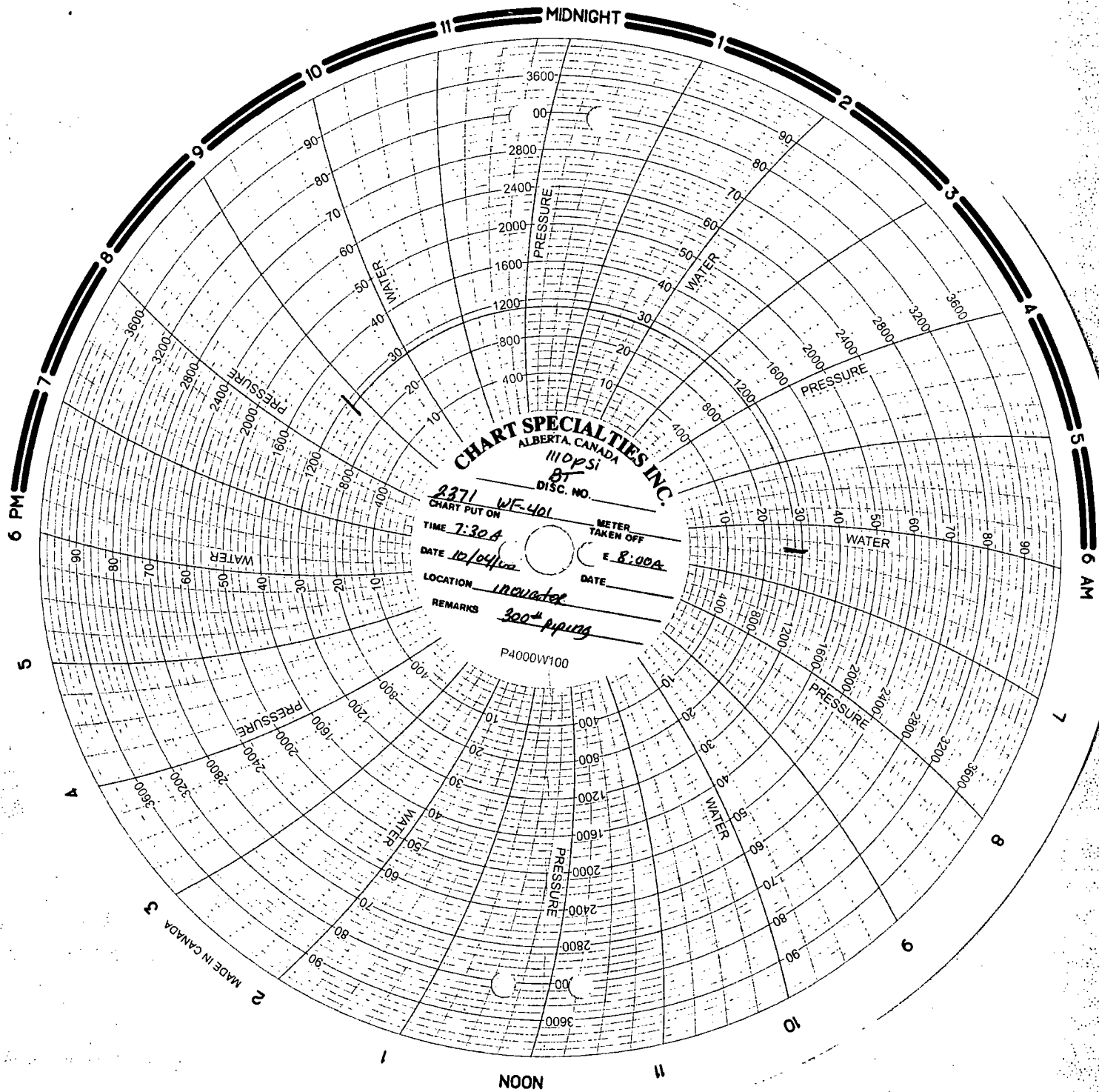
Hydro Test Pressure: 1110 psi

WSS Representative: Brian Tooley

Authorized Inspector: _____

Results: Pass ✓
Fail _____

Reasons if fail:



Revision 0
July 27/04

Leak Test Certificate

Section XVII
Page 47 29

Date: 10/10/06

Customer Name: ~~1220~~

Customer Location: innovator stock

Job Number: 1220

Item Description: 300# piping

Time: Start 10:00 AM Stop 10:32 AM

Recorder Serial Number: 2371

Gauge Serial Number: WF-401 Expirary Date: 01/07 Pressure: 0-4000psi

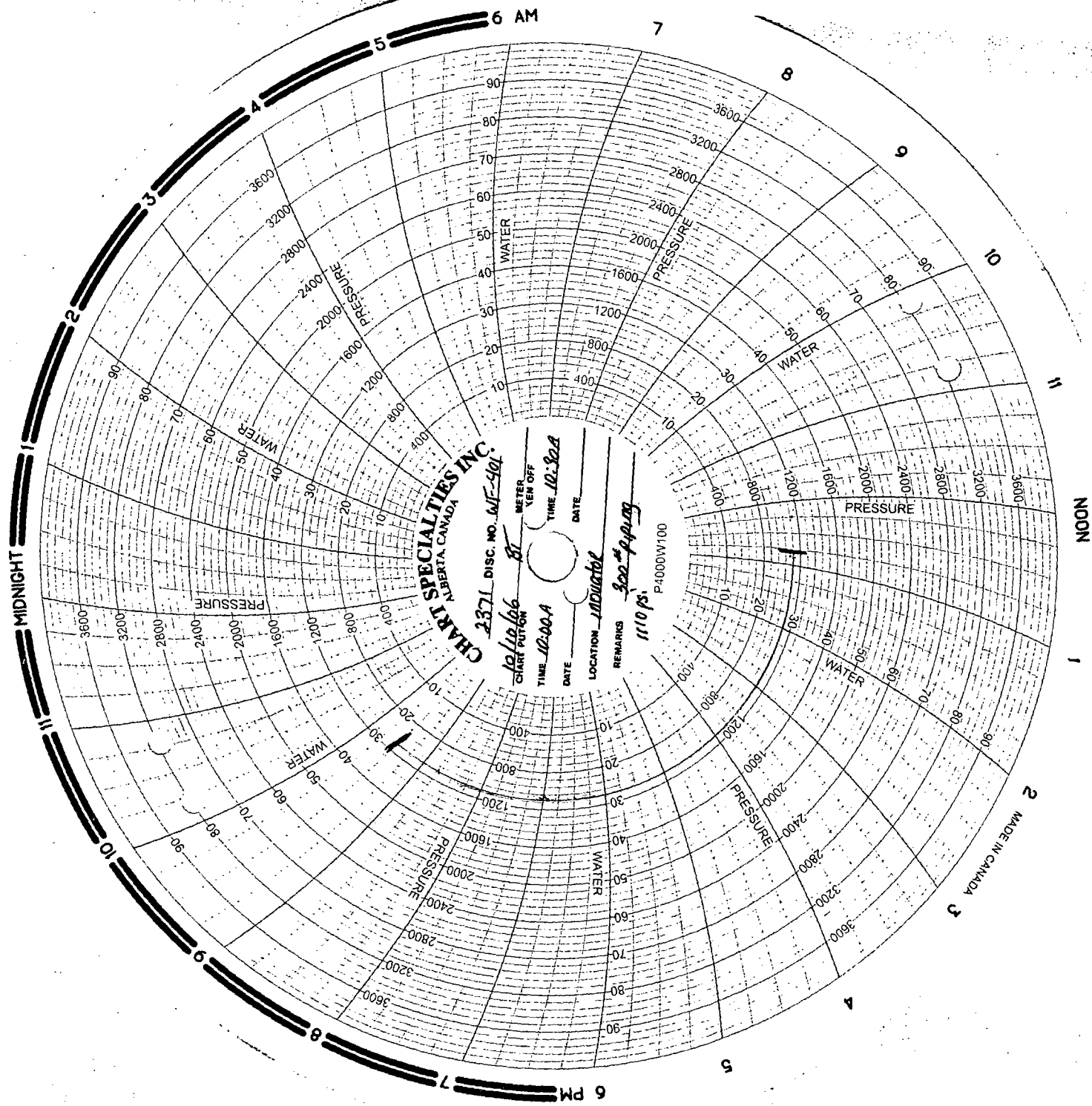
Hydro Test Pressure: 1110 psi

WSS Representative: Brian July

Authorized Inspector: _____

Results: Pass ✓
Fail _____

Reasons if fail:



Revision: 0
July 27/04

Leak Test Certificate

Section XVII
Page 17.29

Date: 10/04/06

Customer Name: WATERFLOOD STOCK

Customer Location: INOCULATOR

Job Number: 1220

Item Description: 300# piping

Time: Start 10:30 AM Stop 11:00 AM

Recorder Serial Number: 2371

Gauge Serial Number: WF-401 Expiry Date: 01/07 Pressure: 0-4000 PSI

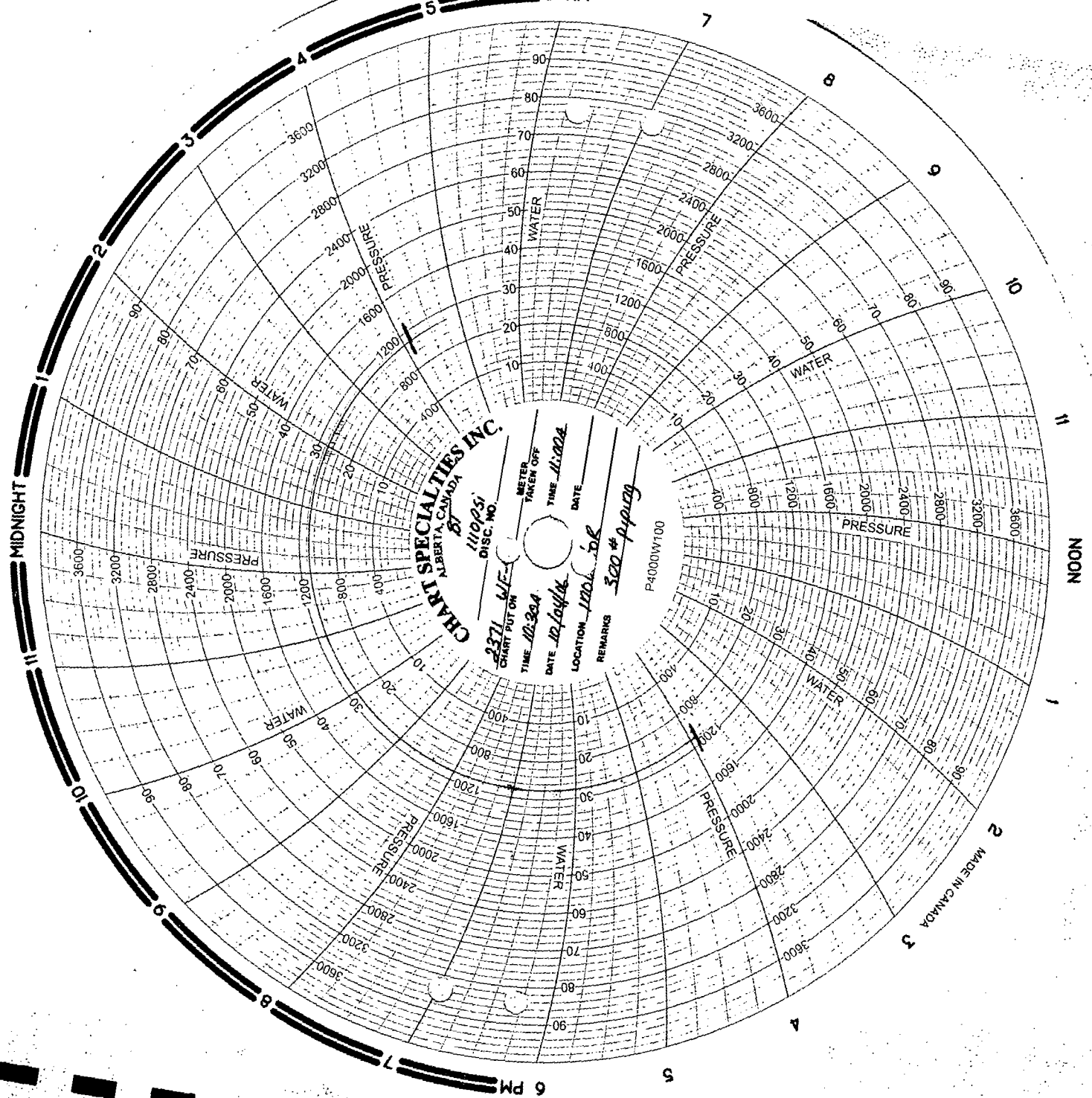
Hydro Test Pressure: 1110 PSI

WSS Representative: Brian Today

Authorized Inspector: _____

Results: Pass ☒
Fail ☐

Reasons if fail:



Revision 0
July 27/04

Leak Test Certificate

Section XVII
Page 17.26

Date: 10/04/06

Customer Name: WATERFLOOD STOCK

Customer Location: INOUATOR

Job Number: 1220

Item Description: 150# piping

Time: Start 12:30 pm Stop 1:00 pm

Recorder Serial Number: 2370

Gauge Serial Number: WF-09 Expirary Date: 08/07 Pressure: 0-1000 psi

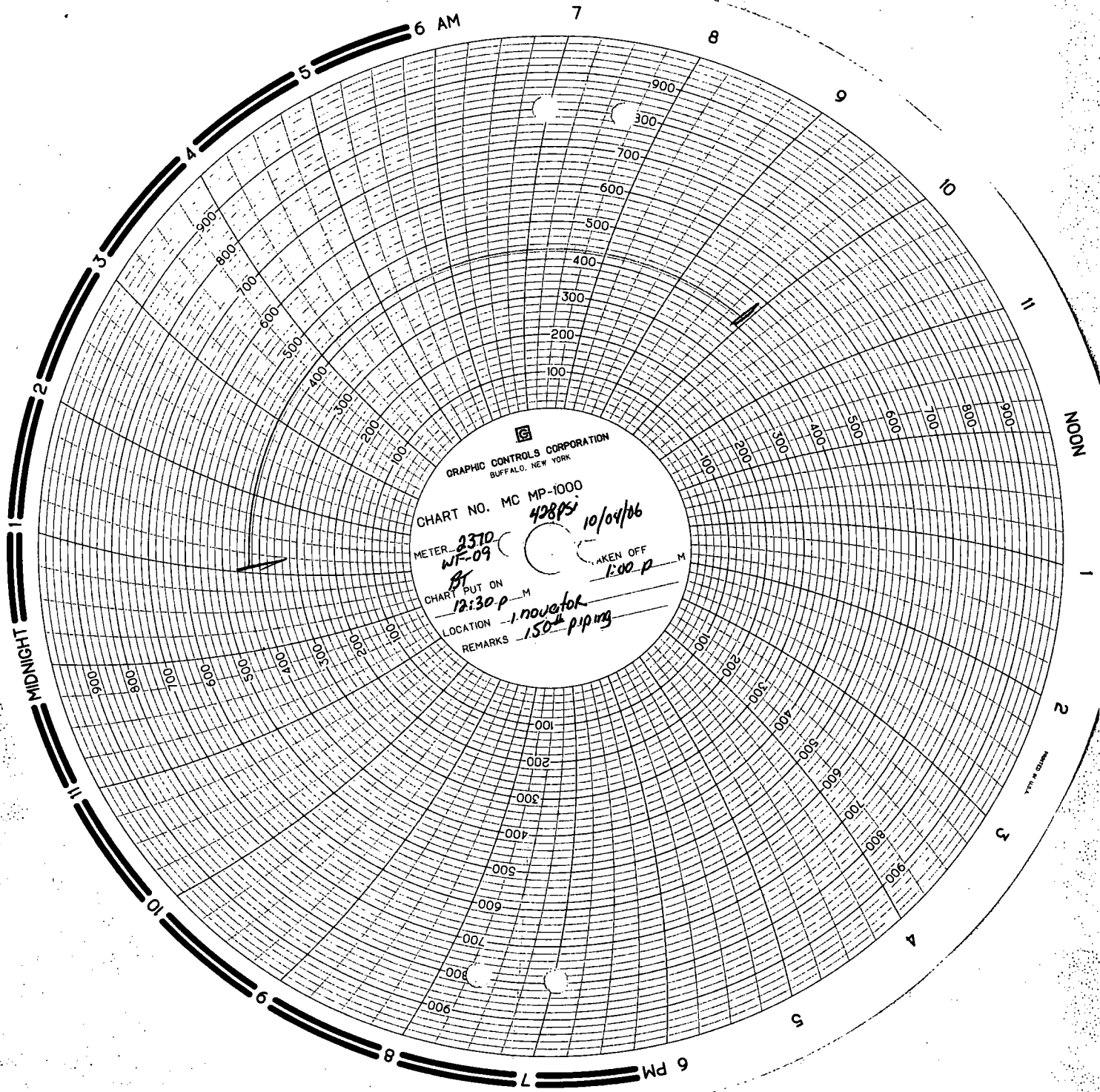
Hydro Test Pressure: 428 psi

WSS Representative: Brian Toley

Authorized Inspector: _____

Results: Pass ✓
Fail _____

Reasons if fail:



GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK

CHART NO. MC MP-1000
428 psi 10/04/06

METER 2370
WF-09
TAKEN OFF 1:00 P M

CHART PUT ON 12:30 P M

LOCATION 1. novator

REMARKS 150# piping

Revision 0
July 27/04

Leak Test Certificate

Section XVII
Page 17.29

Date: 10/11/06

Customer Name: WATERFLOOD STOCK

Customer Location: inoculator

Job Number: 1220

Item Description: 150# piping

Time: Start 9:00 AM Stop 9:30 AM

Recorder Serial Number: 2370

Gauge Serial Number: WF-09 Expiry Date: 08/07 Pressure: 0-1000 psi

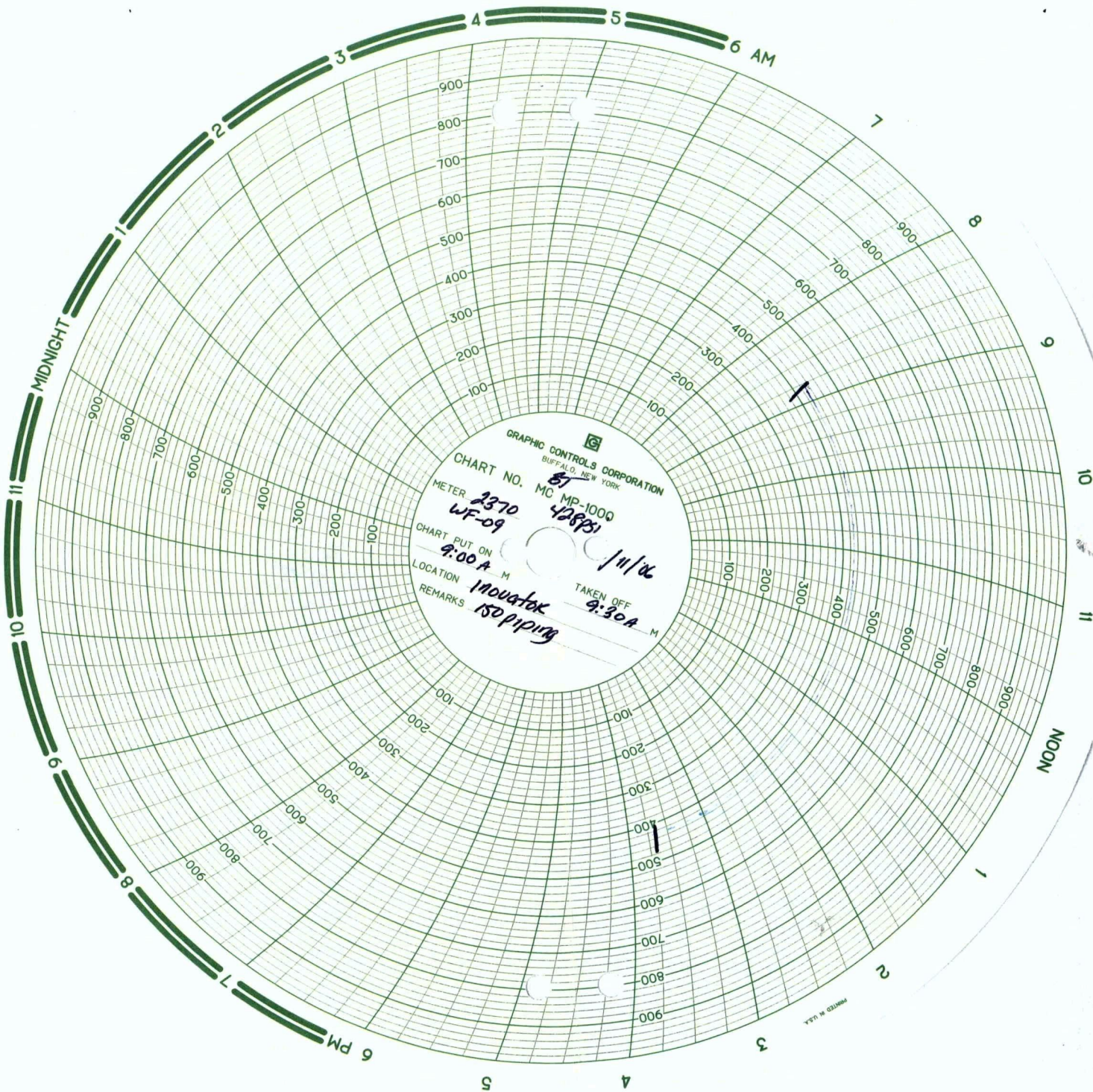
Hydro Test Pressure: 428 psi

WSS Representative: Brian Toley

Authorized Inspector: _____

Results: Pass ✓
Fail _____

Reasons if fail:



GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK

CHART NO. 87
METER 2370
MC MP-1000
WF-09

CHART PUT ON 9:00 A

LOCATION M

REMARKS Inouatek
ISO piping

TAKEN OFF 9:30 A

1/11/06

PRINTED IN U.S.A.

GAUGE CALIBRATION SHEET

TS&M SUPPLY

Box 28, 314 Kensington Ave.
Estevan, SK S4A 2A2
306-634-6494 (phone)
306-634-2599 (fax)

Description of Gauge CPW gauge 0-1000 Psi.SN # or Gauge # 802-1000 W/F-09

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used Perma Cal 0-1000 Test gauge # 1001Date Calibration Performed Oct 31/06Name of Technician [Signature] Comment Gauge Calibrated GoodSignature of Technician [Signature] Comment

Master Gauge Reading	As Found Reading	As Left Reading
0	+0	0
100	120	100
200	220	200
300	320	300
400	420	400
500	520	500
600	620	600
700	720	700
800	820	800
900	920	900

GAUGE CALIBRATION SHEET

TS&M SUPPLY

Box 28, 314 Kensington Ave.
 Estevan, SK S4A 2A2
 306-634-6494 (phone)
 306-634-2599 (fax)

Description of Gauge Clif Mock Pressure Recorder 0-1000 PSI

SN # or Gauge # S/N 2370

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used ID 1001 0-1000 PSI

Date Calibration Performed October 3/06

Name of Technician Travis Klatt Comment _____

Signature of Technician Travis Klatt Comment _____

Master Gauge Reading	As Found Reading	As Left Reading
100 PSI	101 PSI	100 PSI
200 PSI	202 PSI	200 PSI
300 PSI	302 PSI	300 PSI
400 PSI	402 PSI	400 PSI
500 PSI	502 PSI	500 PSI
550 PSI	552 PSI	550 PSI
600 PSI	602 PSI	600 PSI
700 PSI	702 PSI	699 PSI
800 PSI	802 PSI	799 PSI
900 PSI	902 PSI	899 PSI

GAUGE CALIBRATION SHEET

TS&M SUPPLY

Box 28, 314 Kensington Ave.
 Estevan, SK S4A 2A2
 306-634-6494 (phone)
 306-634-2599 (fax)

Description of Gauge C PW - 0 - 4000 Psi. gauge

SN # or Gauge # 802-4000 or WF-401

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2007)

Master Gauge Used Ametek Dead Weight 0-5000 Psi.

Date Calibration Performed Jan 8/07

Name of Technician Thom Rivas Comment Gauge Calibrated Good.

Signature of Technician Thom Rivas Comment

Master Gauge Reading	As Found Reading	As Left Reading
0	0	0
500	460	500
1000	970	1000
1500	1470	1500
2000	1970	2000
2500	2470	2500
3000	2970	3000
3500	3470	3500
4000	3970	4000

GAUGE CALIBRATION SHEET

TS&M SUPPLY

Box 28, 314 Kensington Ave.
 Estevan, SK S4A 2A2
 306-634-6494 (phone)
 306-634-2599 (fax)

Description of Gauge CLIF Mock Company Pressure Recorder 0-4000 PSI

SN # or Gauge # 2371

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2007)

Master Gauge Used ID # 5001

Date Calibration Performed Jan 8/07

Name of Technician Travis Klett Comment _____

Signature of Technician Travis Klett Comment _____

Master Gauge Reading	As Found Reading	As Left Reading
0 PSI	0 PSI	0 PSI
400 PSI	400 PSI	400 PSI
800 PSI	800 PSI	800 PSI
1200 PSI	1200 PSI	1200 PSI
1600 PSI	1600 PSI	1600 PSI
2000 PSI	2000 PSI	2000 PSI
2400 PSI	2400 PSI	2400 PSI
2800 PSI	2800 PSI	2800 PSI
3200 PSI	3195 PSI	3195 PSI
3600 PSI	3595 PSI	3595 PSI



ESTEVAN OFFICE
BOX 66
ESTEVAN, SASK.
S4A 2A2
PH: 306-634-3476

REGINA OFFICE
510 QUEBEC STREET
REGINA, SASK
S4R 1K9
PH: 306-751-0454

Job Report # E 1085

of Pages

REFER TO JB REPORT # 5864

Travel Time:

Site Time:

Total Hours:

Kilometres:

Per Diem:

Date: Oct 6, 2006

Client: WATERFLOOD

Location: STOCK

PO/AFE: 34760

JOB#: WFLD 1220

Prime Contractor: WATERFLOOD

Items Inspected: SPILLS

Consumables:

Penetrant Developer Contrast Bath Cleaner

☐☐☒☒☐

Technician: JOHN ELIAS

CGSB Level II Reg.# 3244

Technician: # 2

Magnetic Particle Inspection	Liquid Penetrant Inspection	Ultrasonic Inspection
Specifications: ASME Section V, Sub A, Art. 7 Procedures & Techniques, ASME Sec. VIII, Div 1, App. 6 Evaluation-Acceptance Criteria, CSA W59-2003 Structural Steel Welding, CSA Z662-Pipeline, API 650 Tank Steel and Welding, ASTM E1444-Procedures & Techniques. Equipment: Portable AC or DC Yoke, High Intensity White & Black Lighting Technique Used: Continuous AC Ultraviolet ☐ Black & White ☒ Powder ☐ Results: THE FOLLOWING WAS INSPECTED AS ABOVE WITH NO RELEVANT LINEAR INDICATIONS OBSERVED AT TIME OF INSPECTION: ONE (1) - 1" T.O.L. FILLET WELD FOUR (4) - 1" T.O.L. FILLET WELDS TWO (2) - 2X1" ELBOW JET FILLET WELDS. For additional information see attached, if applicable.	Specifications: ASME Sec. V, Sub. A, Art. 6 Procedures & Techniques, ASME VIII Div I, App. 8-Evaluation-Acceptable Criteria, CSA W59-2003 Structural Steel Welding, CSA Z662-Pipeline, API 650-Tanks, ASTM E1417 Procedures & Techniques. Equipment: Aerosols- cleaners, penetrant and powder developer (in medium) Technique Used: Solvent removable – visible red dye method, florescent Results: For additional information see attached, if applicable.	Specifications: ASME Sec. V, Sub. A, Art. 4/5-Procedures & Techniques, ASME Sec. VIII, App. 12-Evaluation-Acceptance Criteria, CSA W59-2003 Structural Steel Welding, CSA Z662- Pipeline, ASTM E797 Procedures. & Techniques. Equipment: Portable Digital Thickness gauge, 5MHz – 0 degrees split transducer Technique Used: Straight Beam (longitudinal Wave), Contact, A-Scan Results: For additional information see attached, if applicable.

GB Contract Inspection Ltd.

Graham Ball
P.O. Box 66, # 300 Hwy 18 West
Estevan, Sk. S4A 2A2
Ph: 634-3476 Cell: 421-2278 Fax: 634-8418
Regina Ph: 751-0454 Fax: 751-0711



mo/d/yr	Oct 1 04 1 00		Prime Contractor:	WATERFLOOD	
Client:	WATERFLOOD		Items Inspected:	SPOOL PIECES	
Bill To:	WATERFLOOD		Code:	ASME B 31.3	
	Film	6" 9" 17"x 4.5Wx 7"W x 14"W			
	Size	75			
	RYAN MITCHELL		ISOTOPE:	IR 192	FOCAL SIZE: 3mm SCREENS: .010"
Location:	STOCK				
PC#:	34760				
AFE:					
JOB#:	1220				
			Job Report #	5864	
			# of Pages	192	

Hrs	Min	
Travel Time (HRS) →	6	m →
Site Time (HRS) →		Per diem →
Total (Hours) →		
Technician:	Audley BROWN 7864	
Technician Signature:	Brown RT II	
Technician	LJ	

Legend:	LF - Lack of Fusion	P - Porosity	C - Crater	UC - Undercut	1. Slight	SWE - Single Wall Exposure	SFD - Source to Film Dist.	SS - Source Side	This report in no way constitutes any form of guarantee.
	IP - Incomplete Pen	I - Icicles	HL - Highlow	HB - Hollow Bead	2. Medium	DWE - Double Wall Exposure	CS - Carbon Steel	FS - Film Side	Final film interpretation is the responsibility of the CLIENT.
	S - Slag	LC - Low Cover	W - Windows	GP - Gas Pocket	3. Severe	SWV - Single Wall Viewing	AL - Aluminum	REJ - rejected	I am in full agreement with the above details and
	CB - Concave Bead	BT - Burn Through	CK - Crack	SB - Suck Back		DWN - Double Wall Viewing	ST - Stainless Steel	ACC - Accepted	acknowledge receipt of this form.

Line #	Film Number	Exposure Location	Size	Well Thickness	Material	Welder Symbol	Permeator Placement	S.F.D.	Film Brand	(A)SWE (B)DWE	SWV(C) DWV(D)	LF	IP	S	CB	P	I	LC	BT	C	HL	W	CK	UC	HB	GP	SB	Remarks	ACCEPT	REJECT
1	X1	3	2"	XS	CS		FS	Con.	DS	B	C																		✓	
2	2																												✓	
3	3																												✓	
4	4																												✓	
5	5																												✓	
6	6																												✓	
7	7																												✓	
8	8																												✓	
9	9																												✓	
10	10																												✓	
11	11																												✓	
12	12																												✓	
13	13																												✓	
14	14		2 1/2"																										✓	
15	15		2 1/2"																										✓	
16	16		3"	80																									✓	
17	17																												✓	
18	18																												✓	
19	19																												✓	
20	20																												✓	
21	21																												✓	
22	22		3"	XS																									✓	
23	23																												✓	
24	24																												✓	
25	25		3"	80																									✓	

Inspector (Print):
Inspector's Signature:

GB Contract Inspection Ltd

Graham Ball
P O Box 66, #300 Hwy 18 West
Estevan, Saskatchewan S4A 2A2
phone: 634-3476 cell: 421-2278 fax: 634-8418



mo/d/yr	Oct 10 5 106	Prime Contractor:	WATER FLOOD
Client:	WATER FLOOD	Items Inspected:	SPOOL PIECES
Bill To:	WATER FLOOD	Code:	ASME B 31.3
	RYAN MITCHELL	Film	6" 5" 17x 4.5Wx 7"W x 14"W
		ISOTOPE:	IR 192 FOCAL SIZE: 3mm SCREENS: .010"
Location:	STOCK	Job Report #	5864
POS:	34760	# of Pages	242
AFE:			
JOB#:	1220		

Travel Time (HRS)→	Hrs	Min	Km→	
Site Time (HRS)→			Per diem→	
Total (Hours)→				
Technician:	Audley Brown 7864			
Technician Signature:	Brown RT II			
Technician:	LJ			

Legend:	LF - Lack of Fusion	P - Porosity	C - Crater	UC - Undercut	1. Slight	SWE - Single Wall Exposure	SFD - Source to Film Dist.	SS - Source Side	This report in no way constitutes any form of guarantee.
	IP - Incomplete Pen	I - Icicles	HL - Highlow	HB - Hollow Bead	2. Medium	DWE - Double Wall Exposure	CS - Carbon Steel	FS - Film Side	Final film interpretation is the responsibility of the CLIENT.
	S - Slag	LC - Low Cover	W - Windows	GP - Gas Pocket	3. Severe	SWV - Single Wall Viewing	AL - Aluminum	REJ - rejected	I am in full agreement with the above details and
	CB - Concave Bead	BT - Burn Through	CK - Crack	SB - Suck Back		DWN - Double Wall Viewing	ST - Stainless Steel	ACC - Accepted	acknowledge receipt of this form.

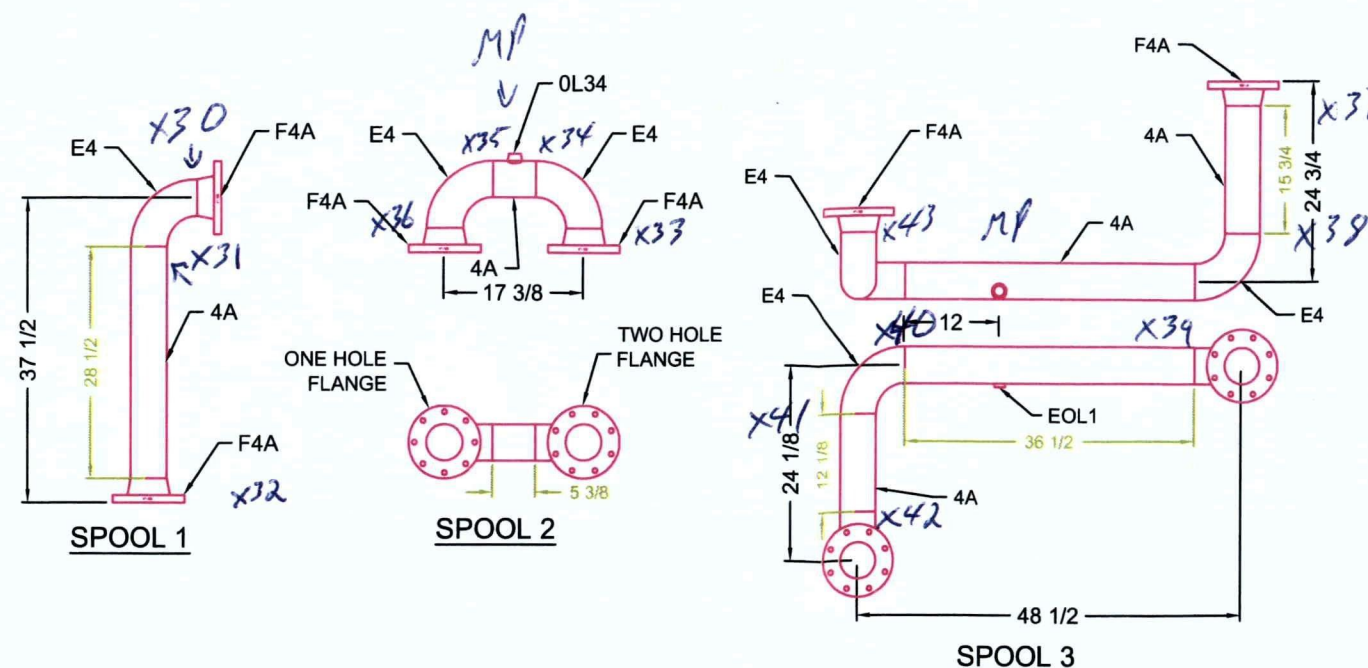
Line #	Film Number	Exposure Location	Size	Wall Thickness	Material	Welder Symbol	Penetration Placement	S.F.D.	Film Brand	(A)SWE (B)DWE	SWV(C) DWV(D)	LF	IP	S	CB	P	I	LC	BT	C	HL	W	CK	UC	HB	GP	SB	Remarks	ACCEPT	REJECT
1	X 26	3	3"	80	CS		FS	CON.	DS	B	C					1														✓
2	27																													✓
3	28																													✓
4	29																													✓
5	30	3	4"	40	CS																									✓
6	31																													✓
7	32																													✓
8	33																													✓
9	34																													✓
10	35																													✓
11	36																													✓
12	37																													✓
13	38																													✓
14	39																													✓
15	40																													✓
16	41																													✓
17	42																													✓
18	43																													✓
19	44	3	3"	80	CS											1														✓
20																														
21																														
22																														
23																														
24																														
25																														

Inspector (Print):
Inspector's Signature:

AFPH

AFPH DESIGN NOTES:

- 150# SWEET HYDROCARBON SERVICE
- C.A. IS 1/16"
- BUILT TO ASME CODE B31.3, LATEST EDITION
- REGISTERED WELD PROCEDURE: WP542.3 WSS-1 REV.1, WSS-2 REV.1, WSS-8-1
- DESIGN: MAWP 285 PSIG @ 100°F/MDMT -20°F @ 285 PSIG
- HYDRO TEST: 100% WITH WATER TO 428 PSIG FOR 1 HOUR
- 10% X-RAY & 10% M.P. REQUIRED
- NO PWHT
- NO INTERNAL COATING
- DO NOT STAMP WELDS - USE WELD MAP



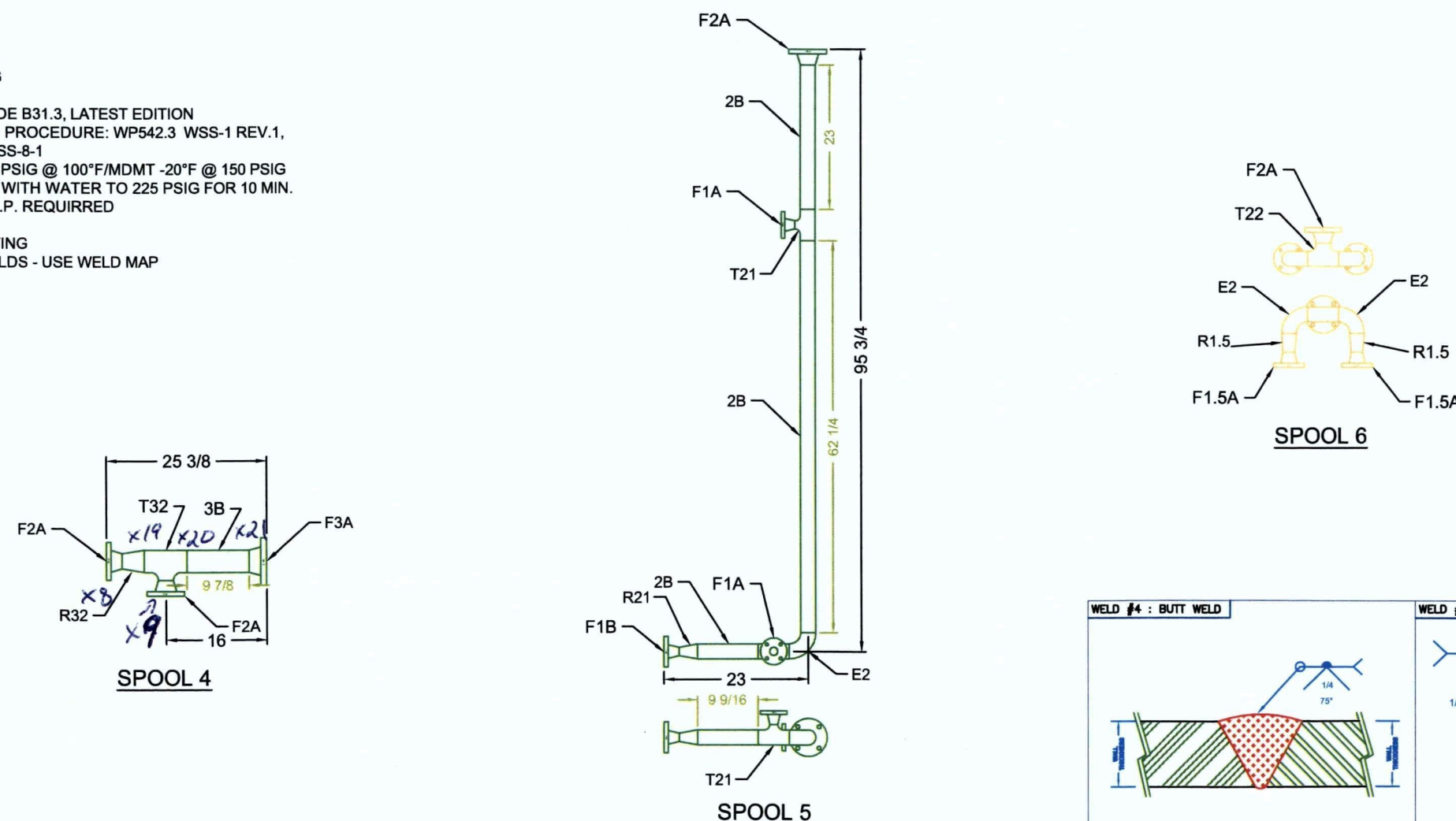
Inovator Bill Of Materials
1220 SPOOLS-1-4

ITEM	QTY.	DESCRIPTION
F1A	2	1" 150# RF WN SCHD 80 FLANGE SA105N
F1B	1	1" 300# RF WN SCHD 80 FLANGE SA105N
F1.5A	2	1.5" 150# RF WN SCHD 80 FLANGE SA105N
F2A	4	2" 150# RF WN SCHD 80 FLANGE SA105N
F3A	1	3" 150# RF WN SCHD 80 FLANGE SA105N
F4A	6	4" 150# RF WN SCHD 40 FLANGE SA105N
E2	3	2" WN SCHD 80 90° ELBOW SA234WPB
E4	6	4" WN SCHD 40 90° ELBOW SA234WPB
T21	2	2" X 2" X 1" WN SCHD 80 TEE SA234WPB
T32	1	3" X 3" X 2" WN SCHD 80 TEE SA234WPB
T22	1	2" X 2" X 2" WN SCHD 80 TEE SA234WPB
R1.5	2	2" X 1.5" WN SCHD 80 CONCENTRIC REDUCER SA234WPB
R21	1	2" X 1" WN SCHD 80 CONCENTRIC REDUCER SA234WPB
R32	1	3" X 2" WN SCHD 80 CONCENTRIC REDUCER SA234WPB
EOL1	1	1" 3M THRD EOL ON 2-6" RUN SA105N
OL34	1	3/4" 3M TOL ON 2-6" RUN SA105N
2B	-	2" SCHD 80 SA106B SMLS PIPE
3B	-	3" SCHD 80 SA106B SMLS PIPE
4A	-	4" SCHD 40 SA106B SMLS PIPE

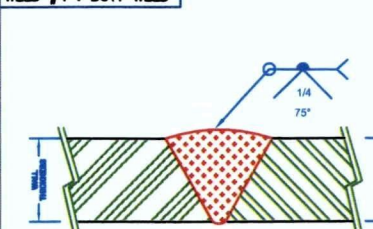
AUH

AUH DESIGN NOTES:

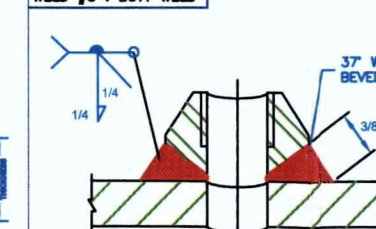
- 150# UTILITY PIPING
- C.A. IS 1/16"
- BUILT TO ASME CODE B31.3, LATEST EDITION
- REGISTERED WELD PROCEDURE: WP542.3 WSS-1 REV.1, WSS-2 REV.1, WSS-8-1
- DESIGN: MAWP 150 PSIG @ 100°F/MDMT -20°F @ 150 PSIG
- HYDRO TEST: 100% WITH WATER TO 225 PSIG FOR 10 MIN.
- 10% X-RAY & 10% M.P. REQUIRED
- NO PWHT
- NO INTERNAL COATING
- DO NOT STAMP WELDS - USE WELD MAP



WELD #4 : BUTT WELD



WELD #3 : BUTT WELD



ISSUED FOR CONSTRUCTION
SEPTEMBER 20/2006

PER *Carmen R. Lindquist* 09/21/06
CARMON R. LINDQUIST

CHECKED BY

PER *[Signature]*

REV	DATE	REVISION DESCRIPTION
1		
2		
3		
4		



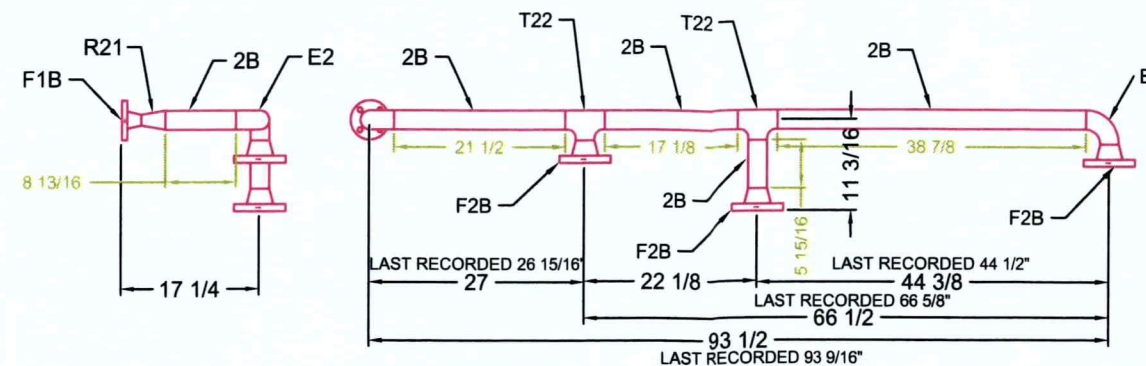
TITLE
WATERFLOOD SERVICE & SALES LTD.
SSH ROTARY
FLOODED SCREW COMPRESSOR

PROJECT
G3304NA/SSH
SPOOLS PRINT
JOB#1220

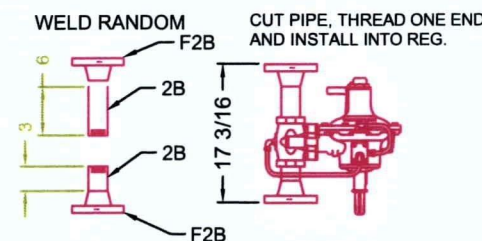
DESIGNED CARMON LINDQUIST	DATE 09/20/06	DRAWN CARMON LINDQUIST	DATE 09/20/06
APPROVED	DATE	CHECKED	DATE
SCALE NTS	COMPUTER FILE # 1220 SPOOLS.DWG	SHEET 1 OF 4	REV 0

BFPH DESIGN NOTES:
 - 300# SWEET HYDROCARBON SERVICE
 - C.A. IS 1/16"
 - BUILT TO ASME CODE B31.3, LATEST EDITION
 - REGISTERED WELD PROCEDURE: WP542.3 WSS-1 REV.1, WSS-2 REV.1, WSS-8-1
 - DESIGN: MAWP 740 PSIG @ 100°F/MDMT -20°F @ 740 PSIG
 - HYDRO TEST: 100% WITH WATER TO 1110 PSIG FOR 1 HOUR
 - 10% X-RAY & 10% M.P. REQUIRED
 - NO PWHT
 - NO INTERNAL COATING
 - DO NOT STAMP WELDS - USE WELD MAP

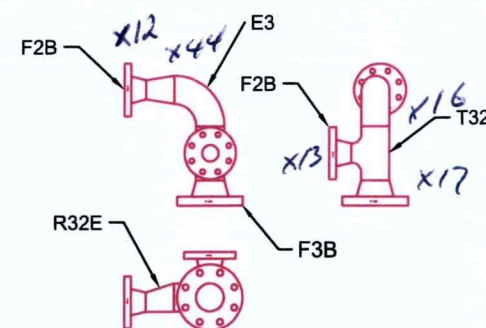
ITEM	QTY.	DESCRIPTION
F1B	5	1" 300# RF WN SCHD 80 FLANGE SA105N
F2B	26	2" 300# RF WN SCHD 80 FLANGE SA105N
F3A	1	3" 150# RF WN SCHD 80 FLANGE SA105N
F3B	1	3" 300# RF WN SCHD 80 FLANGE SA105N
E1	1	1" WN SCHD 80 90° ELBOW SA234WPB
E2	8	2" WN SCHD 80 90° ELBOW SA234WPB
E3	1	3" WN SCHD 80 90° ELBOW SA234WPB
T21	2	2" X 2" X 1" WN SCHD 80 TEE SA234WPB
T22	6	2" X 2" X 2" WN SCHD 80 TEE SA234WPB
T32	1	3" X 3" X 2" WN SCHD 80 TEE SA234WPB
R21	3	2" X 1" WN SCHD 80 CONCENTRIC REDUCER SA234WPB
R32	1	3" X 2" WN SCHD 80 CONCENTRIC REDUCER SA234WPB
R32E	1	3" X 2" WN SCHD 80 ECCENTRIC REDUCER SA234WPB
OL34	3	3/4" 3M TOL ON 2" RUN SA105N
1B	-	1" SCHD 80 SA106B SMLS PIPE
1.5B	-	1 1/2" SCHD 80 SA106B SMLS PIPE
2B	-	2" SCHD 80 SA106B SMLS PIPE
3B	-	3" SCHD 80 SA106B SMLS PIPE



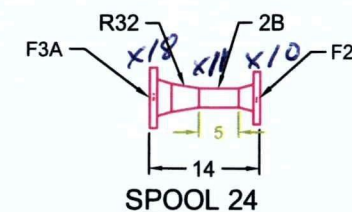
SPOOL 21



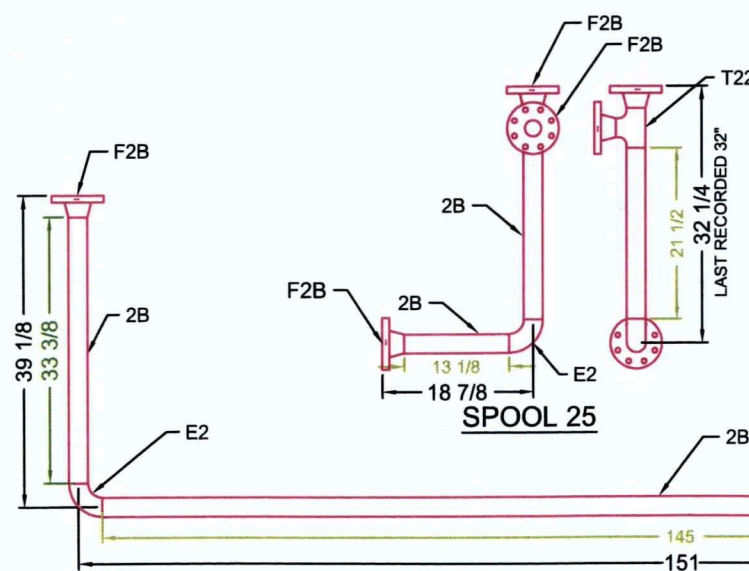
SPOOL 22



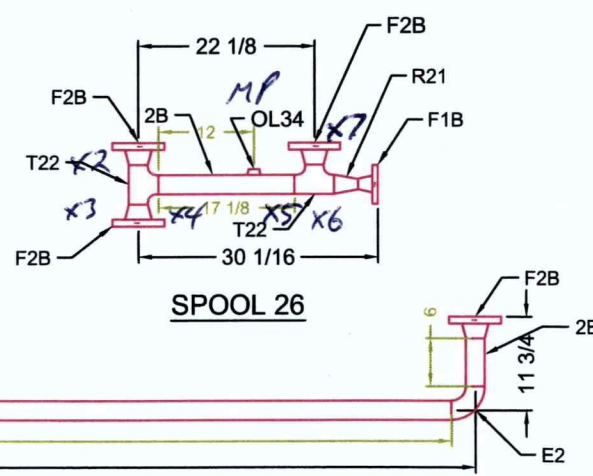
SPOOL 23



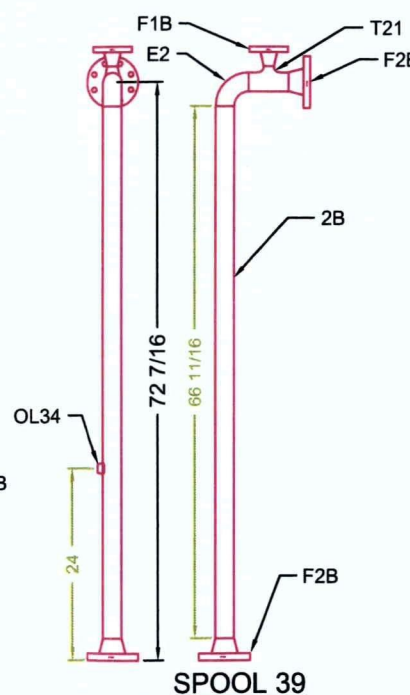
SPOOL 24



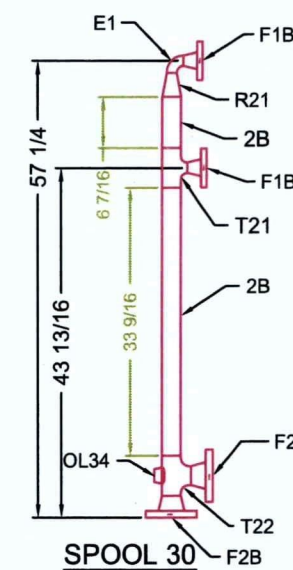
SPOOL 25



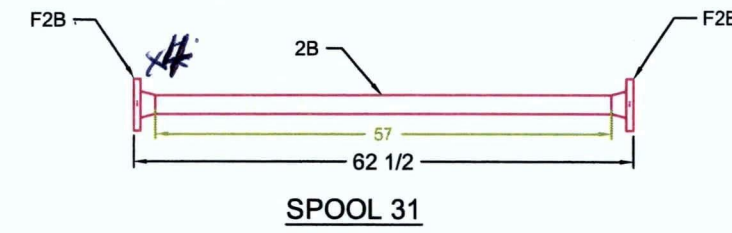
SPOOL 26



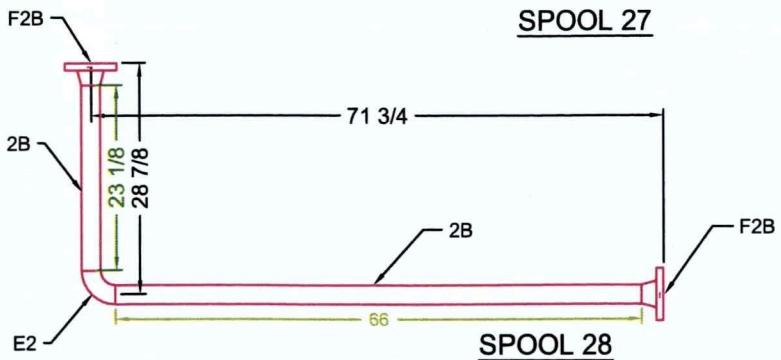
SPOOL 39



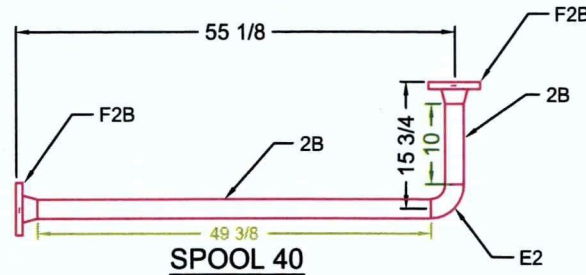
SPOOL 30



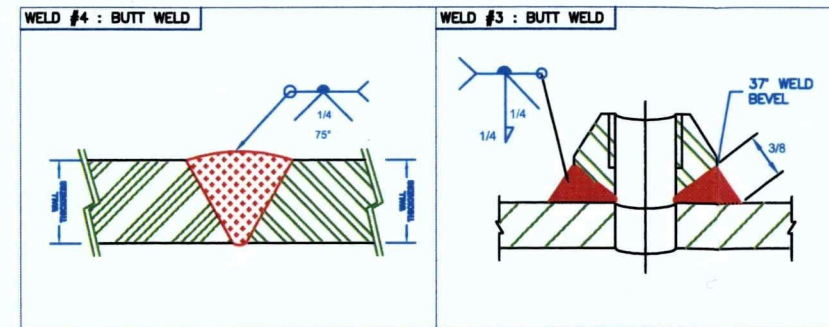
SPOOL 31



SPOOL 27



SPOOL 40



ISSUED FOR CONSTRUCTION
 SEPTEMBER 20/2008

PER *[Signature]* 09/21/08
 CARMON R. LINDQUIST

CHECKED BY

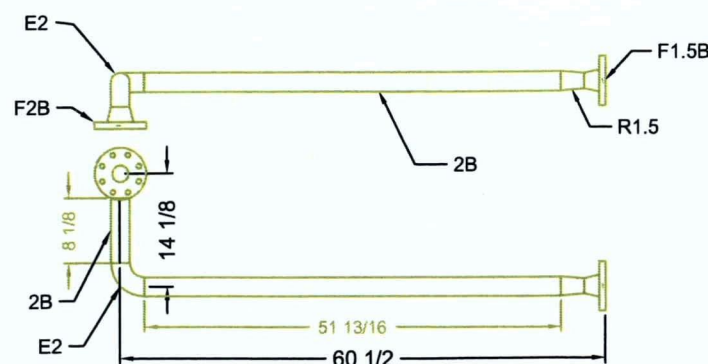
PER *[Signature]*

REV	DATE	REVISION DESCRIPTION
1		
2		
3		
4		

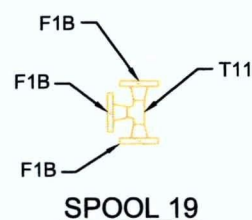
BFPH

BFPH DESIGN NOTES:

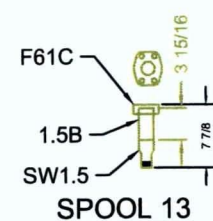
- 300# SWEET HYDROCARBON SERVICE
- C.A. IS 1/16"
- BUILT TO ASME CODE B31.3, LATEST EDITION
- REGISTERED WELD PROCEDURE: WP542.3 WSS-1 REV.1, WSS-2 REV.1, WSS-8-1
- DESIGN: MAWP 740 PSIG @ 100°F/MDMT -20°F @ 740 PSIG
- HYDRO TEST: 100% WITH WATER TO 1110 PSIG FOR 1 HOUR
- 10% X-RAY & 10% M.P. REQUIRED
- NO PWHT
- NO INTERNAL COATING
- DO NOT STAMP WELDS - USE WELD MAP



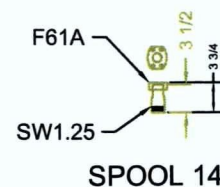
SPOOL 8



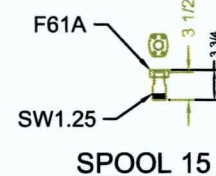
SPOOL 19



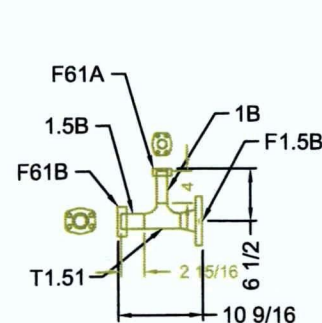
SPOOL 13



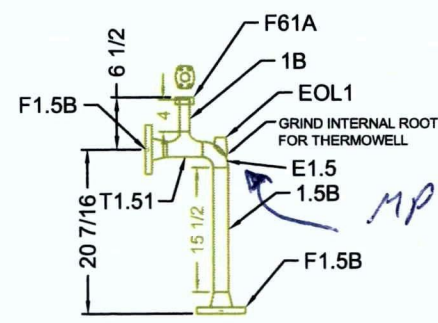
SPOOL 14



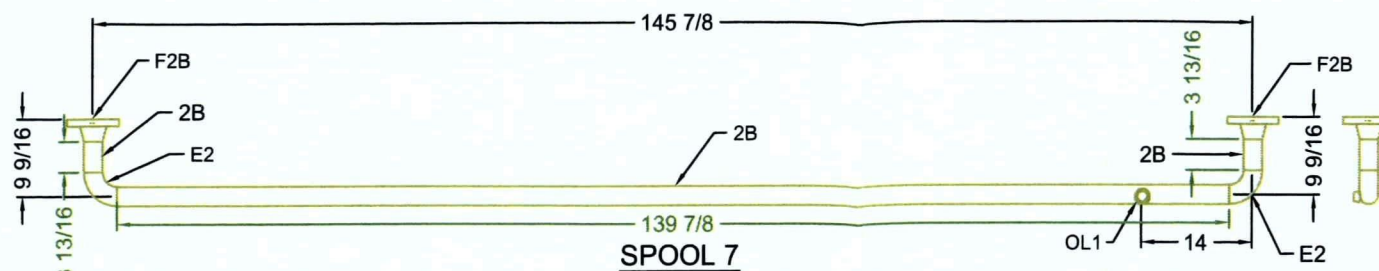
SPOOL 15



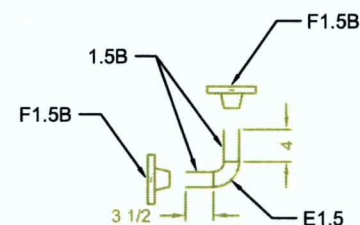
SPOOL 16



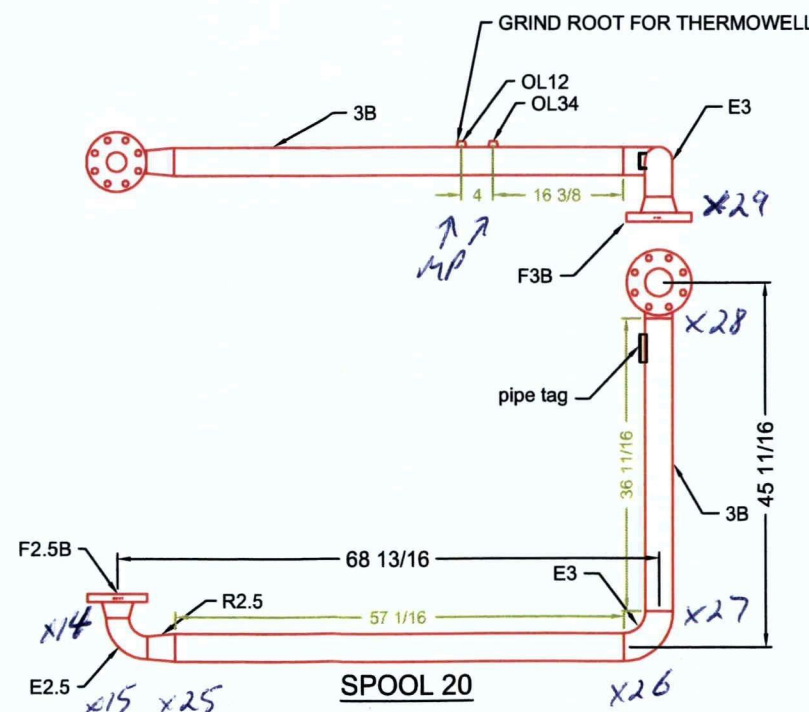
SPOOL 17



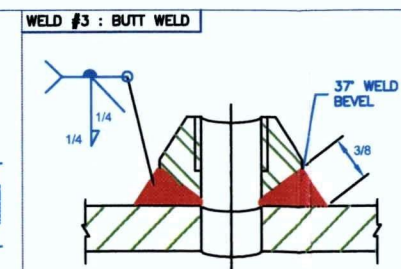
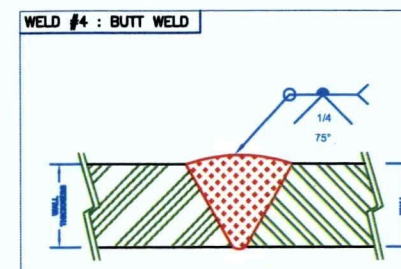
SPOOL 7



SPOOL 11



SPOOL 20



WATERFLOOD SERVICE & SALES LTD.

Inovator Bill Of Materials
1220 SPOOLS-2-4

ITEM	QTY.	DESCRIPTION
F1B	3	1" 300# RF WN SCHD 80 FLANGE SA105N
F1.5B	6	1 1/2" 300# RF WN SCHD 80 FLANGE SA105N
F2B	3	2" 300# RF WN SCHD 80 FLANGE SA105N
F2.5B	1	2 1/2" 300# RF WN SCHD 80 FLANGE SA105N
F3B	1	3" 300# RF WN SCHD 80 FLANGE SA105N
F61A	4	1" CODE 61 FLANGE PARKER PART#W611616
F61B	1	1 1/2" CODE 61 FLANGE PARKER PART#W42424
F61C	1	1 1/2" CODE 61 FLANGE PARKER PART#W612424
E1.5	2	1 1/2" WN SCHD 80 90° ELBOW SA234WPB
E2	4	2" WN SCHD 80 90° ELBOW SA234WPB
E2.5	1	2 1/2" WN SCHD 80 90° ELBOW SA234WPB
E3	2	3" WN SCHD 80 90° ELBOW SA234WPB
T1.51	2	1.5" X 1.5" X 1" WN SCHD 80 TEE SA234WPB
T11	1	1" X 1" X 1" WN SCHD 80 TEE SA234WPB
R1.5	1	2" X 1.5" WN SCHD 80 CONCENTRIC REDUCER SA234WPB
R2.5	1	3" X 2 1/2" WN SCHD 80 CONCENTRIC REDUCER SA234WPB
EOL1	1	1" 3M THRD EOL ON 2-6" RUN SA105N
OL12	1	1/2" 3M TOL ON 2" RUN SA105N
OL34	1	3/4" 3M TOL ON 2" RUN SA105N
OL1	1	1" 3M TOL ON 2" RUN SA105N
SW1.25	2	1 1/4" X 1" SCHD 80 FS SWEDGE SA106B
SW1.5	1	1 1/2" X 1" SCHD 80 FS SWEDGE SA106B
1B	-	1" SCHD 80 SA106B SMLS PIPE
1.5B	-	1 1/2" SCHD 80 SA106B SMLS PIPE
2B	-	2" SCHD 80 SA106B SMLS PIPE
3B	-	3" SCHD 80 SA106B SMLS PIPE

ISSUED FOR CONSTRUCTION
SEPTEMBER 20/2006

PER *Carmen R. Lindquist* 09/24/06
CARMEN R. LINDQUIST

CHECKED BY

PER *[Signature]*

REV	DATE	REVISION DESCRIPTION
1		
2		
3		
4		



TITLE
WATERFLOOD SERVICE & SALES LTD.
SSH ROTARY
FLOODED SCREW COMPRESSOR

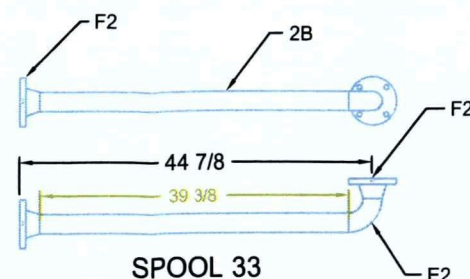
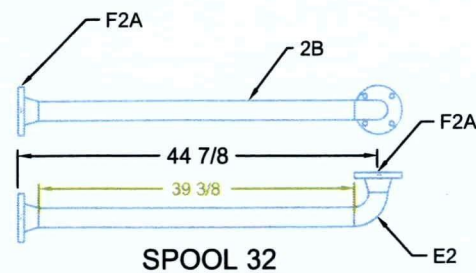
PROJECT
G3304NA/SSH
SPOOLS PRINT
JOB#1220

DESIGNED CARMON LINDQUIST	DATE 09/20/06	DRAWN CARMON LINDQUIST	DATE 09/20/06
APPROVED	DATE	CHECKED	DATE
SCALE NTS	COMPUTER FILE # 1220 SPOOLS.DWG	SHEET 2 OF 4	REV 0
	DRAWING CONTROL # 1220SPOOLS-2-4		

ALH

ALH DESIGN NOTES:

- 150# LOW TEMP SWEET HYDROCARBON SERVICE
- C.A. IS 1/16"
- BUILT TO ASME CODE B31.3, LATEST EDITION
- REGISTERED WELD PROCEDURE: WP542.3 SB-6 REV.0
- DESIGN: MAWP 285 PSIG @ 100°F/MDMT -49°F @ 285 PSIG
- HYDRO TEST: 100% WITH WATER TO 428 PSIG FOR 1 HOUR
- 10% X-RAY & 10% M.P. REQUIRED
- NO PWHT
- NO INTERNAL COATING
- DO NOT STAMP WELDS - USE WELD MAP



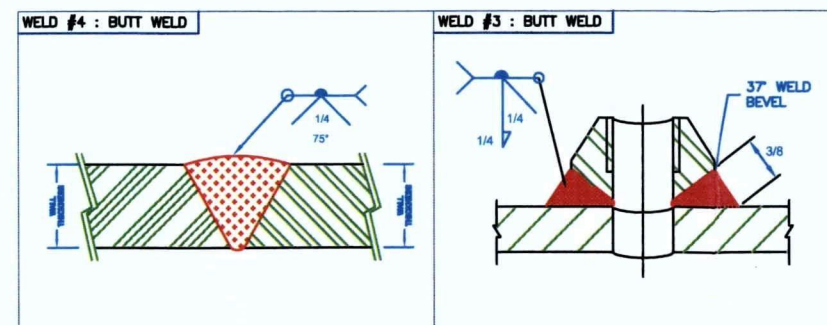
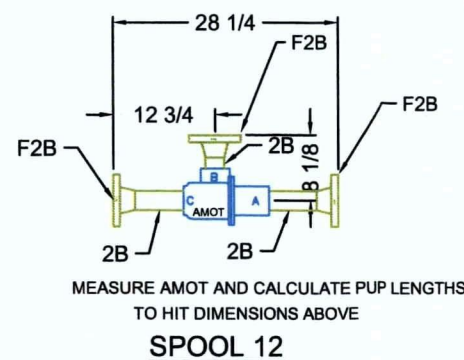
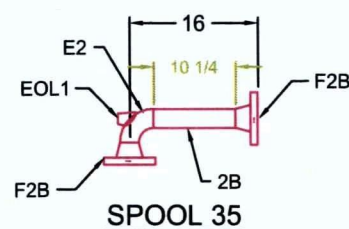
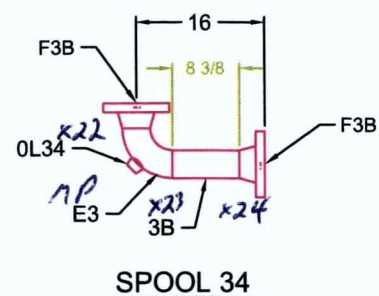
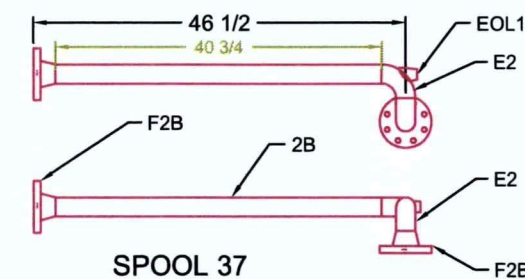
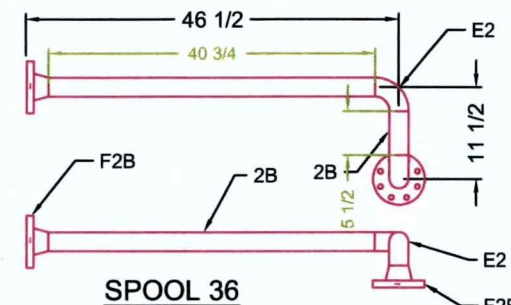
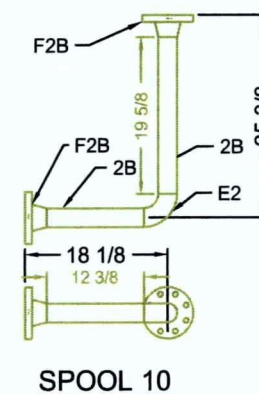
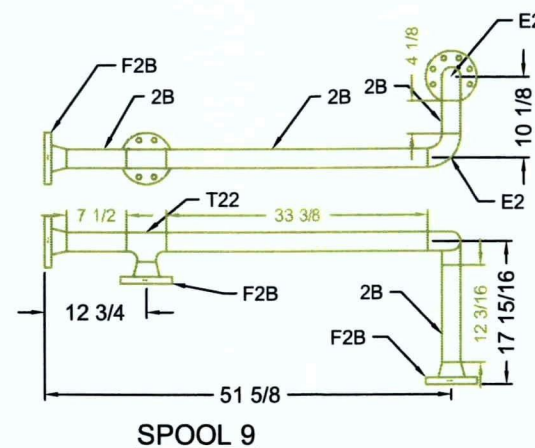
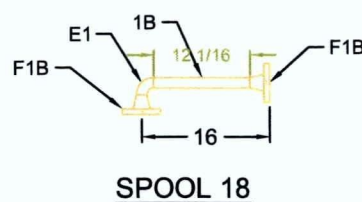
Inovator Bill Of Materials
1220 SPOOLS-4-4

ITEM	QTY.	DESCRIPTION
F1B	2	1" 300# RF WN SCHD 80 FLANGE SA350 LF2
F2A	4	2" 150# RF WN SCHD 80 FLANGE SA350 LF2
F2B	14	2" 300# RF WN SCHD 80 FLANGE SA350 LF2
F3B	2	3" 300# RF WN SCHD 80 FLANGE SA350 LF2
E1	1	1" WN SCHD 80 90° ELBOW SA420WPL
E2	10	2" WN SCHD 80 90° ELBOW SA420WPL
E3	1	3" WN SCHD 80 90° ELBOW SA420WPL
T22	1	2" X 2" X 2" WN SCHD 80 TEE SA420WPL
EOL1	2	1" 3M THRD EOL ON 2-6" RUN SA350 LF2
OL34	1	3/4" 3M TOL ON 2-6" RUN SA350 LF2
1B	-	1" SCHD 80 SA333 SMLS PIPE
2B	-	2" SCHD 80 SA333 SMLS PIPE
3B	-	3" SCHD 80 SA333 SMLS PIPE

BLH

BLPH DESIGN NOTES:

- 300# LOW TEMP SWEET HYDROCARBON SERVICE
- C.A. IS 1/16"
- BUILT TO ASME CODE B31.3, LATEST EDITION
- REGISTERED WELD PROCEDURE: WP542.3 SB-6 REV.0
- DESIGN: MAWP 740 PSIG @ 100°F/MDMT -49°F @ 740 PSIG
- HYDRO TEST: 100% WITH WATER TO 1110 PSIG FOR 1 HOUR
- 10% X-RAY & 10% M.P. REQUIRED
- NO PWHT
- NO INTERNAL COATING
- DO NOT STAMP WELDS - USE WELD MAP



ISSUED FOR CONSTRUCTION
SEPTEMBER 20/2006

PER *[Signature]* 09/21/06
CARMON R. LINDQUIST

CHECKED BY

PER *[Signature]*

REV	DATE	REVISION DESCRIPTION
1		
2		
3		
4		



TITLE
WATERFLOOD SERVICE & SALES LTD.
SSH ROTARY
FLOODED SCREW COMPRESSOR

PROJECT
G3304NA/SSH
SPOOLS PRINT
JOB#1220

DESIGNED CARMON LINDQUIST	DATE 09/20/06	DRAWN CARMON LINDQUIST	DATE 09/20/06
APPROVED	DATE	CHECKED	DATE
SCALE NTS	COMPUTER FILE # 1220 SPOOLS.DWG	SHEET 4 OF 4	REV 0
	DRAWING CONTROL # 1220SPOOLS-4-4		



Saskatchewan
Corrections and
Public Safety

Welder's Certificate
No. 5358

This is to certify that Jeff Chinski
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to
the Branch
- (b) automatic termination if the holder ceases, for six consecutive
months, to be actively employed upon welding of the type
authorized hereby.

Jeff Chinski Welder's Signature
[Signature] Welding Inspector

Name Jeff Chinski Symbol JMC

Process(es) SMAW SMAW Material 1-11, 4X
(P No.)

Filler Metal Group (F No.) F3 F4 Minimum Pipe Dia. 25mm OD
(IN MILLIMETERS)

Max. Deposited Weld Metal Th. 22mm Position(s) A11
(IN MILLIMETERS)

Backing Req'd Yes ☒ No ☒ Uphand/Downhand

Test Date 2005 May 5 Expires 2007 May 5

Restrictions F4 with backing

Name JEFFREY CHINSKI Symbol JMC

Process(es) GMAW SMAW Material P1-11, 4X
(P No.)

Filler Metal Group (F No.) 6 6 Minimum Pipe Dia. 73 O.D.
(IN MILLIMETERS)

Max. Deposited Weld Metal Th. 6 16 Position(s) 1G, 5G
(IN MILLIMETERS)

Backing Req'd Yes ☒ No ☒ Uphand/Downhand

Test Date May 16, 2006 Expires May 16, 2008

ctions

Saskatchewan
Corrections and
Public Safety

No. 4771

This is to certify that [Signature]
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to
the Branch
- (b) automatic termination if the holder ceases, for six consecutive
months, to be actively employed upon welding of the type
authorized hereby.

[Signature] Welder's Signature
[Signature] Welding Inspector

[illegible]

REVISION 0
Dec. /02

EXHIBIT # 10B
CONTINUITY LOG

SECTION XVII
PAGE 17.28

2007

CONTINUITY LOG

WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	JAN. - MAR.	APR. - JUN.	JUL. - SEPT.	OCT. - DEC.
Jeff Chinski	JMC	SMAW	1245			
		SMAW	125D			
		SMAW	06124508			
		SMAW	06124506			
Jeff Chinski	JMC	SMAW	06124504			
		SMAW	06124503			
		SMAW	06124502			
		SMAW	06124501			
Jeff Chinski	JMC	SMAW	06124704			
		SMAW	06124707			
		SMAW	06124501			



Name Corey Haugum Symbol CLH

Process(es) SMAW SMAW Material 1-11.41

Filler Metal Group (F No.) F3 F4 Minimum Pipe Dia. 25mm OD
(in millimeters)

Max. Deposited Weld Metal Th. 22mm Position(s) Qualified All
(in millimeters)

Backing Req'd None Upstand Backband

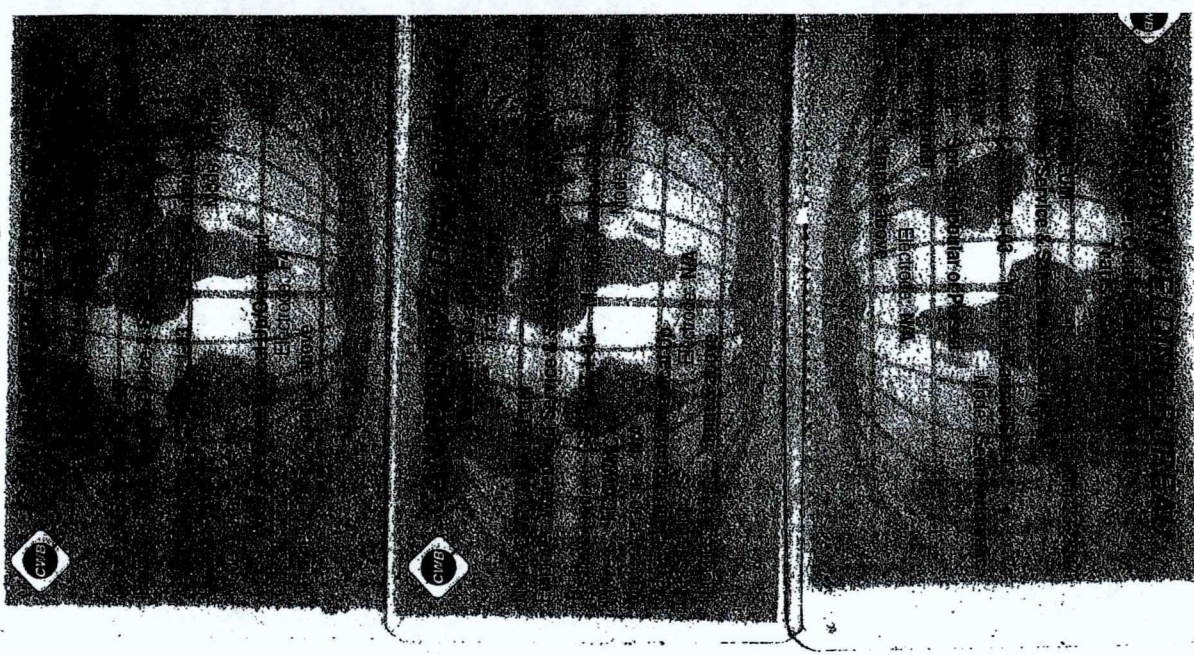
Test Date 2006 Aug 3 Expires 2008 Aug 3

Restrictions

This is to certify that Corey Haugum has been tested in accordance with the requirements of ASME Section IX for pressure welding and is qualified to weld subject to limitations shown and the following:

- (a) certification upon an adverse report by an inspector to the Branch
- (b) automatic cancellation if the welder ceases for six consecutive months, to be actively employed upon welding of the type authorized hereby.

Corey Haugum
Welder's Signature



SECTION XVII
PAGE 17.27

WELDERS LOG									
WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	WELDING PROCEDURE (WPS #)	"P" GROUP	"F" GROUP	POSITION	MAX. DEP. WELD METAL THK.	MIN. PIPE DIA.	EXPIRY DATE P.Q. CD.
Corey Hauglum	CLH	SMAW	WSS-Rev 1	1-114x	F3, F4	A11	22mm	25mm	2008 Aug. 3
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
Corey Hauglum	CLH	SMAW	WSS-Rev 1	1-114x	F3, F4	911	22mm	25mm	2008 Aug. 3
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
Corey Hauglum	CLH	SMAW	WSS-Rev 1	1-114x	F3, F4	911	22mm	25mm	2008 Aug. 3
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
Corey Hauglum	CLH	SMAW	WSS-Rev 1	1-114x	F3, F4	911	22mm	25mm	2008 Aug. 3
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
Corey Hauglum	CLH	SMAW	WSS-Rev 1	1-114x	F3, F4	911	22mm	25mm	2008 Aug. 3
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
Corey Hauglum	CLH	SMAW	WSS-Rev 1	1-114x	F3, F4	911	22mm	25mm	2008 Aug. 3
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
Corey Hauglum	CLH	SMAW	WSS-Rev 1	1-114x	F3, F4	911	22mm	25mm	2008 Aug. 3
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"
		"	"	"	"	"	"	"	"

REVISION 0
Dec. /02

EXHIBIT # 10B
CONTINUITY LOG

SECTION XVII
PAGE 17.28

CONTINUITY LOG 2006

WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	JAN. - MAR.	APR. - JUN.	JUL. - SEPT.	OCT. - DEC.
Corey Hauglum	CLH	SMaw			1226	
		"			1189	
		"			1223	
		"			1229	
Corey Hauglum	CLH	SMaw			06/20503	
		"			E9-12271	
		"			1235	
		"			1145	
Corey Hauglum	CLH	SMaw			F1-35576	
		"				1220
		"				E9-14315
		"				1235
Corey Hauglum	CLH	SMaw				1225
		"				1240
		"				1199
		"				1201
Corey Hauglum	CLH	SMaw				1249
		"				1251
		"				1250



Saskatchewan
Corrections and
Public Safety

Welder's Certificate

No 03450

This is to certify that JASON CAULBERG
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to
the Branch
- (b) automatic termination if the holder ceases, for six consecutive
months, to be actively employed upon welding of the type
authorized hereby.

Jason Caulberg
Welder's Signature

[Signature]
Welding Inspector

Name JASON CAULBERG Symbol JSL
Process(es) SMW SMW Material PT-11, 4x
Filler Metal 3 4 (P No.)
Group (P No.) 73 0.10 Minimum
Pipe Dia. 73 (INCHES)
Max. Deposited 6 16 Position(s)
Weld Metal Th. 6 16 Qualified All
(INCHES)
Backing Req'd No Yes/No Uphand/Downhand
Test Date NOV 16, 2006 Expires NOV 16, 2008
Restrictions

REVISION 0
Dec. /02

EXHIBIT # 10B
CONTINUITY LOG

SECTION XVII
PAGE 17.28

CONTINUITY LOG						
WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	JAN. - MAR.	APR. - JUN.	JUL. - SEPT.	OCT. - DEC.
Jason Carlberg		SMAW	1247-02			

Name: STEVEN BERGEN Symbol: PS15
 Process(es): SMW SMW Material: PT-11, 4K
 (P No.)
 Filler Metal: 6 4 Electrode: 0-0
 Gas: 6 4 Position: AW
 Backing: AW AW AW AW AW AW
 Test Date: Dec 24, 2006 Expires: Dec 24, 2008
 Restrictions: _____



Saskatchewan
 Corrections and
 Public Safety

Welder's Certificate

No 02564

This is to certify that KARSTEN VEBRICH
 has been tested in accordance with the requirements of ASME Code
 Section IX for pressure welding and is qualified to weld subject to the
 limitations shown and the following:
 cancellation upon an adverse report by an inspector to
 the Branch
 automatic termination if the holder ceases, for six consecutive
 months, to be actively employed upon welding of the type
 authorized hereby.

 Holder's Signature

 Welding Inspector

This card issued on behalf of AECB by / Cette carte est émise au nom de la CEEA par
 Certifying Agency / RSC / Organisme de certification
 Ottawa, ON K1A 0G1
 THIS IS NOT A VALID CERTIFICATE UNLESS ACCOMPANIED BY THE
 CARDHOLDER'S PHOTO CARD BEARING THE SAME REGISTRATION NUMBER
 LE CERTIFICAT EST VALABLE SEULEMENT SI ACCOMPAGNÉ DE LA CARTE
 IDENTIFIANT LE TITULAIRE AYANT LE MÊME NUMÉRO MATRICULE
 Qualified Operator
 Opérateur qualifié
 pursuant to Section 18 of the Atomic
 Energy Control Regulations, for the
 purpose of operating an exposure device
 contenant a prescribed substance
 en vertu de l'article 18 du Règlement
 sur le contrôle de l'énergie atomique
 afin d'utiliser un dispositif d'exposition
 contenant une substance prescrite

Atomic Energy Commission de contrôle
 Control Board de l'énergie atomique

This certifies that
 La présente atteste que
 has qualified pursuant to Section 18 of the Atomic Energy Control Regulations as a
 s'est qualifié en vertu de l'article 18 du Règlement sur le contrôle de l'énergie
 atomique comme étant un

Qualified Opérateur
 Operator qualifié

QUALIFICATION CARD
 CARTE DE QUALIFICATION 1997/11/30

REG. NO. 7864
 NO. MATRICULE 7864
 ISSUED DATE 1998/03/18
 DATE D'ÉMISSION 1998/03/18
 ISSUING OFFICER
 AGENT RESPONSABLE

Natural Resources Ressources naturelles
 Canada Canada
 Qualified to 1) CAN CGSB-48 9712 or 2) ISO 20807 Qualifié selon
 Method Level 2 EMC 99/06/07
 Régist. No. 7864
 Issue Date 2006/08/29
 Date d'émission
 Expiry Date 2008/12/31
 Expiration

Natural Resources Ressources naturelles
 Canada Canada
 This card is proof of the certification of the individual as specified
 Cette carte est la preuve de la certification de l'individu comme indiqué

Name Audley A. Brown
 Nom
 Reg. No. 7864
 No matricule
 Issue Date 2006/08/29
 Date d'émission
 Expiry Date 2008/12/31
 Expiration


Manager, Certifying Agency
 Gestionnaire, Organisme de certification

 **Natural Resources Canada** **Ressources naturelles Canada**
 Qualified to: i) CAN/CSB-48.9712 or/ou
 ii) ISO 20807 Qualifié selon

Method Méthode	Level Niveau	Sector Secteur	Cert. Date Date cert.	Recert. Date Date recert.	Expires Expiration
RT	1	2	EMC	92/10/01	08/12/31
UT	1	1	EMC	78/03/01	08/12/31

Manager, Certifying Agency
 Gestionnaire, Organisme de certification

Richard V. Murphy

 **Natural Resources Canada** **Ressources naturelles Canada**
 This card is proof of the certification of the individual as specified.
 Cette carte est la preuve de la certification de l'individu comme indiqué.

Name/
 Nom: **Graham Bail**
 Reg. No /
 No. matricule: **815**
 Issue Date/
 Date d'émission: **2005/12/09**
 Expiry Date/
 Expiration: **2008/12/31**
 Signature: 

 **Atomic Energy Control Board** **Commission de contrôle de l'énergie atomique**

I hereby certify that:
 Je présente atteste que:
 the person named herein is qualified pursuant to Section 18 of the Atomic Energy Control Regulations as a
 la personne nommée ci-dessus est qualifiée en vertu de l'article 18 du Règlement sur le contrôle de l'énergie atomique comme étant un

Qualified Opérateur
Operator qualifié

QUALIFICATION DATE
 DATE DE QUALIFICATION: **1976/07/01**

815

ISSUE DATE
 DATE D'ÉMISSION: **1998/02/17**

ISSUE DATE
 DATE D'ÉMISSION: **1998/02/17**



Natural Resources Canada
Ressources naturelles Canada

This card is proof of the certification of the individual as specified.
Cette carte est la preuve de la certification de l'individu comme indiqué.



Name/
Nom Kevin Rodger Tremblay
Reg. No./
No. matricule 448
Issue Date/
Date d'émission 2005/01/14
Expiry Date/
Expiration 2007/12/31
Signature



Natural Resources Canada
Ressources naturelles Canada

Qualified to i) CAN/CGSB-48.9712 or/ou
ii) ISO 20007 Qualifié selon

Method Méthode	Level Niveau	Sector Secteur	Cert. Date Date cert.	Recert. Date Date recert.	Expires Expiration
RT 1	2	EMC	99/01/07		07/12/31

Manager, Certifying Agency
Gestionnaire, Organisme de certification



Atomic Energy Control Board
Commission de contrôle de l'énergie atomique

This certifies that
La présente atteste que
Kevin Tremblay
has qualified pursuant to Section 18 of the Atomic Energy Control Regulations or
s'est qualifié en vertu de l'article 18 du Règlement sur le contrôle de l'énergie atomique comme étant un

Qualified Opérateur
Operator qualifié

QUALIFICATION DATE
DATE DE QUALIFICATION 1986/03/01

REG. NO.
N. MATRICULE 448

ISSUE DATE
DATE D'ÉMISSION 1998/03/04

ISSUED OFFICER
OFFICIER RESPONSABLE

Natural Resources Canada Ressources naturelles Canada
 Your certification card is only valid when presented with this identity card
 Votre certificat de poche est valide seulement s'il est présenté avec cette carte d'identité



Name/ Nom D. Wayne MacDonald
 Reg. No./ No. matricule 1959
 Issue Date/ Date d'émission 2002/03/12
 Expiry Date/ Expiration 2005/12/31

Atomic Energy Control Board Commission de contrôle de l'énergie atomique

This certifies that D. Wayne MacDonald
 Le présent certificat que
 has qualified according to Section 18 of the Atomic Energy Control Regulations as a:
 s'est qualifié en vertu de l'article 18 du Règlement sur le contrôle de l'énergie
 atomique comme étant un:

Qualified Operator
Opérateur qualifié

QUALIFICATION DATE
 DATE DE QUALIFICATION 1975/12/01

Richard V. May

REG NO
 NO MATRICULE 1959

RENEWAL DATE
 DATE D'ÉMISSION 1998/02/26

ISSUING OFFICER
 AGENT RESPONSABLE

Natural Resources Canada Ressources naturelles Canada

This certifies that D. Wayne MacDonald
 Le présent certificat que
 has qualified according to the CANCSCS Standard 48.0712-2000 as follows:
 est qualifié selon la norme CANCSCS-48.0712-2000 comme suit:

METHOD MÉTHODE	LEVEL NIVEAU	SECTION SECTION	CERT DATE DATE CERT	RENEWAL DATE DATE D'ÉMISSION	EXPIRY DATE DATE D'ÉCHEANCE
PT	2	EMC	77/05/01		06/12/31
RT	2	EMC	77/05/01		06/12/31
PT	2	WH	78/12/01		06/12/31
UT	1	EMC	81/07/01		06/12/31

Richard V. May

REG NO
 NO MATRICULE 1959

RENEWAL DATE
 DATE D'ÉMISSION 03/12/31

MANAGER, CERTIFICATION AGENCY
 COORDONATEUR, ORGANISME DE
 CERTIFICATION



Natural Resources Canada / Ressources naturelles Canada

This card is proof of the certification of the individual as specified.
 Cette carte est la preuve de la certification de l'individu comme indiqué.



Name / Nom: John Stewart Evans

Rec. No. / No. Matricule: 3744

Issue Date / Date d'émission: 2006/01/17

Expiry Date / Expiration: 2008/12/31

John S. Evans



Natural Resources Canada / Ressources naturelles Canada

Qualified to / Qualifié(e) en vertu de :
 a) CAN C GSB-48 9712 or eq.
 b) ISO 9001 Qualification

Method / Méthode	Level / Niveau	Sector / Secteur	Cert. Date / Date cert.	Recert. Date / Date recert.	Expiry / Expiration
RT 1	2	EMC	88/11/01		08/12/31
MT 1	2	EMC	86/11/01		08/12/31
UT 1	1	EMC	86/07/01		08/12/31

Manager / Certifying Agency /
 Gestionnaire / Organisme de certification

 Natural Resources Canada Ressources naturelles Canada
 This card is proof of the certification of the individual as specified
 Cette carte est la preuve de la certification de l'individu comme indiqué



Name
 Nom: Michael D Dufour
 Reg No
 No matricule: 10924
 Issue Date
 Date d'émission: 2006/01/17
 Expiry Date
 Expiration: 2011/01/17
 Signature

 Natural Resources Canada Ressources naturelles Canada
 Qualified to 1) CAN/CGSB-48.971.2 or/ou
 1) ISO 20807 Qualifié selon

Method Méthode	Level Niveau	Sector Secteur	Cert. Date Date cert.	Recert. Date Date recert.	Expiry Expiration
MT 1	2	EMC	01/10/16		08/12/31

Manager, Certifying Agency
 Gestionnaire, Organisme de certification

Richard J. Murphy



Natural Resources Canada / Ressources naturelles Canada

This card is proof of the certification of the individual as specified
Cetle carte est la preuve de la certification de l'individu comme indiqué



Name / Nom: Shawn D. Davies

Reg. No. / No matricule: 9777

Issue Date / Date d'émission: 2006/01/17

Expiry Date / Expiration: 2008/12/31

Signature

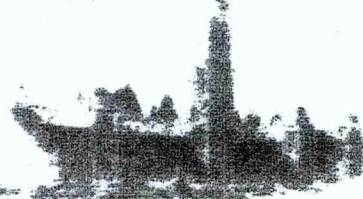


Natural Resources Canada / Ressources naturelles Canada

Qualified to 1) CAN/CGSB-48 9712 or/ou

1) ISO 20807 Qualifié selon

Method / Méthode	Level / Niveau	Sector / Secteur	Cert. Date / Date cert.	Recert. Date / Date recert.	Expires / Expiration
MT 1	2	EMC	01/10/29		08/12/31



Manager, Certifying Agency /
Gestionnaire, Organisme de certification

Richard Murphy



Atomic Energy Commission de contrôle
Control Board de l'énergie atomique

This certifies that
La présente atteste que
Frank P. Elsworth
has qualified pursuant to Section 14 of the Atomic Energy Control Regulations or se
s'est qualifié en vertu de l'article 14 du Règlement sur le contrôle de l'énergie
atomique comme étant un

Qualified Opérateur
Operator qualifié

QUALIFICATION DATE
DATE DE QUALIFICATION

1995/05/31

Signature

REG NO.
NO MATRICULE

9433

EXPIRATION DATE
DATE D'EXPIRATION

1999/07/27

ISSUING OFFICER
AGENTS EN CHARGE



Natural Resources Canada
Ressources naturelles Canada

This card is proof of the certification of the individual as specified.
Cette carte est la preuve de la certification de l'individu comme indiqué.



Name/
Nom Aaron Graves
Reg. No./
No. matricule 12401
Issue Date/
Date d'émission 2005/07/27
Expiry Date/
Expiration 2011/12/31

Aaron Graves



Atomic Solutions Canada Inc. Certifies That:

Aaron Graves

**HAS COMPLETED IN A SATISFACTORY
MANNER THE RADIATION SAFETY SEMINAR
FOR CANADA OPERATIONS.**

Date: 04/29/05 Expiry: 04/29/08 Course Length: 40 hrs.

Instructor: Scott B. Hahn

Company Manager: _____





Natural Resources Canada / Ressources naturelles Canada

Your certification card is only valid when presented with this photo card.
Votre certificat de poche est valide seulement s'il est présenté avec cette photo.



Name/ Nom Steve Faser
Reg. No./ No. matricule 11977
Issue Date/ Date d'émission 2004/06/22
Expiry Date/ Expiration 2005/12/31



Atomic Solutions Canada Inc. Certifies That:

Steve Faser

**HAS COMPLETED IN A SATISFACTORY
MANNER THE RADIATION SAFETY SEMINAR
FOR CANADA OPERATIONS.**

Date: 05/21/04 Expiry: 05/21/07 Course Length: 40 hrs.

Instructor: Scott B. Hahn

Company Manager: _____



HEAT: 39700 SKU: 7534752 DESC: 1 300 RF WN FLG XH A105IN

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
25061 CESANA BRIANZA (LC) ITALY
Tel. 031.636441 - Fax 031.655149
MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
- ISO 9001:2000 -

FORGED FLANGES & FITTINGS LTD
CASTLE HOGGE - STATION ROAD
BEN HARBUT/ZERTZ. GB

INVOICE / FATURA: 24317 21/04/2005
S: 4126
DEL. NOTE / BOLLA: 24367 21/04/2005

INSPECTION CERTIFICATE DIN 50049/3.1B - EN 10204/3.1B ** CERTIFICATO DI COLLAUDO

HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	YOUR P.O. VS. ORDINE	OUR REFERENCE NS. CROSS	QUANTITY QUANTITA'	DESCRIPTION DESCRIZIONE	DIM. IN ACCORDANCE TO DIM. IN ACCORDO A	VISUAL & DIMENSIONAL VISIVO E DIMENSIONALE
	39700	0009	3044	35301243 3026	150	W/N 300 RF 1" X3 A105 7534752	ASME/ANSI B16.5	SATISFACTORY 06

HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	MATERIAL MATERIALE	C %	Si %	Mn %	S %	P %	Cr %	Ni %	Mo %	Ti %	Cu %	V %	Nb %	N %	Al %	C.E. %	STEEL MILL ACCIAIERIA
	39700	0009	ASTM A 105	0.190	0.230	1.030	0.015	0.014	0.110	0.030	0.020	0.018	0.180	0.030	0.001	0.003	0.025	0.420	ASD. B175

HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	TEST SPECIMEN CET. PROVE CET. PROVE	YIELD POINT Limite di snervamento R _{eH} N/mm ²	TENSILE STRENGTH R _m N/mm ²	ELONGATION Allungamento A ₅ %	REDUCTION OF AREA Riduzione di area Z ₅ %	HARDNESS Durezza HB	SEMI VERT Paga	FLATNESS Sfalsatura	IMPACT TEST - Resistance Joules / joules				SHAPE FORMA 1-D 2-D 3-D	W	X	YIELD POINT Limite di snervamento R _{eH} N/mm ²	012 2	
											V.M.	V.M. 10/100	°C	1						2
39700		0009	126.62	50.80	373.0	535	30.3	51.0	159-163	0.0	2.0	KV	20	84	82	86	1		0.1	

HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A	HEAT TREATMENT TRATTAMENTO TERMICO	FURNACE FORNACE
	39700	0009	ASTM/ASME A 105/SA 105 N - 02 VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED	NORMALIZED AT 920 C - COOLED IN STILL AIR	K.807910 TORONTO

NOTE NOTE: CHARPY TEST SPECIMEN RESULT AS 10X10mm MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 2004 2005	QUALITY CONTROL DEPARTMENT UFFICIO CONTROLLO QUALITA' BRACCHI FLAVIO	INSPECTION AUTHORITY ENTE UTI DALE L. 10/4/2000 MARCONI PRODUCTIONS	MANUFACTURER'S SYMBOL MFF
--	--	---	------------------------------

HEAT: J322 SKU: 7534795 DESC: 2 300 RF WN FLG XH A105..

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
23061 GESANA BRIANZA (LC) ITALY
Tel. 031.655441 - Fax 031.655149

MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY CNV
= ISO 9001:2000 =

FORGED FLANGES & FITTINGS LTD
CASTLE MOOSE - STATION ROAD
NEW BARNET/HEPPY. GB

INSPECTION CERTIFICATE EN 10204/S.1

CERTIFICATO DI COLLAUDO

N. 4164/ 23/11/2005
INVOICE / FATTURA 3832/ 23/11/2005
S. 43710
DEL. NOTE / NOTA 6350/ 23/11/2005

HEAT CODE COD. CALATA	HEAT CALATA	ITEM POS.	YOUR P.O. VS. ORDER	OUR REFERENCE NS. ORDER	QUANTITY QUANTITÀ	DESCRIPTION DESCRIZIONE				DIM. ACCORDANCE TO DIM. IN ACCORDO A				VISUAL & DIMENSIONAL VISIVO E DIMENSIONALE									
	76322	0010	3113	05033494 0833	260	W/M 300 BY 2" X8 A105 7534795				ASME/ANSI B16.5				SATISFACTORY									
HEAT CODE COD. CALATA	HEAT CALATA	ITEM POS.	MATERIAL MATERIALE		C %	SI %	Mn %	S %	P %	Cr %	NI %	Mo %	TI %	Cu %	V %	Nb %	N %	Al %	C.E. %	ORIGIN ORIGINE			
	76322	0010	ASTM A 105		0.190	0.206	0.530	0.034	0.014	0.080	0.040	0.010	0.006	0.160	0.001	0.000	0.000	0.012	0.376	EUROPE			
HEAT CODE COD. CALATA	HEAT CALATA	ITEM POS.	TEST SPECIMEN SPECIMEN PROVA		YIELD POINT Sov. (N/mm²) Yield 2.0%	TENSILE STRENGTH Rm (N/mm²) Rm 2	ELONGATION Allargamento A5	REDUCTION OF AREA Riduzione Area Z	HARDNESS Durezza HRC	WELD TEST Prova Page	FLATTENED Appiattito Page	IMPACT TEST - Resistance Jm's : cm² PROVA D'URTO				SHAPE FORMA 1.0 x 1.0			S	W	X	YIELD POINT Sov. (N/mm²) Yield 2.0%	OUR LOG
	76322	0010	126.63 50.80		327.0	528	34.0	59.0	159-163	0.0	0.0	KV	20	86	88	83	1				0.0		
HEAT CODE COD. CALATA	HEAT CALATA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A									HEAT TREATMENT TRATTAMENTO TERMICO											
	76322	0010	ASTM/ASME A 105/SA 105 M - 02									NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE											
VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED																							

VERIFIED TRUE COPY
OF ORIGINAL
FORGED FLANGES &
FITTINGS LIMITED

NOTE

LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm
MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003
2005

QUALITY CONTROL DEPARTMENT
UFFICIO CONTROLLO QUALITÀ

INSPECTION AUTHORITY
ENTE UFFICIALE COLLAUDO

MANUFACTURER'S SYMBOL
MARCHIO PRODUTTORE

BRACCHI ELAVIO



7534795

MILL TEST CERTIFICATE

三英鋼鐵股份有限公司
SAN ENG STEEL FORGING CO., LTD.

NO. 22 LANE 50, WAN SING STREET
SAN MIN DISTRICT, KAOHSIUNG,
TAIWAN, R. O. C.
Tel: 07-372 4249 07-371 2934
Fax: 07-371 2923 07-371 2846
URL: http://www.saneng.com.tw
e-mail: saneng@ksts.seed.net.tw

EN10204-3.1.B(DIN50049/3.1.B)
CUSTOMER : W.F.F. FITTINGS & FLANGES
(CANADA) LTD.
7004K-5TH STREET S.E. CALGARY,
ALBERTA, CANADA T2H 2G3
TEL: 4032559527 FAX: 4032524711

CERT NO.: SE05128

DATE: 12/12/2

ORDER NO.: E04337AG

L/C NO.:

PAGE: 2 OF

PRODUCT				SPECIFICATION FOR MATERIAL				SPECIFICATION FOR FITTINGS										
FORGED CARBON STEEL FLANGES				ASTM A-105-03/ASME SA-105				ASME B16.5-98a										
ITEM NO.	DESCRIPTION			QUANTITY	CHEMICAL COMPOSITION (%)													
					C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	C.E	
11.	300# WNRF STD 2" A105N			11 PCE	0.200	0.130	1.150	0.016	0.019	0.100	0.070	0.080	0.060	0.012	0.003	0.005	0.009	0.4
12.	300# WNRF XS 2" A105N			200 PCE	0.210	0.180	1.030	0.010	0.007	0.090	0.080	0.060	0.005	0.003	0.005	0.010	0.4	

ITEM	HEAT	TENSILE STRENGTH (MPA)	YIELD STRENGTH (MPA)	ELONGATION (%)	HARDNESS (HB)	REDUCTION OF AREA (%)	HEAT TREATMENT	MATERIAL SUPPLIER	REMARKS
		485 MIN	250 MIN	22.0 MIN	187 MAX	30.0 MIN			
11.	47278	511.90	331.50	33.2	153	66.8	NORMALIZED	OENK	NORMALIZATION: 880°C X2HRS Material Control Sign Date Material Received Rm SEP 26 Heat# / MTR'S Rm SEP 26 Chemical Analysis N/A Quantity 1 Job# 1220
12.	34949	509.90	306.00	39.0	148	65.9	NORMALIZED	OENK	

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER AND IS THAT WHICH HAS BEEN TESTED TO THE SATISFACTION OF THE CERTIFICATE.

San Jo S. ...
MANAGER TEST CHIEF

HEAT: LK20044 SKU: 7514409 DESC: 3X2 XH ECC WELD RL

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity 1	Job# 1220	



Thai Benkan Co., Ltd.
36 Soi Wadkrumai, Bangkok, Prapatsong,
Samutprakan, 10130 Thailand.

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

E-No. Purchase Order No. Job No.
MA-434 4018858

TO EN10204 3.1
TO EN10204 3.1

D M Y Certificate No.
08/02/2006 T- 2006200096

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT 1 NACE MR0175-2003		Specification for Inspection ASME B76.9-2003		Visual Examination	Dimensional Inspection
		Product & Size		Quantity	Heat Treatment (Note 1)	Good	Good
1	04N20059	RE WPB 2 X 1 1/2 S80		20	N	7515375	
2	05K20044	RE WPB 3 X 2 S80		17/40	N	7514408	
3	05N20037	RE WPB 3 X 2 S80		23/40	N	7514408	
4	05K20045	RE WPB 4 X 2 S80		2/40	N	7510543	
5	05M20016	RC WPB 2 1/2 X 1 S80		20	N	7510310	

Specification	Chemical Composition %												Tension Test #2			HARDNESS MAX
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
Min.	X 100	X 100	X 100	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 100	MPa.		%	197 HB : GOOD
Max.		10	28										240	415	30	
Material Heat No.	23		108	50	58	40	40	40	15	80	20			585		
1 J4L7396	18	17	70	19	9	1	2	5	1	0	0	31	320	482	56	
2 J5K4989	18	19	70	19	6	1	2	8	2	0	0	32	285	470	40	
3 J5K4989	18	19	70	19	6	1	2	8	2	0	0	32	285	470	40	
4 58M3819	18	28	72	12	7	13	17	12	1	28	1	40	316	488	37	
5 40642	18	18	64	13	1	4	2	4	1	1	1	30	320	459	37	

(Note 1) A : Hot formed with final temperature between 620°C-980 °C, Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling S : Stress Relieving 675°Cx0.5 HR. Air Cooling
* N : NORMALIZING 910 °C X 0.5 HR. AIR COOLING (SPECIFICATION FOR MATERIAL MADE FROM PLATE)

C.E. = C+Mn/6-(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" controlled wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.

HEAT: B20020 SKU: 7511906 DESC: 2X1 XH CONC WELD WPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.
58 Soi Waikrunai, Bangkru, Prapadaeng,
Samutprakan, 10130 Thailand

TO EN10204 3.1

E No. Purchase Order No. Job No.
MA-491 4020192

D M Y Certificate No.
02/06/2006 T-2006200532

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe		Specification for Inspection		Visual Examination	Dimensional Inspection
		ASTM A234-05a/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003		ASME B16.9-2003		Good	Good
		Product & Size	Quantity	Heat Treatment (Note 1)	Symbol No.		
1	06B20020	RC WPB 2 X 1 S80	40	N	7511906		
2	06B20024	RC WPB 3 X 1 S80	20	N	7510311		
3	05K20029	RC WPB 12 X 8 XS	1/10	N	7514107		
4	06C20016	RC WPB 12 X 8 XS	6/10	N	7514107		
5	06D20106	RC WPB 12 X 6 XS	5	N	7614083		

Specification		Chemical Composition %											Tension Test #2			HARDNESS MAX	
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS		E
		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.			%
Min.	Max.		10	29										240	415	30	197 HB : GOOD
Material Heat No.		23		106	60	68	40	40	40	15	80	20			655		
1	J5LB939	19	22	71	12	8	2	2	4	1	0	1	32	311	465	58	
2	J5K4989	18	19	70	19	6	1	2	8	2	0	0	32	285	470	40	
3	22329	16	27	67	15	4	12	4	9	3.2	0	0	31	295	453	45	
4	J5KC311	10	24	127	10	4	2	2	12	1	0	0	34	316	455	52	
5	J6K3255	22	18	69	21	7	1	2	5	0	0	0	35	304	481	47	

(Note 1) A: Hot formed with final temperature between 620°C-980°C, Air Cooling. N: Normalizing 910°Cx0.5 HR, Air Cooling. *N: Normalizing 910°Cx0.5 HR, Air Cooling (Specification for material made from plate). S: Stress Relieving 675°Cx0.5 HR, Air Cooling.

C.E. = C/Mn/6+(Cr-Mo+V)/5+(Nb+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

Quality Assurance Manager
Thai Benkan Co., Ltd.

HEAT: J. 1236 SKU: 7513305 DESC: 2X1 XH WELD TEE WPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

PURCHASER : SEYBOLD
 STANDARD : ASTM A234 WPB-02
 ASME SA234 WPB-01



INSPECTION CERTIFICATE **RIGID** INDUSTRIES CO., LTD.

8, MEI-CHUNG RD. NIAO-SONG,
 KAOHSIUNG HSIEN, 83301 TAIWAN
 TEL: 886-77310527-8
 FAX: 886-77315887

DATE: 2006-04-06

ORDER NO: 5200/4019548

P.I. NO: 5115-1

CERTIFI. NO: 139

MATERIALS : ASTM A106 Gr. B / JIS G3103 SB410
 INSP. SPEC. : ASME B16.9-01

ACCORDING TO EN10204/DIN50049/3.1B

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
1	TEE 10" 1892 STD	25	5J4146	GOOD	139 - 162	N	GOOD	
2	RED-TEE 1X1/2" 2252 STD	16	6C7862 (6C)	GOOD	161 - 164	N	GOOD	
3	RED-TEE 1X3/4" 2236 STD	20	5D8847 (5D)	GOOD	125 - 134	N	GOOD	
4	RED-TEE 1.1/2X1/2" 2392 STD	15	5D0571 (5D)	GOOD	118 - 138	N	GOOD	
5	RED-TEE 1.1/2X1.1/4" 2333 STD	80	ES025 (ES)	GOOD	101 - 125	N	GOOD	
6	RED-TEE 2X3/4" 0721 STD	25	5E6267	GOOD	128 - 142	N	GOOD	
7	RED-TEE 2X3/4" 3283 XH	8	2K8207	GOOD	119 - 129	N	GOOD	
8	RED-TEE 2X1" 7293 160	5	5J3995	GOOD	130 - 154	N	GOOD	
9	RED-TEE 2X1" 3305 XH	25	5F1236	GOOD	148 - 161	N	GOOD	
10	RED-TEE 2.1/2X1" 9508 STD	25	5D3559	GOOD	134 - 155	N	GOOD	

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x1000	Y S KSI	T S KSI	E %	C.E. x100
		MIN.	10	29									35.0	60.0		
	STANDARD	MAX	30		135	50	58	40	40	40	15	8	20	85.0		50
1	J5L2246	11	22	129	9	5	2	2	11	2	0	0	46.3	68.2	48.2	35
2	20652	18	26	53	13	15	0	0	0	0	0	0	47.9	68.2	26.0	26
3	04106747	19	26	53	16	11	0	1	1	0	0	0	53.4	68.9	25.0	28
4	J3K8071	7	24	132	8	2	2	2	10	0	0	0	46.3	64.3	56.0	31
5	N260701	21	21	49	19	10	1	2	1	1	0	0	41.8	65.9	60.0	29
6	J2K9067	11	28	123	12	2	2	3	8	1	0	0	54.2	72.7	59.0	33
7	12T2707	19	26	45	20	15	13	3	6	0	0	0	46.4	69.6	31.0	28
8	J4L8295	11	22	126	11	4	1	2	6	1	0	0	45.7	67.9	65.0	33
9	J4KC136	11	27	125	6	5	3	2	6	1	0	0	47.3	68.0	62.0	33
10	J5L2559	12	24	123	14	4	4	2	11	0	0	0	50.8	71.5	63.0	35

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C X 0.5HR AIR COOLING.

NACE MR-01-75 & NACE MR 0103 : SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou L Lan

MANAGER OF Q.A. DEPT.

HEAT: M00019 SKU: 7510942 DESC: 3 XH LR 90 WELD ELL

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1226



Thai Benkan Co., Ltd.
58 Soi Wadkrasai, Bangkru, Prapadaeng,
Samutprakarn, 10130 Thailand.

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

I-I-No. Purchase Order No. Job No.
MA-410 4874847

TO EN 10204 3.1

D M Y Certificate No.

08/12/2005 T- 2005200971

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe				Specification for Inspection				Visual Examination		Dimensional Inspection	
		ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003				ASME / ANSI B19.9-2003				Good		Good	
		Product & Size		(T*U)		Quantity		Heat Treatment (Note 1)		Symbol No.			
1	05N20010	RC WPB 4 X 3 S40				800		N		7513330			
2	05B20058	RE WPB 2 1/2 X 1 1/2 S40				40		N		7514581			
3	05H00035	90 EL WPB 3 S80				100/1,500		A		7510842			
4	05M00018	90 EL WPB 3 S80				100/1,500		A		7510842			
5	05M00019	90 EL WPB 3 S80				800/1,500		A		7510842			

Specification		Chemical Composition %											Tension Test *2			HARDNESS MAX	
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS		
Min.		X 100	X 100	X 100	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 100	N / mm2		%	
Max.			10	29										240	415	30	197 HB : GOOD
Material Heat No.		23		106	50	58	40	40	40	15	80	20			585		
1	33531	19	23	67	12	4	4	2	5	2	1	1	32	338	481	40	
2	45868	18	20	64	10	2	3	2	2	1	1	1	30	378	522	39	
3	36728	19	23	72	9	1	5	3	5	3	1	1	33	340	489	40	
4	37393	19	20	65	12	2	2	2	3	3	1	1	32	307	463	36	
5	38728	19	23	72	9	1	5	3	5	3	1	1	33	340	489	40	

(Note 1) A : Hot formed with final temperature between 620°C-980°C. Air Cooling. N : Normalizing 910°Cx0.5 HR. Air Cooling. S : Stress Relieving 675°Cx0.5 HR. Air Cooling
* N : NORMALIZING 910°C X 0.5 HR. AIR COOLING (SPECIFICATION FOR MATERIAL MADE FROM PLATE)

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : T* symbolized wall thickness in mm. * 2 : YS Yield strength TS - Tensile strength E = Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.

HEAT: 6818 SKU: 7510900 DESC: 2 XH LR 90 WELD ELL W.

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



INSPECTION CERTIFICATE

RIGID INDUSTRIES CO., LTD.

PURCHASER: SEYBOLD
 STANDARD: ASTM A234 WPB-02
 ASME SA234 WPB-01
 MATERIALS: ASTM A106 Gr. B/JIS G3103 SB410
 INSP. SPEC.: ASME B16.9 -01

8, MEI CHANG RD, NAO SONG,
 KACHUNG HSEN, TAIWAN
 TEL: (07)781-0827-8
 FAX: (07)781-8867

DATE: 2005-10-26
 ORDER NO: 5028
 P. I. NO: 5E12-2
 CERTIFI. NO: 037

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MPG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX 187 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	
11	ELL 90° LR 3/4" STD	300	5J7273 (5J)	GOOD	121-134	A		7510250
12	ELL 90° LR 2" XH	1800	5F6818	GOOD	132-132	A		7510900
13	ELL 90° LR 5" STD	15	5F4828	GOOD	132-133	A		7510446
14	CON-RED 2X1" STD	20	5D8357	GOOD	124-146	N		7510195
15	CON-RED 2.1/2X2" STD	5	5H4855	GOOD	120-133	N		7513062
16	CON-RED 3X1.1/2" STD	10	5F4159	GOOD	133-148	N		7513494
17	CON-RED 3X2" STD	180	5D1484	GOOD	118-132	N		7513170
18	CON-RED 4X2" STD	100	5A5580	GOOD	125-125	N		7513372
19	CON-RED 4X3" STD	180	5C2844	GOOD	124-140	N		7513330
20	ECC-RED 4X2" STD	6	41256D	GOOD	110-133	N		7514913

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C X100	SI X100	Mn X100	P X1000	S X1000	CU X100	NI X100	CR X100	MO X100	V X100	Nb X1000	YS KSI	TS KSI	E %	C. E. x100
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	35.0	80.0		
		30		135	50	58	40	40	40	15	8	20		85.0		50
11	03573	20	29	54	20	8	0	0	0	0	0	0	53.5	64.4	25.0	29
12	503118	20	21	50	12	6	15	5	6	1	0	0	47.2	68.9	30.0	31
13	J4LC228	11	25	126	10	4	2	2	11	1	0	0	57.0	71.5	40.7	34
14	329557	17	24	58	11	6	7	3	3	1	0	2	49.9	70.5	33.0	28
15	J5L1555	11	25	125	10	3	3	2	5	1	0	0	49.2	70.9	62.0	33
16	510159	21	29	45	15	10	13	4	2	1	0	0	43.5	67.5	35.0	30
17	302884	19	24	54	8	1	8	4	5	2	0	1	42.4	68.3	35.0	30
18	2004803289	20	30	51	20	22	1	1	1	0	0	0	50.1	64.6	40.0	28
19	303844	19	22	51	8	3	7	3	7	2	0	1	46.6	70.1	34.5	29
20	3289	20	30	51	20	22	1	1	1	0	0	0	50.1	64.6	40.0	28

NOTED: A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 820°-850°, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°X1.5 HR, AIR COOLING.

NACE MR-01-75: SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou L Lan

MANAGER OF Q.A. DEPT.

HEAT: J328 SKU: 7534795 DESC: 2 300 RF WN FLG XH A105

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# /220

INSPECTION CERTIFICATE EN 10204/1.1



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
231861 CUSANO BRIANZA (LC) ITALY
Tel. 031.655441 Fax 031.655143

MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2000 =

BRACCHI LIMITED
CASTLE HOUSE - STATION ROAD
NEW BARNET HERTFORD GB

INVOICE / FACTURA
N. 44174
DEL NOTE / BOLTA 179/ 12/01/2006

HEAT CODE COD. COLATA	HEAT POS. ALI	ITEM POS.	YOUR P.O. VS. ORDER	OUR REFERENCE AS ORDER	QUANTITY QUANTITA	DESCRIPTION DESCRIZIONE	DIM. ACCORDANCE TO DIM. IN ACCORDO A	VISUAL & DIMENSIONAL VISUALI E DIMENSIONALI
76328		0036	16973*CT	05004421 0017	288	W/R 300 RF 2" XS A105 7534795	ASME/ANSI B16.5	SATISFACTORY
76328		0036	16973*CT	05004421 0017	288	W/R 300 RF 2" XS A105	ASME/ANSI B16.5	SATISFACTORY
75712		0016	16973*CT	05004260 0047	256	W/R 600 RF 2" XS A105 7530234	ASME/ANSI B16.5	SATISFACTORY
75712		0016	16973*CT	05004260 0047	155	W/R 600 RF 2" XS A105	ASME/ANSI B16.5	SATISFACTORY
76322		0016	16973*CT	05004260 0047	121	W/R 600 RF 2" XS A105 7530234	ASME/ANSI B16.5	SATISFACTORY
76322		0016	16973*CT	05004260 0047	256	W/R 600 RF 2" XS A105	ASME/ANSI B16.5	SATISFACTORY

HEAT CODE COD. COLATA	HEAT POS. ALI	ITEM POS.	MATERIAL MATERIALE	C %	Si %	Mn %	S %	P %	Cr %	Ni %	Mo %	Ti %	Cu %	V %	Nb %	N %	Al %	C.E. %	ORIGIN ORIGINE
76328		0036	ASTM A 105	0.195	0.150	0.940	0.021	0.017	0.090	0.050	0.010	0.005	0.190	0.001	0.000	0.000	0.100	0.337	EUROPE
76328		0036	ASTM A 105	0.195	0.150	0.940	0.021	0.017	0.090	0.050	0.010	0.005	0.190	0.001	0.000	0.000	0.100	0.337	EUROPE
75712		0016	ASTM A 105	0.195	0.220	0.870	0.019	0.013	0.070	0.050	0.010	0.005	0.240	0.002	0.002	0.000	0.013	0.375	EUROPE
75712		0016	ASTM A 105	0.195	0.220	0.870	0.019	0.013	0.070	0.050	0.010	0.005	0.240	0.002	0.002	0.000	0.013	0.375	EUROPE
76322		0016	ASTM A 105	0.196	0.200	0.930	0.016	0.014	0.080	0.040	0.010	0.005	0.160	0.001	0.000	0.000	0.012	0.376	EUROPE
76322		0016	ASTM A 105	0.196	0.200	0.930	0.016	0.014	0.080	0.040	0.010	0.005	0.160	0.001	0.000	0.000	0.012	0.376	EUROPE

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS	TEST SPECIMEN		YIELD POINT MPa KSI	TENSILE STRENGTH MPa KSI	ELONGATION % 5mm	REDUCTION OF AREA % 5mm	HARDNESS HRC	BEND TEST R	FLATTENING mm	IMPACT TEST - Charpy					SHAPE		WELD POINT CORRELATION	OBS. REY	
			SECTION SUTRA	NO. LEGEND								U.N.	TEMP. °C	1	2	3	4	5			6
76328		0036	126.60	50.80	336.0	541	33.0	58.0	164-166	0.0	0.0	KV	20	85	90	80	1			0.0	
76328		0036	126.60	50.80	336.0	541	33.0	58.0	164-166	0.0	0.0	KV	20	85	90	80	1			0.0	
75712		0016	126.60	50.80	327.0	529	34.0	60.0	159-163	0.0	0.0	KV	20	88	81	86	1			0.0	
75712		0016	126.60	50.80	327.0	528	34.0	60.0	159-163	0.0	0.0	KV	20	89	81	96	1			0.0	
76322		0016	126.60	50.80	327.0	528	34.0	59.0	159-163	0.0	0.0	KV	20	86	88	93	1			0.0	
76322		0016	126.60	50.80	327.0	528	34.0	59.0	159-163	0.0	0.0	KV	20	86	88	93	1			0.0	

HEAT CODE COD. COLATA	HEAT POS. ALI	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A	HEAT TREATMENT TRATTAMENTO TERMICO
76328		0036	ASTM/ASME A 105/SA 105 M - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE
76328		0036	ASTM/ASME A 105/SA 105 M - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE
75712		0016	ASTM/ASME A 105/SA 105 M - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE
75712		0016	ASTM/ASME A 105/SA 105 M - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE
76322		0016	ASTM/ASME A 105/SA 105 M - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE
76322		0016	ASTM/ASME A 105/SA 105 M - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE

NOTE

MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003

QUALITY CONTROL DEPARTMENT

INSPECTION AUTHORITY

MANUFACTURER'S SYMBOL

CONTROLLED QUALITY

APPROVED QUALITY

APPROVED QUALITY

BRACCHI FLAVIO

(M-F)



Material Test Report

Heat Code: QIF



An Ameri-Forge Group Company
13770 Industrial Road
Houston TX 77015

7534353

6A-0077 ISO 9001:2000
CERT-04264-2003
AQ-HOU-RvA/RVH

Sales: (713) 868-4421 Fax: (713) 455-8366

CCTF-EDMONTON	Part Desc: FLG 03.00 0150 WN RF XH / A105 NRM COFFR		
5407 53RD AVENUE	Sales Order: 38475	Part No: 114-7413	
EDMONTON, ALB T6B3G2	Order Line: 4	Spec: A/SA105 Normalized	
PO: 48687511	Qty Shipped: 239	Vendor: SMI	Vendor Heat Code: 231325

	C	Mn	P	S	Si	Cu	NI	Cr	Mo	V	Cb
Ladle:	0.19	0.88	0.006	0.015	0.22	0.24	0.09	0.09	0.022	0.001	0.002
Product:											
	C.E.	CuNiCrMo	CrMo								
Ladle:	0.38	0.44	0.11								
Product:											

Mechanical Properties	Heat Treatment	Other Results
Test Lab: AFG BHN: 150-150 Elg (%): 27.0 RA (%): 58.0 Test Size (in): 0.254 Tensile (ksi): 79.8 Yield (ksi): 50.7 Gauge Length: 1.00	Norm. Temp. (F): 1675 Norm. (Hrs): 4.0 Norm. Cooling Type: AIR	

Comments

No Weld repair performed. Mercury free.

Product compliant with NACE MRO176, latest Ed.

This report is issued in compliance with the requirements of EN10204 3.1.b / ISO 10474 3.1.b.

MTR No. 21914
MTR Date: 4/8/2004

S. Drozdowski
Stan Drozdowski - AFG Test Lab Manager

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	
Job#	1220	



Material Test Report

Heat Code: QSK ✓



6A-0077

An Ameri-Forge Group Company
13770 Industrial Road
Houston, TX 77015

Sales: (713) 868-4421
Fax: (713) 455-8366

7534787

CCTF-EDMONTON	Part Desc: FLG 01.50 0300 WN RF XH A105 NRM COFFR
5407 53RD AVENUE	Sales Order: 38061 ✓ Part No: 115-2478 ✓
EDMONTON, ALB T6B3G2	Order Line: 81 Spec: A/SA105 Normalized
PO: 4868517-0C	Qty Shipped: 100 ✓ Vendor: SMI Vendor Heat Code: 232006

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Co
Ladle:	0.20	0.85	0.007	0.015	0.22	0.24	0.07	0.11	0.021	0.003	0.001
Product:											
	C.E.	CuNiCrMo	CrMo								
Ladle:	0.39	0.44	0.13								
Product:											

Mechanical Properties	Heat Treatment	Other Results
Test Lab: AFG	Norm. Temp. (F): 1675	Country of Origin: USA
Test Bar Size: SACRIFICIAL	Norm. (Hrs): 4.0	
BHN: 156-158	Norm. Cooling Type: AIR	
F _{0.2} (%): 30.0		
RA (%): 55.0		
Test Size (in): 0.500		
Tensile (ksi): 80.9		
Yield (ksi): 50.9		
Gauge Length: 2.00		

Comments

Materials on this report meet the requirements of: NACE MR-01-75, DIN 50349. No Weld repair performed. Mercury free Product compliant with NACE MRO175, latest Ed.

This report is issued in compliance with the requirements of EN10204 3.1 b / ISO 10474 3.1 b

MTR No: 17863
MTR Date: 2/27/2004

S. Drozdowski
Stan Drozdowski AFG Test Lab Manager

Material Control	Sign	Date
Material Received	Rm	SEP 26 2004
Heat # / MTR'S	Rm	SEP 26 2004
Chemical Analysis	N/A	
Quantity	1	
Job #	1220	

MIL TEST CERTIFICATE

EN10204-3.1.B(DIN50049/3.1.B)
CUSTOMER : SEYBOLD INTERNATIONAL CORP.

三 英 鋼 鐵 股 份 有 限 公 司
SAN ENG STEEL FORGING CO., LTD.

NO. 22 LANE 50, WAN SING STREET
SAN MIN DISTRICT, KAOHSIUNG,
TAIWAN, R. O. C.
Tel: 07-372 4249 07-371 2934
Fax: 07-371 2923 07-371 2846
URL: http://www.saneng.com.tw
e-mail: saneng@ksts.seed.net.tw

20 HOLLY STREET, SUITE 205
TORONTO, M4S 3B1, CANADA
TEL: 416-4810191 FAX: 416-4811790

CERT NO.: SE-4612H

DATE : 01/23/2006

ORDER NO.: 4612(8)WESTLUND

L/C NO. :

PAGE : 1 OF 1

P R O D U C T					S P E C I F I C A T I O N F O R M A T E R I A L					S P E C I F I C A T I O N F O R F I T T I N G S									
FORGED CARBON STEEL FLANGES					ASTM A-105-03/ASME SA-105 (Z245.12 CAT I GR.248 SOUR SERVICE-01)					ASME B16.5-98a									
ITEM NO.	D E S C R I P T I O N				QUANTITY	C H E M I C A L C O M P O S I T I O N (%)													
						C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	C.E.	
1.	7534795 300# WNRF XS				700 PCE	0.190	0.140	1.120	0.010	0.016	0.100	0.110	0.050	0.005	0.003	0.005	0.009	0.411	
2.	7535260 900# WNRF STD				24 PCE	0.210	0.170	1.160	0.017	0.011	0.050	0.060	0.030	0.005	0.003	0.005	0.009	0.423	
3.	7536503 900# WNRF STD				7 PCE	0.220	0.250	0.950	0.016	0.005	0.036	0.026	0.032	0.003	0.007	0.002	0.000	0.389	
4.	7535260 900# WNRF STD				1 PCE	0.220	0.190	1.130	0.018	0.008	0.070	0.070	0.030	0.005	0.003	0.005	0.009	0.431	
5.	7536503 900# WNRF STD				3 PCE	0.200	0.220	0.990	0.018	0.007	0.033	0.018	0.031	0.003	0.008	0.002	0.000	0.374	
6.	7534795 300# WNRF XS				150 PCE	0.210	0.180	1.030	0.010	0.007	0.090	0.080	0.060	0.005	0.003	0.005	0.010	0.410	

ITEM	HEAT	TENSILE STRENGTH (MPA)	YIELD STRENGTH (MPA)	ELONGATION (%)	HARDNESS (HB)	REDUCTION OF AREA (%)	HEAT TREATMENT	MATERIAL SUPPLIER	R E M A R K S			
		485 MIN	250 MIN	22.0 MIN	187 MAX	30.0 MIN			NORMALIZATION: 880°C X2HRS CONFORMS TO MEET NACE MR-01-75 LATEST EDITION			
1.	29572	505.00	300.10	36.0	150	67.7	NORMALIZED	OENK	Material Control	Sign	Date	
2.	17832	511.90	323.60	33.8	157	65.9	NORMALIZED	OENK	Material Received	Rm	SEP 26	2006
3.	06869	500.80	331.30	36.0	171	67.7	NORMALIZED	PANZHITHUA	Heat # / MTR'S	Rm	SEP 26	2006
4.	17830	503.10	327.50	33.8	154	64.9	NORMALIZED	OENK	Chemical Analysis	N/A		
5.	06811	498.90	331.30	36.6	157	67.7	NORMALIZED	PANZHITHUA	Quantity	1	Job#	12a0
6.	34949	509.90	306.00	39.0	148	65.9	NORMALIZED	OENK				

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER AND IS THAT WHICH HAS BEEN TESTED TO THE SATISFACTION OF THE CERTIFICATE

Sam Je Lee High Glory

CLIENTE / Customer / Client

WESTLUND A DIVISION OF EMCO LT
5105 - 75 STREET
EDMONTON, AB T6E 5S5
CANADA

CERTIFICADO DE INSPECCION

Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.B
EN 10204 / 3.1.B
ISO 10474 / 3.1.B

FECHA:
Date:

16/09/2005

N.
No.

102465

HOJA:
Page: 2



N.º: 922164



ULMA FORJA, S.COOP.

Bº Zubillaga, 3 - Apdo. 14
20560 OÑATI (Gipuzkoa) SPAIN
Tel.: 34 - 943 780552
Tel.: 34 - 943 781808
E-mail: forja@forging.ulma.es

PRODUCTO
Article - Produit

FLANGES

SU PEDIDO N.º

Your Order No. 9103482-00
Votre Cde. N.º

DE

of. - de 29/07/2005

Certified acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 E/Q 02 7443

NORMAS APLICABLES
Requirements - Normes Applicables

ASME B16.5-96

MATERIAL CORRESPONDIENTE
Material Correspondent - Qualité

ASTMA105N-03
ASME SA105N

MODO DE FUSION (*)
Steel Making - Elaboration de l'acier
E = Elec. Y = Oxígeno básico

NACE MR-01-75/03

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



47827

DEPARTAMENTO QUALITY ASSURANCE
Section
Department

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No N.º Coulee	RESISTENCIA T. Strength Resist Rupt N/mm2	LIMITE ELAST. Yield Point Limite Elast. N/mm2	ALARGAM. Elongation Allongement Lo: 4 d %	ESTRICCION Reduction A Striction %	RESILENCIA Impact test Resilience Joules	PROBETA - SPECIMEN		DUREZA Hardness Dureté HB
										MEDIA Average Moyenne	°C	
19 7534787	12	WN 1 1/2 300LB S80 RF A105N	NY	234A4	503	319	32,70	66,10				160
23 7534841	40	WN 8 300LB S80 RF A105N	NE	204A5	518	320	32,00	65,70				150
29 7535813	16	BLIND 16 150LB RF A105N	NY	535A5	532	323	31,00	28,70				152

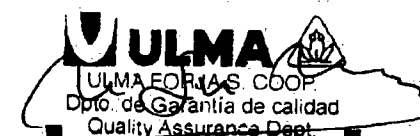
COLADA N.º
Heat No
N.º Coulee

COMPOSICION QUIMICA - STEEL MARKER'S - ANALYSE CHIMIQUE

	C %	SI %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
204A5	0.200	0.240	0.860	0.013	0.004	0.070	0.080	0.020	0.007	0.001	0.250	0.384
234A4	0.210	0.270	0.830	0.014	0.004	0.030	0.005	0.011	0.003	0.007	0.012	0.359
535A5	0.200	0.220	0.840	0.026	0.030	0.001	0.001	0.001	0.001	0.001	0.001	0.341

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants
- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - L'Inspecteur



(*) OBSERVACIONES: N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR
Remarks
Observations

Material Control	Sign	Date
Material Received	Km	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 228049 PAGE 2
BONNEY FORGE
 P.O. BOX 330 • 14406 CROGHAN PIKE • MOUNT UNION, PA 17088-0330
 (814) 642-2545 • (800) 345-7546 • FAX (814) 642-4808
 www.bonneyforge.com

CUSTOMER: CCTF CORPORATION
CUSTOMER'S Order No.: 4876450-00
SHIPPED TO: CCTF CORPORATION
 5407 - 53 AVENUE
 EDMONTON ALBERTA, T6B 3G2 CANA

Date 03/28/06
Bonney Order No. 031038
 354597

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
8A/A350-LF2 CL 1			
004	750	56700	7690102 10-3X 1 6M LF2 THRED T C .200 MN 1.020 P .011 S .019 SI .220 NI .050 CU .170 CR .060 MD .020 V .000 AL .024 NB .014 CE(LONG FORMULA) = 0.40 T/S 76508 Y/S 53015 EL 30.75 RA 65.23 BRINELL HARDNESS1: 135 HARDNESS2: 135 CHARPY: -50F 40.0, 55.0, 42.0 (FT/LBS) AVERAGE 45.6
005	50	38222	7690084 36-2 X1 3000 LF2 LRED T C .200 MN .990 P .007 S .019 SI .240 NI .040 CU .120 CR .060 MD .011 V .024 NB .001 CE(LONG FORMULA) = 0.39 T/S 80450 Y/S 50240 EL 30.50 RA 65.20 BRINELL HARDNESS1: 147 HARDNESS2: 144 CHARPY: -50F 41.0, 36.0, 30.0 (FT/LBS) AVERAGE 35.6
	56250	7690084	36-2 X1 3000 LF2 LRED T C .190 MN 1.050 P .011 S .025 SI .240 NI .030 CU .080 CO .002 CR .050 MD .010 V .024 AL .001 NB .000 CE(LONG FORMULA) = 0.39 T/S 82250 Y/S 64875 EL 28.65 RA 73.50 BRINELL HARDNESS1: 176 HARDNESS2: 172 CHARPY: -50F 18.0, 46.0, 24.0 (FT/LBS) AVERAGE 29.3

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by Sandy Holland
 Sandy Holland

CMTR: REV 1

QUALITY PROCESS MANAGER

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Rm	SEP 29 2006
Chemical Analysis	N/A	
Quantity <u>1</u>	Job# <u>1220</u>	

HEAT: 56250 SKU: 7690084 DESC: 1X2-36 3000 THRD EOL A350LF2

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 225213 PAGE 1
BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 12/30/05

CUSTOMER'S Order No.: 9105471-00

Bonney Order No. 023596

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY
5105 75TH STREET

337587

EDMONTON ALBERTA
EDMONTON ALBERTA, T6E5S5 CANAD

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
------	----------	---------	--

SA/A105N

061	25	56501	7552220	36-2 X 1 3000	A105N LRED T				
				C	.190 MN	1.040 P	.013 S	.018 SI	.190
				NI	.040 CU	.140 CD	.003 CR	.060 MD	.020
				V	.001 AL	.027 NB	.011		
CE(LONG FORMULA) = 0.39									
T/S 75127 Y/S 52284 EL 33.15 RA 71.62									
BRINELL HARDNESS1: 137 HARDNESS2: 135									

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
3. CERTIFYING ASTM A105-03 / ASME SA105-04 EDITION.
4. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.
5. THE MATERIAL SUPPLIED WAS INSPECTED AND MANUFACTURED IN ACCORDANCE WITH EN DIN 10204 3.1. B.
6. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2003 AND NACE MR0175-2003.

***** END OF CERTIFICATION *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

CMTR: REV 1

Material Control	Sign	Date	by <u>[Signature]</u>
Material Received	Rm	SEP 29 2006	Chris Childers
Heat # / MTR'S	Rm	SEP 29 2006	QUALITY PROCESS MANAGER
Chemical Analysis	N/A		
Quantity <u>1</u>	Job# <u>1220</u>		

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 301329 PAGE 1
BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4808
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION
CUSTOMER'S Order No.: 4877505-00
SHIPPED TO: CCTF CORPORATION
5407 - 53 AVENUE
EDMONTON ALBERTA, T6B 3G2 CANA

Date 07/13/06
Bonney Order No 37899
372137

ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO.
CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

SA/A350-LF2 CL 1

001 25 56048 7690110 10 -6 X 1 XS LF2 WELD B
C .190 MN 1.000 P .013 S .025 SI .260
NI .040 CU .140 CR .050 MO .011 V .024
AL .001 NB .000
CE(LONG FORMULA) = 0.39
T/S 77000 Y/S 53000 EL 34.00 RA 66.00
BRINELL HARDNESS1: 150 HARDNESS2: 153
CHARPY: -50F 29.0, 18.0, 24.0 (FT/LBS)
AVERAGE 23.6

004 50 56664 7690107 36-11/2X3/4 3M LF2 FLEX T
C .210 MN 1.150 P .011 S .019 SI .210
NI .020 CU .060 CO .003 CR .040 MO .000
V .002 AL .018 NB .015
CE(LONG FORMULA) = 0.42
T/S 79000 Y/S 52500 EL 35.00 RA 70.00
BRINELL HARDNESS1: 153 HARDNESS2: 153
CHARPY: -50F 63.0, 54.0, 45.0 (FT/LBS)
AVERAGE 54.0

005 50 56438 7690006 21/2-2 X 3/4 3000 LF2 THRD T
C .190 MN .990 P .008 S .025 SI .250
NI .040 CU .190 CO .003 CR .070 MO .011
V .023 AL .001 NB .001
CE(LONG FORMULA) = 0.39
T/S 81625 Y/S 63750 EL 30.70 RA 73.90
BRINELL HARDNESS1: 162 HARDNESS2: 165
CHARPY: -50F 84.0, 84.0, 112.0 (FT/LBS)
AVERAGE 94.0

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Rm	SEP 29 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by 
Cris Childers

CMTR: REV 1

QUALITY PROCESS MANAGER

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 226316 PAGE 25
BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 02/01/06

CUSTOMER'S Order No.: 9106523-00

Bonney Order No. 027654

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY
5105 75TH STREET

344397

EDMONTON ALBERTA
EDMONTON ALBERTA, T6E5S5 CANAD

ITEM QUANTITY LOT NO. GRADE OR SPECIFICATION NO.
CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

SA/A350-LF2 CL 1

109 8 8252 3/8 3000 LF2 COUP T
C .200 MN 1.020 P .012 S .025 SI .250
NI .040 CU .170 CR .200 MO .012 V .023
NB .001
CE(LONG FORMULA) = 0.43
T/S 84960 Y/S 54370 EL 29.10 RA 68.00
BRINELL HARDNESS1: 149 HARDNESS2: 155
CHARPY: -50F 42.0, 45.0, 79.0 (FT/LBS)
AVERAGE 54.0

25 56438 7690006 21/2-2 X 3/4 3000 LF2 THRD T
C .190 MN .990 P .008 S .025 SI .250
NI .040 CU .190 CO .003 CR .070 MO .011
V .023 AL .001 NB .001
CE(LONG FORMULA) = 0.39
T/S 81625 Y/S 63750 EL 30.70 RA 73.90
BRINELL HARDNESS1: 162 HARDNESS2: 165
CHARPY: -50F 86.0, 84.0, 112.0 (FT/LBS)
AVERAGE 94.0

111 25 56293 7690112 6 X 2 XS LF2 WELD B
C .190 MN 1.020 P .011 S .020 SI .240
NI .020 CU .100 CO .002 CR .040 MO .007
V .025 AL .001 NB .000

Material Control	Sign	Date
Material Received	Rm	SEP 29 2005
Heat # / MTR'S	Rm	SEP 29 2005
Chemical Analysis	N/A	
Quantity	1	Job# 1220

CE(LONG FORMULA) = 0.38
T/S 7375 Y/S 51125 EL 31.10 RA 67.70
BRINELL HARDNESS1: 141 HARDNESS2: 139
CHARPY: -50F 62.0, 13.0, 27.0 (FT/LBS)
AVERAGE 34.0

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by
Cris Childers

CMTR: REV 1

QUALITY PROCESS MANAGER

TRI-LAD FLANGE AND FITTINGS INC.

30 Woodslee Avenue, Paris, Ontario
Canada N3L 3V1
(Phone) 519-442-6520
(Fax) 519-442-7658
www.trilad.com



ISO 9001:2000



8A-0707

CERTIFIED MATERIAL TEST REPORT

Certificate No.

06102310

EN 10204 3.1

Date of Report

9/22/2006

Customer

WESTERN/WESTLUND
DIV OF EMCO LTD
615 VENNELS ST.
REGINA

SK S4N 6B1

Customer Order No.

7043779

Quantity

2

Tri-Lad Order No.

456764

Line No.

1

Specification

A350-04A LF2 CL1

Heat Treatment

NORMALISED

Item Description

1 300 WN XS RF LF2 C1

(801819)

Temperature

Init 1670 F 910 C

Shop Order/Trace No.

Time

Lot Definition

Lot No.

Heat Code

021L/G

C.E.

.47

Melt Practice

Chemical Composition

Heat Product

C	.21	Mn	1.21	P	.023	S	.021	Si	.23	Cu	.03	Ni	.34	Cr	.16	Mo	.020	V	.003
---	-----	----	------	---	------	---	------	----	-----	----	-----	----	-----	----	-----	----	------	---	------

Heat Product

Nb	.001																		
----	------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Heat Product

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Mechanical Properties

Yield		Tensile		Elongation	Reduction of Area	Hardness		Impact Test Temperature	Impact Values				Shear Fracture
Ksi	57	Ksi	82			BHN	145		Ft-Lbs	21	20	29	
Mpa	391	Mpa	566	30 ±		BHN	143	M50 F M45 C	Joules	27	26	38	
Tensile Specimen				STD RD									
Lateral Expansion				Impact Type		Impact Orientation			Starting Material			Impact Specimen	
				VNOTCH								FULL SIZE	

Material Control

Sign

Date

Notes

Material Received

RM

SEP 29 2006

Heat # / MTR'S

RM

SEP 29 2006

Chemical Analysis

N/A

Quantity

1

Job# 1220

NO WELD REPAIR

We hereby certify that all information presented on this CMTR conforms to the above specification.

We hereby certify the results to be a true copy of the records of the company.

Les Mansfield, C.E.T.
Les Mansfield, C.E.T.
Quality Assurance Manager

Certificate No.
(성적서번호) 5908050B-1021010

Customer
(주 문 자) SEYBOLD

Material
(재 질) SA/A350LF2-00c

P.O.No.
(발주번호) 9103348-00 (5080)

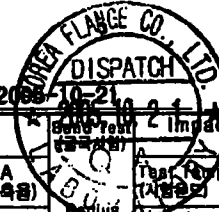
INSPECTION CERTIFICATE

(시험 성적서)

KOF KOREA FLANGE CO.,LTD.
한국프랜지공업주식회사
194, DongBu-Dong, Dong-Ku,
Ulsan-Metropolitan, KOREA
울산광역시 동구 동부동 194번지

W/O No.
(작업지시번호) 5908050B

Issued date
(발행일) : 2008-10-21



Item No. (품번)	Article (품명)	Quantity (수량)	Mechanical Properties (기계적성질) Lot No. (품번) (Control No.)	Tension Test (인장시험)				Impact Test(Charpy) (충격시험) Test Temp: (시험온도) -46 °C Unit : (단위) Joule Ave(평균) : 20 Min(최소) : 16	Hardness Test (경도시험) HB MAX 237	CODE NO (제품번호)
				Y.S (항복강도) psi	T.S (인장강도) psi	E.L (연신율) %	R.A (단면수축률) %			
				36000 Min(최소)	95000 70000	22.0 Min(최소)	30.0 Min(최소)			
043	AN 600 WN RF XS 2	1,200	2C23	48300	78400	35.0	62.0	34 31 33 33	142 139	7581008
044	AN 300 WN RF STD 2	180	2C23	48300	78400	35.0	62.0	34 31 33 33	142 139	7583930✓
045	AN 600 BL RF 3	168	5C98	49600	78100	31.0	66.0	35 39 37 37	144 141	7585119
046	AN 150 WN RF XS 2	539	2C23	48300	78400	35.0	62.0	34 31 33 33	142 139	7585208
047	AN 150 WN RF XS 3	140	5C98	49600	78100	31.0	66.0	35 39 37 37	144 141	7585232

Chemical Composition (화학성분) (%) Lot No. (품번) (Control No.)	C 1/100	Si 1/100	Mn 1/100	P 1/1000	S 1/1000	Ni 1/100	Cr 1/1000	Mo 1/1000	V 1/1000	Cu 1/1000	Cb 1/1000	N 1/1000	Ceq 1/100	Heat treatment (열처리)		
	MAX 30	15 30	60 135	MAX 35	MAX 40	MAX 100	MAX 300	MAX 120	MAX 50	MAX 400	MAX 20		MAX 43	Normalizing (소둔)	900 °C 2.0	h A.C
2C23	18	27	95	14	7	1	30	10	10	10	10		35	Quenching (소입)	°C	h
2C23	18	27	95	14	7	1	30	10	10	10	10		35	Annealing (소둔)	°C	h
5C98	20	34	95	20	8	1	20	10	10	10	10		37	Tempering (소래)	°C	h
2C23	18	27	95	14	7	1	30	10	10	10	10		35	Solution (용해열처리)	°C	
5C98	20	34	95	20	8	1	20	10	10	10	10		35			

Material Control Sign Date
Material Received Rm SEP 29 2006
Heat # / MTR'S Rm SEP 29 2006
Chemical Analysis N/A
Quantity / Job# 1220

Visual & Dimension Inspection
(치수 및 외관검사)
GOOD

B. G. Corp.

Others
(기타)
Works Test Certificate to EN 10204/3.1B
Flanges supplied to ASME B16.5. NACE MR-01-75
CSA Z245.12 GR 248 CAT II

Surveyor To :
(검사관)
We hereby certify that material described herein has been tested and satisfied as above in accordance with the specification.
본 성적서에 명시된 소재는 상기 사양에 의거 위와같이 시험되었으며 그 결과가 만족함을 증명함.

QA Department Manager
(품질보증부장)

CLIENTE / Customer / Client
CCTF CORPORATION (EDMONTON)
 5487 - 53 AVENUE NW
 EDMONTON, AB T8B 3G2
 CANADA

CERTIFICADO DE INSPECCION
 Works Certificate - Certificat d'Usine

DIN EN 10204 / 3.1
 ISO 10474 / 3.1

FECHA: 10/04/2006
 Date:

N.º 106181
 No.:

HQJA: Page: 1



ULMA

ULMA FORJA, S.COOP.

Bº Zubillaga, 3 - Apdo. 14
 20460 ORATÍ (Gipuzkoa) SPAIN
 Tel.: 94 - 943 760552
 Fax: 94 - 943 781808
 E-mail: forja@forjag.ulma.es

61682

PRODUCTO
 Article - Produit

FLANGES

SU PEDIDO N.º
 Your Order No 4875594-00
 Votre Cde N.º

DE
 of - de 21/12/2005

Certified acc. PED 97/23/EC
 by TÜV Rheinland
 N.º 01 202 E/O 02 T443

MARCA DEL FABRICANTE
 Mark of factory
 Marque du fabricant

DEPARTAMENTO QUALITY ASSURANCE
 Section
 Département

NORMAS APLICABLES
 Requirements - Normes Applicables

ASME B14.5-94

MATERIAL CORRESPONDIENTE
 Material Correspondent - Qualité

AISA350LF2CL1-04b
 ASTM/ASME

MODO DE FUSION (*)

Steel Making - Elaboration de l'acier

NACE MR-01-75/03

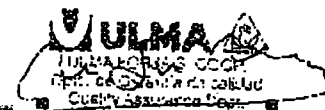
El = Elec. Y = Origénio básico

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	LOTE	OBSERVACIONES Remarks Observations	T.M.S De Al. Heat No N.º Coudée	RESISTENCIA T.Strength Tensile Repe Mband		ALARGAM. Elongation Elongation L. 4 to %		REDUCCION Red. Area Reducti %		RESISTENCIA Impact test Resilience Joules	CHARTY V		DUREZA Hardness Dureté HB
						Y.Strength Yield Repe Mband	Y.Strength Yield Repe Mband	%	%	MCA Average Moyenne	°C				
39 7585437	720	WN 2 300LB S80 RF A350LF2	688	NE	271R5	613	326	37.10	72.10	70	63	70	68	-50	148

COMPOSICION QUIMICA - STEEL MARKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE												
C %	SI %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %	
271R5	0.180	0.270	1.170	0.011	0.003	0.090	0.100	0.030	0.007	0.001	0.240	0.402

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et état de surface sont satisfaisants
- Los métodos de ensayo cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
 Works Inspector - L'inspecteur



(*) OBSERVACIONES:
 Remarks
 Observations

N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Rm	SEP 29 2006
Chemical Analysis	N/A	
Quantity 1	Job# 1220	

PURCHASER: SEYBOLD
 STANDARD: ASTM A420 WPL6-02
 ASME SA420 WPL6-92



INSPECTION CERTIFICATE

RIGID INDUSTRIES CO., LTD.

8, MEI-CHUNG RD. NIAO-SUNG,
 KAOHSIUNG HSIEN, 83301 TAIWAN
 TEL: 886-77310527-8
 FAX: 886-77315887

MATERIALS: ASTM A333-6 (SEAMLESS PIPE)
 INSP. SPEC.: ASME B16.9 - 01

ACCORDING TO EN10204/DIN50049/3.1B

DATE: 2006 - 02 - 07
 ORDER NO: 5290/9105440
 P.I. NO: 5K14-1
 CERTIFI. NO: 053

ITEM NO.	PRODUCT & SIZE		QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
4	TEE	2"WPL6 XH	200	5J5762	GOOD	127 — 134	N	GOOD 7561873	10 X 2.5 X 2V AT -45°C 60.8 55.9 60.8 59.16

ITEM NO.	MATERIAL CHARGE NO.		CHEMICAL COMPOSITION %											PHYSICAL TEST			
			C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mn x100	V x100	Nb x1000	Y S	T S	E	
	STANDARD	MIN.		15	60									KSI	KSI	%	
		MAX.	30	30	135	35	40	40	40	30	12	5	20		85.0		
4	J5L2562		11	23	132	11	3	5	2	11	1	0	0	48.2	70.5	62	

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C AIR COOLING.
 N: NORMALIZING AT TEMPERATURE 880°C X 0.5HR AIR COOLING.
 NACE MR-01-75 & NACE MR 0103 : BATHFACTORY
 WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Material Control	Sign	Date	 Ou L. Lan MANAGER OF Q.A. DEPT.
Material Received	Rm	SEP 29 2006	
Heat # / MTR'S	Rm	SEP 29 2006	
Chemical Analysis	N/A		
Quantity	1	Job#	1220



WESTLUND INDUSTRIAL SUPPLY

Purchaser: _____

INSPECTION CERTIFICATE

TO EN10204 3.1

Thai Benkan Co., Ltd.
58 Soi Watkrumai, Bangkru, Prapadi
Samulprakan, 10130 Thailand.

Purchase Order No.
4810138

Job No.

D M Y Certificate No.
05/08/2006 T- 2008030549

E-No.	Specification for Material Made from Seamless Pipe		Specification for Inspection		Visual Examination		Dimensional Inspection												
MA-554	ASTM A420M - 05 / ASME SA420 Gr.WPL6 CSA Z245.11 Gr.241 CAT 4 NACE MR0175-2003		ASME B16.9-2003		Good		Good												
MFG. No. (Heat Identification No.)	Product & Size (T*1)				Quantity		Item No.												
08B01006	90 EL WPL6 3 S80				581/600		7560815												
Material Manufacturer			Material Heat No.																
			362401																
Specifi- cation	Chemical Composition %													*2 Tension Test			Hardness Max 197 HB : GO		
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	C.E.	YS	TS	E	Impact Test (J)		
	X 100	X 100	X 100	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 1000	X 100	MPa.			%	10 X 5.0 X 2V - AT -45 °C	
	Min.		15	50											240	415	30	140	AVE. 127
	Max.	23	40	135	35	40	40	40	30	12		80	20			655		118	
	14	17	105	14	3	2	3	12	1		0	0	35	312	464	41	123		

NORMALIZING 910 C X 0.5 HR. AIR COOLING

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Am	SEP 29 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned
and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation
Form TZ 6C/2

Quality Assurance Manager
Thai Benkan Co., Ltd.

SEP-27-06 15:10 FROM-

T-565 P.017/021 F-015



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
23861 CESANA BRIANZA (LC) ITALY
Tel. 031.655441 - Fax 031.655149

MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2000 =

IZACO LIMITED
CASTLE HOUSE - STATION ROAD
BURN RABBIT HERTFORD GR

INSPECTION CERTIFICATE EN 10204/3.1

CERTIFICATO DI COLLAUDO

N. 2094/ 26/05/2006
INVOICE / FATTELLA: 1849/ 25/05/2006
S. 45979
DEL. NOTE / BOLLA: 2933/ 26/05/2006

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	YOUR PO. VS. ORDINE	OUR REFERENCE NS. ORDINE	QUANTITY QUANTITA'	DESCRIPTION DESCRIZIONE		DIM. ACCORDANCE TO DIM. IN ACCORDO A		VISUAL & DIMENSIONAL VISIVO E DIMENSIONALE	
79576	34848	0042	16996	06000949 0060	144	W/K 300 RT 3" IS	LF2 7585453	ASME/ANSI B16.5	SATISFACTORY		
54742	78089	0020	16996	06000949 0035	150	W/K 300 RT 4" STD	A105 7534655	ASME/ANSI B16.5	SATISFACTORY		
78089	78089	0014	17008	06001641 0029	12	BLIND 300 RT 10"	A105 7536038	ASME/ANSI B16.5	SATISFACTORY		
78089	78089	0035	16996	06000949 0050	125	BLIND 600 RT 3"	A105 7531052	ASME/ANSI B16.5	SATISFACTORY		
78089	78089	0035	16996	06000949 0050	125	BLIND 600 RT 3"	A105 ✓	ASME/ANSI B16.5	SATISFACTORY		

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL MATERIALE	C %	Si %	Mn %	S %	P %	Cr %	Ni %	Mo %	Ti %	Cu %	V %	Nb %	N %	Al %	O.E. %	ORDIN ORIGINE
79576	34848	0042	ASTM A350 LF2 CL1/2	0.180	0.230	1.050	0.011	0.009	0.080	0.050	0.010	0.022	0.140	0.022	0.001	0.000	0.026	0.390	EUROPE
54742	78089	0020	ASTM A 105	0.180	0.250	0.980	0.017	0.011	0.090	0.050	0.010	0.008	0.160	0.004	0.001	0.000	0.008	0.378	EUROPE
78089	78089	0014	ASTM A 105	0.180	0.210	1.030	0.008	0.011	0.070	0.070	0.020	0.009	0.200	0.004	0.002	0.000	0.025	0.388	EUROPE
78089	78089	0035	ASTM A 105	0.190	0.200	0.960	0.026	0.013	0.110	0.060	0.010	0.005	0.190	0.002	0.000	0.000	0.010	0.391	EUROPE
78089	78089	0035	ASTM A 105	0.190	0.200	0.960	0.026	0.013	0.110	0.060	0.010	0.005	0.190	0.002	0.000	0.000	0.010	0.391	EUROPE

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	TEST SPECIMEN per PROVA SECTION Sagitta		YIELD POINT Stressamento R _{0.2} MPa	TENSILE TENSORE R _{0.2} MPa	ELONGATION Allungamento A ₅ %	REDUCTION OF AREA Riduzione Area Z ₅ %	HARDNESS Durezza Hv	BEND TEST Piegatura	FLATWELDER Saldatura	IMPACT TEST - Resilience Joule / Cal				SHARP FORMA 1=0 3=1	B	W	X	YIELD POINT Stressamento R _{0.2} MPa	OUR REF.
			mm	inch								1	2	3							
79576	34848	0042	126.60	50.80	316.0	521	35.0	69.0	156-159	0.0	0.0	KV	-50	48	60	52	1			0.0	
54742	78089	0020	126.60	50.80	337.0	512	32.0	59.0	156-159	0.0	0.0	KV	20	82	86	84	1			0.0	
78089	78089	0014	126.60	50.80	317.0	527	29.0	57.0	159-163	0.0	0.0	XV	20	83	88	85	1			0.0	
78089	78089	0035	126.60	50.80	327.0	527	33.0	58.0	159-163	0.0	0.0	KV	20	86	81	84	1			0.0	
78089	78089	0035	126.60	50.80	327.0	527	33.0	58.0	159-163	0.0	0.0	XV	20	86	81	84	1			0.0	

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A		Sign	Date	HEAT TREATMENT TRATTAMENTO TERMICO	
			Material	Quantity			Process	Medium
79576	34848	0042	ASTM/ASME A 350/SA 350	1	Rm	SEP 29 2006	NORMALIZED AT 930 C - COOLED IN STILL AIR	ELECTRIC FURNACE
54742	78089	0020	ASTM/ASME A 105/SA 105	1	Am	SEP 29 2006	NORMALIZED AT 920 C - COOLED IN STILL AIR	ELECTRIC FURNACE
78089	78089	0014	ASTM/ASME A 105/SA 105	1			NORMALIZED AT 920 C - COOLED IN STILL AIR	ELECTRIC FURNACE
78089	78089	0035	ASTM/ASME A 105/SA 105	1			NORMALIZED AT 920 C - COOLED IN STILL AIR	ELECTRIC FURNACE
78089	78089	0035	ASTM/ASME A 105/SA 105	1			NORMALIZED AT 920 C - COOLED IN STILL AIR	ELECTRIC FURNACE

NOTE		QUALITY CONTROL DEPARTMENT UFFICIO CONTROLLO QUALITA'	INSPECTION AUTHORITY ENTE UFFICIALE COLLAUDO	MANUFACTURER'S SYMBOL MARCHIO PRODUZIONE
MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003		BRACCHI PLAVIO <i>Lab</i>		MFF

SEP-27-06 15:08 FROM- T-565 P.016/021 F-015

CCTF

Purchaser : _____

INSPECTION CERTIFICATE

TO EN10204 3.1B



Thai Benkan Co., Ltd.
58 Soi Watkrunai, Bangkni, Prapadaeng,
Samutprakarn, 10130 Thailand.

Order No. 4672078

Job No. _____

05/08/2006 D M Y Certificate No. 2805930668 T -

E-No.	Specification for Material Made from Seamless Pipe ASTM A1201 - 02 / ASME SA420 Gr. WPL6 CSA Z245.11 Gr. 241 CAT B NACE MR0175-2000										Specification for Inspection ANSI/ASME B16.9				Visual Examination Good		Dimensional Inspection Good	
MA-207																		
MFG. No. (Heat Identification No.) 05F01002	Product & Size 90 EL WPL6 T 880										(T*1)		Quantity 100		Item No. 7367005			
Material Manufacturer					Material Heat No. J2K8396													
Specifi- cation	Chemical Composition %													*2 Tension Test			Hardness Max 197 HB : GOOD	
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	C.E.	YS	TS	E	Impact Test (J)	
	X	X	X	X	X	X	X	X	X	X	X	X	X	MPa			AT -45 °C	
	100	100	100	1000	1000	100	100	100	100	1000	1000	1000	100	240	415	30	29	AVE 29
	23	40	135	35	40	40	40	30	12		80	20			585		30	
11	24	130	15	2	3	3	7	1		0	0	35	332	463	49	27		
NORMALIZING 910 C X 0.5 HR AIR COOLING																		

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR FERRITE

We hereby certify that the product described herein has been manufactured in accordance with the specifications and also with the purchaser's requirements and that the test results shown herein are correct.

*1 : "T" symbolized wall thickness in mm. *2 : YS Yield strength TS = Tensile strength E = Elongation

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Rm	SEP 29 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

Quality Assurance Manager
Thai Benkan Co., Ltd.

SEP-27-06

15:07

FROM-

T-565

P.008/021

F-015

HEAT: 05C01005 SKU: 7560893 DESC: 2 XH LR 90 WELD ELL A420WPL6

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Rm	SEP 29 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

Purchaser: CCTF

INSPECTION CERTIFICATE



EN 10204 3.1B

Purchase Order No.
4872656

Job No.

D M Y Certificate No.
08/04/2005 T 2005090181

E.No.		Specification for Material Made from Seamless Pipe						Specification for Inspection					Visual Examination			Dimensional Inspection		
MA-188		ASTM A420M - 02 / ASME B4420 Gr.WPL6 CSA Z245.11 Gr.341 CAT B NACE MR0175-7600						ANSI/ASME B16.9					Good			Good		
MFG. No. (Heat Identification No.)		Product & Size						(T.*1)					Quantity			Item No.		
05C01005		90 EL WPL6 2 S80											647/2.000			7560893		
Material Manufacturer				Material Heat No.				Hardness Max 187 HB . GOOD										
				88755														
Specifi- cation	Chemical Composition %													*2 Tensile Test			Impact Test (J)	
	C	SI	Mn	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	C.E.	Y S	T S	B	10 X 2.5 X 2V	
	X	X	X	X	X	X	X	X	X	X	X	X	X	MPa		%	AT -45 °C	
	100	100	100	1000	1000	100	100	100	100	1000	1000	1000	100					
Min.		15	50											240	415	30	42	
Max.	23	40	135	35	40	40	40	30	12		80	20			585		47	
	14	19	95	13	4	1	2	8	2		0	0	32	328	477	35	47	
																	AVE	45

NORMALIZING 910 C X 0.5 HR AIR COOLING

C.E. = C+Mn/5+(Cr+Mo-V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEL ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength B = Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.
58 Soi Wudonak, Bangkok, Prapachong,
Samutprakan, 10130 Thailand.

SEP-27-06

15:07

FROM-

T-565

P. 008/021

F-015

HEAT: 149R6 SKU: 7585437 DESC: 2 300 RF WN FLG XH A350LF2

SEP-27-06 15:08 FROM-

CLIENTE / CLIENT / Client
OCTF CORPORATION (EDMONTON)
6407 - 53 AVENUE NW
EDMONTON, AB T6B 3G2
CANADA

CERTIFICADO DE INSPECCION
Works Certificate - Certificat d'Usine

EN EN 10204 / 3.1
ISO 10474 / 3.1



ULMA

FECHA: 30/05/2006 N.º 107150 ROSA: 2

N.º 5091922164

ULMA FORJA, S.COOP.

PRODUCTO: FLANGES
Mater. Prod. SU PEDIDO N.º: 4875337-68
Your Order No. 4875337-68
Your Cde. N.º

DE: 02/02/2006

Certified acc. PED 9223EC
by TUV Rheinland
N.º 01 532 873 03 1443

ET Zwick/Ross, J. Agda, 14
20560 UNATI (Zwick/Ross) SPAIN
Tel.: 34 - 943 780551
Fax: 34 - 943 781805
E-mail: ulma@ulmaforja.com

NORMAS APLICABLES: ASME B16.5-98
Requirements - Normas Aplicables

MATERIAL CORRESPONDIENTE: AISI A350LF2CL1-045
Material Correspondent - Qualité: A350LF2CL1-045

MODO DE FUSION (*): Steel Making - Elaboration de l'acier
E - Elec. Y - Outgoing Molten
NACE MR-01-76-03
CSA - Z245.12-05
GR248 CAT II

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



62576

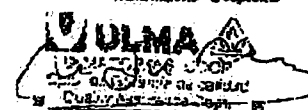
DEPARTAMENTO: QUALITY ASSURANCE
Section: Department

PARTIDA Order Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	LOTE	OBSERVACIONES Remarks Observations	COLADA N.º Mold No. Moule N.º	N.º DE FUSION Fusion No. Fusion No.	ANALISIS V. Strength V. Force V. Force	ESTACION Post. Area Station	RESISTENCIA Tensile Résistance	CHARPY V Impact Choc	TEMPERATURA Temperature Température	REMARKS REMARKS REMARKS			
01 7585437	60	WN 10 300LB S&O RF A350LF2	1496	NE	155R6	543	352	35.60	72.30	76	73	67	79	-50	149
02 7585437	360	WN 2 300LB S&O RF A350LF2	1376	NE	149R6	629	353	35.63	61.30	65	69	68	74	-50	154

COMPOSICION QUIMICA - STEEL MARKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE												
COLADA N.º Mold No. Moule N.º	C %	SI %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
149R6	0.150	0.220	1.183	0.014	0.001	0.080	0.070	0.040	0.007	0.004	0.180	0.334
155R6	0.150	0.230	1.180	0.017	0.002	0.100	0.070	0.010	0.007	0.002	0.200	0.377

- Les dimensions à 1/2" condition superficielle de l'acier sont satisfaisantes
- Dimensions inch surface condition pour l'acier acceptable
- Les dimensions et état de surface sont satisfaisants
- Les dimensions et état de surface sont satisfaisants
- Les dimensions et état de surface sont satisfaisants

EL INSPECTOR
Works Inspector - L'inspecteur



REMARKS: N.º NORMALIZED AT 800 C AND ALLOWED TO COOL IN STILL AIR
Observations

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Am	SEP 29 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

T-565 P. 011/021 F-015

HEAT: 2G SKU: 7511248 DESC: 1-1/2X1 XH WELD TEE WPB

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Rm	SEP 29 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

PURCHASER : SEYBOLD
ASTM A234 WPB-02
STANDARD : ASME SA234 WPB-01



INSPECTION CERTIFICATE **RIGID INDUSTRIES CO., LTD.**

R MEI-CHUNG RD. NAO-GONG,
KAOHSIUNG HSIEN, 83301 TAIWAN
TEL: 886-77310527~8
FAX: 886-77316887

DATE: 2006-06-13

ORDER NO: 5191/4674511

P.I. NO: 514-1

CERTIFI. NO: 279

MATERIALS : ASTM A106 Gr. B / JIS G3103 SB410
INSP. SPEC. : ASME B16.9-01

ACCORDING TO EN10204/DIN50049/3.1B

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX. 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
41	TEE 1.1/4" STD	50	5F3662 (5F)	GOOD	118 - 122	N	GOOD	7511698
42	TEE 1.1/4" XH	25	0D3212 (0D)	GOOD	126 - 134	N	GOOD	7512007
43	TEE 1.1/2" XH	30	4G7517 (4G)	GOOD	112 - 155	N	GOOD	7512023
44	TEE 4" STD	300	5K3348	GOOD	144 - 179	N	GOOD	7511817
45	TEE 5" STD	20	5G3021	GOOD	141 - 165	N	GOOD	7511833
46	RED-TEE 1.1/4X3/4" STD	50	5F7628 (5F)	GOOD	119 - 129	N	GOOD	7512295
47	RED-TEE 1.1/2X1" STD	50	5D0771 (5D)	GOOD	111 - 116	N	GOOD	7512350
48	RED-TEE 1.1/2X1" XH	25	2G4168 (2G)	GOOD	122 - 169	N	GOOD	7511248
49	RED-TEE 2X1.1/2" STD	50	5H049	GOOD	124 - 148	N	GOOD	7512414
50	RED-TEE 4X3" STD	300	5J5648	GOOD	145 - 162	N	GOOD	7512759

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x1000	Y S KSI	T S KSI	E %	C.E X100
		MIN.	10	29									35.0	60.0		
	STANDARD	MAX	30		135	50	58	40	40	15	8	20		65.0		60
41	J5L2562	11	23	132	11	3	5	2	11	1	0	0	50.3	70.9	51.0	35
42	J0K1112	11	27	131	12	7	3	2	6	0	1	0	47.7	71.2	53.0	34
43	J3K1617	11	27	126	9	3	2	2	3	1	0	0	48.6	70.1	52.0	33
44	J5K4248	11	26	124	12	4	3	3	5	1	0	0	47.4	65.8	41.3	33
45	J5K3121	10	25	128	10	5	2	3	11	1	0	0	46.7	70.8	41.3	34
46	5D3028	19	22	49	9	5	17	5	3	1	0	0	50.1	71.8	35.0	29
47	J3K8071	7	24	132	8	2	2	2	10	0	0	0	46.3	64.3	56.0	31
48	J3K4168	11	26	122	8	2	2	2	4	0	1	3	47.3	68.7	54.0	32
49	J2K5449	18	22	62	16	6	2	3	5	1	0	0	45.8	72.1	58.0	29
50	J5K4248	11	26	124	12	4	3	3	5	1	0	0	47.8	66.7	44.6	33

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 820°C-880°C AIR COOLING.

N: NORMALIZING AT TEMPERATURE 860°C X 0.5HR AIR COOLING.

NACE MR-01-75 & NACE MR 0103 : SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou L Lan

MANAGER OF Q.A. DEPT.

HEAT: 06A10130 SKU: 7513305 DESC: 2X1 XH WELD TEE WPB

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Rm	SEP 29 2006
Chemical Analysis	N/A	
Quantity 1	Job# 1220	



Purchaser: OCTF CORPORATION

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.
38 Soi Wadkrumai, Bangkru, Prapadong,
Samutprakarn, 10130 Thailand.

TO EN10204 3.1

F-No. Purchase Order No. Job No.
MA-585 4876475

D M Y Certificate No.
2006/2006 T- 2006200593

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe		Specification for Inspection	Visual Examination	Dimensional Inspection
		ASTM A234-05B/ASME SA234 WPB CSA Z245.11 GR245 CAT 1 NACE MR0175-2003		ASME B10.9.2003	Good	Good
		Product & Size (T*1)	Quantity	Heat Treatment (Note 1)	Specimen	
1	06A10324	T WPB 1 S80	50	N	7511981	
2	06E10119	T WPB 3 S80	108/700	S	7511081	
3	05H10136	T WPB 2 X 1 1/2 S80	13/25	S	7511308	
4	06A10130	T WPB 2 X 1 S80	25	S	7511305	
5	06E10701	T WPB 4 X 3 S40	89/200	S	7512758	

Specification	Min.	Max.	Material Heat No.	Chemical Composition %											Tension Test #2			HARDNESS MAX	
				C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS		E
				x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.			%
					10	29										240	415		30
				23		106	50	58	40	40	40	15	80	20		655		197 HB : GOOD	
1	J5K9602			18	20	69	13	6	4	3	6	1	0	2	31	318	485	50	
2	J5K4B12			19	19	56	13	6	1	2	6	1	0	0	30	299	470	41	
3	J4KC306			17	20	67	19	3	2	2	5	0	0	40	29	342	511	56	
4	J5K5221			19	21	55	13	1	2	2	4	0	0	0	29	312	487	62	
5	J3K1763			17	18	57	10	3	2	2	5	0	0	0	28	290	458	40	

(Note 1) A: Hot formed with final temperature between 630°C-990°C. Air Cooling. N: Normalizing 910°Cx0.5 HR. A: Cooling. *N: Normalizing 910°Cx0.5 HR. Air Cooling (Specification for material made from plate) S: Stress Relieving 675°Cx0.5 HR. Air Cooling

C.E. = C+Mn/6+(Cr-Mn+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY: GOOD

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

Quality Assurance Manager
Thai Benkan Co., Ltd.

INSPECTION CERTIFICATE

(시험 성적서)



KOREA FLANGE CO., LTD.
한국프랜지공업주식회사
194, DongBu-Dong, Dong-Ku,
Ulsan-Metropolitan, KOREA
울산광역시 동구 동북동 194번지



Certificate No. (성격서번호) 59080508-1021008

Customer (주명자) SEYBOLD

Material (재명) SA/A105-02

P.O. No. (발주번호) 9103348-00 (5090)

W/O No. (작업지시번호) 59080508

Issued date (발행일) 2006.09.21

Item No. (품번)	Article (품명)	Quantity (수량)	Mechanical Properties (기계적성질) Lot No. (품번번호) (Control No.)	Tension Test (인장시험)				Impact Test (Charpy) (충격시험)		Hardness Test (경도시험) HB	CODE NO (제품번호)
				Y.S (항복강도) psi	T.S (인장강도) psi	E.L (연신율) %	R.M (단면수축률) %	Temp (시험온도) °C	Unit (단위)		
				Min (최소)	Min	Min (최소)	Min (최소)	Angle (각도)	Ave (평균) Min (최소)	MAX 187	
026	AN 150 WN RF XS 1	12	2C23	53300	77200	36.0	61.0		7534291	155 152	
027	AN 150 WN RF XS 11/2	20	2C23	53300	77200	36.0	61.0		7534325	155 152	
028	AN 150 WN RF XS 2	1,120	2C23	53300	77200	36.0	61.0		7534337	155 152	
029	AN 150 WN RF XS 2	16	2C23	53300	77200	36.0	61.0		7534507	155 152	
030	AN 300 WN RF STD 21/2	15	5C97	50700	79000	33.0	65.0		7534612	148 143	

Chemical Composition (화학성질) (%) Lot No. (품번번호) (Control No.)	C 1/100	Si 1/100	Mn 1/100	P 1/1000	S 1/1000	Ni 1/100	Cr 1/1000	Mo 1/1000	V 1/1000	Cu 1/1000	Cs 1/1000	N 1/1000	Req 1/100	Heat treatment (열처리)		
Requirements (시정)	MAX 35	10 35	60 105	MAX 35	MAX 40	MAX 100	MAX 300	MAX 120	MAX 80	MAX 400	MAX 20		MAX 43	Normalizing (소둔)	800 °C 2.0	A.C
2C23	18	27	95	14	7	1	30	10	10	10	10		35	Quenching (소금)	°C	n
2C23	18	27	95	14	7	1	30	10	10	10	10		35	Annealing (소둔)	°C	n
2C23	18	27	95	14	7	1	30	10	10	10	10		35	Tempering (소둔)	°C	n
2C23	18	27	95	14	7	1	30	10	10	10	10		35	Solution (고온용액처리)	°C	
5C97	20	30	97	18	13	1	30	10	10	10	10		37			

Others (기타)

Works Test Certificate to EN 10204/3.1B
Ranges supplied to ASME B18.5, NACE MR-01-75
CSA Z245.12 GR 248 CAT 1

Visual & Dimension Inspection (시수 및 외관검사)
GOOD

Surveyor To: (검사관)

We hereby certify that material described herein has been tested and satisfied as above in accordance with specification.
본 성적서에 명시된 소지는 상기 사양에 의거 위와같이 시험되었으며

Material Control	Sign	Date
Material Received	Rm	SEP 29 2006
Heat # / MTR'S	Am	SEP 29 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1020



Purchaser: WESTLUND INDUSTRIAL SUPPLY

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.

58 Soi Watkrunai, Bangkru, Prapadaeng

Samutprakarn, 10130 Thailand.

E-No.
MA-554Purchase Order No.
9106952

Job No.

TO EN10204 3.1

D M Y
11/04/2006Certificate No.
T- 2006200359

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe				Specification for Inspection		Visual Examination	Dimensional Insp
		ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003				ASME B16.9-2003		Good	Good
		Product & Size (T*1)			Quantity	Heat Treatment (Note 1)		Symbol No.	
1	06C00006	90 EL WPB 4 S40			965/1,000	A		7510420	
2	06C00008	90 EL WPB 4 S40			35/1,000	A		7510420	
3	06C00041	90 EL WPB 12 STD			7/160	A		7510535	
4	06C00043	90 EL WPB 12 STD			48/160	A		7510535	
5	06C00055	90 EL WPB 12 STD			6/160	A		7510535	

Specification		Chemical Composition %											Tension Test #2					
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E		
		X 100	X 100	X 100	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 100	MPa.		%	HARDNESS MAX	
			10	29										240	415	30	197 HB : GOOD	
Material Heat No.		30		106	50	58	40	40	40	15	80	20			585			
1	J5LC314	18	22	69	13	8	3	2	5	1	0	0	31	313	Material Control	Sign	Date	
2	J5LC314	18	22	69	13	8	3	2	5	1	0	0	31	313	Material Received	Rm	SEP 26	2006
3	J5L9228	19	19	71	16	6	3	2	5	0	0	0	32	303	Heat # / MTR'S	Rm	SEP 26	2006
		470		45											Chemical Analysis	N/A		
4	J5LC442	21	20	68	10	7	2	2	4	1	0	1	34	318	Quantity 42	/	Job# 1220	
5	J5LC442	21	20	68	10	7	2	2	4	1	0	1	34	318	491	42		

(Note 1) A : Hot formed with final temperature between 620°C-980°C, Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling *N : Normalizing 910°Cx0.5 HR. Air Cooling (Specification for material made from plate) S : Stress Relieving 675°Cx0.5 HR

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

Quality Assurance Manager
Thai Benkan Co., Ltd.

TS = Tensile strength E = Elongation

CLIENTE / Customer / Client

WESTLUND A DIVISION OF EMCO LT
5105 - 75 STREET
EDMONTON, AB T6E 5S5
CANADA

CERTIFICADO DE INSPECCION

Works Certificate - Certificat d'Usine

DIN EN 10204 / 3.1
ISO 10474 / 3.1

FECHA:
Date:

13/01/2006

N.º
No.

104352

HOJA:
Page:

1



N.º: SGI 1922164

ULMA FORJA, S.COOP.

PRODUCTO
Article - Produit

FLANGES

SU PEDIDO N.º

Your Order No. 9105795-00

Votre Cde. N.º

DE

of. - de 13/12/2005

Certified acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 E/Q 02 7443

Bº Zubillaga, 3 - Apdo. 14
20560 ONATI (Gipuzkoa) SPAIN
Tel.: 34 - 943 780552
Fax: 34 - 943 781808
E-mail: forja@forging.ulma.es

NORMAS APLICABLES

ASME B16.5-96

Requirements - Normes Applicables

MATERIAL CORRESPONDIENTE

ASTMA105N-03

Material Correspondent - Qualité

ASME SA105N-03

MODO DE FUSION (*)

NACE MR-01-75/03

Steel Making - Elaboration de l'acier

E = Elec. Y = Oxígeno básico

MARCA DEL FABRICANTE

Mark of factory

Marque du fabricant



49744

DEPARTAMENTO QUALITY ASSURANCE

Section

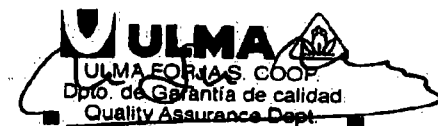
Department

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No N.º Coulée	RESISTENCIA T.Strength Resist Rupt N/mm2	LIMITE ELAST. Y.Strength Limite Elast N/mm2	ALARGAM. Elongation Allongement Lc: 4 d %	ESTRICCION Red. Area Striction %	RESILENCIA Impact test Resilience Joules	PROBETA - SPECIMEN		DUREZA Hardness Dureté HB
										MEDIA Average Moyenne	°C	
5 7534291	20	WN 1 150LB S80 RF A105N	NE	154A5	518	307	31,80	63,50				150
6 7534337	539	WN 2 150LB S80 RF A105N	NE	32A5	518	318	32,00	64,70				150
8 7535138	25	SO 3/4 150LB RF A105N	NE	373A5	518	318	31,50	63,00				149
9 7535147	50	SO 1 150LB RF A105N	NE	154A5✓	518	307	31,80	63,50				150
14 7535317	48	SO 20 150LB RF A105N	NE	442R5	521	336	34,80	68,30				152
16 7535414	150	THR 3/4 150LB RF A105N	NE	378A5	504	311	33,70	67,00				147
17 7535422	125	THR 1 150LB RF A105N	NE	154A5✓	518	307	31,80	63,50				150
27 7535066	2	WN 2 300LB S/OXS RF A105N	NE	256A5	497	303	31,80	63,90				147
29 7535546	25	THR 1/2 300LB RF A105N	NE	162A5	502	301	32,40	65,00				149
30 7535554	90	THR 3/4 300LB RF A105N	NE	318A4	516	304	30,70	63,80				151

COLADA N.º Heat No N.º Coulée	COMPOSICION QUIMICA - STEEL MARKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE											
	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
154A5	0.210	0.190	0.860	0.017	0.011	0.020	0.010	0.001	0.001	0.001	0.250	0.375
162A5	0.190	0.200	0.840	0.016	0.010	0.020	0.010	0.002	0.001	0.002	0.190	0.348
256A5	0.200	0.230	0.830	0.013	0.023	0.020	0.010	0.002	0.002	0.004	0.180	0.356
318A4	0.180	0.180	1.010	0.008	0.012	0.030	0.080	0.009	0.000	0.001	0.180	0.374
32A5	0.180	0.250	0.820	0.029	0.003	0.140	0.130	0.030	0.007	0.002	0.380	0.385
373A5	0.190	0.220	0.850	0.018	0.001	0.100	0.110	0.030	0.007	0.001	0.310	0.386
378A5	0.190	0.190	0.880	0.015	0.008	0.010	0.010	0.003	0.002	0.004	0.200	0.354
442R5	0.160	0.270	1.160	0.006	0.002	0.090	0.110	0.030	0.007	0.001	0.200	0.398

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants
- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - L'Inspecteur



(*) OBSERVACIONES: N_NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR
Remarks
Observations

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity 1	Job# 1220	

HEAT: 5F6818 SKU: 7510900 DESC: 2 XH LR 90 WELD ELL WPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



INSPECTION CERTIFICATE

RIGID INDUSTRIES CO., LTD.

PURCHASER: SEYBOLD

ASTM A234 WPB-02

STANDARD: ASME SA234 WPB-01

MATERIALS: ASTM A106 Gr. B/J15 G3103 SB410

INSP. SPEC.: ASME B16.9 -01

8, MEI CHUANG RD, MAO SONG,
KACHUNG HSEN TAIWAN
TEL: (07) 781-0827-8
FAX: (07) 781-8887

DATE: 2005-10-26

ORDER NO: 5028

P. I. NO: 5E12-2

CERTIF. NO: 037

ACCORDING TO EN10204/DIN50040/2 1B

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX 187 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	
11	ELL 90 LR 3/4" STD	300	5J7273 (5J)	GOOD	121-134	A		7510250
12	ELL 90 LR 2" XH	1800	5F6818	GOOD	132-132	A		7510900
13	ELL 90 LR 5" STD	15	5F4828	GOOD	132-133	A		7510446
14	CON-RED 2X1" STD	20	5D6357	GOOD	124-146	N		7510195
15	CON-RED 2.1/2X2" STD	5	5H4855	GOOD	120-133	N		7513062
16	CON-RED 3X1.1/2" STD	10	5F4159	GOOD	133-148	N		7513494
17	CON-RED 3X2" STD	480	5D1484	GOOD	118-132	N		7513178
18	CON-RED 4X2" STD	100	5A558D	GOOD	125-125	N		7513372
19	CON-RED 4X3" STD	180	5C2844	GOOD	124-140	N		7513330
20	BCC-RED 4X2" STD	6	41256D	GOOD	110-133	N		7514913

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Y S	T S	E	C. R.
		X100	X100	X100	X1000	X1000	X100	X100	X100	X100	X100	X1000	ksi	ksi	%	x100
	MIN.		10	20									35.0	80.0		
	MAX.	30		135	50	58	40	40	40	15	8	20		85.0		50
11	03573	20	29	54	20	8	0	0	0	0	0	0	53.5	64.4	25.0	29
12	503118	20	21	50	12	6	15	5	6	1	0	0	47.2	68.9	30.0	31
13	J4LC228	11	25	126	10	4	2	2	11	1	0	0	57.0	71.5	40.7	34
14	329557	17	24	58	11	6	7	3	3	1	0	2	49.9	70.5	33.0	28
15	J5L1555	11	25	125	10	3	3	2	5	1	0	0	49.2	70.9	62.0	33
16	510159	21	29	45	15	10	13	4	2	1	0	0	43.5	67.5	35.0	30
17	302884	19	24	54	8	1	3	4	5	2	0	1	42.4	68.3	35.0	30
18	20048D3289	20	30	51	20	22	1	1	1	0	0	0	50.1	64.6	40.0	28
19	303844	19	22	51	8	3	7	3	7	2	0	1	46.6	70.1	34.5	29
20	3289	20	30	51	20	22	1	1	1	0	0	0	50.1	64.6	40.0	28

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 650°C-850°C, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C X 0.5 HR, AIR COOLING.

NACE MR-01-75: SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou E Lan

MANAGER OF Q.A. DEPT.

CERTIFIED MILL TEST REPORT



The Best Value
Price, Quality, Service
All The Time.

LOG NO. 300627

PAGE 2

BONNEY FORGE
P.O. BOX 330 • 14498 CROGHAN PIKE • MOUNT UNION, PA 17088-0330
(814) 642-2545 • (800) 345-7546 • FAX (814) 642-4908
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 06/21/06

CUSTOMER'S Order No.: 4877271-00

Bonney Order No. 036700

SHIPPED TO: CCTF CORPORATION

369474

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO.
CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

SA/A105N

BRINELL HARDNESS1: 144 HARDNESS2: 147

028 25 56501 7550026 10-S X2 3000 A105N SOCK S
C .190 MN 1.040 P .013 S .018 SI .190
NI .040 CU .140 CO .003 CR .060 MD .020
V .001 AL .027 NB .011
CE(LONG FORMULA) = 0.39
T/S 75127 Y/S 52254 EL 33.15 RA 71.62
BRINELL HARDNESS1: 137 HARDNESS2: 135

029 50 56352 7952637 21/2-11/4X3/4 6M A105N SOCK S
C .220 MN .980 P .010 S .023 SI .220
NI .014 CU .230 CR .100 MD .018 V .034
CB .006 AL .006 SN .008
CE(LONG FORMULA) = 0.43
T/S 83500 Y/S 60750 EL 29.60 RA 62.75
BRINELL HARDNESS1: 159 HARDNESS2: 156

030 50 56495 7552697 8-6 X11/2 6000 A105N SOCK S
C .190 MN 1.060 P .010 S .016 SI .180
NI .040 CU .150 CO .004 CR .050 MD .020
V .004 AL .024 NB .010
CE(LONG FORMULA) = 0.39
T/S 74750 Y/S 52875 EL 33.60 RA 71.40
BRINELL HARDNESS1: 139 HARDNESS2: 135

031 250 56297 7552220 36-2 X 1 3000 A105N LREQ T
C .190 MN 1.010 P .013 S .023 SI .250
NI .020 CU .090 CO .002 CR .050 MD .008
V .022 AL .001 NB .000
CE(LONG FORMULA) = 0.38
T/S 80300 Y/S 52750 EL 30.05 RA 66.75

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

Sandy Holland

CMTR: REV 1

QUALITY PROCESS MANAGER

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

HEAT: 56297 SKU: 7552220 DESC: 1X2T036 3000 THRD EOL A105N

1220-2-4

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

PURCHASER : SEYBOLD
 ASTM A234 WPB-02
 STANDARD : ASME SA234 WPB-01



INSPECTION CERTIFICATE

RIGID INDUSTRIES CO., LTD.

8, MEI-CHUNG RD. NIAO-SONG,
 KAOHSIUNG HSIEN, 83301 TAIWAN
 TEL: 886-77310527-8
 FAX: 886-77315887

DATE: 2006 - 02 - 06

ORDER NO: 5171/45000319

P.I. NO: 5108-2

CERTIFI. NO: 049

MATERIALS : ASTM A106 Gr.B / JIS G3103 SB410
 INSP. SPEC. : ASME B16.9 - 01

ACCORDING TO EN10204/DIN50049/3.1B

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
11	CON-RED 3X2" > 2621 XH	320	5F6055	GOOD	142 - 151	N		
12	CON-RED 3X2" 2490 XH	80	5H1543	GOOD	126 - 130	N		
13	CON-RED 6X2" 2503 STD	50	5F4238	GOOD	124 - 130	N		
14	CON-RED 8X3" 2717 STD	25	5K2931	GOOD	127 - 143	N		
15	ECC-RED 4X2" 2948 STD	20	5D4844	GOOD	120 - 135	N		
16	TEE 4" 2948 STD	400	5K3348	GOOD	144 - 179	N	GOOD	
17	TEE 8" 2948 STD	140	5K7028	GOOD	157 - 170	N	GOOD	
18	RED-TEE 3X2" 3241 XH	250	5J2113	GOOD	152 - 176	N	GOOD	

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x100	Y S KSI	T S KSI	E %	C.E. X100
		MIN.	10	29									35.0	60.0		
	STANDARD	MAX.	30	135	50	58	40	40	40	15	8	20		85.0		60
11	306655	18	26	57	5	4	8	3	3	2	0	1	45.9	70.1	38.5	29
12	J5K4543	12	22	131	18	3	2	2	6	1	0	0	50.8	71.8	38.8	35
13	43-04138	18	27	50	19	19	5	2	2	1	1	0	45.7	69.6	34.5	27
14	374131	19	26	59	7	8	7	2	2	0	0	0	44.3	69.6	30.0	29
15	303844	19	22	51	8	3	7	3	7	2	0	1	46.6	70.1	34.5	29
16	J5K4248	11	26	124	12	4	3	3	5	1	0	0	47.4	65.8	41.3	33
17	J5L3128	12	25	126	21	5	3	2	11	1	0	0	51.8	72.7	44.3	35
18	J4KA413	11	23	127	9	5	2	2	12	1	0	0	46.3	70.1	40.9	35

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-880°C AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C X 0.5HR AIR COOLING.

NACE MR-01-75 & NACE MR 0103 : SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou L Lan

MANAGER OF Q.A. DEPT.

93629



Thai Benkan Co., Ltd.
58 Soi Watkrunai, Bangkok, Prapadseng,
Samutprakarn, 10130 Thailand.

INSPECTION CERTIFICATE

Purchaser : CCTF CORPORATION

TO EN10204 3.1B
XXXXXXXXXXXXXX
TO EN10204 3.1

D M Y Certificate No.

E-No. Purchase Order No. Job No.
MA-433 4875183

17/03/2006 T- 2006200256

No.		MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe						Specification for Inspection			Visual Examination	Dimensional Inspection				
			ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003						ASME B16.9-2003			Good	Good				
			Product & Size (T:*1)			Quantity			Heat Treatment (Note 1)			Symbol No.					
1		05K10116	T WPB 2 S80						100/500			S	7512040				
2		05K10117	T WPB 2 S80						110/500			S	7512040				
3		05P10335	T WPB 2 S80						62/500			N	7512040				
4		06B10115	T WPB 3 S80						350/700			S	7512082				
5																	
Specification Min . Max . Material Heat No.		Chemical Composition %											Tension Test *2			HARDNESS MAX	
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS		E
		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.			%
			10	29										240	415		30
			23		106	50	58	40	40	40	15	80	20		685		197 HB : GOOD
1	J5K5221	19	21	55	13	1	2	2	4	0	0	0	29	312	487	62	
2	J4KC308	17	20	67	19	3	2	2	5	0	0	<0	29	341	511	56	
3	J5L7298	21	20	69	11	8	2	2	4	0	0	1	34	324	474	54	
4	J5K4B12	19	19	68	15	5	2	2	5	1	0	0	32	299	470	41	
5																	

(Note 1) A : Hot formed with final temperature between 620°C-980°C, Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling S : Stress Relieving 675°Cx0.5 HR. Air Cooling

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : MPa mechanical tensile strength in mm * 2 : YS Yield strength TS = Tensile strength E = Elongation

Material Control	94953	Quality Assurance Manager
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

Mate	Control	Sign	Date
Material Received	Rm	SEP 26	2006
Heat # / MTR'S	Rm	SEP 26	2006
Chemical Analysis	N/A		

CLIENTE / Client

CCTF CORPORATION (OAKVILLE)
1387 CORNWALL RD.
OAKVILLE, ONTARIO
L6J 7T6 - CANADA

Job# 1220

CERTIFICADO DE INSPECCION Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.B
EN 10204 / 3.1.B
ISO 10474 / 3.1.B

FECHA: 24/10/2006 N.º 103008

HOJA: 1



ULMA

N.º: 922164

ULMA FORJA, S COOP.

PRODUCTO
Article - Produit

FLANGES

SU PEDIDO N.º

Your Order No. 4019163-00

Votre Cde. N.º

DE

of - de 13/07/2006

Certified acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 EQ 02 7443

Bº Zubillaga, 3 - Apdo. 14
20680 ONATI (Gipuzkoa) SPAIN
Tel. 34 - 943 780552
Tel. 34 - 943 781808
E-mail: forja@forging.ulma.es

NORMAS APLICABLES
Requirements - Normes Applicables

ASME B16.6-96

MATERIAL CORRESPONDIENTE
Material Correspondent - Qualité

ASTMA105N-03
ASME SA105N

MODO DE FUSION (*)
Steel Making - Elaboration de l'acier
E = Elec. Y = Oxígeno básico

NACE MR-01-75/03

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



48378

DEPARTAMENTO QUALITY ASSURANCE
Section
Department

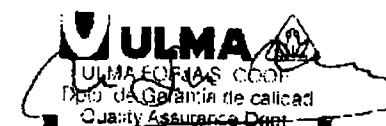
PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No N.º Coudre	RESISTENCIA T. Strength Resist Rust N/mm2	LIMITE ELAST. Yield Point Limite Elast. N/mm2	ALARGAM. Finngement Allongement Lo: 4 d %	ESTRACCION Reaction A Solucion %	RESILENCIA Impact test Resilience Joules	MEDIA Average Moyenne	TEMP. °C	DUREZA Hardness Dureté HB
1 7534051	315	WN 8 150LB S40 RF A105N	NE	317A5	514	312	32,70	65,00				180
3 7534426	15	WN 14 150LB S4XS RF A105N	NE	344A5	511	316	33,00	66,60				149
8 7534108	6	WN 14 180LB S/STD FF A105N	NE	345A5	513	314	31,70	64,00				149
9 7535287	80	SO 14 150LB RF A105N	NE	348A5	522	311	32,30	64,00				152
10 7535783	42	BLIND 10 150LB RF A105N	NE	331A5	519	314	32,30	63,70				150
13 7534817	210	WN 3 300LB S80 RF A105N	NE	216A5	515	313	32,40	66,00				150
17 7535996	120	BLIND 4 300LB RF A105N	NE	144A5	518	315	32,00	64,80				150
18 7530137	12	WN 12 800LB S/STD RF A105N	NE	337A5	520	316	32,00	63,10				151
20 7530196	30	WN 3/4 800LB S80 RF A105N	NE	181A5	504	303	33,20	67,00				150

COLADA N.º Heat No N.º Coudre	C %	SI %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
144A5	0.180	0.240	0.830	0.014	0.004	0.120	0.170	0.030	0.007	0.001	0.370	0.385
161A5	0.200	0.210	0.850	0.015	0.010	0.020	0.010	0.001	0.001	0.002	0.200	0.380
216A5	0.180	0.220	0.880	0.016	0.004	0.100	0.100	0.020	0.007	0.001	0.330	0.378
317A5	0.190	0.250	0.880	0.008	0.001	0.080	0.130	0.030	0.007	0.001	0.210	0.378
331A5	0.190	0.260	0.820	0.011	0.003	0.170	0.160	0.040	0.007	0.001	0.280	0.386
337A5	0.190	0.240	0.900	0.020	0.003	0.120	0.080	0.040	0.007	0.006	0.220	0.394
344A5	0.180	0.240	0.850	0.009	0.001	0.080	0.080	0.040	0.007	0.001	0.240	0.387
345A5	0.180	0.220	0.850	0.009	0.002	0.070	0.080	0.050	0.007	0.001	0.200	0.375
348A5	0.180	0.260	0.820	0.027	0.004	0.250	0.280	0.060	0.007	0.004	0.330	0.420

- Les dimensions y le condition superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et etats de surface sont satisfaisantes

- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - L'Inspecteur



(*) OBSERVACIONES: N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

Remarks
Observations

PURCHASER : SEYBOLD
 ASTM A234 WPB-02
 STANDARD : ASME SA234 WPB-01



INSPECTION CERTIFICATE

RIGID INDUSTRIES CO., LTD.

8, MEI-CHUNG RD. NIAO-SONG,
 KAOHSIUNG HSIEN, 83301 TAIWAN
 TEL: 886-77310527~8
 FAX: 886-77315887

DATE: 2006 - 02 - 07

ORDER NO: 5177

P.I. NO: 5111-3

MATERIALS : ASTM A106 Gr.B / JIS G3103 SB410
 INSP. SPEC. : ASME B16.9 - 01

ACCORDING TO EN10204/DIN50049/3.1B

CERTIFI. NO: 052

ITEM NO.	PRODUCT & SIZE			QUANTITY PCS	MFG NO.	VISUAL & DIMENTIONAL INSPECTION	HARDNESS MAX 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
1	CAP	2"	XH	300	5K5820	GOOD	133 - 138	N	7515740	
2	CAP	3"	STD	450	5K5920	GOOD	124 - 132	N	7515588	
3	CAP	4"	XH	90	5K6221	GOOD	134 - 167	N	7511477	
4	ELL 90 LR	2"	160	260	5G1809	GOOD	124 - 137	A	7515146	
5	ELL 90 LR	2"	STD	400	5K2446	GOOD	132 - 132	A	7510346	
6	ELL 90 LR	2"	XH	2400	5F6818	GOOD	132 - 132	A	7510900	
7	ELL 90 LR	3"	XH	1200	5K1802	GOOD	132 - 134	A	7510942	
8	ELL 90 LR	4"	XH	230	5H5645	GOOD	131 - 132	A	7510985	
9	CON-RED	3X2"	XH	700	5F6055	GOOD	142 - 151	N	7513992	
10	CON-RED	4X3"	XH	125	5H1050	GOOD	133 - 137	N	7514123	

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x1000	Y S KSI	T S KSI	E %	C.E. X100
		MIN.	10	29									35.0	60.0		
	STANDARD	MAX.	30	135	50	58	40	40	40	15	8	20		85.0		50
1	3Y720		16	24	75	19	7	0	0	1	0	0	48.9	68.2	27.7	28
2	3Y720		16	24	75	19	7	0	0	1	0	0	48.9	68.2	27.7	28
3	3Y721		18	23	78	16	6	0	1	1	0	0	42.7	65.9	27.5	31
4	J5L2809		11	24	125	8	5	3	2	10	1	0	45.1	65.8	64.0	34
5	503046		21	22	49	9	35	15	5	3	1	0	47.9	71.1	36.0	31
6	503118		20	21	50	12	6	15	5	6	1	0	47.2	68.9	36.0	31
7	307702		13	17	82	9	2	7	3	3	1	0	43.1	66.6	40.0	28
8	J5L2245		10	27	125	6	4	2	2	9	1	0	48.9	71.1	43.3	33
9	306655		18	26	57	5	4	8	3	3	2	0	45.9	70.1	38.5	29
10	306850		18	25	55	8	3	9	4	3	2	1	41.8	70.5	41.0	29

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-880°C, AIR COOLING
 N: NORMALIZING AT TEMPERATURE 880°C X 0.5HR, AIR COOLING.
 NACE MR-01-75 & NACE MR 0103 : SATISFACTORY
 WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Material Control Sign Date
 Material Received Rm SEP 2 2006
 Heat # / MTR'S Rm SEP 2 2006
 Chemical Analysis N/A
 Quantity 1 Job# 1220

MANAGER OF Q.A. DEPT.

On E Lan

HEAT: CSP00008 SKU: 7510420 DESC: 4 STD LR 90 WELD ELL WPB



Thai Benkan Co., Ltd.
58 Soi Watkrual, Bangkru, Prapachong,
Samutprakan, 10130 Thailand.

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

TO EN10204 3.1

D M Y Certificate No.

E.No. Purchase Order No. Job No.
MA-433 4875183

19/01/2006 T: 2006200003

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe		Specification for Inspection		Visual Examination	Dimensional Inspection
		ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT 1 NACE MR0175-2003		ASME B16.9-2003		Good	Good
		Product & Size (T:*)		Quantity	Heat Treatment (Note 1)	Symbol No.	
1	05P00006	90 EL WPB 3 S40		1,500/3,500	A	7510381	
2	05P00008	90 EL WPB 4 S40		871/1,000	A	7510420	
3	05P00075	90 EL WPB 4 S40		128/1,000	A	7510420	
4	05N00005	90 EL WPB 5 S40		125	A	7510446	
5	05P00085	90 EL WPB 8 S40		416	A	7510488	

Specification		Chemical Composition %												Tension Test *2			HARDNESS MAX
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
Min.		X 100	X 100	X 100	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 100	MPa		%	
Max.			10	28										240	415	30	197 HB : GOOD
Material Heat No.		23		106	50	58	40	40	40	15	80	20			585		
1	40842	18	18	64	13	1	4	2	4	1	1	1	30	332	483	32	
2	40758	20	18	67	8	1	4	2	5	3	2	1	34	316	472	37	
3	41187	19	18	67	8	1	4	2	3	1	1	1	32	318	488	34	
4	37152	19	18	70	14	4	8	6	7	3	1	1	34	324	489	38	
5	J5K7005	18	19	70	13	7	2	2	5	1	0	1	31	291	476	40	

(Note 1) A : Hot formed with final temperature between 620°C-980°C, Air Cooling. N : Normalizing 910°Cx0.5 HR, Air Cooling. S : Stress Relieving 675°Cx0.5 HR, Air Cooling.

C.E. = C+Mn/6+(Cr+Mo-V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.

CERTIFIED MILL TEST REPORT



The Best Value
Price, Quality, Service
All The Time.

LOG NO. 225682 PAGE 17
BONNEY FORGE
 P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
 www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 01/14/06

CUSTOMER'S Order No.: 9106201-00

Bonney Order No. 026260

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY
 5105 75TH STREET

340326

EDMONTON ALBERTA
 EDMONTON ALBERTA, T6E5S5 CANAD

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
------	----------	---------	--

SA/A105N

085	3	56377	7552106	10 -3 X 3/4 6000 A105N THRD T C .200 MN .960 P .009 S .022 SI .250 NI .082 CU .230 CR .104 MO .020 V .035 CB .009 AL .007 CE(LONG FORMULA) = 0.41 T/S 81000 Y/S 58125 EL 31.85 RA 64.45 BRINELL HARDNESS1: 153 HARDNESS2: 153
087	3	56613	7552147	10 -3 X 1 6000 A105N THRD T C .190 MN 1.000 P .008 S .018 SI .230 NI .040 CU .160 CO .004 CR .050 MO .020 V .000 AL .020 NB .013 CE(LONG FORMULA) = 0.38 T/S 75625 Y/S 53500 EL 32.00 RA 67.25 BRINELL HARDNESS1: 132 HARDNESS2: 132
087	3	56593	7552424	2 1/2-2 X 3/4 3000 A105N SOCK S C .200 MN 1.050 P .007 S .021 SI .220 NI .020 CU .070 CO .004 CR .030 MO .010 V .000 AL .021 NB .014 CE(LONG FORMULA) = 0.39 T/S 74000 Y/S 49400 EL 33.00 RA 67.00 BRINELL HARDNESS1: 144 HARDNESS2: 147
088	3	56593	7552432	5 -3 X 3/4 3000 A105N SOCK S C .200 MN 1.050 P .007 S .021 SI .220 NI .020 CU .070 CO .004 CR .030 MO .010 V .000 AL .021 NB .014 CE(LONG FORMULA) = 0.39 T/S 74000 Y/S 49400 EL 33.00 RA 67.00 BRINELL HARDNESS1: 144 HARDNESS2: 147

***** CONTINUED ON NEXT PAGE *****

Verify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity <u>1</u>	Job# <u>1220</u>	

Cris Childers

QUALITY PROCESS MANAGER

HEAT: 39700 SKU: 7534752 DESC: 1 300 RF WN FLG XH A105N

Material Control	Sig.	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
23841 CESANA BRIANZA (LC) ITALY
Tel 031.656441 - Fax 031.655149
MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2000 =

FORGED FLANGES & FITTINGS LTD
CASTLE ROGGE - STATION ROAD
NEW HARNET/23877. GB

INSPECTION CERTIFICATE DIN 50049/3.1B - EN 10204/3.1B ** CERTIFICATO DI SOLIDAGGIO

INVOICE / FATTURA: 14317 21/04/2005
DEL. NOTE / BOLLA: 26561 21/04/2005

HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	YOUR P.O. VS. ORDINE	OUR REFERENCE NS. CRONE	QUANTITY QUANTITA'	DESCRIPTION DESCRIZIONE		DIM. IN ACCORDANCE TO DIM. IN ACCORDO A		VISUAL & DIMENSIONAL VISIVO E DIMENSIONALIT															
	39700	0009	3044	55301243 3026	150	W/N 300 RF 1" X8	A105 7534752	ASME/ANSI B16.5	SATISFACTORY																
HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	MATERIAL MATERIALE		C %	Si %	Mn %	S %	P %	Cr %	Ni %	Mo %	Ti %	Cu %	V %	Nb %	N %	Al %	C.S. %	STEEL MILL ACCIAIERIA					
	39700	0009	ASTM A 135		0.190	0.230	1.030	0.015	0.014	0.110	0.090	0.020	0.018	0.180	0.030	0.301	0.003	0.025	0.420	ACC. B174					
HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	TEST SPECIMEN SPE. PROVA SPE. PROVA	YIELD POINT CONCERNING YIELD STRENGTH	TENSILE STRENGTH ROB. TIRAZ.	ELONGATION ALLUNGAMENTO	REDUCTION OF AREA RIDUZIONE AREA	IMPACT TEST PROVA D'URTO	IMPACT TEST - Reference Value / Val. Ref.								SHAPES FORMA 1-2-3-4	S	W	X	YIELD POINT CONCERNING YIELD STRENGTH	002 251			
	39700	0009	126.63	50.80	373.0	535	30.0	51.0	159-161	0.0	2.0			KV	20	84	82	86	1				0.1		
HEAT CODE COD. CALDAIA	HEAT CALDAIA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A						HEAT TREATMENT TRATTAMENTO TERMICO						FURNACE FORNIO										
	39700	0009	ASTM/ASME A 135/SA 135 N - 02						NORMALIZED AT 920 C - COOLED IN STILL AIR						K.80741 063408										
VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED																									
NOTE L02: CHARPY TEST SPECIMEN RESULT AS 10X10mm MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 -2004 / 2005										QUALITY CONTROL DEPARTMENT UFFICIO CONTROLLO QUALITA' BRACCHI FLAVIO												INSPECTION AUTHORITY ENTE UNICALE ITALIANO		MANUFACTURER'S SYMBOL MARCA PRODUTTORE 	

CLIENTE / Customer / Client:

COTIF A DIVISION OF EMCO LTD.
WESTERN CANADA REGION
14940-121A AVENUE, EDMONTON
ALBERTA T5V 1A3 - CANADA

CERTIFICADO DE INSPECCION
Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.B.
EN 10204 / 3.1.B.



ULMA

N.º: 922164

ULMA FORJA S. COOP.
Bº Zubiaga, 3 - Apdo. 14
22560 UNATI (Gipuzkoa) S.P.A. 22564
Tel.: 34 - 943 780522
Fax: 34 - 943 781808

FECHA: 19/07/02
Date-Date:

N.º 86677
No. N.º

HOJA: 1
Page:

PRODUCTO FLANGES
Article - Produit

SU PEDIDO N.º 4862201-00 JULY30/02
Your Order No.
Votre Cde. N.º

DE 22/04/02
of - de

NORMAS APLICABLES ASME B16.5-96
Requirements - Normes applicables

MATERIAL CORRESPONDIENTE ASTMA105N-01
Material Correspondent - Qualité ASMESA105N
MODO DE FUSION (*) NACE MR-01-75/02

MODO DE FUSION (*)
Steel making - Elaboration de l'acier
E = Elec. Y = Oxígeno básico

Certified acc. PED 97/23/EG
by TÜV Rheinland
N.º 01 202 EW 02 7443

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



DEPARTAMENTO
Section
Département

QUALITY ASSURANCE

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No. N.º Coulée	RESISTENCIA Tensile Rm N/mm²	RESISTENCIA Yield Point Rp0.2 N/mm²	ALARGAMIENTO Elongation A5 %	REDUCCION Reduction R %	RESISTENCIA Impact energy Resilience Joules	PROBETA Test Test	DUREZA Hardness HRC
7534027	392	WN 4 150LB S40 RF A105N	NE	222AZ	518	304	30,3	56,0			150
7534183	95	WN 2 150LB S40 FF A105N	NE	264AX	538	321	30,6	58,3			154
7536550	1	WN 14 150LB S/STD FF A105N	NE	46AZ	523	334	30,7	59,0			162
7530317	25	WN 2 150LB S80 FF A105N	NE	183AX	522	305	30,2	56,0			162
7535589	17	WN 4 150LB S80 FF A105N	NE	170AS	500	292	27,0	50,3			150
7535147	500	SO 1 150LB RF A105N	NE	461AX	516	305	30,1	55,0			150
7535210	1404	SO 4 150LB RF A105N	NE	184AZ	518	305	30,5	56,8			150

COLADA Heat Coulée No.	COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE											
	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
222AZ	0,19	0,19	0,85	0,013	0,022	0,06	0,12	0,03	0,003	0,007	0,23	0,370
264AX	0,21	0,19	0,90	0,016	0,020	0,09	0,18	0,03	0,002	0,001	0,36	0,420
46AZ	0,18	0,27	0,85	0,014	0,001	0,12	0,10	0,04	0,003	0,001	0,31	0,380
183AX	0,19	0,18	0,87	0,021	0,020	0,16	0,10	0,02	0,003	0,003	0,34	0,400
170AS	0,21	0,18	0,85	0,015	0,015	0,05	0,08	0,02	0,000	0,000	0,23	0,380
461AX	0,21	0,19	0,96	0,015	0,020	0,10	0,11	0,02	0,003	0,005	0,23	0,400
184AZ	0,20	0,18	0,82	0,022	0,020	0,07	0,13	0,03	0,003	0,001	0,34	0,390

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimensions and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants
- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
ULMA
ULMA FORJA S. COOP.
Dpto. de Garantía de calidad
Quality Assurance Dept.

(*) OBSERVACIONES:
Remarks
Observations

N NORMALIZED AT 900 °C AND ALLOWED TO COOL IN STILL AIR

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

HEAT: 461AX SKU: 7535147 DESC: 1 150 RF SO FLG A105N

HEAT: 79955 SKU: 7534787 DESC: 1-1/2 300 RF WN FLG XH A105N

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	/	Job# 1220



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
22061 CESANA BRIANZA (LC) ITALY
Tel: 031.655441 - Fax 031.655149
MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2000 =

FORGED FLANGES & FITTINGS LTD
CASTLE HOUSE - STATION ROAD
NEW BARNET, HERTF. GB

INSPECTION CERTIFICATE EN 10204/3.1

CERTIFICATO DI COLLAUDO

N. 1924/ 18/05/2005
INVOICE / FATTURA 1770/ 18/05/2005
S. 41651
DEL. NOTE / NOTA 3174/ 18/05/2005

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	YOUR P.O. V.S. ORDINE	OUR REFERENCE N.S. CROINE	QUANTITY QUANTITA	DESCRIPTION DESCRIZIONE										DIM. ACCORDANCE TO D.M. IN ACCORDO A				22 VISUAL & DIMENSIONAL VISIVO & DIMENSIONALE				
	79955	0007	3022	05060510 0022	200	W/N 300 RF 1.1/2" X8 A105 7534787										ASME/ANSI B16.5				SATISFACTORY				
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL MATERIALE			C %	SI %	Mn %	S %	P %	Cr %	NI %	Mo %	TI %	Cu %	V %	Nb %	N %	Al %	C.E. %	ORIGIN ORIGINE			
	79955	0007	ASTM A 105			0.190	0.166	0.950	0.022	0.011	0.080	0.070	0.010	0.013	0.170	0.002	0.001	0.000	0.006	0.382	EUROPE			
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	TEST SPECIMEN col. PROVA col. SEZIONE col. LAVORO		YIELD POINT Sopra-sopra N/mm ² & KSI	TENSILE STRENGTH Rupture N/mm ² & KSI	ELONGATION Allungamento %	REDUCTION OF AREA Riduzione Area %	HARDNESS Durezza HRC	BRINELL TEST Materiale	FLATNESS TEST Schiacciatura	IMPACT TEST - Resilience Scale / Unit					SHAPE FORMA col. 24	S	W	X	YIELD POINT Sopra-sopra N/mm ² & KSI	006.00		
	79955	0007	126.69	50.80	338.0	546	34.0	59.0	163-165	0.0	0.0	KV	20	84	88	86	1				C.9			
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A										HEAT TREATMENT TRATTAMENTO TERMICO											
	79955	3007	ASTM/ASME A 105/SA 105 N - 02										NORMALIZED AT 920 C - COOLED IN STILL AIR										ELECTRIC FURNACE	
VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED																								

VERIFIED TRUE COPY
OF ORIGINAL
FORGED FLANGES &
FITTINGS LIMITED

NOTE

LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm
MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003
-2005

QUALITY CONTROL DEPARTMENT
UFFICIO CONTROLLO QUALITA

BRACCHI ELAVIO

INSPECTION AUTHORITY
UFFICIO COLLAUDO

MANUFACTURER'S SYMBOL
MARCHIO PRODOTTORE



HEAT: 76322 SKU: 7534795 DESC: 2 300 RF WN FLG XH A105N

Material Control	S	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	NA	
Quantity	/	Job# 1220



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
23861 CESANA BRIANZA (LC) ITALY
Tel. 031.855441 - Fax 031.855149
MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY CNV
= ISO 9001:2000 =

FORGED FLANGES & FITTINGS LTD
CASTLE HOUSE - STATION ROAD
NEW BARNET/UK777. GB

INSPECTION CERTIFICATE EN 10204/3.1

CERTIFICATO DI COLLAUDO

INVOICE / FATTURA
S. 43710
DEL. NOTE / NOTA
4164/ 23/11/2005
3832/ 23/11/2005
6350/ 23/11/2005

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	YOUR P.O. VS. ORDER	OUR REFERENCE N.S. ORDER	QUANTITY	DESCRIPTION DESCRIZIONE	DIM. ACCORDANCE TO DIM. IN ACCORDO A	VISUAL & DIMENSIONAL VISIVO E DIMENSIONALE
76322		0010	3113	05033494 0333	260	W/N 300 RF 2" XS A105 7534795	ASME/ANSI B16.5	SATISFACTORY

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL MATERIALE	C %	SI %	BR %	S %	P %	Cr %	NI %	Mo %	TE %	Cu %	V %	Nb %	N %	Al %	C.E. %	ORIGIN ORIGINE
76322		0010	ASTM A 105	0.190	0.206	0.938	0.018	0.014	0.080	0.040	0.010	0.006	0.160	0.001	0.008	0.000	0.012	0.376	EUROPE

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	TEST SPECIMEN PROVETTA SECTION LUNGHEZZA	YIELD POINT S _{0.2} (MPa) T _{0.2} (ksi)	TENSILE STRENGTH R _m (MPa) R _t (ksi)	ELONGATION A ₅ (%)	REDUCTION OF AREA Z (%)	HARDNESS H _{RC}	BEND TEST P _{0.2}	FLATTENED S _{0.2}	IMPACT TEST - Results J _{0.2} / cm ² U.M. TYPE J _{0.2} (J)	1	2	3	4	5	6	7	8	9	10	YIELD POINT S _{0.2} (MPa) T _{0.2} (ksi)	ORIGIN ORIGINE
76322		0010	126.63	50.80	327.0	528	34.8	59.0	159-163	0.0	0.0	XV	28	86	88	83	1					0.0	008.387

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A	HEAT TREATMENT TRATTAMENTO TERMICO
76322		0010	ASTM/ASME A 135/SA 105 K - 02 VERIFIED IN A COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED	NORMALIZED AT 920 C - COOLED IN STILL AIR ELECTRIC FURNACE

NOTE	QUALITY CONTROL DEPARTMENT UFFICIO CONTROLLO QUALITA'	INSPECTION AUTHORITY ENTE UFFICIALE COLLAUDO	MANUFACTURER'S SYMBOL MARCHIO DELL'INDUSTRIA
LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 2005	BRACCHI ELAVIO <i>Bracchi</i>		MFF

HEAT: TNM SKU: 7534027 DESC: 4 150 RF WN FLG STD A105N



An Ameri-Forge Group Company
13770 Industrial Road
Houston, TX 77015

Material Test Report

Heat Code: TNM



6A-0077

ISO 9001:2000 Certified

Sales: (713) 393-4200 Fax: (713) 455-8368

7534027

CCTF-EDMONTON	PO: 4874020	Sales Order: 51114	Sales Ord Line: 2
5407 53RD AVENUE	Part Desc: FLG 04.00 0150 WN RF STD / A105 NRM COFFR		
EDMONTON, ALB T6B3G2	Part No: 0151400101-0021F	Qty Shipped: 129	
	Vendor: SMI	Vendor Heat Code: 244856	
Spec: ASTM A 105/A 105M-03/ASME SA 105/SA 105M-04 Normalized			

	C	Mn	P	S	Si	Cu	NI	Cr	Mo	V	Cb
Ladle:	0.20	0.85	0.031	0.019	0.22	0.36	0.10	0.17	0.023	0.002	0.002
Product:											
	C.E.										
Ladle:	0.41										
Product:											

Mechanical Properties		Heat Treatment		Other Results	
Test Lab	AFG	Norm. Temp. (F)	1675	Country of Origin	USA
Test Bar Size	SACRIFICIAL	Norm. (Hrs)	4.0		
BHN	170-170	Norm. Cooling Type	AIR		
Elg (%)	30.0				
RA (%)	54.0				
Tensile Specimen Size	0.251				
Tensile (ksi)	81.7				
Yield (ksi)	49.5				
Gauge Length	1.00				

Comments

No Weld repair performed. Chemical Analysis results shown are actual. Forgings are capable of passing hydrostatic test compatible with the appropriate rating. Elongation taken from a round specimen. All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing. Yield strength was determined using the 0.2% offset method.

This report is issued in compliance with the requirements of EN10204 3.1 b / ISO 10474 3.1.b.

MTR No. 76843
MTR Date: 11/11/2005

S. Drozdowski

Stan Drozdowski - AFG Test Lab Manager

Material Control	Sign	Date
Material Received	Rm	SEP 28 2006
Heat # / MTR'S	Rm	SEP 28 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1226

2006

HEAT: J0M10103 SKU: 7513453 DESC: 3X2 XH WELD TEE WFL

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220 BKL

Purchaser: CCTE CORPORATION

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.
58 Soi Wadkrumai, Bangkok, Prapadsang,
Samutprakan, 10130 Thailand.

TO EN10204 3.1

E-No. Purchase Order No. Job No.

D M Y Certificate No.

MA-491

4020192

02/06/2006 T- 2006200530

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe											Specification for Inspection		Visual Examination	Dimensional Inspection	
		ASTM A234-05a/ASME SA234 WPB CSA Z245.11 GR241 CAT 1 NACE MR0175-2003											ASME B16.9-2003		Good	Good	
		Product & Size (T x D)											Quantity	Heat Treatment (Note 1)	Symbol No.		
1	05H10138	T WPB 2 X 1 1/2 S80											5/10	S	7513348		
2	98C1134	T WPB 2 1/2 X 2 S80											5/10	S	7513428		
3	05M10103	T WPB 3 X 2 S80											20	S	7513453		
4	05K10311	T WPB 4 X 2 S80											8/15	N	7513486		
5	08E10119	T WPB 3 S80											30	S	7512082		
Specification Min. Max. Material Heat No.		Chemical Composition %											Tension Test #2		H		
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS			TS
		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.		%
													240		415	30	197 HB : GOOD
1	J4KC306	17	20	67	19	3	2	2	5	0	0	<0	29	342	511	56	
2	10214	18	21	43	16	23	2	2	2	1	TR	0	26	325	473	56	
3	J5K4B12	19	19	68	15	5	2	2	5	1	0	0	32	296	467	42	
4	J5L8454	18	18	66	10	7	1	2	5	1	0	0	30	284	447	42	
5	J5K4B12	19	19	56	13	6	1	2	6	1	0	0	30	299	470	41	

(Note 1) A: Hot formed with final temperature between 620°C-980°C. Air Cooling N: Normalizing 910°Cx0.5 HR. Air Cooling *N: Normalizing 910°Cx0.5 HR. Air Cooling (Specification for material made from plate) S: Stress Relieving 675°Cx0.5 HR. Air Cooling

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

GOOD

Quality Assurance Manager
Thai Benkan Co., Ltd.

HEAT: UK00069 SKU: 7510586 DESC: 1 XH LR 90 WELD ELL .PB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	(BKL)
Quantity	Job# 1220	

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.
303 Watkrasai, Bangkok, Prapacheng,
Sanutprakern, 10130 Thailand.

E-No. MA-491 Purchase Order No. 4020192 Job No.

TO EN10204 3.1

D M Y Certificate No.

07/03/2006 T- 2006200241

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe ASTM A234.04/ASME SA234 WPB CSA Z245.11 GR241 CAT 1 NACE MR0175-2003	Specification for Inspection ASME B18.9-2003	Visual Examination	Dimensional Inspection
		Product & Size (T+1)	Quantity	Heat Treatment (Note 1)	Symbol No.
1	08A20041	RE WPB 8 X 5 S40	10	N	7515212
2	05F20050	RE WPB 14 X 8 STD	1/5	N	7510193
3	05K00089	90 EL WPB 1 S80	50	A	7510588
4	05E00012	90 EL WPB 1 1/4 S80	150	A	7510881
5	05K00070	90 EL WPB 1 1/2 S80	100	A	7510888

Specification	Chemical Composition %												Tension Test *2			HARDNESS MAX
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
Min.	X 100	X 100	X 100	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 100	MPa		%	197 HB : GOOD
Max.		10	29										240	415	30	
Material Heat No.	23		106	50	58	40	40	40	15	80	20			585		
1	64384	20	19	87	11	1	5	2	2	1	1	32	335	492	39	
2	20470	19	17	83	14	3.2	12	5	7	5.2	0	36	298	471	38	
3	J5L7712	19	20	71	16	7	1	2	8	2	0	33	324	497	45	
4	J4KA485	19	20	72	19	8	2	2	5	0	0	32	324	491	47	
5	J5L7712	19	20	71	16	7	1	2	8	2	0	33	318	489	49	

(Note 1) A : Hot formed with final temperature between 630°C-980°C. Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling S : Stress Relieving 675°Cx0.5 HR. Air Cooling

C.E. = C+Mn/6+(Cr+Mo-V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" symbolized wall thickness in mm * 2 : YS Yield strength TS = Tensile strength E = Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.

PURCHASER : SEYBOLD
 STANDARD : ASTM A234 WPB-02
 ASME SA234 WPB-01



INSPECTION CERTIFICATE

RIGID INDUSTRIES CO., LTD.

8. MEI-CHUNG RD. NIAO-SONG,
 KAOHSIUNG HSIEN, 83301 TAIWAN
 TEL: 886-77310527-8
 FAX: 886-77315887

DATE: 2006 - 02 - 07

ORDER NO: 5290/9105440

P.I. NO: 5K14-1

MATERIALS : ASTM A106 Gr.B (SEAMLESS PIPE)
 INSP. SPEC. : ASME B16.9 - 01

ACCORDING TO EN10204/DIN50049/3.1B

CERTIFI. NO: 053

ITEM NO.	PRODUCT & SIZE			QUANTITY PCS	MFG NO.	VISUAL & DIMENTIONAL INSPECTION	HARDNESS MAX. 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
1	TEE	2"	XH	500	5J5762	GOOD	127 - 134	N	GOOD	7512040
2	TEE	8"	STD	75	5K7092	GOOD	144 - 159	N	GOOD	7511876
3	TEE	8"	XH	12	56243	GOOD	139 - 157	N	GOOD	7512198

ITEM NO.	MATERIAL CHARGE NO.		CHEMICAL COMPOSITION %										PHYSICAL TEST				
			C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x1000	Y S KSI	T S KSI	E %	C.E. X100
	STANDARD	MIN.		10	29								35.0	60.0			
		MAX.	30		135	50	58	40	40	40	15	8	20		65.0		50
1	J5L2562		11	23	132	11	3	5	2	11	1	0	0	48.2	70.5	62.0	35
2	J5L2092		12	30	126	15	4	2	2	12	1	0	0	47.7	68.5	44.3	35
3	J5K4343		11	27	127	10	5	3	2	11	0	0	0	46.1	67.9	50.5	34
										Material Control		Sign	Date				
										Material Received		Rm	SEP 2 6	2006			
										Heat # / MTR'S		Rm	SEP 2 6	2006			
										Chemical Analysis		N/A					
										Quantity		/	Job#	1220			
(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C AIR COOLING																	

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C X 0.5HR, AIR COOLING.

NACE MR-01-75 & NACE MR 0103 : SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou L Lan

MANAGER OF Q.A. DEPT.

MIL TEST CERTIFICATE

三 兵 鋼 鐵 股 份 有 限 公 司
SAN ENG STEEL FORGING CO., LTD.

EN10204-3.1.B(DIN50049/3.1.B)
CUSTOMER : SEYBOLD INTERNATIONAL CORP.

NO. 22 LANE 50, WAN SING STREET
SAN MIN DISTRICT, KAOHSIUNG,
TAIWAN, R. O. C.
Tel: 07-372 4249 07-371 2934
Fax: 07-371 2923 07-371 2846
URL: http://www.saneng.com.tw
e-mail: saneng@ksts.seed.net.tw

20 HOLLY STREET, SUITE 205
TORONTO, M4S 3B1, CANADA
TEL: 416-4810191 FAX: 416-4811790

CERT NO.: SE-4612H

DATE : 01/23/2001

ORDER NO.: 4612(8)WESTLUND

L/C NO. :

PAGE : 1 OF 1

P R O D U C T				S P E C I F I C A T I O N F O R M A T E R I A L					S P E C I F I C A T I O N F O R F I T T I N G S									
FORGED CARBON STEEL FLANGES				ASTM A-105-03/ASME SA-105 (Z245.12 CAT I GR.248 SOUR SERVICE-01)					ASME B16.5-98a									
ITEM NO.	D E S C R I P T I O N		QUANTITY	C H E M I C A L C O M P O S I T I O N (%)														
				C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	C.E.		
1.	7534795 300# WNRF XS		2"	700 PCE	0.190	0.140	1.120	0.010	0.016	0.100	0.110	0.050	0.005	0.003	0.005	0.009	0.411	
2.	7535260 900# WNRF STD		3"	24 PCE	0.210	0.170	1.160	0.017	0.011	0.050	0.060	0.030	0.005	0.003	0.005	0.009	0.423	
3.	7536503 900# WNRF STD		4"	7 PCE	0.220	0.250	0.950	0.016	0.005	0.036	0.026	0.032	0.003	0.007	0.002	0.000	0.389	
4.	7535260 900# WNRF STD		3"	1 PCE	0.220	0.190	1.130	0.018	0.008	0.070	0.070	0.030	0.005	0.003	0.005	0.009	0.431	
5.	7536503 900# WNRF STD		4"	3 PCE	0.200	0.220	0.990	0.018	0.007	0.033	0.018	0.031	0.003	0.008	0.002	0.000	0.374	
6.	7534795 300# WNRF XS		2"	150 PCE	0.210	0.180	1.030	0.010	0.007	0.090	0.080	0.060	0.005	0.003	0.005	0.010	0.410	

ITEM	HEAT	TENSILE STRENGTH (MPA)	YIELD STRENGTH (MPA)	ELONGATION (%)	HARDNESS (HB)	REDUCTION OF AREA (%)	HEAT TREATMENT	MATERIAL SUPPLIER	R E M A R K S																	
		485 MIN	250 MIN	22.0 MIN	187 MAX	30.0 MIN																				
1.	29572	505.00	300.10	36.0	150	67.7	NORMALIZED	OEMK	NORMALIZATION: 880°C X2HRS CONFORMS TO MEET NACE MR-01-75 LATEST EDITION <table><tr><td>Material Control</td><td>Sign</td><td>Date</td></tr><tr><td>Material Received</td><td>Rm</td><td>SEP 26 2006</td></tr><tr><td>Heat # / MTR'S</td><td>Rm</td><td>SEP 26 2006</td></tr><tr><td>Chemical Analysis</td><td>N/A</td><td></td></tr><tr><td>Quantity</td><td>1</td><td>Job# 1226</td></tr></table>			Material Control	Sign	Date	Material Received	Rm	SEP 26 2006	Heat # / MTR'S	Rm	SEP 26 2006	Chemical Analysis	N/A		Quantity	1	Job# 1226
Material Control	Sign	Date																								
Material Received	Rm	SEP 26 2006																								
Heat # / MTR'S	Rm	SEP 26 2006																								
Chemical Analysis	N/A																									
Quantity	1	Job# 1226																								
2.	17832	511.90	323.60	33.8	157	65.9	NORMALIZED	OEMK																		
3.	06869	500.80	331.30	36.0	171	67.7	NORMALIZED	PANZHIHUA IRON																		
4.	17830	503.10	327.50	33.8	154	64.9	NORMALIZED	OEMK																		
5.	06811	498.90	331.30	36.6	157	67.7	NORMALIZED	PANZHIHUA IRON																		
6.	34949	509.90	306.00	39.0	148	65.9	NORMALIZED	OEMK																		

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER AND IS THAT WHICH HAS BEEN TESTED TO THE SATISFACTION OF THE CERTIFICATE

San Je Lee
MANAGED

756211

erne fittings gmbh A-6824 Schlins Hauptstrasse 48 Austria/Europe Telefon +43/5524 501-0 Telefax +43/5524 501-930		 Reg. No. 12 100 3054		Abnahmeprüfzeugnis Inspection Certificate EN 10204 - 3.1				Zeugnisnummer [certificate no.] 012939/06-HG		Rev.	Datum [date] 21/03/										
Kunde [customer] EMCO Corporation PO Box 5300 Stn A CDN-N6A 4N7 London, Ontario		Ihre Bestellnummer [your order no.] 9105444-00				Unsere Auftrags.Nr. [our order no.] 80681-NA-0460															
		Ihre Artikelnummer [your item no.]				Schmelze Nr [heat no.] 457083		Ident Nr. [identi]													
		Menge [quantity] 56		Artikelbezeichnung [designation] tees R-S-WPL6-3"/2"-XS/XS		Anforderungen [requirements] ASME B16.9-2001,WPL6,ASTM A 420/A 420M-01,ASME SA 4 Sec. II Part A,,NACE MR-01-75,EN 10204/3.1,Manufacturers standard															
Vormaterial [base material]		Rohrzeugnisnr. [tube work's cert.no.] 38587		Hersteller [manufacturer] Voest Alpin				Dichtheitsprüfung [leakage test] Bar 172													
Analyse [analysis]		Schmelze Nr. [heat no.]		Erschmelzungsart [melting process] Y		1 = Schmelzeanalyse [heat analysis] 2 = Produktanalyse [product analysis]		J-Faktor [J-Factor]: (Si + Mn) * (P + Sn) * 10000 CEQ [CEQ]: C + (Mn / 6) + (Cr + Mo + V) / 5 + (Cu + Ni) / 15													
Index		C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	Nb	Al	B	Ti	N	Sn	Ceq	Pb		
1		0.165	0.253	0.894	0.014	0.0042	0.030	0.0049	0.015	0.022	0.0026	0.0012	0.0312	0.0001	0.0017	0.0047	0.0024	0.32			
2		0.180	0.274	0.931	0.0166	0.0039	0.030	0.009	0.015	0.020	0.002	0.003	0.026	0.0003	0.002	0.006	0.002	0.345	0.004		
Mech.-technologische Prüfung [mech. technological test]																					
Proben Nr. [test no.]		Zugversuch [tensile test]						Kerbschlagbiegeversuch [notched bar impact test] Form: ISO V						Härteprüfung [hardness test]							
		Pr.-Lage [pos. of sample]	Temp.	Dehng. [yield str.] Rp 0.2	Zugfestigkeit [tensile str.] Rm (N/mm²)	Dehnung [elongation] 2" (%)	PR-Lage [pos. of sample]	Temp.	Querschnitt [cross sec.]	Kerbschlagarbeit [impact values] (J)	147-153 HB										
M049467/05		L	+20 °C	340	495	34	L	-50°C	40	38-48-40											
										Material Control Material Received Heat # / MTR'S Chemical Analysis Quantity 1		Sign Rm Rm N/A Job# 1220		Date SEP 26 2006 SEP 26 2006		Wärmebehandlung [heat treatm] normalized temperature 900 °C Holding Time 15 min. Cooling in still air					
Kennzeichnung [marking]  Mat./457083/DN" wall																					
Besichtigung und Ausmessung [visual inspection and dimensional check] o.B./o.K.										Die gestellten Anforderungen wurden erfüllt [Manufacturing requirements are satisfied] Der Werksachverständige [the Works Inspector] 21/03/06 Grabherr Harald											
Bemerkungen [remarks] cold formed magnetic particle examination acc. ASTM E709: o.k.										Dieses Dokument wurde elektronisch erstellt und ist ohne Unt gültig. [The certificate is issued by the computerized system a valid without signature.]											

02/14/2006 TUE 09:34 FAX

001/001

M.E.G.A.
V.F.F. FITTINGS & FLANGES
 (CANADA) LTD.
 7004K-5TH STREET S.E.
 CALGARY, ALBERTA T2H 2E3

 COMPANY N. 252979
 COMPANY M. 01/03/05
 COMPANY L. 01/03/05

 CERTIFICATO DI COLLAUDO
 TEST CERTIFICATE
 CERTIFICAT DE CONTROLE

 COMPANY
 COMPANY M. 01/03/05
 COMPANY L. 01/03/05

 CAL764200-CAL764200/AD01
 COMPANY M. 01/03/05
 COMPANY L. 01/03/05

 COMPANY N. 252979
 COMPANY M. 01/03/05
 COMPANY L. 01/03/05

FROM Test Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen
FRBD	ASTM A105/02	497704.3	0.178	0.195	0.980	0.010	0.009	0.017	0.018	0.018	0.000	0.180	0.000	0.025	0.369				
CRKT	ASTM A105M/01	30233	0.174	0.216	1.072	0.001	0.007	0.014	0.019	0.021	0.000	0.286	0.001	0.025	0.417				
FLLS	ASTM A105/02	498/04	0.170	0.160	0.940	0.009	0.008	0.008	0.011	0.022	0.000	0.280	0.001	0.025	0.367				
FRBD	ASTM A105/02	498/04	0.170	0.160	0.940	0.009	0.008	0.008	0.011	0.022	0.000	0.280	0.000	0.020	0.367				
BAND	ASTM A105M/98	AT4037	0.180	0.200	0.740	0.005	0.010	0.018	0.017	0.060	0.000	0.120	0.000	0.024	0.363				
FAUD	ASTM A105M/98	108464	0.153	0.231	1.230	0.006	0.006	0.012	0.011	0.035	0.000	0.149	0.005	0.040	0.409				

FROM Test Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen
FRBD	30.6	25.0	313.0	534.0	28.6	67.6	149-156												
CRKT	30.6	25.0	318.0	538.0	29.0	69.0	156-163												
FLLS	30.6	25.0	325.0	543.0	29.6	67.4	150-160												
FRBD	30.6	25.0	328.0	513.0	30.3	68.6	146-153												
BAND	30.6	25.0	306.0	502.0	33.4	68.4	148-155												
FAUD	30.6	25.0	318.0	522.0	27.4	67.2	140-145												

FROM Test Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen
FRBD	ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																		
CRKT	ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																		
FLLS	ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																		
FRBD	ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																		
BAND	ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																		
FAUD	ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																		

FROM Test Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen
FRBD	013	170	116A13201	NEBALET S. 3000 NPT A/SALON 1/4-3/8															OK
CRKT	014	25	116A14201	NEBALET S. 3000 NPT A/SALON 1/4-1.1/2															OK
FLLS	016	100	116A16201	NEBALET S. 3000 NPT A/SALON 1/2-2.1/2															OK
FRBD	016	600	116A16201	NEBALET S. 3000 NPT A/SALON 1/4-5															OK
BAND	017	264	116A17201	NEBALET S. 3000 NPT A/SALON 1/4-3/8															OK
FAUD	017	41	116A17201	NEBALET S. 3000 NPT A/SALON 1/4-3/8															OK

Material Control	Sign	Date
Material Received	Rm	SEP 27 2006
Heat # / MTR'S	Rm	SEP 27 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

FROM Test Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen	TEST Specimen
FRBD	013	170	116A13201	NEBALET S. 3000 NPT A/SALON 1/4-3/8															OK
CRKT	014	25	116A14201	NEBALET S. 3000 NPT A/SALON 1/4-1.1/2															OK
FLLS	016	100	116A16201	NEBALET S. 3000 NPT A/SALON 1/2-2.1/2															OK
FRBD	016	600	116A16201	NEBALET S. 3000 NPT A/SALON 1/4-5															OK
BAND	017	264	116A17201	NEBALET S. 3000 NPT A/SALON 1/4-3/8															OK
FAUD	017	41	116A17201	NEBALET S. 3000 NPT A/SALON 1/4-3/8															OK

M.E.G.A. S.p.A. - VIA DALLA CHIESA, 3 - SCANZOROSCIATE (BG) ITALY - TEL. +39 035 661280 - TELEFAX +39 035 665525

92149

7534795

MILL TEST CERTIFICATE

三英鋼鐵股份有限公司
SAN ENG STEEL FORGING CO., LTD.

NO. 22 LANE 50, WAN SING STREET
SAN MIN DISTRICT, KAOHSIUNG,
TAIWAN, R. O. C.
Tel: 07-372 4249 07-371 2934
Fax: 07-371 2923 07-371 2846
URL: http://www.saneng.com.tw
e-mail: saneng@ksts.seed.net.tw

EN10204-3.1.B(DIN50049/3.1.B)
CUSTOMER : W.F.F. FITTINGS & FLANGES
(CANADA) LTD.
7004K-5TH STREET S.E. CALGARY,
ALBERTA, CANADA T2H 2G3
TEL: 4032559527 FAX: 4032524711

CERT NO.: SE05128

DATE: 12/12/2

ORDER NO.: E04337AG

L/C NO.:

PAGE: 2 OF

PRODUCT				SPECIFICATION FOR MATERIAL				SPECIFICATION FOR FITTINGS								
FORGED CARBON STEEL FLANGES				ASTM A-105-03/ASME SA-105				ASME B16.5-98a								
ITEM NO.	DESCRIPTION		QUANTITY	CHEMICAL COMPOSITION (%)												
				C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	C.E.
11.	300# WNRF STD	2" A105H	11 PCE	0.200	0.130	1.150	0.016	0.019	0.100	0.070	0.060	0.012	0.003	0.005	0.009	0.4
12.	300# WNRF XS	2" A105N	200 PCE	0.210	0.180	1.030	0.010	0.007	0.090	0.080	0.060	0.005	0.003	0.005	0.010	0.4

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER AND IS THAT WHICH HAS BEEN TESTED TO THE SATISFACTION OF THE CERTIFICATE.

San Jo Sae
MANAGER
TEST CHIEF

HEAT: 33865 SKU: 7534809 DESC: 2-1/2 300 RF WN FLG XH A105N

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



**METAL FATTI
PRODOTTI INDUSTRIALI S.p.A.**
23801 GESANA BRIANZA (Lecce) ITALY
Tel. (0331) 885441
Telex: 885149
MATERIAL TEST DEPARTMENT
SALA PROVA SO ANALISI MATERIALI

COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY ISO 9002

INSPECTION CERTIFICATE EN 50649/3.15 - EN 10304.1/3.15** CERTIFICATO DI COLLAUDO

IRACO LIMITED
CASTLE HOUSE - STATION ROAD
NEW BARNET WATFORD GU

M.J. 975/ 15/03/2004
INVOICE / FATURA 876/ 12/03/2004
S. 36416
DEL NOTE / BOLLA 1423/ 12/03/2004
PAGE

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	THICKNESS VS. DRONE	OUR REFERENCE RS. DRONE	QUANTITY QUANTITA'	DESCRIPTION DESCRIZIONE										WEL. IN ACCORDANCE TO DR. IN ACCORDO A										VISUAL & DIMENSIONAL VISIVO E DIMENSIONALE		
	33865 31837 76859 76525 34560 76859	0051 0065 0068 0072 0082 0028	16629*CT 16629*CT 16629*CT 16629*CT 16593*CT 16608*CT	03003215 0117 03003215 0145 03003215 0151 03003215 0159 03001520 0019 03002407 0063	10 30 30 30 5 30	W/N 300 RF 2.1/2" X9 A105 7534809 S/O 300 RF 2.1/2" A105 7536208 THRD 300 RF 1/2" A105 7535546 THRD 300 RF 1.1/2" A105 7535582 W/N 150 PP 12" STD A105 7534264 S/N 300 RF 1/2" 160 A105 7530032										ASTM/AISI B16.5 ASTM/AISI B16.5 ASTM/AISI B16.5 ASTM/AISI B16.5 ASTM/AISI B16.5 ASTM/AISI B16.5										SATISFACTORY SATISFACTORY SATISFACTORY SATISFACTORY SATISFACTORY SATISFACTORY		
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL				0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%	STEEL WEL. ACCURATA
	33865 31837 76859 76525 34560 76859	0051 0065 0068 0072 0082 0028	ASTM A 105 ASTM A 105 ASTM A 105 ASTM A 105 ASTM A 105 ASTM A 105				0.185 0.180 0.170 0.195 0.180 0.170	0.230 0.250 0.220 0.170 0.230 0.220	1.130 0.960 1.080 0.950 1.130 1.080	0.013 0.024 0.013 0.021 0.013 0.013	0.009 0.008 0.023 0.014 0.011 0.023	0.080 0.080 0.100 0.090 0.070 0.100	0.070 0.070 0.060 0.050 0.070 0.060	0.010 0.010 0.001 0.010 0.020 0.001	0.000 0.010 0.017 0.013 0.001 0.017	0.160 0.180 0.190 0.160 0.760 0.190	0.023 0.001 0.003 0.004 0.003 0.003	0.001 0.001 0.001 0.001 0.000 0.001	0.000 0.000 0.000 0.000 0.000 0.000	0.025 0.005 0.025 0.005 0.028 0.025	0.411 0.374 0.387 0.388 0.409 0.387	ACC. CARBURNO ACC. CARBURNO ACC. RIVA ACC. RIVA ACC. RIVA ACC. RIVA						
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	TEST SPECIMEN PROVETTA		TEST POINT Sampoint	WELD POINT Riviera	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	SELECTION Attrezzatura	CUR. RE
	33865 31837 76859 76525 34560 76859	0051 0065 0068 0072 0082 0028	176.60 126.60 126.60 126.60 126.60 126.60	50.80 50.80 50.80 50.80 50.80 50.80	317.0 311.0 315.0 314.0 345.0 315.0	572 512 527 521 520 527	33.0 33.0 33.0 34.0 31.0 33.0	65.0 59.0 64.0 67.0 60.0 64.0	156-15 156-15 159-16 159-16 136-159 159-16	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0			
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A										HEAT TREATMENT TRATTAMENTO TERMICO										FURNACE FORNO					
	33865 31837 76859 76525 34560 76859	0051 0065 0068 0072 0082 0028	ASTM/AISI A 105/SA 105 N - 01 ASTM/AISI A 105/SA 105 N - 01 ASTM/AISI A 105/SA 105 N - 01 ASTM/AISI A 105/SA 105 N - 01 ASTM/AISI A 105/SA 105 N - 01 ASTM/AISI A 105/SA 105 N - 01										NORMALIZED AT 920 C - COOLED IN STILL AIR NORMALIZED AT 920 C - COOLED IN STILL AIR NORMALIZED AT 920 C - COOLED IN STILL AIR NORMALIZED AT 920 C - COOLED IN STILL AIR NORMALIZED AT 920 C - COOLED IN STILL AIR NORMALIZED AT 920 C - COOLED IN STILL AIR										ELECTRIC FURNACE ELECTRIC FURNACE ELECTRIC FURNACE ELECTRIC FURNACE ELECTRIC FURNACE ELECTRIC FURNACE					
QUALITY CONTROL DEPARTMENT UFFICIO CONTROLLO QUALITA'																												
BRACCHI FRAVIO																												
MFF																												

HEAT: 373A5 SKU: 7534817 DESC: 3 300 RF WN FLG XH A105N

Material Control	Sign	ate
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

CLIENTE / Customer / Client

GCTF CORPORATION (EDMONTON)
5407 - 63 AVENUE NW
EDMONTON, AB T8B 3G2
CANADA

CERTIFICADO DE INSPECCION Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.B
EN 10204 / 3.1.B
ISO 10474 / 3.1.B

FECHA: 10/11/2006 N.º 103328 HOJA: 1
Date: 10/11/2006 No. 103328 Page: 1



ULMA

ULMA FORJA, S COOP.

8º Zubillaga, 3 - Apdo. 14
20560 ORATU (Gipuzkoa) SPAIN
Tel.: 34 - 943 780652
Tel.: 34 - 943 781809
E-mail: forja@forging.ulma.es

Certified acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 E/Q 02 7443

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant

DEPARTAMENTO QUALITY ASSURANCE
Section
Department

PRODUCTO FLANGES
Article - Produit
NORMAS APLICABLES ASME B16.6-06
Requirements - Normes Applicables
MATERIAL CORRESPONDIENTE ASTM A105N-03
Material Correspondent - Qualité ASME SA105N
MODO DE FUSION (*)
Steel Melting - Elaboration de l'acier
E = Elec. Y = Origano básico

SU PEDIDO N.º
Your Order No. 4874979-00 (02.11.05)
Votre Cde. N.º

DE
of - de 02/11/2006

NACE MR-01-75/03

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations	COLADA N.º Heat No N.º Coulée	RESISTENCIA T. Strength Revenir Rupt N/mm²	ALARGUE Yield Point Limite Elast N/mm²	ALARGUE Elongation Allongement L ₀ 4 d %	ESTRICCION Reduction A Striction %	RESILENCIA Impact test Resilience Joules	DUREZA Hardness Dureté HB
17 7534817	210	WN 3 300LB S80 RF A105N	NE	373A5	518	316	31.50	83.00		149

COLADA N.º
Heat No
N.º Coulée

COMPOSICION QUIMICA - STEEL MARKER'S - ANALYSE CHIMIQUE

Heat No M. Coude	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEO %
373A5	0.190	0.220	0.850	0.016	0.001	0.100	0.110	0.030	0.007	0.001	0.310	0.388

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et l'état de surface sont satisfaisants
- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - L'Inspecteur



(*) OBSERVACIONES:
Remarks
Observations

N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

HEAT: 02200004 SKU: 7510888 DESC: 1-1/2 XH LR 90 WELD ELLWPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity 1	Job# 1226	

Purchaser: CCTF (A DIVISION OF EMCO LTD.)

INSPECTION CERTIFICATE

EN 10204 3.1B

BENKAN

D M Y Certificate No.

E-No. M-036 Purchase Order No. 4012344-00 Job No.

PHYSICAL AND CHEMICAL TEST REPORT

05/03/2002 T- 2002200055

No.	BENKAN No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe	Specification for Inspection	Visual Examination	Dimensional Inspection
			ASTM A234-89/ASME SA234 WPB CSA Z245.11 GR241 CAT 1 NACE MR0175-2000	ASME / ANSI B16.9	Good	Good
			Product & Size (T x I)	Quantity	Heat Treatment (Note 1)	
1		02200004	90 EL WPB 1 1/2 S80	321/450	A	7510888
2		01700088	90 EL WPB 4 S80	67/200	A	7510985
3		01500018	90 EL WPB 4 S80	4/200	A	11 11
4		02200006	90 EL WPB 4 S80	129/200	A	11 11
5		01500019	90 EL WPB 5 S80	30	A	7511015

Specification		Chemical Composition %											Tension Test *2			
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E
Min.		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 100	x 1000	x 100	MPa.		%
Max.			10	28										240	415	30
Material Heat No.		28		106	50	58	40	40	40	15	8	20			585	
1	44472	20	25	71	13	1	8	3	3	3	0.1	1	34	356	517	44
2	46140	19	20	64	9	1	2	2	2	1	0.1	1	31	292	464	36
3	46690	20	20	66	10	1	7	2	3	1	0.1	1	32	317	480	42
4	47439	19	18	66	10	1	5	2	3	2	0.1	1	31	308	471	38
5	1-73298	13	24	67	9	2	<1	1	3	<1	0.2	<1	28	349	479	41

(Note 1) A: Hot formed with final temperature between 600°C-950°C, Air Cooling. N: Normalizing 910°Cx0.5 HR, Air Cooling. S: Stress Relieving 675°Cx0.5 HR, Air Cooling. *A: Hot Finished Condition
RAW MATERIAL ASTM A106 Gr.B

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1: "T" Symbolized wall thickness in mm. * 2: YS Yield strength TS = Tensile strength E = Elongation

Sasaki
Manager of Quality Assurance Department
Thai Benkan Co., Ltd.
58 Soi Watkrunai, Bangkok, Prapadeng.

HEAT: 5F6818 SKU: 7510900 DESC: 2 XH LR 90 WELD ELL WPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



INSPECTION CERTIFICATE

RIEID INDUSTRIES CO., LTD.

PURCHASER: SEYBOLD

ASTM A234 WPB-02

STANDARD: ASME SA234 WPB-01

MATERIALS: ASTM A106 Gr. B/JIS G3103 SB410

INSP. SPEC.: ASME B16.9 -01

S. MEI CHIANG RD, NAO SONG,
KAOHSIUNG HSEN, TAIWAN
TEL: (07)781-0827-8
FAX: (07)781-0887

DATE: 2006-10-26

ORDER NO: 5028

P. I. NO: 5612-2

CERTIFI. NO: 637

ACCORDING TO EN10304/DIN50042/2-18

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MPG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX. 187 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	
11	ELL 90° LR 3/4" STD	300	5J7273(5J)	GOOD	121-134	A		7510250
12	ELL 90° LR 2" XH	1800	5F6818	GOOD	132-132	A		7510900
13	ELL 90° LR 5" STD	15	5F4828	GOOD	132-133	A		7510446
14	CON-RED 2X1" STD	20	5D6357	GOOD	124-146	N		7510195
15	CON-RED 2.1/2X2" STD	5	5H4855	GOOD	120-133	N		7513062
16	CON-RED 3X1.1/2" STD	10	5F4159	GOOD	133-148	N		7513494
17	CON-RED 3X2" STD	480	5D1484	GOOD	118-132	N		7513178
18	CON-RED 4X2" STD	100	5A5580	GOOD	125-125	N		7513372
19	CON-RED 4X3" STD	180	5C2844	GOOD	124-140	N		7513330
20	BCC-RED 4X2" STD	6	412560	GOOD	110-133	N		7514913

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C X100	SI X100	Mn X100	P X1000	S X1000	Cu X100	NI X100	Cr X100	Mo X100	V X100	Nb X1000	Y S KSI	T S KSI	E %	C. R. x1.00
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MIN.	MIN.	MIN.	MIN.
	STANDARD	30		1.35	50	58	40	40	40	15	8	20	35.0	85.0		50
11	03573	20	29	54	20	8	0	0	0	0	0	0	53.5	64.4	25.0	29
12	503118	20	21	50	12	6	15	5	6	1	0	0	47.2	68.9	30.0	31
13	J4LC228	11	25	126	10	4	2	2	11	1	0	0	57.0	71.5	40.7	34
14	329557	17	24	58	11	6	7	3	3	1	0	2	49.9	70.5	33.0	28
15	J5L1555	11	25	125	10	3	3	2	5	1	0	0	49.2	70.9	62.0	33
16	510159	21	29	45	15	10	13	4	2	1	0	0	43.5	67.5	35.0	30
17	302884	19	24	54	8	1	3	4	5	2	0	1	42.4	68.3	35.0	30
18	2004803289	20	30	51	20	22	1	1	1	0	0	0	50.1	64.8	40.0	28
19	303844	19	22	51	8	3	7	3	7	2	0	1	46.6	70.1	34.5	29
20	3289	20	30	51	20	22	1	1	1	0	0	0	50.1	64.6	40.0	28

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 820°C-880°C, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C X 0.5 HR, AIR COOLING.

NACE MR-01-75: SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou L Lan

MANAGER OF Q.A. DEPT.

HEAT: 05M00018 SKU: 7510942 DESC: 3 XH LR 90 WELD ELL WPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220 (BKL)

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.
58 Soi Wadkrumai, Bangkok, Prapadung,
Samutprakan, 10130 Thailand.

It-No.
MA-410

Purchase Order No.
4874847

Job No.

~~XXXXXXXXXXXX~~
TO EN 10204 3.1

D M Y Certificate No.

08/12/2005 T- 2005200971

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003				Specification for Inspection ASME / ANSI B16.9-2003				Visual Examination Good		Dimensional Inspection Good	
		Product & Size (T*1)		Quantity		Heat Treatment (Note 1)		Symbol No.					
1	05N20010	RC WPB 4 X 3 S40				800		N		7513330			
2	05B20056	RE WPB 2 1/2 X 1 1/2 S40				40		N		7514581			
3	05H00035	90 EL WPB 3 S80				100/1,500		A		7510842			
4	05M00018	90 EL WPB 3 S80				100/1,500		A		7510842			
5	05M00019	90 EL WPB 3 S80				800/1,500		A		7510842			

Specification		Chemical Composition %											Tension Test *2			HARDNESS MAX
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	
Min.		X 100	X 100	X 100	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 100	N / mm2		%
Max.			10	29										240	415	30
Material Heat No.		23		106	50	58	40	40	40	15	80	20		585		
1	33531	19	23	67	12	4	4	2	5	2	1	1	32	338	481	40
2	45868	18	20	64	10	2	3	2	2	1	1	1	30	378	522	39
3	36728	19	23	72	9	1	5	3	5	3	1	1	33	340	488	40
4	37393	19	20	65	12	2	3	2	3	3	1	1	32	307	463	36
5	36728	19	23	72	9	1	5	3	5	3	1	1	33	340	489	40

(Note 1) A : Hot formed with final temperature between 620°C-980°C. Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling S : Stress Relieving 675°Cx0.5 HR. Air Cooling
* N : NORMALIZING 910 C X 0.5 HR. AIR COOLING : SPECIFICATION FOR MATERIAL MADE FROM PLATE)

C.E. = C+Mn/6+((Cr+Mo+V)/5)+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS - Tensile strength E = Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.

HEAT: 05B20033 SKU: 7513917 DESC: 2X1-1/2 XH CONC WELD REDWPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

Thai Benkan Co., Ltd.
58 Soi Witkrung, Bangkru, Prapacheng,
Samutprakarn, 10130 Thailand.

Purchaser: OCTF CORPORATION

INSPECTION CERTIFICATE

D M Y Certificate No.

E-No. Purchase Order No. Job No.
MA-434 4018858

TO EN10204 3.1

08/02/2006 T- 2006200092

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe		Specification for Inspection		Visual Examination	Dimensional Inspection
		ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003		ASME B18.9-2003		Good	Good
		Product & Size (T=1)		Quantity	Heat Treatment (Note 1)	Symbol No.	
1	04E00084	180 EL WPB 6 S80		5	A	7512843	
2	05F20013	RC WPB 1 1/2 X 1 1/4 S80		40	N	7513874	
3	05E20009	RC WPB 1 1/2 X 3/4 S80		40	N	7513825	
4	05B20033	RC WPB 2 X 1 1/2 S80		7/40	N	7513817	
5	05N20073	RC WPB 2 X 1 1/2 S80		33/40	N	7513817	

Specification		Chemical Composition %												Tension Test *2			HARDNESS MAX
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
Min.		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.			%
Max.			10	29										240	415	30	
Material Heat No.	23			106	50	58	40	40	40	15	80	20			585		
1	75814	14	26	67	18	7	38	14	8	4	1	0	31	292	465	40	
2	72727	16	28	75	15	1	20	10	8	3	4	1	32	361	508	36	
3	72727	16	26	75	15	1	20	10	6	3	4	1	32	361	508	36	
4	69949	16	20	103	15	3	1	1	7	1	0	0	35	331	493	38	
5	J5L7298	21	20	69	11	8	2	2	4	0	0	1	34	319	472	70	

(Note 1) A : Hot formed with final temperature between 620°C-980°C. Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling S : Stress Relieving 675°Cx0.5 HR. Air Cooling

* N : NORMALIZING 910 C X 0.5 HR. AIR COOLING (SPECIFICATION FOR MATERIAL MADE FROM PLATE)

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni-Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TUB ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.

HEAT: 05C20105 SKU: 7513976 DESC: 3X2-1/2 XH CONC WELD REDWPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity /	Job# 1220	BKL

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.
38 Soi Watkrunai, Bangkru, Prapadaeng,
Samutprakan, 10130 Thailand.

TO EN10204 3.1

E-No. Purchase Order No. Job No.
MA-639 4020888

D M Y Certificate No.
01/07/2006 T- 2006200663

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe										Specification for Inspection			Visual Examination	Dimensional Inspection	
		ASTM A234-08a/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003										ASME B16.9-2003			Good	Good	
		Product & Size (Tol.)										Quantity	Heat Treatment (Note 1)	Symbol No.			
1	08C00023	90 EL WPB 3 S160 751 S154										25	A	7515154			
2	05M00046	90 EL WPB 4 S160 751 S162										25	A	7515162			
3	05C20105	RC WPB 3 X 2 1/2 S80 751 3976										20	N	7513976			
4	08F20026	RC WPB 4 X 3 S80 751 4123										40	N	7514123			
5	08C20074	RC WPB 4 X 2 1/2 S80 751 6411										10	N	7510411			
Specification Min. Max. Material Heat No.		Chemical Composition %												Tension Test #2			HARDNESS MAX 197 HB : GOOD
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.		%	
		23		108	50	58	40	40	40	15	80	20			655		
1	J5LB939	19	22	71	12	8	2	2	4	1	0	1	32	303	472	66	
2	J5K7120	18	18	68	13	9	3	2	4	0	0	1	30	277	461	43	
3	36010	18	19	65	10	1	3	1	4	2	1	1	30	316	455	42	
4	68M0936	18	23	73	10	3	12	8	6	2	25	2	35	331	482	40	
5	42221	19	20	63	11	2	4	3	4	3	1	1	32	307	468	39	

(Note 1) A : Hot formed with final temperature between 620°C-980°C, Air Cooling. N : Normalizing 910°Cx0.5 HR. Air Cooling. #2 : Normalizing 910°Cx0.5 HR. Air Cooling (Specification for material made from plate) S : Stress Relieving 675°Cx0.5 HR. Air Cooling

C.E. = C+Mn/61(Cr+Mo+V)/51(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR THE ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

Quality Assurance Manager
Thai Benkan Co., Ltd.

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 024151 PAGE 1
BONNEY FORGE
 P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
 (814) 542-2545 • (800) 346-7546 • FAX (814) 542-4908
 www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 11/17/05

CUSTOMER'S Order No.: 4019821-00

Bonney Order No. 023246

SHIPPED TO: CCTF CORPORATION

331582

1387 CORNWALL RD.

DAKVILLE, ONTARIO, L6J7T5 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS
SA/A105N			
001	25	55362	7550936 5 -3 X 3/4 XS A105N WELD B C .200 MN .970 P .007 S .024 SI .320 NI .020 CU .120 CR .060 MO .004 V .023 NB .001 CE(LONG FORMULA) = 0.39 T/S 76779 Y/S 51533 EL 32.00 RA 64.00 BRINELL HARDNESS1: 147 HARDNESS2: 144
002	25	55834	7551118 10-8 X 2 XS A105N WELD B C .180 MN 1.090 P .010 S .027 SI .250 NI .090 CU .240 CR .060 MO .027 V .034 CB .001 CE(LONG FORMULA) = 0.41 T/S 79900 Y/S 54500 EL 32.00 RA 66.00 BRINELL HARDNESS1: 159 HARDNESS2: 159
003	100	56277	7551478 2 1/2-2X1 1/2 3M A105N THRD T C .180 MN .980 P .009 S .030 SI .240 NI .040 CU .200 CR .003 CR .050 MO .011 V .025 AL .001 NB .000 CE(LONG FORMULA) = 0.38 T/S 77250 Y/S 56250 EL 30.50 RA 64.45 BRINELL HARDNESS1: 147 HARDNESS2: 147
004	100	56250	7550007 4-31/2X2 3M A105N THRD T C .190 MN 1.050 P .011 S .025 SI .240 NI .030 CU .080 CR .002 CR .050 MO .010 V .024 AL .001 NB .000 CE(LONG FORMULA) = 0.39 T/S 76884 Y/S 51758 EL 31.10 RA 64.97 BRINELL HARDNESS1: 144 HARDNESS2: 147

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory tests.

By 
 Cris Childers

CMTR: REV 1

QUALITY PROCESS MANAGER

Material Control	Sign	Date
Material Received	Rm	SEP 25 2005
Heat # / MTR'S	Rm	SEP 26 2005
Chemical Analysis	N/A	
Quantity	1	
Job #	1220	

HEAT: 56277 SKU: 7551478 DESC: 1/2X2TO2-1/2 3000 TOL A105N

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 222995 PAGE 3

BONNEY FORGE
P.O. BOX 330 • U.S. RTE 622 SOUTH • MOUNT UNION, PA 17066-0330
(814) 542-7845 • (800) 346-7846 • FAX (814) 542-4806
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 10/07/05

CUSTOMER'S Order No.: 4019646-00

Bonney Order No020562

SHIPPED TO: CCTF CORPORATION

325404

1397 CORNWALL RD.

OAKVILLE, ONTARIO, L6J7T5 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS
------	----------	---------	--

SA/A105N

008	25	38296	7551525	1 X 3/4 3000 A105N THRD T C .210 MN 1.020 P .010 S .023 SI .250 NI .030 CU .140 CR .060 MO .006 V .025 AL .001 NB .001 CE(LONG FORMULA) = 0.41 T/S 77504 Y/S 50327 EL 30.80 RA 64.27 BRINELL HARDNESS: 148
		56163	7551525	1 X 3/4 3000 A105N THRD T C .200 MN .970 P .020 S .023 SI .240 NI .040 CU .140 CO .003 CR .060 MO .011 V .023 AL .001 NB .001 CE(LONG FORMULA) = 0.39 T/S 77625 Y/S 51000 EL 32.40 RA 67.90 BRINELL HARDNESS1: 144 HARDNESS2: 147
009	200	56468	7551622	2X1 3M A105N THRD T C .200 MN 1.030 P .006 S .022 SI .230 NI .030 CU .140 CO .003 CR .040 MO .015 V .021 AL .001 NB .000 CE(LONG FORMULA) = 0.40 T/S 77750 Y/S 32875 EL 32.65 RA 67.90 BRINELL HARDNESS1: 139 HARDNESS2: 139
010	25	56182	7551720	21/2X11/4 3M A105N THRD T C .190 MN 1.050 P .007 S .024 SI .240 NI .020 CU .060 CO .002 CR .040 MO .008 V .024 AL .001 NB .000 CE(LONG FORMULA) = 0.38 T/S 75128 Y/S 48597 EL 32.30 RA 67.50 BRINELL HARDNESS1: 139 HARDNESS2: 139

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory check.

Cris Childers

CMTR: REV 1

QUALITY PROCESS MANAGER

Material Control	5/9/07	Date
Material Received	RmSEP 26 2005	
Heat # / MTR'S	RmSEP 26 2005	
Chemical Analysis	N/A	
Quantity	1	
Job #	1220	

HEAT: 56468 SKU: 7551622 DESC: 1X2 3000 TOL A105N

HEAT: 2C48 SKU: 7534291 DESC: 1 150 RF WN FLG XH A105N

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

Certificate No. (검정서번호) 5903050C-1007001

Customer (주 문 자) CCTF

Material (재 질) SA/A105-02

P.O.No. (발주번호) 4018393

INSPECTION CERTIFICATE

(시험 성적서)

W/O No. (작업지시번호) : 5803050C

Issued date (발행 일자) : 2006.10.07

KOF KOREA FLANGE CO., LTD.
한국플랜지공업주식회사
194, DongBu-Dong, Dong-Ku,
Ulsan-Metropolitan, KOREA
울산광역시 동구 동북동 194번지

Item No. (품번)	Article (품명)	Quantity (수량)	Min. Mechanical Properties (기계적성질) Lot No. (품번번호) (Control No.)	Tension Test (인장시험)				Hardness Test (경도시험) H _B	CODE NO (제품번호)
				Y.S. (항복강도) psi Min (최소)	T.S. (인장강도) psi Min	E.L. (연신율) % Min (최소)	R.A. (단면수축율) % Min (최소)		
003	AN 150 WN RF XS 1	350	2C48	51000	79900	35.0	64.0	149 146	7534291
004	AN 150 WN RF S120 6	25	2C98	50700	77400	32.0	63.0	143 140	7530372
005	AN 150 WN RF S180 11/2	50	2C48	51000	79900	35.0	64.0	149 146	7530114
001	AN 150 WN RF STD 11/2	250	2C48	51000	79900	35.0	64.0	149 146	7533942
002	AN 150 WN RF XS 1/2	150	2C98	50700	77400	32.0	63.0	143 140	7530111

Chemical Composition (화학성질) (%) Req. (요구사항) Lp. No. (발주번호) (Control No.)	C												Heat Treatment (열처리) 900 °C 2.0 h A.C
	1/100	1/100	1/100	1/1000	1/1000	1/100	1/1000	1/1000	1/1000	1/1000	1/1000	1/1000	
MAX 35	10	35	60	MAX 35	MAX 40	MAX 100	MAX 300	MAX 120	MAX 80	MAX 400	MAX 20	MAX 43	
2C48	22	23	101	9	15	1	20	10	10	10	10	40	Normalizing (정화) °C h
2C98	20	28	95	28	8	1	30	10	10	10	10	37	Quenching (조임) °C h
2C48	22	23	101	9	15	1	20	10	10	10	10	40	Annealing (조림) °C h
2C48	22	23	101	9	15	1	20	10	10	10	10	40	Tempering (조림) °C h
2C98	20	28	95	28	8	1	30	10	10	10	10	37	Solution (고용처리) °C
Others (기타)	Works Test Certificate to EN 10204/3.1B Flanges supplied to ASME B16.5. NACE MR-01-75 CSA Z245.12 GR 248CAT I												Visual & Dimension Inspection (시각 및 치수 검사) GOOD B. G. 100%

Surveyor To
(위 시 권)

We hereby certify that material described herein has been tested and satisfied as above in accordance with the specification.
본 검사서에 권시된 소재는 상기 사양에 의거 위와같이 시험되었으며 그 결과가 만족함을 증명함.

QA Department Manager
(품질보증부장)

HEAT: 939A SKU: 7510926 DESC: 2-1/2 XH LR 90 WELD ELLWPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Am	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



INSPECTION CERTIFICATE

(MILL TEST)

CHUP HSEN ENTERPRISE CO., LTD.

17, TUNG LI ROAD HSIAO KANG

KACHING, TAIWAN R. O. C.

TEL: (07) 831-9167-9

FAX: (07) 831-2842, 821-7500

Customer: F&T (A DIVISION OF EMCO LTD.)

Product: SEAMLESS STEEL PIPE FITTING

Spec: AS1M A234 WPB-90
(DIN 50049/3.1B) NACE MR 0175-95

Certificate No: 09200141-0105

Order No: 4015715

Date: 2003/10/9

Specification for Raw Material		Specification for Inspection		Visual Examination		Dimensional Inspection													
ASTMA108 GR.B		ANSI B16.9-1993		GOOD		GOOD													
Item	Description		Quantity	Heat ID.	Heat No.	Raw Material Mfg	Raw Certificate NO.												
50	90° 1/2" X S	7510588	50	198A	J130188	SUMITOMO	WYYM1125												
	90° 1/2" X S	7510861	400	896A	J1K2898	SUMITOMO	WYYF3172												
	90° 1/2" X S	7510926	75	939A	J1K1839	SUMITOMO	WYYF3171												
Specifi- cation	Chemical Composition %												Tension Test			HARD NBSS TEST	Heat Treatment	Magnetic Particle Exam.	Remark
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	CE	Y.S. P.S.I	T.S P.S.I	E %				
MIN	×100	×100	×100	×100	×100	×100	×100	×100	×100	×100	×100	×100	85000	90000	90	HB			
MAX	30		106	50	58	40	40	40	15	80	20	30		65000		197			
50	20	22	48	8	11	5	3	2	0	0	0	28	43500	71100	41	138	820°C TO 880°C		
51	18	21	55	11	8	4	3	5	1	0	<2	30	48900	64800	43	134	HOT FORMED		
52	18	31	56	11	16	3	3	4	1	1	<2	30	48900	64500	43	128			

C.E.=C+MN/6+(CR+MO+V)/5+(NI+CU)/15

We hereby certify that the product described herein has manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

Chief of Quality Assurance Section

L. S. Tsai

HEAT: J5H10132 SKU: 7511981 DESC: 1 XH WELD TEE WPB

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity /	Job# 1220	

(BKL)

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

Thai Benkan Co., Ltd.
58 Soi Watkrunai, Bangkru, Prapadaeng,
Samutprakan, 10130 Thailand.

I-No.
MA-322

Purchase Order No.
4873829

Job No.

TO EN 10204 3.1
TO EN 10204 3.1

D M Y Certificate No.

08/12/2005 T- 2005200949

No.	MFG. No. (Test Identification No.)	Specification for Material Made from Seamless Pipe		Specification for Inspection		Visual Examination	Dimensional Inspection
		ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2003		ASME / ANSI B16.9-2003		Good	Good
		Product & Size (T*1)		Quantity	Heat Treatment (Note 1)	Symbol No	
1	05H10132	T WPB 1 S80		50	S	7511981	
2							
3							
4							
5							

Specification	Chemical Composition %												Tension Test *2			HARDNESS MAX
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
Min.	x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.		%	197 HB : GOOD
Max.		10	29										240	415	30	
Material Heat No.	23		106	50	58	40	40	40	15	80	20			585		
1 J4L7555	18	20	68	14	6	2	2	5	1	0	0	31	318	471	54	
2																
3																
4																
5																

(Note 1) A : Hot formed with final temperature between 620°C-580°C. Air Cooling. N : Normalizing 910°Cx0.5 HR. Air Cooling. S : Stress Relieving 675°Cx0.5 HR. Air Cooling

* N : NORMALIZING 910 C X 0.5 HR AIR COOLING / SPECIFICATION FOR MATERIAL MADE FROM PLATE)

C.E. = C+Mn/6+(Cr+Mo+V)/5-(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

GOOD

Quality Assurance Manager
Thai Benkan Co., Ltd.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS - Tensile strength E - Elongation

2 XH A333

 VALLOUREC & MANNESMANN TUBES Y & M FRANCE Tuboires de St Sauve rue du Galibot ZI n°4 - BP 2 59880 Saint-Sauve FRANCE tel.: 03.27.23.13.01 fax: 03.27.23.15.63	MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B	ISO 9001 (A03)Rcf: 26-05-153086 1 3 (A08)N°V&M: 1.A1006/03
---	--	--

(A06)Purchaser : **CCTF CORPORATION**(A07)Order n° : **VM1420 / 4872927-00**

(B01)SEAMLESS STEEL PIPE, HOT FINISHED (KILLED STEEL)

(B04) HOT FINISHED NORMALIZED CONDITION 920°C (1688 F) min-air

ENDS BEVELLED 37,5° ANTI-RUST COATING DRY VARNISH

(B02)Specification : ASTM A 333 (10/01/99)+ASME SA 333 (01/07/01 ADD 07/03) +GRADE 1 AND 6+CSA Z245-1 (01/03/98)+GRADE 290 CAT.II+NACE MR8175 ISO 1516 +CEC N-4 Rev. D +ASME SECT. II PART.A PART.D(07/01) ADD (2003)+ASTM A 530 (01/10/04)+ASME SA 530 (01/07/04)

(B06-B07)

Stencil marking: VALLOUREC & MANNESMANN FRANCE A/SA333 Z245-1 1 + 6 + 290 CAT II HF SCH 80 S 1 T 51 F 2 0.218 SOUR HT HEAT NUMBER VM1420 / 4872927-00

QUANTITY PER ITEM

Y/R	O/R	(B11-B12) Size	(B13) single length	(B10) Quantity	length ft	(B14) Weight lb	(B09) item ref	(B08) Heat
03	03	NPS 2 Schedule 80 60.30 X 5.54 MM	11765MM 463.21in	380	14677.85	74577	SKU No 2530009	348003

(C71-C92)

LADLE ANALYSIS

CE = C + F (MN/6 + SI/24 + CU/15 + NI/20 - (CR + MO + V + NB) / 5 + 5 B) < 0.40% : HEAT 348003 = 0.32%

022: M/V/C														
(C70) Process	(B08) Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B
MIN.			0.10	0.40										
MAX.		0.24	0.50	1.35	0.025	0.025					0.11	0.11	0.11	0.001
		%	%	%	%	%	%	%	%	%	%	%	%	%
1.	348003	0.14	0.19	1.04	0.011	0.005	0.12	0.01	0.04	0.04	0.02	0.00	0.00	0.000

FOR EACH REDUCTION OF 0.01% CARBON BELOW 0.30%, AN INCREASE OF 0.05% MANGANESE ABOVE 1.06% WOULD BE PERMITTED TO A MAXIMUM OF 1.35% MANGANESE

(C10-C02-C03)

RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE

(C00) Test	(B08) Heat	width	thick.	sect.	(C11) Y.S.	(C12) T.S.	(C13) Elong. 2"
MIN.					42000	60000	
MAX.							
		mm	mm	mm ²	psi	psi	%
01EA936	348003	25.0	5.4	141.53	45700	70218	33

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	/	Job# 1220

(A04)

(A07)



VALLOUREC & MANNESMANN TUBES

V & M FRANCE
Tuberies de St Sauverue du Galibot ZI n°4 - BP 2
59880 Saint-Sauve FRANCEtel: 03.27.23.13.01
fax: 03.27.23.15.63

MATERIAL TEST REPORT

INSPECTION CERTIFICATE EN 10204 3.1.B

ISO 9001

(A03)Réf: 26-05-153086 2 / 3

(A08)N°V&M: LA1006/03

(C00) Test MIN. MAX.	(B08) Heat	width	thick.	sect.	(C11) Y.S. 42000	(C12) T.S. 60000	(C13) Elong. 2"
		mm	mm	mm ²	psi	psi	%
02EA936	348003	24.9	6.0	155.29	43814	68332	37
03EA936	348003	25.0	5.6	145.47	44104	68187	37
04EA936	348003	24.7	5.5	141.30	44539	68042	36
05EA936	348003	24.8	5.7	148.11	44829	70218	35
06EA936	348003	24.9	6.0	155.29	43378	67172	36
07EA936	348003	24.8	6.1	158.87	43378	66591	37
08EA936	348003	25.0	5.9	153.34	43524	66591	39
09EA936	348003	24.9	7.0	181.52	44539	67897	37
10EA936	348003	24.8	6.0	154.62	42798	67317	36
11EA936	348003	24.8	5.2	133.82	45555	69928	35
12EA936	348003	25.1	5.6	146.10	44684	69058	35
13EA936	348003	24.8	6.1	158.87	43524	67462	37
14EA936	348003	24.6	6.2	159.72	44829	70508	37
15EA936	348003	24.7	5.6	145.19	44394	67607	36
16EA936	348003	25.1	5.5	143.46	45700	70073	37
17EA936	348003	24.8	5.6	144.52	46425	71089	38
18EA936	348003	24.2	5.8	147.10	44829	68187	35
19EA936	348003	25.0	5.5	142.85	44394	68622	35
20EA936	348003	24.3	5.7	143.93	45264	68913	37

ROCKWELL C HARDNESS < OR = 22 GUARANTEED

(C40-C02-C41)

CHARPY V LONGITUDINAL IMPACT TEST

(C00) Test	(B08) Heat	(C03) temp.	width	height	sect.	(C42) E1	(C42) E2	(C42) E3	(C43) mean	(C42) shear1	(C42) shear2	(C42) shear3	(C43) shear
MIN.						4	4	4	7	60	60	60	60
MAX.													
		F	mm	mm	cm ²	ft.lbf	ft.lbf	ft.lbf	ft.lbf	%	%	%	%
01EA936	348003	-65	3.33	10.00	0.27	44	42	29	38	100	100	100	100



VALLOUREC & MANNESMANN TUBES

(A01) V & M FRANCE
Tuberie de St Sauve

rue du Calibot ZI n°4 - BP 2
59880 Saint-Sauve FRANCE

tel : 03.27.23.13.01
fax: 03.27.23.15.63

MATERIAL TEST REPORT

INSPECTION CERTIFICATE EN 10204 3.1.B

ISO 9001

(A03)Réf: 26-05-153086 3 / 3

(A08)N°V&M: LA1006/03

(D01-D99)

NON DESTRUCTIVE TESTS

test	test rate	specification	pressure psi	hold time sec	result
APPEARANCE & DIMENSIONS	100% LOT				OK
EDDY CURRENT TEST	100% LOT	CSA Z245-1			OK
HYDROSTATIC TEST	100% LOT		3000	5	OK

(C50-C69)

TECHNOLOGICAL TESTS

test	result
FLATTENING TEST	OK

(Z01)02/06/2005

(Z02)

Original computer copy - authenticity is guaranteed by the V&M logo.

All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.

(A05)

The authorized expert in Quality Control Section

Mr SKORUPKA

4 STD A106

 VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tuberie de St Sauve rue du Galibot ZI n°4 - BP 2 59880 Saint-Sauve FRANCE tel: 03.27.23.13.01 fax: 03.27.23.15.63		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03)Réf: 26-05-257052 1 (3) (A08)N°V&M: LA1049/12	
(A06)Purchaser : CCTF CORPORATION (A07)Order n° : VM1480 4873659-00 (B01)SEAMLESS STEEL PIPE,HOT FINISHED (KILLED STEEL) (B04) HOT FINISHED NORMALIZED CONDITION 920°C (1688 F) minl-ctr ENDS BEVELLED 30° ANTI-RUST COATING DRY VARNISH (B02)Specification :API SL(12/2004)+PSLI+ASTM A 106 (01/10/04) +ASME SA 106 (01/07/04) + GRADE B +CSA Z245-1 (01/03/98)+ GRADE 290 CAT.I +NACE MR0175 (17/01/04) + CEcn-3 Rev.D+ASTM A 530 (0 1/10/04) + ASME SA 530 (01/07/04) +ASME SECT. II PART.A PART.D(07/01) ADD (2003) (B06-B07) Stencil marking: V & M FRANCE SL 0061 API DATE OF MARKING A/SA106 Z245-1 4 1/2 10.79 B + 290 CAT I PSLI S 2654 PSI HT HEAT NUMBER SCH 40 4 1/2 X 0.237 VM1480 4873659-00 LENGTH QUANTITY PER ITEM					
(B10)	(B11-B12)	(B13)	(B14)	(B09)	(B08)
Quantity	Size	single length	Weight lb	item ref.	Heat
1308	NPS 4 SCH 40	06096MM	285605	SKU No 2520273	
843	114.30 X 6.02 MM	240.01in	183696		34189
465			101909		34190

(C71-C92)
LADLE ANALYSIS
 $CB = C + F (MN/6 + SI/24 + CU/15 + NI/20 + (CR + MO + V + NB) / 5 + 5 B) < 0.40\%$: HEAT 34189 = 0.35% - HEAT 34190 = 0.34%

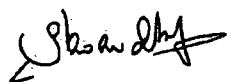
022: MN/C															
(C70)	(B08)														
Process	Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022
MIN.			0.10	0.29											3
MAX.		0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.40	0.11	0.11	0.08	0.001	
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
E	34189	0.16	0.23	0.77	0.014	0.007	0.18	0.05	0.10	0.24	0.02	0.00	0.00	0.000	4.765
E	34190	0.16	0.19	0.74	0.013	0.006	0.15	0.05	0.09	0.22	0.02	0.00	0.00	0.000	4.742

90366

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

(A04)		(A02)		(A03)																																																																																																																																	
 VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tuberie de St Sauve rue du Galliot ZI n°4 - BP 2 59880 Saint-Sauve FRANCE tel: 03.27.23.13.01 fax: 03.27.23.15.63		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03)R&F: 26-05-257052 2 / 3 (A08)N°V&M: LA1049/12																																																																																																																																	
(C71-C92) PRODUCT ANALYSIS CE = C + F (MN/6 + SI/24 + CU/15 + NI/20 + (CR+MO+V+NB)/5 + 5B) < 0.40% : Tests 1EF836 = 0.36% - 1EF837 = 0.33% - 2EF836 = 0.35% - 2EF837 = 0.33%																																																																																																																																					
(C22: MN/C (C00) (B08) <table border="1"> <thead> <tr> <th>Test</th> <th>Heat</th> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Mo</th> <th>Ni</th> <th>Cu</th> <th>Ti</th> <th>Nb</th> <th>V</th> <th>B</th> <th>022</th> </tr> </thead> <tbody> <tr> <td>MIN.</td> <td></td> <td></td> <td>0.10</td> <td>0.29</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>MAX.</td> <td></td> <td>0.30</td> <td>0.50</td> <td>1.06</td> <td>0.030</td> <td>0.035</td> <td>0.40</td> <td>0.15</td> <td>0.40</td> <td>0.40</td> <td>0.11</td> <td>0.11</td> <td>0.08</td> <td>0.001</td> <td></td> </tr> <tr> <td></td> <td></td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> </tr> <tr> <td>1EF836</td> <td>34189</td> <td>0.17</td> <td>0.23</td> <td>0.75</td> <td>0.011</td> <td>0.009</td> <td>0.18</td> <td>0.05</td> <td>0.10</td> <td>0.24</td> <td>0.02</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>5</td> </tr> <tr> <td>1EF837</td> <td>34190</td> <td>0.16</td> <td>0.18</td> <td>0.72</td> <td>0.011</td> <td>0.006</td> <td>0.15</td> <td>0.05</td> <td>0.09</td> <td>0.21</td> <td>0.02</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>5</td> </tr> <tr> <td>2EF836</td> <td>34189</td> <td>0.16</td> <td>0.23</td> <td>0.75</td> <td>0.012</td> <td>0.008</td> <td>0.18</td> <td>0.05</td> <td>0.10</td> <td>0.25</td> <td>0.02</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>5</td> </tr> <tr> <td>2EF837</td> <td>34190</td> <td>0.16</td> <td>0.18</td> <td>0.73</td> <td>0.012</td> <td>0.006</td> <td>0.15</td> <td>0.05</td> <td>0.09</td> <td>0.21</td> <td>0.02</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>5</td> </tr> </tbody> </table>						Test	Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022	MIN.			0.10	0.29											3	MAX.		0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.40	0.11	0.11	0.08	0.001				%	%	%	%	%	%	%	%	%	%	%	%	%	%	1EF836	34189	0.17	0.23	0.75	0.011	0.009	0.18	0.05	0.10	0.24	0.02	0.00	0.00	0.000	5	1EF837	34190	0.16	0.18	0.72	0.011	0.006	0.15	0.05	0.09	0.21	0.02	0.00	0.00	0.000	5	2EF836	34189	0.16	0.23	0.75	0.012	0.008	0.18	0.05	0.10	0.25	0.02	0.00	0.00	0.000	5	2EF837	34190	0.16	0.18	0.73	0.012	0.006	0.15	0.05	0.09	0.21	0.02	0.00	0.00	0.000	5
Test	Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022																																																																																																																						
MIN.			0.10	0.29											3																																																																																																																						
MAX.		0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.40	0.11	0.11	0.08	0.001																																																																																																																							
		%	%	%	%	%	%	%	%	%	%	%	%	%	%																																																																																																																						
1EF836	34189	0.17	0.23	0.75	0.011	0.009	0.18	0.05	0.10	0.24	0.02	0.00	0.00	0.000	5																																																																																																																						
1EF837	34190	0.16	0.18	0.72	0.011	0.006	0.15	0.05	0.09	0.21	0.02	0.00	0.00	0.000	5																																																																																																																						
2EF836	34189	0.16	0.23	0.75	0.012	0.008	0.18	0.05	0.10	0.25	0.02	0.00	0.00	0.000	5																																																																																																																						
2EF837	34190	0.16	0.18	0.73	0.012	0.006	0.15	0.05	0.09	0.21	0.02	0.00	0.00	0.000	5																																																																																																																						
(C10-C02-C03) RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE																																																																																																																																					
<table border="1"> <thead> <tr> <th>(C00) Test</th> <th>(B08) Heat</th> <th>width</th> <th>thick.</th> <th>sect.</th> <th>(C11) Y.S.</th> <th>(C12) T.S.</th> <th>(C13) Elong. 2"</th> </tr> </thead> <tbody> <tr> <td>MIN.</td> <td></td> <td></td> <td></td> <td></td> <td>42000</td> <td>60000</td> <td></td> </tr> <tr> <td>MAX.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>mm</td> <td>mm</td> <td>mm²</td> <td>psi</td> <td>psi</td> <td>%</td> </tr> <tr> <td>01EF836</td> <td>34189</td> <td>30.2</td> <td>5.8</td> <td>177.51</td> <td>49037</td> <td>74716</td> <td>35</td> </tr> <tr> <td>01EF837</td> <td>34190</td> <td>30.0</td> <td>6.1</td> <td>185.43</td> <td>47731</td> <td>70944</td> <td>36</td> </tr> <tr> <td>02EF836</td> <td>34189</td> <td>30.3</td> <td>5.9</td> <td>181.19</td> <td>48891</td> <td>74135</td> <td>35</td> </tr> </tbody> </table>						(C00) Test	(B08) Heat	width	thick.	sect.	(C11) Y.S.	(C12) T.S.	(C13) Elong. 2"	MIN.					42000	60000		MAX.										mm	mm	mm ²	psi	psi	%	01EF836	34189	30.2	5.8	177.51	49037	74716	35	01EF837	34190	30.0	6.1	185.43	47731	70944	36	02EF836	34189	30.3	5.9	181.19	48891	74135	35																																																																								
(C00) Test	(B08) Heat	width	thick.	sect.	(C11) Y.S.	(C12) T.S.	(C13) Elong. 2"																																																																																																																														
MIN.					42000	60000																																																																																																																															
MAX.																																																																																																																																					
		mm	mm	mm ²	psi	psi	%																																																																																																																														
01EF836	34189	30.2	5.8	177.51	49037	74716	35																																																																																																																														
01EF837	34190	30.0	6.1	185.43	47731	70944	36																																																																																																																														
02EF836	34189	30.3	5.9	181.19	48891	74135	35																																																																																																																														
ROCKWELL C HARDNESS < OR = 22 GUARANTEED (D01-D99) NON DESTRUCTIVE TESTS																																																																																																																																					
<table border="1"> <thead> <tr> <th>test</th> <th>test rate</th> <th>specification</th> <th>pressure psi</th> <th>hold time sec</th> <th>result</th> </tr> </thead> <tbody> <tr> <td>APPEARANCE & DIMENSIONS</td> <td>100% LOT</td> <td></td> <td></td> <td></td> <td>OK</td> </tr> <tr> <td>EDDY CURRENT TEST</td> <td>100% LOT</td> <td>CSA Z245-1</td> <td></td> <td></td> <td>OK</td> </tr> <tr> <td>HYDROSTATIC TEST</td> <td>100% LOT</td> <td></td> <td>2655</td> <td>5</td> <td>OK</td> </tr> </tbody> </table>						test	test rate	specification	pressure psi	hold time sec	result	APPEARANCE & DIMENSIONS	100% LOT				OK	EDDY CURRENT TEST	100% LOT	CSA Z245-1			OK	HYDROSTATIC TEST	100% LOT		2655	5	OK																																																																																																								
test	test rate	specification	pressure psi	hold time sec	result																																																																																																																																
APPEARANCE & DIMENSIONS	100% LOT				OK																																																																																																																																
EDDY CURRENT TEST	100% LOT	CSA Z245-1			OK																																																																																																																																
HYDROSTATIC TEST	100% LOT		2655	5	OK																																																																																																																																

90366A

(A04) VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tuberie de St Sauve rue du Galibot 21 n°4 - BP 2 59880 Saint-Sauve FRANCE tel.: 03.27.23.13.01 fax: 03.27.23.13.63	(A02) MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B	ISO 9001 (A03)Réf: 26-05-257052 3 / 3 (A08)N°V&M: LA1049/12				
(C50-C69) TECHNOLOGICAL TESTS <table border="1" data-bbox="325 560 928 625"><thead><tr><th>test</th><th>result</th></tr></thead><tbody><tr><td>FLATTENING TEST</td><td>OK</td></tr></tbody></table> (Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length. (Z01)14/09/2005 (A05) The authorized expert in Quality Control Section Mr SKORUPKA  90366B			test	result	FLATTENING TEST	OK
test	result					
FLATTENING TEST	OK					


Tenaris

INSPECTION CERTIFICATE

(EN 10204-3.1B - ISO 10474 3.1B)

21800

33330

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(02804)MHA) Campana
Buenos Aires, Argentina
(54) 3489 433 100 tel
(54) 3489 433 405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediental / Manufacturing Order 57887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 1 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/AASME SA333 + C8A Z245.1				Grado / Grade 16.6+290/1				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133596 Lb		

ENSAYOS DE TRACCION / TENSILE TEST

Colada	Nº de Ensayo	Condición de la probeta						Temp de Ens	Dimensiones		Sección	Fluencia / Yield Strength						Rotura/U.T.S			Rotación FR	Alargamiento Elongation			Red. de area		Dureza / Hardness Tipo / type: BHN		
Heat	Test Nº	Specimen condition						Test Temp	Size	Area	Offset Method		EUL Method				Req. Min	V. obt.	Req. Max	Y&A/T.S. Ratio	Lo 2"	Req. Min	V. obt.	Area Red.	Req. Min	V. Obt.		Req. Min	
											Req. Min	V. obt.	EUL	Req. Min	V. obt.	Req. Max													
		0.2%	Kel	%	Kel	Kel	Req. Max																			Obt.	Min		%
				Zona	Estado	Ext.	Nº P/T				Tipo	Ori	°C	Inches	Inches2														
32824	441323	C/B	PRO			ST	L	TART	0.743	X 0.300	0.225		0.5	42	69.6		80	76.6			50.8	33.6	34.8				168		237
32824	441340	C/B	PRO			ST	L	TART	0.759	X 0.300	0.230		0.5	42	67.5		80	77.9			50.8	33.6	34.8				165		237
33330	441287	C/B	PRO			ST	L	TART	0.744	X 0.301	0.226		0.5	42	71.8		80	81.8			50.8	33.6	37.2				177		237
33330	441285	C/B	PRO			ST	L	TART	0.765	X 0.301	0.229		0.5	42	68.7		80	79.2			50.8	33.6	37.8				160		237
33330	441290	C/B	PRO			ST	L	TART	0.782	X 0.297	0.226		0.5	42	70.1		80	79.7			50.8	33.6	38.0				189		237
33330	441292	C/B	PRO			ST	L	TART	0.747	X 0.302	0.229		0.5	42	70.2		80	81.0			50.8	33.6	38.1				167		237
33330	441293	C/B	PRO			ST	L	TART	0.742	X 0.300	0.228		0.5	42	72.0		80	82.9			50.8	33.6	34.8				169		237
33330	441294	C/B	PRO			ST	L	TART	0.748	X 0.300	0.226		0.5	42	68.5		80	78.4			50.8	33.6	34.8				168		237
33330	441296	C/B	PRO			ST	L	TART	0.742	X 0.301	0.225		0.5	42	68.8		80	80.3			50.8	33.6	35.6				182		237
33330	441297	C/B	PRO			ST	L	TART	0.747	X 0.308	0.233		0.5	42	71.8		80	81.8			50.8	33.6	37.0				176		237
33330	441298	C/B	PRO			ST	L	TART	0.743	X 0.291	0.218		0.5	42	72.2		80	82.9			50.8	33.6	34.8				162		237
33330	441301	C/B	PRO			ST	L	TART	0.745	X 0.305	0.229		0.5	42	71.2		80	83.4			50.8	33.6	34.8				182		237

TEST TECNOLÓGICO / TECHNOLOGICAL TEST						NOTA / NOTE:	
Aplastamiento Flattening Test	Curvado Bend test	Abocardado Flaring Test	Pretallado Flange Test	Ens. De anillo expandido Ring expanding Test	Ens. De Tracción de anillo Ring tensile Test		
Satisfact.	N.A	N.A	N.A	N.A	N.A		
Pro = Procesos / Processes N = Normalizado / Normalized DIST = Distorsionada / Stress Relief Q & T = Templado y Revenido / Quenched & Tempered TART = Temp. Ambiente / Room Temperature				RE = Rectangular CI = Cilíndrica / Cylindrical ST = Segmento Tubular / Tubular segmen TU = Transversal		CB = Cuerpo / Body RU = Rosca / Upset P / A = Promedio / Average Min = Mínimo / minimum Max = Máximo / Maximum	
						L = Longitudinal T = Transversal P/T = Tubo / Pipe EXT = Extremo / End M = Medio / Middle	V.Obt. = Valor Obtenido / Obtained value E = Comienzo de marcación / Stranding starting O = Extremo opuesto al E / Opposite extreme to E

CAL 17884

85447

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
33500MMA Carapara
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediente / Manufacturing Order 57687.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 2 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 15.6+290M				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133596 Lb		

ENSAYOS DE TRACCION / TENSILE TEST

Colado	Nº de Ensayo	Condición de la probeta						Temp de Ensa	Dimensiones		Sección	Fuerza / Yield Strength						Rotura/U.T.S			Relación FR	Alargamiento Elongation				Red. de area		Dureza / Hardness Tipo / type: BHN			
Host	Test N°	Specimen condition						Test Temp	Size	Area	Offset Method		EUL Method				Req. Min	V. obt.	Req. Max	YS/UTS Ratio	Lo 2"	Req. Min	V. obt.	Area Red.	Req. Min	V. Obt.		Req. Min			
											Req. Min	V. obt.	EUL	Req. Min	V. obt.	Req. Max															
		0.2%	%	Kal	Kal	Kal																									
		Zone	Estado	Ext.	Nº P/T	Typo	Dir				°C	inches	Incha2	Kal	%	Kal										Kal	Req. Max		Obt.	mm	%
33330	441331	CR	PRO		ST	L	TART	0,748	X	0,297	0,224		0.5	42	71.3		60	82.5			60.8	33.6	35.6			181			237		
33330	441332	CR	PRO		ST	L	TART	0,759	X	0,303	0,232		0.5	42	69.6		60	76.1			60.8	33.6	34.2			180			237		
33330	441333	CR	PRO		ST	L	TART	0,759	X	0,291	0,223		0.5	42	68.9		60	76.7			60.8	33.6	34.7			186			237		
33330	441334	CR	PRO		ST	L	TART	0,758	X	0,283	0,224		0.5	42	70.8		60	81.4			60.8	33.6	36.9			178			237		
33330	441335	CR	PRO		ST	L	TART	0,767	X	0,300	0,232		0.5	42	68.8		60	76.1			60.8	33.6	37.6			186			237		
33330	441336	CR	PRO		ST	L	TART	0,757	X	0,298	0,225		0.5	42	70.8		60	80.3			60.8	33.6	35.4			178			237		
33330	441337	CR	PRO		ST	L	TART	0,757	X	0,294	0,225		0.5	42	71.2		60	80.6			60.8	33.6	35.3			183			237		
33330	441338	CR	PRO		ST	L	TART	0,768	X	0,296	0,227		0.5	42	67.9		60	76.3			60.8	33.6	35.0			182			237		
33330	441339	CR	PRO		ST	L	TART	0,757	X	0,304	0,232		0.5	42	70.3		60	80.8			60.8	33.6	35.5			181			237		
33330	441341	CR	PRO		ST	L	TART	0,762	X	0,319	0,245		0.5	42	71.2		60	81.4			60.8	33.6	35.8			180			237		
33330	441351	CR	PRO		ST	L	TART	0,765	X	0,296	0,229		0.5	42	70.0		60	80.5			60.8	33.6	36.4			188			237		
33330	441352	CR	PRO		ST	L	TART	0,751	X	0,313	0,238		0.5	42	71.9		60	80.9			60.8	33.6	33.7			190			237		

TEST TECNOLÓGICO / TECHNOLOGICAL TEST						NOTA / NOTE:	
Apilastamiento Flattening Test	Curvado Bend test	Abocardado Flaring Test	Pestillado Flange Test	Ensa. De anillo expandido Ring expanding Test	Ensa. De Tracción de anillo Ring tensile Test		
Satisfact.	NA	NA	NA	NA	NA		
Pro = Proceso / Process N = Normalizado / Normalized DIST = Distorsionada / Stress Relief Q & T = Templado y Revenido / Quenched & Tempered TART = Temp. Ambiente / Room Temperature				RE = Rectangular CI = Cilíndrico / Cylindrical ST = Segmento Tubular / Tubular segmen TU = Transversal		C/B = Cuerpo / Body RU = Roscado / Upset P/A = Promedio / Average Min = Mínimo / minimum Max = Máximo / Maximum	
						L = Longitudinal T = Transversal P/T = Tubo / Pipe EXT = Extremo / End M = Medio / Middle	
						V.Obt. = Valor Obtenido / Obtained value E = Comienzo de marcación / Stenciling starting O = Extremo opuesto al E / Opposite extreme to E	

CALI 17004

85447A



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(B2804MHA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expedient / Manufacturing Order 5/7887.91		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 3 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 15S+290/0		Extremos / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13893.41 Ft 133506 Lb	

ENSAYOS DE TRACCION / TENSILE TEST

Colado	Nº de Ensayo	Condición de la probeta						Temp de Ens	Dimensiones		Sección	Fluencia / Yield Strength						Rotura/U.T.S			Relación FR	Alargamiento Elongation				Red. de area	Dureza / Hardness Tipo / type: BHN			
												Offset Method		EUL Method				Req. Min	V. obt.	Req. Max		YSAUTS Ratio	Lo 2"	Req. Min	V. obt.		Area Red.	Req. Min	V. Obt.	Req. Max
		Req. Min	V. obt.	EUL Req. Min	V. obt.	Req. Max	Req. Min		V. obt.	Req. Max		Req. Min	V. obt.	Req. Max	Req. Min	V. obt.	Req. Max													
		Heat	Test Nº	Zone	Estado	Ext.	Nº P/T		Tipo	Ori		°C	Inches	Inches²	Kel	%	Kel	Kel	Kel	Req. Min		Req. Max	Req. Min	Req. Max	%		%	%	%	%
33330	441350	C/B	PRO			ST	L	TART	0,754	X 0,286	0,228		0,5	42	70,2	80	81,7					33,8	33,8	35,0				181		237
33330	441364	C/B	PRO			ST	L	TART	0,767	X 0,302	0,231		0,5	42	69,5	80	81,1					33,8	33,8	34,8				180		237
33330	441355	C/B	PRO			ST	L	TART	0,783	X 0,291	0,224		0,5	42	68,4	80	78,7					33,8	33,8	33,0				180		237
33330	441356	C/B	PRO			ST	L	TART	0,756	X 0,300	0,228		0,5	42	69,5	80	80,7					33,8	33,8	34,1				182		237
33330	441367	C/B	PRO			ST	L	TART	0,758	X 0,313	0,240		0,5	42	67,8	80	79,6					33,8	33,8	33,8				185		237
33330	441364	C/B	PRO			ST	L	TART	0,759	X 0,289	0,222		0,5	42	68,2	80	80,7					33,8	33,8	33,4				176		237
33330	441365	C/B	PRO			ST	L	TART	0,760	X 0,292	0,224		0,5	42	72,8	80	83,1					33,8	33,8	33,6				177		237
33330	441368	C/B	PRO			ST	L	TART	0,789	X 0,289	0,222		0,5	42	70,6	80	81,4					33,8	33,8	33,2				176		237
33330	441372	C/B	PRO			ST	L	TART	0,752	X 0,296	0,226		0,5	42	71,9	80	82,1					33,8	33,8	33,3				180		237
33330	441373	C/B	PRO			ST	L	TART	0,748	X 0,291	0,220		0,5	42	70,1	80	80,9					33,8	33,8	33,7				176		237

TEST TECNOLÓGICO / TECHNOLOGICAL TEST						NOTA / NOTE:	
Apilastamiento Flattening Test	Curvado Bend test	Abocinado Flaring Test	Pestifado Flange Test	Ens. De anillo expandido Ring expanding Test	Ens. De Tracción de anillo Ring tensile Test		
Satisfact.	NA	NA	NA	NA	NA		
Pro = Procesado / Process N = Normalizado / Normalized DIST = Distorsionado / Stress Relief Q & T = Templado y Revertido / Quenched & Tempered TART = Temp. Ambiente / Room Temperature				RE = Rectangular CI = Cilíndrico / Cylindrical ST = Segmento Tubular / Tubular segment TU = Transversal		C/B = Cuerpo / Body R/U = Rectique / Upset P/A = Promedio / Average Min = Mínimo / minimum Max = Máximo / Maximum	
				L = Longitudinal T = Transversal P/T = Tubo / Pipe EXT = Extremo / End M = Medio / Middle		V.Obt. = Valor Obtenido / Obtained value E = Comienzo de marcación / Stencilling starting O = Extremo opuesto al E / Opposite extreme to E	

CAJ 1786

85447 B



Siderca S.A.I.C.
Dr Jorge A. Simini 250
(B2804MHA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cifanta / Customer VAN LEEUWEN CANADA				Expediental / Manufacturing Order 67667.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 4 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CBA Z245.1				Grado / Grade 1&6+280/1		Extremos / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pcs 3990.87 m 60596 Kg 602 Pcs 13093.41 Ft 133596 Lb		

ENSAYOS QUIMICOS / CHEMICAL ANALYSES

[illegible]

NOTAS / NOTES: H = Análisis de colada / Heat Analysis. P = Análisis de producto / Product Analysis. C.e = Carbono Equivalente/Equivalent Carbon. R = Ratio. * = PPM / Part per million		
CEQ 1 = $C + (Mn/8) + (Cr+Mo+V)/5 + (Ni+Cu)/15$	CEQ 2 = $C + (Mn/8) + (Si/24) + (Cu/15) + (Nb/20) + (Cr+Mo+V+Nb)/5 + (S/8)$	PCM =
Sum 1 = $Cr+Cu+Mo+Nb+V$	SUM 2 =	SUM 3 =
R 1 = Mn/C	R 2 =	R 3 =

CALL TODAY

85447 C



Siderca S.A.I.C
Dr Jorge A. Simini 250
(B2804MHA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediental / Manufacturing Order 57687.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 5 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 180+290B				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60588 Kg 602 Pcs 13093.41 Ft 133596 Lb	

ENSAYOS QUÍMICOS / CHEMICAL ANALYSES

[illegible]

NOTAS / NOTES: H = Análisis de ceniza / Heat Analysis. P = Análisis de producto / Product Analysis. C.e = Carbono Equivalente/Equivalent Carbon		R = Ratio	* = PPM / Part per million
CEQ 1 = $C + (Mn/8) + (Cr+Mo+V)/5 + (Ni+Cu)/15$	CEQ 2 = $C + F((Mn/8) + (Si/24) + (Cu/15) + (Ni/20) + (Cr+Mo+V+Ni)/5 + (S/8))$	PCM =	
SUM 1 = $Cr+Cu+Mo+Ni+V$	SUM 2 =	SUM 3 =	
R 1 = Mn/C	R 2 =	R 3 =	

CALI 0720



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(0200)4444 Carapana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433403 fax

Cliente / Customer VAN LEEUWEN CANADA				Expedient / Manufacturing Order 617887.01		Número / Number 216076		Fecha / Date 03/09/2004		Pág./Page 6 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 15.5+250H				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.97 m 80598 Kg 602 Pcs 13083.41 Ft 133596 Lb	

ENSAYOS QUÍMICOS / CHEMICAL ANALYSES

			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
--	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTAS / NOTES: H = Análisis de colada / Heat Analysis. P = Análisis de producto / Product Analysis. C.e = Carbono Equivalente / Equivalent Carbon. R = Ratio. * = PPM / Part per million		
CEQ 1 = $C + (Mn/6) + (Cr + Mo + V)/5 + (Nb + Ti)/15$	CEQ 2 = $C + (Mn/6) + (Si/2) + (Cu/16) + (Ni/20) + (Cr + Mo + V + Nb)/5 + (S/8)$	PCM =
Sum 1 = $Cr + Cu + Mo + Nb + V$	Sum 2 =	Sum 3 =
R1 = MNC	R2 =	R3 =

CAL 17004

85447 E



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(022006MA) Campana
Buenos Aires, Argentina
(54) 5033 433100 tel
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediente/ Manufacturing Order 57887.01		Número / Number 218076		Fecha / Date 03/08/2004		Pág./Page 7 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra/ Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 150+250/H		Extremos / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 18.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED			Cantidades / Quantities 602 Pcs 3990.87 m 66598 Kg 602 Pcs 13093.41 Ft 133596 Lb	

ENSAYOS DE IMPACTO / IMPACT TEST

Cotada Heat	Ensayo Test	Condición de la probeta / Specimen condition				Energía Absorbida / Absorbed Energy				Área ductil / Shear Area (%)				Expansión Lateral / Lateral Exp. (Mils)			
		Zona Zone	Método Method	Entalla Notch	Orient. Orient.	Temper. °C Req. T/RE	Unidad Unit	Req. Min PIA	V.Obt./Obtained Values Sample N°	Req. Min PIA	V.Obt./Obtained Values Sample N°	Req. Min PIA	V.Obt./Obtained Values Sample N°	Req. Min PIA	V.Obt./Obtained Values Sample N°	Req. Min PIA	V.Obt./Obtained Values Sample N°
									1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
32824	441323	CB	CHARPY	V		-52	Joules	7.0	122.0 120.0 120.0	120.7							
32824	441323	CB	CHARPY	V		-45	Joules	0.0	128.0 128.0 148.0	128.0	134.0	85.0	100.0 100.0 100.0	100.0	100.0		
32824	441340	CB	CHARPY	V		-45	Joules	0.0	120.0 120.0 124.0	120.0	121.5	85.0	100.0 100.0 100.0	100.0	100.0		
32824	441340	CB	CHARPY	V		-52	Joules	7.0	115.0 132.0 114.0	114.0	120.3	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441287	CB	CHARPY	V		-45	Joules	0.0	119.0 124.0 138.0	119.0	128.5	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441287	CB	CHARPY	V		-52	Joules	7.0	128.0 118.0 131.0	118.0	125.0	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441288	CB	CHARPY	V		-45	Joules	0.0	114.0 112.0 112.0	112.0	112.7	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441288	CB	CHARPY	V		-52	Joules	7.0	108.0 107.0 111.0	107.0	108.7	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441290	CB	CHARPY	V		-45	Joules	0.0	114.0 130.0 118.0	114.0	117.3	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441290	CB	CHARPY	V		-52	Joules	7.0	119.0 108.0 112.0	108.0	111.0	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441292	CB	CHARPY	V		-45	Joules	0.0	120.0 116.0 118.0	116.0	121.3	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441292	CB	CHARPY	V		-52	Joules	7.0	114.0 128.0 110.0	110.0	116.7	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441293	CB	CHARPY	V		-45	Joules	0.0	128.0 114.0 108.0	108.0	116.0	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441293	CB	CHARPY	V		-52	Joules	7.0	121.0 115.0 114.0	114.0	116.7	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441294	CB	CHARPY	V		-45	Joules	0.0	121.0 114.0 114.0	114.0	118.3	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441294	CB	CHARPY	V		-52	Joules	7.0	114.0 117.0 115.0	114.0	115.3	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441296	CB	CHARPY	V		-45	Joules	0.0	112.0 117.0 121.0	112.0	116.7	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441296	CB	CHARPY	V		-52	Joules	7.0	115.0 122.0 112.0	112.0	116.3	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441297	CB	CHARPY	V		-45	Joules	0.0	112.0 113.0 108.0	108.0	111.3	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441297	CB	CHARPY	V		-52	Joules	7.0	110.0 129.0 126.0	110.0	121.7	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441298	CB	CHARPY	V		-45	Joules	0.0	108.0 113.0 113.0	109.0	111.7	85.0	100.0 100.0 100.0	100.0	100.0		
33330	441299	CB	CHARPY	V		-45	Joules	0.0	117.0 130.0 130.0	117.0	125.7	85.0	100.0 100.0 100.0	100.0	100.0		

NOTE: Req = Requisito / Requirement CB = Cuerpo / Body RU = Rosca / Upset Orient = Orientación / Orientation V = Valor / Value PIA = Promedio / Average Min = Mínimo / Minimum TRE = Temp. Ens. / Test Temp.

GALI 17004

85447F



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(B2504MHA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA					Expediental Manufacturing Order 5/7887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 8 / 13	
Producto / Product Seamless steel line pipe					Orden de Compra Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1					Grado / Grade 165+290/1				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60596 Kg 602 Pcs 13093.41 Ft 133596 Lb			

ENSAYOS DE IMPACTO / IMPACT TEST

Cobete Heat	Ensayo Test	Condición de la probeta / Specimen condition					Energía Absorbida / Absorbed Energy										Área dúctil / Shear Area (%)						Expansión Lateral/Lateral Exp. (Mils)					
		Zona Zone	Método Method	Entalla Notch	Dimensiones Size	Orient. Orient.	Temper. °C		Unidad Unit	Req.		V.Obt./Obtained Values			Min	PIA	V.Obt./Obtained Values			Min	PIA	V.Obt./Obtained Values			Min	PIA		
							Req.	T/E		Min	PIA	Sample N°					Sample N°					Sample N°						
					Inches							1	2	3			1	2	3			1	2	3				
33330	441301	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	121.0	121.0	138.0	121.0	128.7												
33330	441301	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	118.0	118.0	123.0	118.0	119.3	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441331	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	124.0	114.0	114.0	114.0	117.3												
33330	441331	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	126.0	118.0	119.0	118.0	121.0	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441332	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	118.0	114.0	118.0	114.0	116.7												
33330	441332	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	133.0	132.0	126.0	128.0	130.3	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441333	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	124.0	118.0	122.0	118.0	121.7												
33330	441333	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	118.0	127.0	122.0	118.0	122.7	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441334	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	110.0	110.0	114.0	110.0	111.3												
33330	441334	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	114.0	117.0	111.0	111.0	114.0	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441335	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	116.0	112.0	114.0	112.0	114.0	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441335	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	110.0	114.0	114.0	110.0	112.7												
33330	441336	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	108.0	118.0	123.0	108.0	115.0	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441336	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	112.0	115.0	108.0	108.0	111.0												
33330	441337	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	128.0	114.0	117.0	114.0	120.0	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441337	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	115.0	118.0	131.0	118.0	121.3												
33330	441338	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	111.0	109.0	120.0	109.0	113.3	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441339	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	118.0	113.0	123.0	113.0	119.0												
33330	441339	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	122.0	118.0	118.0	113.0	117.7	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441339	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	117.0	132.0	131.0	117.0	126.7												
33330	441341	C/B	CHARPY	V	0,304 x 0,197	L	-45	-45	Joules	0.0	20.0	118.0	118.0	119.0	118.0	117.7	85.0	100.0	100.0	100.0	100.0	100.0						
33330	441341	C/B	CHARPY	V	0,304 x 0,197	L	-52	-52	Joules	7.0	9.0	127.0	118.0	114.0	114.0	119.7												

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body RAJ = Recaque / Upset Orient = Orientación / Orientation V = Valor / Value PIA = Promedio / Average Min = Mínimo / Minimum TIE = Temp. Era. / Test Temp.

CAJ 17984

85447G



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(82204694) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediental / Manufacturing Order 57887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 9 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/A334M S4333 + CSA Z245.1				Grado / Grade 18.5+280/0				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60596 Kg 602 Pcs 13093.41 Ft 133596 Lb		

ENSAYOS DE IMPACTO / IMPACT TEST

Cetada Heat	Ensayo Test	Condición de la probeta / Specimen condition						Energía Absorbida / Absorbed Energy										Área dúctil / Shear Area (%)						Expansión Lateral/Lateral Exp. (Mils)					
		Zona Zone	Método Method	Entalla Notch	Dimensiones Size	Orient. Orient.	Temper. °C	Unidad Unit	Req.	V.Obt./Obtained Values						Req.	V.Obt./Obtained Values						Req.	V.Obt./Obtained Values					
										Min	PIA	Sample N°			Min		PIA	Sample N°			Min	PIA		Sample N°			Min	PIA	
												1	2	3				1	2	3				1	2	3			
33330	441351	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	117.0	118.0	113.0	113.0	118.0	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441351	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	118.0	111.0	120.0	111.0	116.3													
33330	441352	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	113.0	113.0	118.0	113.0	114.0	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441352	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	112.0	119.0	118.0	112.0	115.7													
33330	441353	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	119.0	124.0	122.0	119.0	121.7	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441353	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	113.0	110.0	113.0	110.0	112.0													
33330	441354	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	120.0	118.0	122.0	116.0	119.3	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441354	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	119.0	118.0	112.0	112.0	118.5													
33330	441355	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	108.0	118.0	113.0	108.0	113.3													
33330	441355	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	108.0	118.0	113.0	108.0	113.3	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441356	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	112.0	113.0	118.0	112.0	114.3													
33330	441356	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	112.0	110.0	115.0	110.0	112.8	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441357	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	118.0	112.0	118.0	112.0	114.7													
33330	441357	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	112.0	120.0	118.0	112.0	118.7	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441358	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	118.0	129.0	132.0	118.0	128.5	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441358	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	112.0	110.0	115.0	110.0	112.8													
33330	441359	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	117.0	118.0	108.0	108.0	114.7	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441359	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	111.0	114.0	112.0	111.0	112.3													
33330	441359	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	113.0	122.0	115.0	113.0	118.7	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441359	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	120.0	126.0	119.0	119.0	121.7													
33330	441372	C/B	CHARPY	V	0.394 x 0.197	L	-45	-45	Joules	0.0	20.0	127.0	119.0	120.0	119.0	122.0	85.0	100.0	100.0	100.0	100.0	100.0							
33330	441372	C/B	CHARPY	V	0.394 x 0.197	L	-52	-52	Joules	7.0	9.0	107.0	119.0	115.0	107.0	110.7													

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body RAJ = Rosaque / Upset Orient = Orientación / Orientation V = Valor / Value PIA = Promedio / Average Min = Mínimo / Minimum T/E = Temp. Ens. / Test Temp.

0414 17/04/04

85447H


Tenaris
INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

 Siderca S.A.I.C.
 Dr Jorge A. Simini 250
 (B2604MHA) Campana
 Buenos Aires, Argentina
 (54) 3489 433 100 tel
 (54) 3489 433 025 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediente / Manufacturing Order 57887.01	Número / Number 216076	Fecha / Date 03/09/2004	Pág./Page 10 / 13
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45028439	Item 00001	Referencia del Cliente / Customer Reference	
Norma / Standard ASTM A333/ASME SA333 + CSA Z45.1				Grado / Grade 168+280M		Extremos / Ends BEVELLED AT 30 DEG. ASTM	
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches	Schedule 80	Peso Nominal / Nominal Weight 19.27 KG/MT 10.25 LB/FT	Longitud / Length B.R. (SP)	Superficie Externa / External Surface VARROSHED		Cantidades / Quantities 602 Pz 3990.87 m 60696 Kg 602 Pcs 13093.41 Ft 133596 Lb	

ENSAYOS DE IMPACTO / IMPACT TEST

		Condición de la probeta / Specimen condition					Energía Absorbida / Absorbed Energy										Área ductil / Shear Area (%)						Expansión Lateral/Lateral Exp. (Mils)										
Cotada Head	Ensayo Test	Zona Zone	Metodo Method	Entalla Notch	Dimensiones Size	Orient.	Temper. °C		Unidad Unit	Req.		V.Obt./Obtained Values						Req.		V.Obt./Obtained Values						Req.		V.Obt./Obtained Values					
					Inches		Orient.	Req.		T/E	Min	PIA	Sample N°			Min	PIA	Min	PIA	Sample N°			Min	PIA	Sample N°			Min	PIA				
												1	2	3				1	2	3			1	2	3			1	2	3			
33330	441373	CB	CHARPY	V	0.394 x 0.187	L	-45	-45	Joules	0.0	20.0	119.0	119.0	114.0	114.0	116.3	85.0	100.0	100.0	100.0	100.0	100.0											
33330	441373	CB	CHARPY	V	0.394 x 0.187	L	-52	-52	Joules	7.0	9.0	118.0	132.0	122.0	118.0	134.0																	

NOTE: Req = Requisitos / Requirements CB = Cuerpo / Body RU = Recolque / Upset Orient = Orientación / Orientation V = Valor / Value PIA = Promedio / Average Min = Mínimo / Minimum T/E = Temp. Ens. / Test Temp.

03/09/2004

85447 I



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Smilni 250
(02804MVA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediental / Manufacturing Order 5/7887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 11 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 18.8+290/3		Extremo / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 16.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133598 Lb		

S = Monograma / Monogram SIDERCA **NNNNN** = Número de tubo / Nbr of pipe **LLL** = Longitud / length **PPP** = Peso / Weight **@** = Monograma / Monogram API
MMYY = Mes / Año Month / Year **YTT** = Año / Trimestre Year / Quarter **HH0000X** = Colada / Heat

Estadido (Tube) / Stencilling (Pipe)
 NNNNN LLLL PPPPP TENARIS 80 MM.YY A333/SA333 CSA Z245.1-98 3 X 0,3 10,25 1/8 QT/290CAT II HQ M45C SCH80 XS 3000PSI SEAMLESS PO45029439 V.L. CODE 21600 5/7887.01 MADE IN ARGENTINA
 HH0000X

Tarjeta / Card :
 SIDERCA MADE IN ARGENTINA
 P.O.: PO 45029439 OF: 5/7887-01
 PIECES: LENGTH:
 WEIGHT(KG): LIFT:
 SIZE: 88,90 X 7,62 GDO:18.8+290/3
 SPEC: ASTM A333 HEAT:
 GLVA CANADA

FABRICADO POR SIDERCA	*MANUFACTURED BY SIDERCA*
PROCESO DE ACERACIÓN	*ACIERAGE PROCESS*
FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELECTRICO Y COLADO CONTINUO - ACERO CALIADO AL ALUMINIO. LA PRÁCTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE UNA INYECCIÓN FINAL DE UNA VARILLA DE SILICIURO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROINCLUSIONES. MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO.	STEEL MAKING PROCESS: E.A.F.A.F. AND CONTINUOUS CASTING - FULL ALUMINIUM KILLED AND FINE GRAIN PRACTICE. THE LF PRACTICE INCLUDES A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL. MATERIAL FREE FROM MERCURY CONTAMINATION.
PROCESO DE LAMINACIÓN	*ROLLING PROCESS*
FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.	MANUFACTURING PROCESS : SEAMLESS HOT ROLLED.
CONTROLES	*CONTROLS*
CONTROL VISUAL Y DIMENSIONAL: SATISFACTORIO. CONTROL NO DESTRUCTIVO TUBO (C.N.D.): SATISFACTORIO.	VISUAL AND DIMENSIONAL INSPECTION : SATISFACTORY. PIPE NON DESTRUCTIVE TEST (N.D.T.): SATISFACTORY.

CAL 17084

85447 J



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(0220-434044) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433403 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediental Manufacturing Order 57887.01		Número / Number 216076		Fecha / Date 03/08/2004		Página / Page 12 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 188+2900		Extremo / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133596 Lb		
CONDICIONES DEL MATERIAL -NO REPARADO POR SOLDADURA.						*MATERIAL CONDITIONS* -NO REPAIR BY WELDING.					
PROPIEDADES DEL MATERIAL -LA DUREZA CUMPLE CON LA NORMA NACE MR 01-75 ULTIMA EDICION. -EL MATERIAL CUMPLE CON LOS REQUISITOS DE ASTM A530/A530M EDICION 98.						*MATERIAL PROPERTIES* -HARDNESS ACCORDING TO NACE MR-01-75 LATEST EDITION. -MATERIAL ACCORDING TO REQUIREMENTS OF ASTM A530/A530M EDITION 98.					
NORMAS -CERTIFICADO DE ACUERDO CON: EN 10204 3.1.B/95 - ISO 10474 3.1.B/92. -EDICION DE LA NORMA : ASME SA 333/01. -EDICION DE LA NORMA : NACE MR-01-75 ULTIMA EDICION -EDICION DE LA NORMA: CSA Z245.1/98. -EDICION DE LA NORMA : ASTM A333/99.						*STANDARDS* -CERTIFICATE ACCORDING TO : EN 10204 3.1.B/95 - ISO 10474 3.1.B/92. -EDITION OF REGULATION: ASME SA 333/01. -EDITION OF REGULATION: NACE MR-01-75 LATEST EDITION -EDITION OF REGULATION: CSA Z245.1/98. -EDITION OF REGULATION: ASTM A333/99.					
Observaciones / Remarks HYDROSTATIC TEST PRESSURE: 211 Kg/Cm2 = 3000 PSI (5 sec.). HEAT TREATMENT: QUENCHED & TEMPERED. QUENCH MEDIA OF HEAT TREATING PROCESS: WATER INSPECTION METHODS: E.M.I. LONG.(EXT.) NOTCH 5% E.M.I. LONG.(INT.) NOTCH 10% E.M.I. TRANSV. (EXT./INT.) NOTCH 10%. IMPACT TEST ACCORDING ASTM A370. HARDNESS ACCORDING TO NACE MR-01-75 LATEST EDITION.											

CALL 07204

85447 K



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Siderca S.A.I.C.
Dr Jorge A. Simini 250
(02804)MHA Compena
Buenos Aires, Argentina
(54) 3483 433100 tel
(54) 3483 433405 fax

Cliente / Customer VAN LEEUWEN CANADA				Expediental Manufacturing Order 5/7667.01		Número / Number 216076		Fecha / Date 03/09/2004		Pág./Page 13 / 13	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 18.8+290/1		Extremo / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 18.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)	Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13083.41 Ft 133596 Lb			
ONE YELLOW LONGITUDINAL STRIPE FULL LENGTH. ONE ORANGE BAND.											

Por la presente certificamos que el material aquí descrito ha sido fabricado de acuerdo con las normas y especificaciones solicitadas en vuestra orden y satisface las correspondientes requerimientos. Este certificado es emitido mediante un sistema computarizado y es válido con firma electrónica. El certificado original presenta el logo Tenaris (verde claro), impreso en la parte inferior de la hoja. En caso que el poseedor del certificado entregue una copia del mismo, deberá garantizar la conformidad con el original, haciéndose responsable por cualquier uso ilegal o indebido. Cualquier alteración y / o falsificación estará sujeta a la ley. Si necesitan asegurar la autenticidad de este certificado, contactarse con Siderca SAIC, e-mail: aya@siderca.com	We hereby certify that material herein described has been manufactured in accordance with the standards and specifications required in your order and satisfies the corresponding requirements. This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark Tenaris light-green coloured at the bottom of the page is stamped. In case the owner of the certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and / or falsification will be subject to the law. If you need to assure the authenticity of this certificate, please do not hesitate to contact Siderca SAIC through this e-address: aya@siderca.com	 QUALITY CERTIFICATION DEPT. OTO CERTIFICACION DE CALIDAD EDUARDO A. AYERBE
---	--	---

CAL 17084

85447L

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-50880 SAINT SAULVE 	 VALLIOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 5998SV08 Page/Page: 1 / 5 Date/Date: 17.07.2006
---	---	---

4 STD A106

(A01) V&M FRANCE	(A06.1) V&M-Order-No. / N° de Cde V&M/ TH2916 (A06.2) Suborder / Suborder
(A06.1) Customer / Client CCTF CORPORATION 5407 -53RD AVENUE T6B 3G2 EDMONTON AB T6B 3G2	(A07.1) Order-No. / N° de Cde VM1693
(A06.2) Orderer / Emetteur VALLOUREC TUBES CANADA / BURLINGTON, ONTARIO L7R 3X5	(A07.2) Order-No. / N° de Cde VM1693 Date / Date 20.04.2006
	(A07.3) Order-No. / N° de Cde 4876700-00
(B01, B02, B04) Description of the product Description du produit	Hot finished seamless fine pipe angle 30° (+5 / -0), root face 1.6 mm (± 0.8) Ends bevelled, Inside without rust protection - Outside dry varnish Tubes sans soudure, finis à chaud, pour conduite angle 30° (+5 / -0), méplat 1,6 mm (± 0,8) Extrémités chanfreinées, Inter sans protection - Exter vernis sec API spec. 5 L, PSL1, 03:2004 ASTM A 106 - 04 A / ASTM A 530 - 04 ASME SA 106, Edition 2004 / ASME SA 530, Edition 2004 ASME Boiler and Pressure Vessel Code, Sect. II, Part 1 Edition 2004, Addenda 2005 CSA Z 245.1:2002 Nace Standard MR 0176-2003 Paragraph 3.2 Spec. CECN-3, Rev. D, dated 08.2002 Grade B Grade B ecc. to ASTM A 106 / ASME SA 106 Grade 290 ecc. to CSA Z 245.1, Cat. I ROCKWELL C HARDNESS <= 22 GUARANTEED DURETE ROCKWELL C <= 22 GARANTIE

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity 1	Job#	1220

(A13) V&M Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B04) Dimensions Dimensions	(B10) Single length Long. indiv.
17		SKU No 2520273	NPS 4 SCH 40 OD-Tolerance + 0.031 in - 0.031 in WT-Tolerance + 15 % - 12.5 % NPS 4 SCH 40 Tol. sur DE + 0.031 in - 0.031 in Tol. sur EP + 15 % - 12.5 %	Fixed length 20 Ft + 4 in - 0 in Longueur fixe 20 Ft + 4 in - 0 in

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 5998Sv06 Page/Page: 2 / 5 Date/Date: 17.07.2006
---	--	---

(A13) V&M Item Poste	(A39) Cust. Item Poste	(B07.1) Heat Coulée	(B08) Quantity Nombre	(B11) Total length Long. totale ft	(B19) Weight Poids lb
17		40259	398	8.000,16	86.745

(C71)

HEAT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE COULEE

For each reduction of 0,01 % carbon below 0,30 %, an increase of 0,06 % manganese above 1,06 % will be permitted up to a maximum of 1,20 % manganese

(B37.1) Heat Coulée	(B15) Process Procédé	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Cu %	Ti %
min	-	-	0,10	0,29	-	-	-	-	-	-	-
max	-	0,28	0,50	1,06	0,030	0,030	0,40	0,15	0,40	0,40	0,04
40259	Electric (EAF)	0,17	0,21	0,75	0,017	0,005	0,12	0,03	0,09	0,22	0,02

(B07.1) Heat Coulée	Nb/Cb %	V %	B %	0002 %	2528 %	0014 %	1099 %	0001 %				
min	-	-	-	-	3,00	-	-	-				
max	0,11	0,08	0,001	0,15	-	1,00	0,40	0,03				
40259	0,00	0,00	0,000	0,02	4,49	0,47	0,33	0,00				

0002	V+NB+Ti
2528	MN/C
0014	CR+CU+MO+NI+V
1099	C+F(MN/8+SI/24+CU/15+NI/20+((CR+MO+V+NB)/5)+6*B)
0001	NB+V

Heats fully killed
Acier Calmé

(C72)

PRODUCT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE PRODUIT

For each reduction of 0,01 % carbon below 0,30 %, an increase of 0,06 % manganese above 1,06 % will be permitted up to a maximum of 1,20 % manganese

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 5998SV08 Page/Page: 3 / 5 Date/Date: 17.07.2006
---	--	---

(G72)

PRODUCT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE PRODUIT

(607.1) Heat Coulée	(C00.1) Test Piece Eprouvette	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Cu %	Ti %
min		-	0,10	0,29	-	-	-	-	-	-	-
max		0,26	0,50	1,06	0,030	0,030	0,40	0,15	0,40	0,40	0,04
40259	01KC251	0,16	0,20	0,75	0,017	0,004	0,12	0,03	0,09	0,21	0,02
40259	02KC261	0,16	0,20	0,75	0,018	0,004	0,12	0,03	0,09	0,22	0,02

(607.1) Heat Coulée	(C00.1) Test Piece Eprouvette	Nb/Cb %	V %	B %	0002 %	2528 %	0014 %	1099 %	0001 %		
min		-	-	-	-	3,00	-	-	-		
max		0,11	0,08	0,001	0,15	-	1,00	0,40	0,03		
40259	01KC251	0,00	0,00	0,000	0,02	4,54	0,46	0,33	0,00		
40259	02KC251	0,00	0,00	0,000	0,02	4,63	0,46	0,33	0,00		

0002	V+NB+Ti
2528	MN/C
0014	CR+CU+MO+NI+V
1099	C+F(MN/8+SI/24+CU/15+NI/20+((CR+MO+V+NB)/5)*5*B)
0001	NB+V

(804)

HEAT TREATMENT / TRAITEMENT THERMIQUE

HOT FINISHED NORMALIZED CONDITION MIN 920°C (1688 F) COOLING AIR
FINI A CHAUD ETAT NORMALISE MIN 920°C (1688 F) REFROIDISSEMENT AIR

TENSILE TEST RESULTS / RESULTATS D'ESSAI DE TRACTION

(C10.1) Type / Type	Tube strip specimen / Eprouvette prismatique
(C03) Test temperature / Température d'essai	Room temperature / Température ambiante
(C02) Direction / Orientation	longitudinal / longitudinal

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-58880 SAINT SAULVE 	(A01)  VALLOIRREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE (A02) 3.1 EN 10204 : 2004 No. / N° : 6998Sv08 (A03) Page/Page: 4 / 5 Date/Date: 17.07.2006
---	--	---

TENSILE TEST RESULTS / RESULTATS D'ESSAI DE TRACTION

(B07.1) Heat Coulée	(C00.1) Test Piece Eprouvette	(C10.2) Dimension Dimension	(C11) YS LimElast	(C12) TS Résist.	(C13.2) Elong. Allong.						
		in / sq in	R _{p0.2} psi	R _m psi	2" %						
min		-	42000	60000	29						
max		-	-	-	-						
40259	01KC261	0.98x0.22 217.17	44830	71815	33						
40259	02KC261	0.97x0.24 231.78	44249	70654	36						

(C10.2) Dimension / Dimension	Test piece dimensions / Dimension de l'éprouvette Test piece area / Section de l'éprouvette
----------------------------------	--

(C50)

TECHNOLOGICAL AND OTHER TESTS ON SPECIMENS / ESSAIS TECHNOLOGIQUES ET AUTRES ESSAIS SUR ECHANTILLON

Test Nature d'essai	Conditions Conditions	Test rate Ampleur du contrôle	Result Résultat
Flattening test Essai d'aplatissement			Satisfactory Satisfaisant

(D54)

OTHER TESTS ON PIPE / AUTRES ESSAIS SUR TUBE

Test Nature d'essai	Conditions Conditions	Test rate Ampleur du contrôle	Result Résultat
Hydrostatic test Epreuve hydrostatique	2854 PSI 5 SEC	100% each lot 100% Lot	Satisfactory Satisfaisant
Appearance & Dimensions Aspect & Dimensions		100% each lot 100% Lot	Satisfactory Satisfaisant
Eddy Current test Courants de Foucault	CSA Z245-1	100% each lot 100% Lot	Satisfactory Satisfaisant
Residual magnetism Magnétisme résiduel spectro	30 GAUSS MAX	100% each lot 100% Lot	Satisfactory Satisfaisant

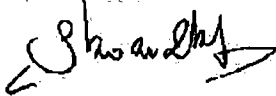
(A04, B03)

MARKING, IDENTIFICATION / MARQUAGE, IDENTIFICATION

Paint stenciling Marquage peinture	 V & M FRANCE 5L 0061 API DATE OF MARKING A/SA106 Z245-1 4 1/2 X 0.237 10.79 B + 290 CAT 1 PSL1 S 2854 PSI HT HEAT NUMBER SC H 40 VM1683 4876700-00 LENGTH
---------------------------------------	---

V&M FRANCE: TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 6998Sv06 Page/Page: 5 / 5 Date/Date: 17.07.2006
--	--	---

(201) The supplied products are in compliance with the requirements of the order Les produits livrés sont conformes aux stipulations de la commande
--

(A05, Z02, Z03)	
Date / Date	17.07.2006
Validated by	Inspection Representative
Validé par	Agent Réceptionnaire
	HERVE SKORUPKA 
☎	+ (33) 3 27 23 14 56
☎	+ (33) 3 27 23 15 25
@	herve.skorupka@vmtubes.fr
Stamp / Cachet	

This testimonial and certification respectively may neither be modified nor used for other products. Offences are regarded as falsification of documents and will be subject to criminal prosecution. Ce certificat, ou cette attestation ne doit être ni modifié ni appliqué pour d'autres produits. Tous changements ou application pour d'autres produits seront considérés comme falsification de documents et fraude et seront su, et à la juridiction pénale.

BENTELER

Stahl/Rohr

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

EN 10204:2005-01

Benteler Stahl/Rohr GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

National-Oilwell Canada Ltd.
7127 - 56 Avenue
EDMONTON, AB T6B 3L3
CANADA

Dokument-Nr.: 65-282326/001/P

Document No.:
No. du document:

Kunden-Bestell-Nr.: 05-5446

Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.: 1129689

Benteler Order No.:
No. de commande Benteler:

Versandanzeigen-Nr.: 6565028

Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

Prüf-Nr.:

Inspection No.:
No. du certificat:

Hersteller: Warmrohrwerk Dinslaken
Manufacturer: ISO/TS 16949 (ISO 9001) DNV CERT-13765-2003
Producteur: PED 97/23/EC TÜV Cert 07 202 4111/Z/6001/1/H

Herstellerzeichen:
Manufacturer's brand:
Marque du producteur:

Stempel des Abnahmebeauftragten: WA
Stamp of the inspection representative:
Timbre du contrôleur:

Stahlerschmelzungsverfahren: ELEKTROSTAHL
Steelmaking process: ELECTRIC FURNACE
Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

Blatt: 1 / 9

Page:
Page:

Lieferbedingungen: CSA Standard Z245.1-02 Category I, API Specification 5L Forty-Third Edition, March 2004, PSL 1, ASTM-A 106-2004b, S5, ASME SA-106, ASME Section II Part A Edition 2004, S5, NACE Standard MR0175-03

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen: ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2004, ASTM-A 530-2004a

Dimensions-tolerances:

Dimensions-tolérances:

Stahlsorte: GRADE 290, GRADE B, GRADE X 42

Steel grade:

Nuance d'acier:

Lieferzustand: Hot rolled

Delivery condition:

État de livraison:

Produktkennzeichnung: see attachment product marking

Product marking:

Marquage du produit:

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

Pos.	Stück	Maße	Länge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiple
			feet	lbs		PSI	s	
0002	258	1 1/2" NPS * Sched. 40 18 FT - 22 FT	5271,06	14123	737755	3000	5	
0003	1308	2" NPS * Sched. 40 18 FT - 22 FT	28029,56	101014	738122	3000	5	89328

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-282326/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 2 / 9
Page:
Page:

Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur	Gewicht Weight Poids	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlängen Multiple lengths Longueurs multiple
		feet	feet	lbs		PSI		
0007	75	1 1/4" NPS * Sched. 80 18 FT - 22 FT	1587,11	4559	528793	3000	5	
0008	133	1 1/2" NPS * Sched. 80 18 FT - 22 FT	2596,03	9297	528753	3000	5	
0009	1473	2" NPS * Sched. 80 18 FT - 22 FT	29198,39	145331	738043	3000	5	
0009	544	2" NPS * Sched. 80 18 FT - 22 FT	10776,38	53855	738045	3000	5	
0010	152	3" NPS * Sched. 80 18 FT - 22 FT	3260,24	33021	738162	3000	5	
0011	223	1" NPS * Sched. 160 18 FT - 22 FT	4629,36	13109	737979	3000	5	
0012	74	2" NPS * Sched. 160 18 FT - 22 FT	1584,12	11826	738001	3000	5	

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0002	737755	0,145	0,220	0,85	0,010	0,004	0,14	0,03	0,08	0,15	0,001	0,010	0,003	0,0001
0003	738122	0,135	0,200	0,83	0,011	0,004	0,14	0,04	0,09	0,19	0,001	0,010	0,003	0,0001
0007	528793	0,120	0,230	0,80	0,007	0,003	0,15	0,03	0,10	0,14	0,001	0,010	0,005	0,0003
0008	528753	0,130	0,210	0,84	0,007	0,004	0,10	0,04	0,09	0,17	0,001	0,010	0,003	0,0002
0009	738043	0,130	0,205	0,82	0,009	0,006	0,13	0,03	0,11	0,16	0,001	0,010	0,003	0,0001
0009	738045	0,130	0,205	0,82	0,008	0,005	0,12	0,04	0,10	0,16	0,001	0,010	0,003	0,0001
0010	738162	0,130	0,197	0,79	0,009	0,004	0,11	0,04	0,10	0,14	0,001	0,010	0,003	0,0001
0011	737979	0,125	0,225	0,81	0,010	0,003	0,12	0,04	0,10	0,14	0,002	0,010	0,003	0,0002
0012	738001	0,130	0,230	0,83	0,009	0,004	0,13	0,03	0,09	0,15	0,001	0,010	0,003	0,0001

89328 A.

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-282326/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 3 / 9
Page:
Page:

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Ni)/5) + (5*B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule
0002	737755	0,336	0,322	5,862	0,401
0003	738122	0,328	0,307	6,148	0,461
0007	528793	0,306	0,268	6,667	0,421
0008	528753	0,316	0,287	6,462	0,401
0009	738043	0,317	0,287	6,308	0,431
0009	738045	0,316	0,286	6,308	0,421
0010	738162	0,308	0,280	6,077	0,391
0011	737979	0,308	0,280	6,480	0,402
0012	738001	0,317	0,288	6,385	0,401

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0002	737755	0,150	0,190	0,81	0,007	0,004	0,08	0,03	0,08	0,10	0,002	0,010	0,002	0,0004
0002	737755	0,140	0,190	0,81	0,007	0,004	0,08	0,03	0,08	0,10	0,002	0,010	0,002	0,0003
0003	738122	0,140	0,190	0,82	0,010	0,004	0,13	0,04	0,08	0,20	0,001	0,009	0,002	0,0001
0003	738122	0,140	0,190	0,82	0,011	0,004	0,14	0,04	0,10	0,20	0,001	0,009	0,002	0,0001
0007	528793	0,140	0,220	0,82	0,010	0,002	0,18	0,08	0,14	0,15	0,003	0,010	0,003	0,0005
0007	528793	0,140	0,220	0,81	0,010	0,002	0,19	0,08	0,14	0,15	0,003	0,010	0,003	0,0004
0008	528753	0,150	0,200	0,84	0,008	0,005	0,10	0,04	0,12	0,14	0,002	0,010	0,003	0,0003
0008	528753	0,150	0,190	0,82	0,008	0,005	0,10	0,03	0,11	0,14	0,002	0,010	0,002	0,0004

89328 B

Benteler Stahl/Rohr GmbH
 Postfach 13 40
 33043 Paderborn
 Deutschland
 Tel.: +49.5254.81-0 Fax: +49.5254.13666

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-282326/001/P
 Document No.:
 No. du document:

Prüf-Nr.:
 Inspection No.:
 No. du certificat:

Blatt: 4 / 9
 Page:
 Page:

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0009	738043	0,150	0,200	0,84	0,008	0,005	0,10	0,04	0,12	0,14	0,002	0,010	0,003	0,0003
0009	738043	0,150	0,190	0,82	0,008	0,005	0,10	0,03	0,11	0,14	0,002	0,010	0,002	0,0004
0009	738045	0,150	0,200	0,84	0,008	0,006	0,10	0,04	0,12	0,14	0,002	0,010	0,003	0,0004
0009	738045	0,150	0,200	0,84	0,008	0,006	0,10	0,04	0,12	0,14	0,002	0,010	0,003	0,0004
0010	738162	0,150	0,170	0,82	0,007	0,004	0,09	0,03	0,10	0,11	0,001	0,010	0,002	0,0002
0010	738162	0,140	0,170	0,82	0,007	0,004	0,09	0,03	0,11	0,11	0,001	0,010	0,002	0,0002
0011	737979	0,150	0,180	0,79	0,010	0,002	0,13	0,04	0,11	0,13	0,002	0,010	0,003	0,0002
0011	737979	0,140	0,170	0,80	0,010	0,003	0,12	0,04	0,12	0,13	0,002	0,010	0,003	0,0002
0012	738001	0,140	0,230	0,83	0,009	0,002	0,10	0,04	0,08	0,13	0,002	0,010	0,003	0,0002
0012	738001	0,140	0,220	0,82	0,009	0,002	0,10	0,04	0,08	0,13	0,001	0,010	0,003	0,0003

- Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
- Formel: $CEV = C + F^* ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5*B)) \leq 0,40$
- Formel: $Mn/C \geq 3/1$
- Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule	Formel Formula Formule
0002	737755	0,319	0,308	5,400	0,292	
0002	737755	0,309	0,293	5,786	0,292	
0003	738122	0,330	0,309	5,857	0,451	
0003	738122	0,333	0,311	5,857	0,481	
0007	528793	0,349	0,327	5,857	0,553	
0007	528793	0,349	0,327	5,786	0,563	
0008	528753	0,336	0,322	5,600	0,402	
0008	528753	0,330	0,317	5,467	0,382	

89328 C

Benteler Stahl/Rohr GmbH
 Postfach 13 40
 33043 Paderborn
 Deutschland
 Tel.: +49.5254.81-0 Fax: +49.5254.13666

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:
 Document No.:
 No. du document:

65-282326/001/P

Prüf-Nr.:
 Inspection No.:
 No. du certificat:

Blatt: 5 / 9
 Page:
 Page:

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel	Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula	Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule	Formule
0009	738043	0,336	0,322	5,600	0,402	
0009	738043	0,330	0,317	5,467	0,382	
0009	738045	0,336	0,323	5,600	0,402	
0009	738045	0,336	0,323	5,600	0,402	
0010	738162	0,325	0,311	5,467	0,331	
0010	738162	0,316	0,296	5,857	0,341	
0011	737979	0,332	0,318	5,267	0,412	
0011	737979	0,322	0,302	5,714	0,412	
0012	738001	0,321	0,303	5,929	0,352	
0012	738001	0,319	0,302	5,857	0,351	

Prüfergebnisse / Test results / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch: The tubes have been submitted to a leak tightness test by: Les tubes ont passé un contrôle d'étanchéité par:		Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test pressure/Time-record			PASSED
Augensichtkontrolle: Visual inspection: Examen visuel:	PASSED	Biegeversuch: Bending test: Essai de cintrage: Pos. / Item / Poste: 0002, 0003, 0007, 0008, 0009, 0011, 0012	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions:	PASSED
Ringfaltversuch: Flattening test: Essai d'aplatissement: Pos. / Item / Poste: 0010	PASSED				

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.
 The sampling was carried out on multiple lengths.
 L'échantillonnage était réalisé aux longueurs multiples.

89328D

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13688

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-282326/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 6 / 9
Page:
Page:

Zugversuch / Tensile test / Essai de traction

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH MPa 290-495	Rm MPa 415-760	A2" % MIN 30		
							1. Formel 1. Formula 1. Formule	
0002	000001	737755	12,70 X 3,60	364	478	35,00		
0002	000002	737755	12,70 X 3,60	359	483	32,00		
0003	000001	738122	19,00 X 3,80	343	463	34,00		
0003	000002	738122	19,00 X 3,80	344	469	37,00		
0007	000001	528793	12,70 X 4,70	356	484	34,00		
0007	000002	528793	12,70 X 4,70	354	487	34,00		
0008	000001	528753	12,70 X 5,00	351	481	38,00		
0008	000002	528753	12,70 X 5,00	360	477	38,00		
0009	000001	738043	19,00 X 5,40	350	486	38,00		
0009	000002	738043	19,00 X 5,40	354	486	37,00		
0009	000001	738045	19,00 X 5,40	359	479	39,00		
0009	000002	738045	19,00 X 5,40	357	480	39,00		
0010	000001	738162	25,40 X 7,50	329	461	40,00		
0010	000002	738162	25,40 X 7,50	319	460	41,00		
0011	000001	737979	12,70 X 6,20	345	479	38,00		
0011	000002	737979	12,70 X 6,20	341	477	38,00		
0012	000001	738001	19,00 X 9,20	341	468	40,00		
0012	000002	738001	19,00 X 9,40	337	470	38,00		

893281

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13686

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-282326/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 7 / 9
Page:
Page:

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté			
Anforderungen Requirements Exigences			HRC	HB	HV	HRB
				MAX 200		
0002	000001	737755		140		
0003	000001	738122		146		
0007	000001	528793		148		
0008	000001	528753		140		
0009	000001	738043		140		
0009	000001	738045		140		
0010	000001	738162		141		
0011	000001	737979		149		
0012	000001	738001		140		

Restmagnetismus / Demagnetize / Démagnétiser

Pos. / Item / Poste: 0002, 0008, 0003, 0007, 0011, 0012, 0010, 0009
residual magnetic field intensity max 3,5 millitesla

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0002		P.O. 10718482/6350	05-5446
0003		P.O. 10718482/6101	05-5446
0007		P.O. 10718482/8735	05-5446
0008		P.O. 10718482/7447	05-5446
0009		P.O. 10718482/6242	05-5446
0010		P.O. 10718482/73711	05-5446
0011		P.O. 10718482/10292	05-5446

89328 F

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-282326/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 8 / 9
Page:
Page:

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0012		P.O. 10718482/6523	05-5446

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0002, 0012, 0008, 0007, 0003, 0012, 0009, 0011, 0007, 0011, 0009, 0008, 0003, 0009, 0007, 0012, 0011, 0008, 0003, 0009, 0011, 0007, 0003, 0012, 0008, 0011, 0008, 0007, 0012

NACE Standard: hardness acc. to NACE Standard MR0175 HRC max 22, The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.; Bend test: mandrel diameter 12D, bending angle 90 degree

Pos. / Item / Poste: 0010

NACE Standard: hardness acc. to NACE Standard MR0175 HRC max 22, The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.

Beiblatt Produktkennzeichnung / Attachment product marking / Supplément marquage du produit

Pos. Item Poste	Produktkennzeichnung Produktkennzeichnung Marquage du produit
0002	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/6350
0003	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/6101
0007	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/8735
0008	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/7447
0009	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/6242

893286

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-282326/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 9 / 9
Page:
Page:

0010	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/73711
0011	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/10292
0012	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/6523

FK = Farbkennzeichnung, colour marking, marquage par couleur FS = Farbschablonierung, peint stencilling, marquage par peinture FSD = Farbstrahldrucker, Colour jet printer, imprimante à jet d'encre de couleur LS = Längeschablonierung, longitudinal stencilling, marque longitudinal par peinture PKE = Etikettarkennzeichnung, tag marking, marquage sur étiquette PS = Prägestempel, die stamp, marquage par poinçonnage TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre

Verkäufer(in) / Salesman/ woman in charge / Personne chargée : Mr Seelbach, Tel.: 05254/81-4281, Fax: 4289

Dinslaken, 26.07.2005, TEL.: 02064.623-537 FAX: 02064.623-539

Abnahmebeauftragter
Inspection representative
Contrôleur
JAN FREERKS / WAG



Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

89328 H

2 xH A106

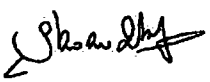
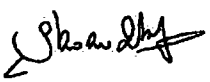
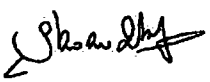
 VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tubes de St Sulpice rue du Galibat Zi n°4 - BP 2 59180 Saint-Sulpice FRANCE tel: 03.27.23.13.01 fax: 03.27.23.15.63		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03) BAE 26-05-286042 1 3 (A06) N° V&M: LA1061/07											
(A00) Purchaser : CCTF CORPORATION (A07) Order n° : VM1490 4873872-00 (B01) SEAMLESS STEEL PIPE HOT FINISHED (KILLED STEEL) (B04) HOT FINISHED NORMALIZED CONDITION 520°C (1688 F) min-elt ENDS BEVELLED 30° ANTI-RUST COATING DRY VARNISH (B02) Specification : API 5L (12/2004) + PSL1 + ASTM A 106 (01/10/04) + ASME SA 106 (01/07/04) + GRADE B + CSA Z245-1 (01/03/98) + GRADE 290 CAT.1 + NACE MR0175 (17/01/84) + CECS-3 Rev.D + ASTM A 530 (0 1/10/04) + ASME SA 530 (01/07/04) + ASME SECT. II PART A PART.D (07/01) ADD (2003) (B06-B07) Stencil marking: V & M FRANCE SL 0061 API DATE OF MARKING A/SA106 Z245-1 2 3/8 B + 290 CAT 1 PSL1 S 3000 PSI HT HEAT NUMBER SCH 80 2 3/8 X 0.218 VM1490 4873872-00 LENGTH															
QUANTITY PER ITEM															
Y/R	O/R	(B11-B12) Size	(B13) single length	(B10) Quantity	length B	(B14) (B09) Weight lb	item ref.	(B08) Heat							
07	07	NPS 2 SCH 80 60.30 X 5.54 MM	06096MM 240.01in	1799	36221.56	184725	SKU No 2520400								
				82	1661.75	8478		34478							
				1717	34559.81	176246		34753							
(C71-C92) LADLE ANALYSIS CE = C + F (MnV6 + Si/24 + Cu/15 + Ni/20 + (Cr + Mo + V + Nb) / 5 + S B) < 0.40% : HEAT 34478 = 0.34% and HEAT 34753 = 0.33%															
022: MNC (C70) (B08) Process Heat						022 3									
MIN.		C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022
MAX.		0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.40	0.11	0.11	0.08	0.001	3
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
E	34478	0.16	0.18	0.75	0.014	0.004	0.20	0.04	0.09	0.16	0.00	0.00	0.00	0.000	4.698
E	34753	0.16	0.18	0.76	0.016	0.004	0.15	0.03	0.09	0.15	0.00	0.00	0.00	0.000	4.733

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity	1	Job# 1220

94561

(A01)		(A02)		(A03)																																																																																																																																																	
 VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tuberte de St Sauve. rue du Galliot 21 n°4 - BP 2 59280 Saint-Sauve FRANCE tel: 03.27.23.13.01 fax: 03.27.23.15.63		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03)Ref: 26-05-286042 2 / 3 (A08)N°V&M: LA1061/07																																																																																																																																																	
(C71-C92) PRODUCT ANALYSIS CE = C + F (MN/6 + SI/24 + CU/15 + NI/20 + (CR+MO+V+NB)/5 + 5B) < 0.40% : Tests 1EL209 = 0.37% and 2EL209 = 0.36% Tests 1EL210 = 0.36% and 2EL210 = 0.35%																																																																																																																																																					
022: MN/C <table border="1"> <thead> <tr> <th>(C00)</th> <th>(B08)</th> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Mo</th> <th>Ni</th> <th>Cu</th> <th>Ti</th> <th>Nb</th> <th>V</th> <th>B</th> <th>022</th> </tr> <tr> <th>Test</th> <th>Heat</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>MIN.</td> <td></td> <td></td> <td>0.10</td> <td>0.29</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>MAX.</td> <td></td> <td>0.30</td> <td>0.50</td> <td>1.06</td> <td>0.030</td> <td>0.035</td> <td>0.40</td> <td>0.15</td> <td>0.40</td> <td>0.11</td> <td>0.11</td> <td>0.08</td> <td>0.001</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> </tr> <tr> <td>1EL209</td> <td>34478</td> <td>0.18</td> <td>0.18</td> <td>0.76</td> <td>0.017</td> <td>0.003</td> <td>0.20</td> <td>0.04</td> <td>0.09</td> <td>0.16</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>4.320</td> </tr> <tr> <td>1EL210</td> <td>34753</td> <td>0.18</td> <td>0.19</td> <td>0.78</td> <td>0.018</td> <td>0.004</td> <td>0.15</td> <td>0.03</td> <td>0.10</td> <td>0.13</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>4.418</td> </tr> <tr> <td>2EL209</td> <td>34478</td> <td>0.17</td> <td>0.18</td> <td>0.76</td> <td>0.017</td> <td>0.003</td> <td>0.20</td> <td>0.04</td> <td>0.09</td> <td>0.16</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>4.427</td> </tr> <tr> <td>2EL210</td> <td>34753</td> <td>0.17</td> <td>0.18</td> <td>0.78</td> <td>0.018</td> <td>0.004</td> <td>0.15</td> <td>0.03</td> <td>0.09</td> <td>0.13</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>4.483</td> </tr> </tbody> </table>						(C00)	(B08)	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022	Test	Heat															MIN.			0.10	0.29											3	MAX.		0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.11	0.11	0.08	0.001					%	%	%	%	%	%	%	%	%	%	%	%	%	%	1EL209	34478	0.18	0.18	0.76	0.017	0.003	0.20	0.04	0.09	0.16	0.00	0.00	0.00	0.000	4.320	1EL210	34753	0.18	0.19	0.78	0.018	0.004	0.15	0.03	0.10	0.13	0.00	0.00	0.00	0.000	4.418	2EL209	34478	0.17	0.18	0.76	0.017	0.003	0.20	0.04	0.09	0.16	0.00	0.00	0.00	0.000	4.427	2EL210	34753	0.17	0.18	0.78	0.018	0.004	0.15	0.03	0.09	0.13	0.00	0.00	0.00	0.000	4.483
(C00)	(B08)	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022																																																																																																																																						
Test	Heat																																																																																																																																																				
MIN.			0.10	0.29											3																																																																																																																																						
MAX.		0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.11	0.11	0.08	0.001																																																																																																																																								
		%	%	%	%	%	%	%	%	%	%	%	%	%	%																																																																																																																																						
1EL209	34478	0.18	0.18	0.76	0.017	0.003	0.20	0.04	0.09	0.16	0.00	0.00	0.00	0.000	4.320																																																																																																																																						
1EL210	34753	0.18	0.19	0.78	0.018	0.004	0.15	0.03	0.10	0.13	0.00	0.00	0.00	0.000	4.418																																																																																																																																						
2EL209	34478	0.17	0.18	0.76	0.017	0.003	0.20	0.04	0.09	0.16	0.00	0.00	0.00	0.000	4.427																																																																																																																																						
2EL210	34753	0.17	0.18	0.78	0.018	0.004	0.15	0.03	0.09	0.13	0.00	0.00	0.00	0.000	4.483																																																																																																																																						
(C10-C02-C03) RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE <table border="1"> <thead> <tr> <th>(C00)</th> <th>(B08)</th> <th>width</th> <th>thick.</th> <th>sect.</th> <th>(C11)</th> <th>(C12)</th> <th>(C13)</th> </tr> <tr> <th>Test</th> <th>Heat</th> <th></th> <th></th> <th></th> <th>Y.S.</th> <th>T.S.</th> <th>Elong. 2"</th> </tr> <tr> <td>MIN.</td> <td></td> <td></td> <td></td> <td></td> <td>42000</td> <td>60000</td> <td>29</td> </tr> <tr> <td>MAX.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>mm</td> <td>mm</td> <td>mm²</td> <td>psi</td> <td>psi</td> <td>%</td> </tr> <tr> <td>01EL209</td> <td>34478</td> <td>20.2</td> <td>5.4</td> <td>111.73</td> <td>49472</td> <td>73410</td> <td>33</td> </tr> <tr> <td>01EL210</td> <td>34753</td> <td>24.8</td> <td>5.5</td> <td>141.61</td> <td>48456</td> <td>73700</td> <td>35</td> </tr> <tr> <td>01EL211</td> <td>34753</td> <td>25.0</td> <td>5.7</td> <td>148.09</td> <td>49762</td> <td>74861</td> <td>35</td> </tr> <tr> <td>02EL210</td> <td>34753</td> <td>24.7</td> <td>5.3</td> <td>135.82</td> <td>50052</td> <td>76167</td> <td>35</td> </tr> </thead></table>						(C00)	(B08)	width	thick.	sect.	(C11)	(C12)	(C13)	Test	Heat				Y.S.	T.S.	Elong. 2"	MIN.					42000	60000	29	MAX.										mm	mm	mm ²	psi	psi	%	01EL209	34478	20.2	5.4	111.73	49472	73410	33	01EL210	34753	24.8	5.5	141.61	48456	73700	35	01EL211	34753	25.0	5.7	148.09	49762	74861	35	02EL210	34753	24.7	5.3	135.82	50052	76167	35																																																																								
(C00)	(B08)	width	thick.	sect.	(C11)	(C12)	(C13)																																																																																																																																														
Test	Heat				Y.S.	T.S.	Elong. 2"																																																																																																																																														
MIN.					42000	60000	29																																																																																																																																														
MAX.																																																																																																																																																					
		mm	mm	mm ²	psi	psi	%																																																																																																																																														
01EL209	34478	20.2	5.4	111.73	49472	73410	33																																																																																																																																														
01EL210	34753	24.8	5.5	141.61	48456	73700	35																																																																																																																																														
01EL211	34753	25.0	5.7	148.09	49762	74861	35																																																																																																																																														
02EL210	34753	24.7	5.3	135.82	50052	76167	35																																																																																																																																														
ROCKWELL C HARDNESS < OR = 22 GUARANTEED (D01-D99) NON DESTRUCTIVE TESTS <table border="1"> <thead> <tr> <th>test</th> <th>test rate</th> <th>specification</th> <th>pressure psi</th> <th>hold time sec</th> <th>result</th> </tr> </thead> <tbody> <tr> <td>APPEARANCE & DIMENSIONS</td> <td>100% LOT</td> <td></td> <td></td> <td></td> <td>OK</td> </tr> <tr> <td>EDDY CURRENT TEST</td> <td>100% LOT</td> <td>CSA 2245-1</td> <td></td> <td></td> <td>OK</td> </tr> <tr> <td>HYDROSTATIC TEST</td> <td>100% LOT</td> <td></td> <td>3000</td> <td>5</td> <td>OK</td> </tr> </tbody> </table>						test	test rate	specification	pressure psi	hold time sec	result	APPEARANCE & DIMENSIONS	100% LOT				OK	EDDY CURRENT TEST	100% LOT	CSA 2245-1			OK	HYDROSTATIC TEST	100% LOT		3000	5	OK																																																																																																																								
test	test rate	specification	pressure psi	hold time sec	result																																																																																																																																																
APPEARANCE & DIMENSIONS	100% LOT				OK																																																																																																																																																
EDDY CURRENT TEST	100% LOT	CSA 2245-1			OK																																																																																																																																																
HYDROSTATIC TEST	100% LOT		3000	5	OK																																																																																																																																																

94561 A

(A04)  VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tuberies de St Sauve rue du Calibot 21 n°4 - BP 2 59880 Saint-Sauve FRANCE tel.: 03.27.23.13.01 fax: 03.27.23.13.63	(A03) MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B	ISO 9001 (A03)R4E: 26-05-286042 3 / 3 (A08)N°V&M: LA1061/07								
(C58-C69) TECHNOLOGICAL TESTS <table border="1" data-bbox="373 537 945 602"><thead><tr><th>test</th><th>result</th></tr></thead><tbody><tr><td>MANDREL BEND TEST</td><td>OK</td></tr></tbody></table> (Z01)13/10/2005 <table border="1" data-bbox="373 639 1558 805"><thead><tr><th data-bbox="373 639 1146 683">(Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.</th><th data-bbox="1146 639 1558 683">(A05) The authorized expert in Quality Control Section Mr SKORUPKA</th></tr></thead><tbody><tr><td data-bbox="373 683 1146 805"></td><td data-bbox="1146 683 1558 805"></td></tr></tbody></table>			test	result	MANDREL BEND TEST	OK	(Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.	(A05) The authorized expert in Quality Control Section Mr SKORUPKA		
test	result									
MANDREL BEND TEST	OK									
(Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.	(A05) The authorized expert in Quality Control Section Mr SKORUPKA									
										

94561 B

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Stahl/Rohr GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

National-Oilwell Canada Ltd.
7127 - 56 Avenue
EDMONTON, AB T6B 3L3
KANADA

Dokument-Nr.: 41-277386/001/P

Document No.:
No. du document:

Kunden-Bestell-Nr.: 05-5446

Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.: 1129689

Benteler Order No.:
No. de commande Benteler:

Versandanzeigen-Nr.: 4161022

Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

Prüf-Nr.:
Inspection No.:

No. du certificat:

Hersteller: Warmrohrwerk/Zieherei
Manufacturer: ISO/TS 16949 (ISO 9001) DNV CERT-13765-2003
Producteur: PED 97/23/EC TÜV Cert 07 202 3937 Z 00014/H

Herstellerzeichen:
Manufacturer's brand:
Marque du producteur:



Stempel des Abnahmebeauftragten: WA
Stamp of the inspection representative:
Timbre du contrôleur:

Stahlschmelzungsverfahren: ELEKTROSTAHL
Steelmaking process: ELECTRIC FURNACE
Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

Blatt: 1 / 6

Page:
Page:

Lieferbedingungen: Terms of delivery: Conditions de livraison:	CSA Standard Z245.1-02 Category I, API Specification 5L Forty-Third Edition, March 2004, PSL 1, ASTM-A 106-2004b, S5, ASME SA-106, ASME Section II Part A Edition 2004, S5, NACE Standard MR0175-03
Maße - Toleranzen: Dimensions-tolerances: Dimensions-tolérances:	ASME B36.10M-1996, ASME SA-530, ASME Section II Part A Edition 2004, ASTM-A 530-2004a
Stahlsorte: Steel grade: Nuance d'acier:	GRADE 290, GRADE B, GRADE X 42
Lieferzustand: Delivery condition: État de livraison:	Hot rolled
Produktkennzeichnung: Product marking: Marquage du produit:	see attachment product marking

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity /	JOB# 1220	

Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur	Gewicht Weight Poids	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlängen Multiple lengths Longueurs multip
		feet	feet	lbs		PSI	s	
0001	135	1" NPS * Sched. 40 18 FT - 22 FT	2719,49	4647	528184	3000	5	
0005	480	3/4" NPS * Sched. 80 18 FT - 22 FT	9448,82	14374	528105	3000	5	88757

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-277386/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 2 / 6
Page:
Page:

Pos.	Stück	Maße	Länge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlänge
Item	Number	Dimensions	Length	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multi
			feet	lbs		PSI		
0006	1493	1" NPS * Sched. 80 18 FT - 22 FT	29389,76	65169	143635	3000 5		

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0001	528184	0,120	0,190	0,83	0,009	0,004	0,13	0,03	0,08	0,16	0,001	0,003	0,002	0,0001
0005	528105	0,130	0,210	0,82	0,014	0,004	0,13	0,02	0,09	0,13	0,001	0,004	0,002	0,0001
0006	143635	0,130	0,205	0,83	0,009	0,003	0,12	0,04	0,09	0,16	0,001	0,003	0,003	0,0001

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr + Mo + V + Nb)/5) + (5 * B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr + Cu + Mo + Ni + V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr.	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0001	528184	0,307	0,266	6,917	0,401
0005	528105	0,312	0,282	6,308	0,371
0006	143635	0,317	0,286	6,385	0,411

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0001	528184	0,130	0,180	0,83	0,009	0,003	0,14	0,03	0,08	0,18	0,001	0,003	0,002	0,0002

88757A

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-277386/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 3 / 6
Page:
Page:

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0001	528184	0,120	0,180	0,85	0,009	0,003	0,14	0,03	0,08	0,18	0,001	0,003	0,002	0,0002
0005	528105	0,130	0,210	0,83	0,013	0,003	0,13	0,03	0,08	0,14	0,001	0,003	0,002	0,0002
0005	528105	0,130	0,210	0,83	0,013	0,003	0,13	0,03	0,09	0,14	0,001	0,003	0,002	0,0002
0006	143635	0,140	0,210	0,84	0,009	0,001	0,12	0,05	0,09	0,17	0,001	0,003	0,002	0,0002
0006	143635	0,140	0,210	0,85	0,009	0,001	0,12	0,05	0,09	0,17	0,001	0,003	0,002	0,0002

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5*B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel	Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula	Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule	Formule
0001	528184	0,320	0,288	6,385	0,431	
0001	528184	0,313	0,271	7,083	0,431	
0005	528105	0,315	0,285	6,385	0,381	
0005	528105	0,316	0,286	6,385	0,391	
0006	143635	0,332	0,310	6,000	0,431	
0006	143635	0,333	0,312	6,071	0,431	

Prüfergebnisse / Test results / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch: The tubes have been submitted to a leak tightness test by: Les tubes ont passé un contrôle d'étanchéité par:	Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test pressure/Time-record	PASSED
Augensichtkontrolle: Visual inspection: Examen visuel:	Biegeversuch: Bending test: Essai de cintrage:	PASSED
	Maßkontrolle: Dimensions examination: Vérification des dimensions:	PASSED

88757 B

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-277386/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 6 /
Page:
Page:

Paderborn Schloß Neuhaus, 27.06.2005, TEL.: 05254.81-1765 FAX: 05254.81-1991


Abnahmebeauftragter
Inspection representative
Contrôleur
DIETER KELLE / DIE

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

88757 E

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-277386/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 4 /
Page:
Page:

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.

Zugversuch / Tensile test / Essai de traction

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH N/mm² 290-495	Rm N/mm² 415-760	A2" % MIN 30	1. Formel 1. Formula 1. Formule	
0001	000001	528184	33,40 X 3,50	330	480	46,00		
0001	000002	528184	33,40 X 3,50	333	481	46,00		
0005	000001	528105	26,70 X 4,00	309	486	42,00		
0005	000002	528105	26,70 X 4,00	311	483	40,00		
0006	000001	143635	33,40 X 4,70	338	486	48,00		
0006	000002	143635	33,40 X 4,70	324	484	48,00		
0006	000003	143635	33,40 X 4,70	335	488	50,00		

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté	HRC	HB	HV	HRB
Anforderungen Requirements Exigences							
					MAX 200		
0001	000001	528184			143		
0005	000001	528105			137		
0006	000001	143635			143		
0006	000002	143635			141		

88757C

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-277386/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 5 /
Page:
Page:

Restmagnetismus / Demagnetize / Démagnétiser

residual magnetic field intensity max 3,5 millitesla

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0001		P.O. 10718482/5865	05-5446
0005		P.O. 10718482/6154	05-5446
0006		P.O. 10718482/6103	05-5446

Vermerk / Remark / Remarque

NACE Standard: hardness acc. to NACE Standard MR0175 HRC max 22, The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.; Bend test: mandrel diameter 12D, bending angle 90 degree

Beiblatt Produktkennzeichnung / Attachment product marking / Supplément marquage du produit

Pos. Item Poste	Produktkennzeichnung Produktkennzeichnung Marquage du produit
0001	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/5865
0005	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/6154
0006	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10718482/6103

FK = Farbkennzeichnung, colour marking, marquage par couleur FS = Farbschablonierung, paint stencilling, marquage par peinture FSD = Farbstrahldrucker, Colour jet printer, imprimante à jet d'encre de couleur LS = Längsschablonierung, longitudinal stencilling, marc longitudinal par peinture PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette PS = Prägestempel, die stamp, marquage par poinçonnage TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre

Verkäufer(in) / Salesman/ woman in charge / Personne chargée : Mr Seelbach, Tel.: 05254/81-4281, Fax: 4289

88757D

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13686

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Stahl/Rohr GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

National Oilwell Canada Ltd.
7127 - 58 Avenue
EDMONTON, AB T6B 3L3
KANADA

Dokument-Nr.: 65-322514/001/P

Document No.:
No. du document:

Kunden-Bestell-Nr.: 06-5578 / 10818277

Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.: 1139743

Benteler Order No.:
No. de commande Benteler:

Versandanzeigen-Nr.: 6588730

Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

Prüf-Nr.:
Inspection No.:
No. du certificat:

Hersteller: Warmrohrwerk Dinslaken
Manufacturer: ISO/TS 16949 (ISO 9001) DNV CERT-13766-2003
Producteur: PED 97/23/EC TÜV Cert 07 202 4111/Z/6001/1/M

Herstellerzeichen:
Manufacturer's brand:
Marque du producteur:

Stempel des Abnahmebeauftragten: WA
Stamp of the inspection representative:
Timbre du contrôleur:

Stahlschmelzungsverfahren: ELEKTROSTAHL
Steelmaking process: ELECTRIC FURNACE
Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

Blatt: 1 / 1
Page:
Page:

Lieferbedingungen: CSA Standard Z245.1-02 Category I, API Specification 5L Forty-Third Edition, March 2004, PSL 1, ASTM-A 106-2004b, S5, ASME SA-106, ASME Section II Part A Edition 2004 Addenda 2005, S5, NACE MR0175/ISO 15156-1:2001, NACE MR0175/ISO 15156-2:2003

Maße - Toleranzen: ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2004 Addenda 2005, ASTM-A 530-2004a

Stahlsorte: GRADE 290, GRADE B, GRADE X 42

Steel grade:

Nuance d'acier:

Lieferzustand: Hot rolled

Delivery condition:

État de livraison:

Produktkennzeichnung: see attachment product marking

Product marking:

Marquage du produit:

Material Control	Sign	Date
Material Received	Rm	SEP 26 2006
Heat # / MTR'S	Rm	SEP 26 2006
Chemical Analysis	N/A	
Quantity 1	Job# 1220	

Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur	Gewicht Weight Poids	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlänger Multiple lengths Longueurs multiples
0008	390	4" NPS * Sched. 40 18 FT - 22 FT	8352,07	90727	742007	207 5		
0009	24	4" NPS * Sched. 40 38 FT - 42 FT	916,27	10099	742011	207 5		9371

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13686

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:
Document No.:
No. du document:

65-322514/001/P

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 2 / 3
Page:
Page:

Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur feet	Gewicht Weight Poids lbs	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve bar	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlänge Multiple lengths Longueurs multi
0016	1500	2" NPS * Sched. 80 18 FT - 22 FT	29748,39	149939	742186	207	5	
0016	610	2" NPS * Sched. 80 18 FT - 22 FT	12263,71	61884	742187	207	5	
0024	54	2" NPS * XXS 18 FT - 22 FT	1104,99	9972	532916	207	5	
0044	76	3" NPS * Sched. 80 38 FT - 42 FT	3153,84	32375	533054	207	5	
0045	50	4" NPS * Sched. 80 38 FT - 42 FT	2055,94	30724	532990	207	5	
0050	127	2" NPS * Sched. 80 38 FT - 42 FT	5285,60	26713	533055	207	5	

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0008	742007	0,130	0,195	0,83	0,007	0,004	0,13	0,03	0,09	0,13	0,001	0,010	0,003	0,0001
0009	742011	0,130	0,195	0,83	0,007	0,005	0,11	0,03	0,09	0,15	0,002	0,010	0,003	0,0001
0016	742186	0,145	0,210	0,77	0,007	0,004	0,16	0,03	0,18	0,20	0,001	0,010	0,003	0,0001
0016	742187	0,145	0,210	0,77	0,007	0,004	0,16	0,03	0,18	0,20	0,001	0,010	0,003	0,0001
0024	532916	0,140	0,190	0,82	0,010	0,004	0,14	0,04	0,10	0,17	0,001	0,010	0,003	0,0002
0044	533054	0,140	0,240	0,82	0,008	0,003	0,19	0,04	0,16	0,22	0,001	0,010	0,003	0,0001
0045	532990	0,120	0,210	0,81	0,009	0,004	0,11	0,02	0,10	0,19	0,001	0,010	0,003	0,0001
0050	533055	0,130	0,210	0,82	0,009	0,006	0,20	0,04	0,18	0,21	0,001	0,010	0,002	0,0001

93714A

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-322514/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 3 / 8
Page:
Page:

1. Formel: $CE\ IIW = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) \leq 0,40\%$
2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr + Mo + V + Nb)/5) + (5 * B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr + Cu + Mo + Ni + V \leq 1,00\%$

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule
0008	742007	0,315	0,285	6,385	0,381
0009	742011	0,313	0,283	6,385	0,382
0016	742186	0,337	0,321	5,310	0,571
0016	742187	0,337	0,321	5,310	0,571
0024	532916	0,331	0,310	5,857	0,451
0044	533054	0,348	0,325	5,857	0,611
0045	532990	0,301	0,263	6,750	0,421
0050	533055	0,341	0,305	6,308	0,631

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0008	742007	0,140	0,180	0,83	0,008	0,002	0,13	0,03	0,08	0,11	0,001	0,010	0,002	0,0003
0008	742007	0,140	0,190	0,84	0,008	0,002	0,13	0,03	0,08	0,11	0,001	0,010	0,002	0,0003
0009	742011	0,140	0,190	0,86	0,009	0,002	0,13	0,03	0,09	0,12	0,002	0,010	0,002	0,0005
0009	742011	0,140	0,190	0,85	0,009	0,002	0,13	0,03	0,08	0,11	0,001	0,010	0,002	0,0002
0016	742186	0,160	0,190	0,73	0,007	0,002	0,11	0,02	0,17	0,18	0,001	0,010	0,002	0,0003
0016	742186	0,160	0,190	0,73	0,007	0,002	0,11	0,02	0,17	0,19	0,001	0,010	0,002	0,0002
0016	742187	0,140	0,180	0,78	0,008	0,005	0,10	0,02	0,09	0,14	0,002	0,010	0,003	0,0001
0016	742187	0,140	0,180	0,78	0,008	0,005	0,10	0,02	0,09	0,14	0,002	0,010	0,003	0,0001
0024	532916	0,140	0,180	0,81	0,010	0,004	0,14	0,03	0,10	0,16	0,002	0,010	0,002	0,0002

93741

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13688

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-322514/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 4 /
Page:
Page:

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0024	532916	0,130	0,180	0,81	0,010	0,003	0,14	0,03	0,10	0,16	0,002	0,010	0,002	0,000
0044	533054	0,140	0,210	0,83	0,009	0,002	0,19	0,04	0,16	0,22	0,001	0,010	0,002	0,000
0044	533054	0,130	0,230	0,80	0,009	0,001	0,13	0,03	0,09	0,16	0,002	0,010	0,002	0,000
0045	532990	0,120	0,200	0,84	0,009	0,004	0,12	0,02	0,09	0,19	0,001	0,010	0,002	0,000
0045	532990	0,120	0,200	0,84	0,010	0,004	0,12	0,02	0,09	0,20	0,001	0,010	0,002	0,000
0050	533055	0,160	0,190	0,73	0,007	0,002	0,11	0,02	0,17	0,18	0,001	0,010	0,002	0,000
0050	533055	0,160	0,190	0,73	0,007	0,002	0,11	0,02	0,17	0,19	0,001	0,010	0,002	0,000

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F \cdot ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5 \cdot B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr.	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0008	742007	0,323	0,304	5,929	0,351
0008	742007	0,325	0,306	6,000	0,351
0009	742011	0,330	0,311	6,143	0,372
0009	742011	0,327	0,307	6,071	0,351
0016	742186	0,331	0,325	4,563	0,481
0016	742186	0,332	0,326	4,563	0,491
0016	742187	0,310	0,291	5,571	0,352
0016	742187	0,310	0,291	5,571	0,352
0024	532916	0,327	0,306	5,786	0,432
0024	532916	0,317	0,287	6,231	0,432
0044	533054	0,350	0,327	5,929	0,611

937141

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-322514/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 5 / 8
Page:
Page:

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule
0044	533054	0,312	0,285	6,154	0,412
0045	532990	0,307	0,268	7,000	0,421
0045	532990	0,308	0,268	7,000	0,431
0050	533055	0,331	0,325	4,563	0,481
0050	533055	0,332	0,326	4,563	0,491

Prüfergebnisse / Test results / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch: The tubes have been submitted to a leak tightness test by: Les tubes ont passé un contrôle d'étanchéité par:		Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test pressure/Time-record		PASSED
Augensichtkontrolle: Visual inspection: Examen visuel:	PASSED	Biegeversuch: Bending test: Essai de cintrage: Pos. / Item / Poste: 0016, 0024, 0050	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions:
Ringfaltversuch: Flattening test: Essai d'aplatissement: Pos. / Item / Poste: 0008, 0009, 0044, 0045	PASSED			

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.

93741

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13668

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-322514/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 6 / 8
Page:
Page:

Zugversuch Streifenprobe / Tensile test Strip test specimen / Essai de traction Bande decoupee sur tube

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH MPa 290-495	Rm MPa 415-760	A2" % MIN 30	1. Formel 1. Formula 1. Formule	
0008	000001	742007	25,40 X 6,00	353	482	41,00		
0008	000002	742007	25,40 X 6,00	355	485	40,00		
0009	000001	742011	25,40 X 6,00	348	481	42,00		
0009	000002	742011	25,40 X 6,00	353	486	40,00		
0016	000001	742186	19,00 X 6,30	366	510	34,00		
0016	000002	742186	19,00 X 6,10	371	511	34,00		
0016	000001	742187	19,00 X 5,50	371	510	34,00		
0016	000002	742187	19,00 X 5,50	367	511	34,00		
0024	000001	532916	19,00 X 11,10	341	473	46,00		
0024	000002	532916	19,00 X 11,10	340	471	46,00		
0044	000001	533054	25,40 X 7,70	378	518	42,00		
0044	000002	533054	25,40 X 7,60	371	511	38,00		
0045	000001	532990	25,50 X 8,70	339	475	40,00		
0045	000002	532990	25,50 X 8,70	338	477	40,00		
0050	000001	533055	19,00 X 5,50	368	510	34,00		
0050	000002	533055	19,00 X 5,50	367	510	34,00		

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté				
Anforderungen Requirements Exigences			HRC	HB	HV	HRB	
				MAX 200			
0008	000001	742007		136			

93714

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13868

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:
Document No.:
No. du document:

65-322514/001/P

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 7 / 8
Page:
Page:

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté			
Anforderungen Requirements Exigences			HRC	HB	HV	HRB
				MAX 200		
0009	000001	742011		137		
0016	000001	742186		140		
0016	000001	742187		141		
0024	000001	532916		138		
0044	000001	533054		145		
0045	000001	532990		136		
0050	000001	533055		140		

Restmagnetismus / Demagnetize / Démagnétiser

Pos. / Item / Poste: 0008, 0016, 0024, 0045, 0050, 0009, 0044
residual magnetic field intensity max 3,5 millitesla

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0008		P.O. 10819277	06-5578 / 10819277
0009		P.O. 10819277	06-5578 / 10819277
0016		P.O. 10819277	06-5578 / 10819277
0024		P.O. 10819277	06-5578 / 10819277
0044		P.O. 10819277	06-5578 / 10819277
0045		P.O. 10819277	06-5578 / 10819277
0050		P.O. 10819277	06-5578 / 10819277

93714

BENTELER
 Stahl/Rohr

 Benteler Stahl/Rohr GmbH
 Postfach 13 40
 33043 Paderborn
 Deutschland
 Tel.: +49.5254.81-0 Fax: +49.5254.13666

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

 Dokument-Nr.: 65-322514/001/P
 Document No.:
 No. du document:

 Prüf-Nr.:
 Inspection No.:
 No. du certificat:

 Blatt: 8 / 8
 Page:
 Page:

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0008, 0045, 0009, 0009, 0044, 0045, 0044, 0045, 0009

NACE Standard: Hardness acc. to NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.

Pos. / Item / Poste: 0016, 0024, 0024, 0050, 0050, 0050, 0024, 0050

NACE Standard: Hardness acc. to NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.; Bend test: mandrel diameter 12D, bending angle 90 degree

Beiblatt Produktkennzeichnung / Attachment product marking / Supplément marquage du produit

Pos. Item Poste	Produktkennzeichnung Produktkennzeichnung Marquage du produit
-----------------------	---

0008, 0009, 0016, 0044, 0045, 0050

 FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY
 P.O. 10819277

 0024 FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS WEIGHT CLASS WA GERMANY
 P.O. 10819277

FK = Farbkennzeichnung, colour marking, marquage par couleur FS = Farbschablondierung, paint stencilling, marquage par peinture FSD = Farbstrahlendrucker, Colour jet printer, Imprimante à jet d'encre de couleur LS = Längsschablondierung, longitudinal stencilling, marquage longitudinal par peinture PKE = Etikettenschildzeichnung, tag marking, marquage sur étiquette PS = Prägestempel, die stamp, marquage par poinçonnage TS = Tintenstreichkennzeichnung, ink jet spray marking, Imprimante à jet d'encre

Verkäufer(in) / Salesman/woman in charge / Personne chargée : Mr Seelbach, Tel.: 05254/81-4281, Fax: 4289

Dinslaken, 23.03.2006, TEL.: 02064.623-537 FAX: 02064.623-539

 Abnahmebeauftragter
 Inspection representative
 Contrôleur
 ROLF TRITTEL / WAG

 Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
 We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
 Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

93714

4 STD A106

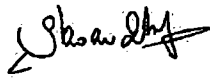
(A09)		(A09)		(A09)											
 VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tuboires de St Sauve rue du Galibot ZI n°4 - BP 2 59880 Saint-Sauve FRANCE tel: 03.27.23.13.01 fax: 03.27.23.15.63		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03)R&F: 26-06-046125 (13) (A08)N°V&M: LA1141/11											
(A09)Purchaser : CCTF CORPORATION (A07)Order n° : VM1595 4875535-00 (B01)SEAMLESS STEEL PIPE, HOT FINISHED (CILLED STEEL) (B04) HOT FINISHED NORMALIZED CONDITION 920°C (1688 F) min-air ENDS BEVELLED 30° ANTI-RUST COATING DRY VARNISH (B07)Specification : API 5L(12/1004)+PSL1+ASTM A 106 (01/10/04)+ASME SA 106 (01/07/04)+GRADE B+C3A Z245-1 (01/03/98)+GRADE 290 CATI+NACE MB0175 ISO 15156 2005 (01/09/05)+CEen-3 Rev.D+ASTM A 530 (0 1/10/04)+ASME SA 530 (01/07/04)+ASME SECT. II PART.A PART.D(2004) ADD (2005) (B04-B07) Stencil marking: V & M FRANCE SL 0061 API DATE OF MARKING A/SA106 Z245-1 4 1/2 10.79 B + 290 CAT 1 PSL1 S 2654 PSI HT HEAT NUMBER SCH 40 4 1/2 X 0.237 VM1595 4875535-00 LENGTH QUANTITY PER ITEM															
(Y/R)	(Q/R)	(B11-B12) Size	(B13) single length	(B10) Quantity	length ft	(B14) Weight lb	(B09) item ref.	(B08) Heat							
11	11	NPS 4 SCH 40 114.30 X 6.02 MM	06096MM 240.01in	1350	27137.43	293987	SKU No 2520273	365022							
(C71-C92) LADLE ANALYSIS $CE = C + F (MN/6 + SI/24 + CU/15 + NI/20 + (CR + MO + V + NB) / 5 + 5 B) < 0.40\%$: HEAT 365022 = 0.39%															
022: MN/C (C70) (B08) Process Heat															
MIN.		C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022
		0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.40	0.11	0.11	0.08	0.001	3
MAX.		%	%	%	%	%	%	%	%	%	%	%	%	%	5
L	365022	0.20	0.20	1.03	0.014	0.002	0.07	0.01	0.03	0.02	0.00	0.00	0.00	0.000	5

Material Control	Sign	Date
Material Received	Rm	
Heat # / MTR'S	Rm	
Chemical Analysis	N/A	
Quantity 1	Job# 1220	

-94562

94562 A

(A00)		(A01)		(A02)																																																																																																																								
 VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tubes de St Sauve rue du Galibot ZI n°4 - BP 2 59680 Saint-Sauve FRANCE tel: 03.27.23.13.01 fax: 03.27.23.15.63		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03)Réf: 26-06-046125 2 / 3 (A08)NV&M: LA1141/11																																																																																																																								
(C71-C92) PRODUCT ANALYSIS CE = C + F (MN/6 + SI/24 + CU/15 + NI/20 + (CR+MO+V+NB)/5 + 5B) < 0.40% : Tests 1FF007 = 0.39% and 2FF007 = 0.39%																																																																																																																												
022: MNUC <table border="1"> <thead> <tr> <th>(C00)</th> <th>(B08)</th> <th></th> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Mo</th> <th>Ni</th> <th>Cu</th> <th>Ti</th> <th>Nb</th> <th>V</th> <th>B</th> <th>022</th> </tr> <tr> <th>Test</th> <th>Heat</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>MIN.</td> <td></td> <td></td> <td></td> <td>0.10</td> <td>0.29</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>MAX.</td> <td></td> <td></td> <td>0.30</td> <td>0.50</td> <td>1.06</td> <td>0.030</td> <td>0.035</td> <td>0.40</td> <td>0.15</td> <td>0.40</td> <td>0.40</td> <td>0.11</td> <td>0.11</td> <td>0.08</td> <td>0.001</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> </tr> <tr> <td>1FF007</td> <td>365022</td> <td></td> <td>0.20</td> <td>0.20</td> <td>0.99</td> <td>0.016</td> <td>0.003</td> <td>0.07</td> <td>0.01</td> <td>0.03</td> <td>0.02</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>5</td> </tr> <tr> <td>2FF007</td> <td>365022</td> <td></td> <td>0.20</td> <td>0.20</td> <td>1.00</td> <td>0.016</td> <td>0.003</td> <td>0.06</td> <td>0.01</td> <td>0.03</td> <td>0.02</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>5</td> </tr> </tbody> </table>						(C00)	(B08)		C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022	Test	Heat																MIN.				0.10	0.29											3	MAX.			0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.40	0.11	0.11	0.08	0.001					%	%	%	%	%	%	%	%	%	%	%	%	%	%	1FF007	365022		0.20	0.20	0.99	0.016	0.003	0.07	0.01	0.03	0.02	0.00	0.00	0.00	0.000	5	2FF007	365022		0.20	0.20	1.00	0.016	0.003	0.06	0.01	0.03	0.02	0.00	0.00	0.00	0.000	5
(C00)	(B08)		C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022																																																																																																												
Test	Heat																																																																																																																											
MIN.				0.10	0.29											3																																																																																																												
MAX.			0.30	0.50	1.06	0.030	0.035	0.40	0.15	0.40	0.40	0.11	0.11	0.08	0.001																																																																																																													
			%	%	%	%	%	%	%	%	%	%	%	%	%	%																																																																																																												
1FF007	365022		0.20	0.20	0.99	0.016	0.003	0.07	0.01	0.03	0.02	0.00	0.00	0.00	0.000	5																																																																																																												
2FF007	365022		0.20	0.20	1.00	0.016	0.003	0.06	0.01	0.03	0.02	0.00	0.00	0.00	0.000	5																																																																																																												
(C10-C92-C93) RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE																																																																																																																												
<table border="1"> <thead> <tr> <th>(C00)</th> <th>(B08)</th> <th></th> <th>width</th> <th>thick.</th> <th>secl.</th> <th>(C11)</th> <th>(C12)</th> <th>(C13)</th> </tr> <tr> <th>Test</th> <th>Heat</th> <th></th> <th></th> <th></th> <th></th> <th>Y.S.</th> <th>T.S.</th> <th>Elong. 2"</th> </tr> </thead> <tbody> <tr> <td>MIN.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>42000</td> <td>60000</td> <td></td> </tr> <tr> <td>MAX.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>mm</td> <td>mm</td> <td>mm²</td> <td>psi</td> <td>psi</td> <td>%</td> </tr> <tr> <td>01FF007</td> <td>365022</td> <td></td> <td>24.8</td> <td>6.0</td> <td>150.13</td> <td>48456</td> <td>74571</td> <td>35</td> </tr> <tr> <td>02FF007</td> <td>365022</td> <td></td> <td>24.7</td> <td>6.1</td> <td>152.01</td> <td>47731</td> <td>74426</td> <td>34</td> </tr> </tbody> </table>						(C00)	(B08)		width	thick.	secl.	(C11)	(C12)	(C13)	Test	Heat					Y.S.	T.S.	Elong. 2"	MIN.						42000	60000		MAX.												mm	mm	mm ²	psi	psi	%	01FF007	365022		24.8	6.0	150.13	48456	74571	35	02FF007	365022		24.7	6.1	152.01	47731	74426	34																																																								
(C00)	(B08)		width	thick.	secl.	(C11)	(C12)	(C13)																																																																																																																				
Test	Heat					Y.S.	T.S.	Elong. 2"																																																																																																																				
MIN.						42000	60000																																																																																																																					
MAX.																																																																																																																												
			mm	mm	mm ²	psi	psi	%																																																																																																																				
01FF007	365022		24.8	6.0	150.13	48456	74571	35																																																																																																																				
02FF007	365022		24.7	6.1	152.01	47731	74426	34																																																																																																																				
ROCKWELL C HARDNESS < OR = 22 GUARANTEED (D01-D99) NON DESTRUCTIVE TESTS																																																																																																																												
<table border="1"> <thead> <tr> <th>test</th> <th>test rate</th> <th>specification</th> <th>pressure psi</th> <th>hold time sec</th> <th>result</th> </tr> </thead> <tbody> <tr> <td>APPEARANCE & DIMENSIONS</td> <td>100% LOT</td> <td></td> <td></td> <td></td> <td>OK</td> </tr> <tr> <td>EDDY CURRENT TEST</td> <td>100% LOT</td> <td>CSA Z245-1</td> <td></td> <td></td> <td>OK</td> </tr> <tr> <td>HYDROSTATIC TEST</td> <td>100% LOT</td> <td></td> <td>2654</td> <td>5</td> <td>OK</td> </tr> </tbody> </table>						test	test rate	specification	pressure psi	hold time sec	result	APPEARANCE & DIMENSIONS	100% LOT				OK	EDDY CURRENT TEST	100% LOT	CSA Z245-1			OK	HYDROSTATIC TEST	100% LOT		2654	5	OK																																																																																															
test	test rate	specification	pressure psi	hold time sec	result																																																																																																																							
APPEARANCE & DIMENSIONS	100% LOT				OK																																																																																																																							
EDDY CURRENT TEST	100% LOT	CSA Z245-1			OK																																																																																																																							
HYDROSTATIC TEST	100% LOT		2654	5	OK																																																																																																																							
(C50-C69) TECHNOLOGICAL TESTS																																																																																																																												
<table border="1"> <thead> <tr> <th>test</th> <th>result</th> </tr> </thead> <tbody> <tr> <td>FLATTENING TEST</td> <td>OK</td> </tr> </tbody> </table>						test	result	FLATTENING TEST	OK																																																																																																																			
test	result																																																																																																																											
FLATTENING TEST	OK																																																																																																																											

(A01)  VALLOUREC & MANNESMANN TUBES (A01) V & M FRANCE Tuberie de St Sauve rue du Galibot ZI n°4 - BP 2 59880 Saint-Sauve FRANCE tel.: 03.27.23.13.01 fax: 03.27.23.15.63	(A02) MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B	ISO 9001 (A03) Réf: 26-06-046125 3 / 3 (A08) N° V&M: LA1141/11
(Z01) 15/02/2006		
(Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.		(A05) The authorized expert in Quality Control Section Mr SKORUPKA 

94562 B

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13866

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-320025/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 2 / 1:
Page:
Page:

Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur feet	Gewicht Weight Poids lbs	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve bar	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlängen Multiple lengths Longueurs multip
0007	891	3" NPS * Sched. 40 18 FT - 22 FT	18990,88	144110	742004	207	5	
0007	587	3" NPS * Sched. 40 18 FT - 22 FT	12513,42	94920	742005	207	5	
0008	176	4" NPS * Sched. 40 18 FT - 22 FT	3809,78	41462	742007	207	5	
0009	44	4" NPS * Sched. 40 38 FT - 42 FT	1708,66	18779	742011	207	5	
0014	126	1 1/4" NPS * Sched. 80 18 FT - 22 FT	2635,04	7780	532774	207	5	
0015	283	1 1/2" NPS * Sched. 80 18 FT - 22 FT	6088,48	22040	742030	207	5	
0017	70	2 1/2" NPS * Sched. 80 18 FT - 22 FT	1431,27	11030	532889	207	5	
0018	337	3" NPS * Sched. 80 18 FT - 22 FT	7188,03	73577	742021	207	5	
0019	218	4" NPS * Sched. 80 18 FT - 22 FT	4747,24	70652	532915	207	5	
0021	172	2" NPS * Sched. 160 18 FT - 22 FT	3687,34	27549	742037	207	5	
0022	70	3" NPS * Sched. 160 18 FT - 22 FT	1531,20	21916	532916	207	5	
0041	73	2" NPS * Sched. 40 38 FT - 42 FT	3015,78	10939	532869	207	5	
0042	125	3" NPS * Sched. 40 38 FT - 42 FT	5187,83	39236	742006	207	5	

93602 A

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13888

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:

Document No.:

No. du document:

65-320025/001/P

Prüf-Nr.:

Inspection No.:

No. du certificat:

Blatt: 3 / 1:

Page:

Page:

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0005	532869	0,140	0,200	0,82	0,007	0,003	0,10	0,02	0,08	0,22	0,003	0,010	0,002	0,0001
0006	532869	0,140	0,200	0,82	0,007	0,003	0,10	0,02	0,08	0,22	0,003	0,010	0,002	0,0001
0007	742004	0,130	0,195	0,82	0,007	0,004	0,12	0,03	0,09	0,14	0,002	0,010	0,003	0,0001
0007	742005	0,130	0,195	0,83	0,007	0,004	0,11	0,03	0,09	0,13	0,002	0,010	0,003	0,0001
0008	742007	0,130	0,195	0,83	0,007	0,004	0,13	0,03	0,09	0,13	0,001	0,010	0,003	0,0001
0009	742011	0,130	0,195	0,83	0,007	0,005	0,11	0,03	0,09	0,15	0,002	0,010	0,003	0,0001
0014	532774	0,130	0,200	0,81	0,008	0,004	0,14	0,05	0,11	0,15	0,001	0,010	0,002	0,0002
0015	742030	0,130	0,215	0,83	0,010	0,003	0,14	0,04	0,10	0,17	0,001	0,010	0,003	0,0001
0017	532889	0,130	0,220	0,81	0,010	0,003	0,14	0,04	0,12	0,18	0,001	0,010	0,002	0,0002
0018	742021	0,130	0,215	0,83	0,010	0,003	0,14	0,04	0,10	0,17	0,001	0,010	0,003	0,0001
0019	532915	0,130	0,190	0,82	0,010	0,003	0,14	0,03	0,10	0,17	0,001	0,010	0,003	0,0002
0021	742037	0,135	0,200	0,81	0,010	0,004	0,14	0,03	0,11	0,18	0,001	0,010	0,003	0,0002
0022	532916	0,140	0,190	0,82	0,010	0,004	0,14	0,04	0,10	0,17	0,001	0,010	0,003	0,0002
0041	532869	0,140	0,200	0,82	0,007	0,003	0,10	0,02	0,08	0,22	0,003	0,010	0,002	0,0001
0042	742006	0,130	0,195	0,83	0,007	0,004	0,13	0,03	0,09	0,13	0,001	0,010	0,003	0,0001

- Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
- Formel: $CEV = C + F \cdot ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5 \cdot B)) \leq 0,40$
- Formel: $Mn/C \geq 3/1$
- Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr.	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0005	532869	0,321	0,302	5,857	0,423
0006	532869	0,321	0,302	5,857	0,423
0007	742004	0,312	0,283	6,308	0,382

93602

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:

Document No.:

No. du document:

65-320025/001/P

Prüf-Nr.:

Inspection No.:

No. du certificat:

Blatt: 4 / 12

Page:

Page:

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule
0007	742005	0,311	0,282	6,385	0,362
0008	742007	0,315	0,285	6,385	0,381
0009	742011	0,313	0,283	6,385	0,382
0014	532774	0,321	0,290	6,231	0,451
0015	742030	0,323	0,292	6,385	0,451
0017	532889	0,321	0,291	6,231	0,481
0018	742021	0,323	0,292	6,385	0,451
0019	532915	0,319	0,288	6,308	0,441
0021	742037	0,324	0,303	6,000	0,461
0022	532916	0,331	0,310	5,857	0,451
0041	532869	0,321	0,302	5,857	0,423
0042	742006	0,315	0,285	6,385	0,381

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0005	532869	0,130	0,180	0,81	0,008	0,002	0,10	0,02	0,08	0,22	0,004	0,010	0,002	0,0002
0005	532869	0,130	0,180	0,81	0,008	0,002	0,10	0,02	0,08	0,22	0,004	0,010	0,002	0,0003
0006	532869	0,130	0,180	0,81	0,008	0,002	0,10	0,02	0,08	0,22	0,004	0,010	0,002	0,0002
0006	532869	0,130	0,180	0,81	0,008	0,002	0,10	0,02	0,08	0,22	0,004	0,010	0,002	0,0002
0007	742004	0,140	0,180	0,84	0,008	0,002	0,13	0,03	0,08	0,12	0,001	0,010	0,002	0,0002
0007	742004	0,140	0,190	0,84	0,008	0,003	0,13	0,03	0,08	0,12	0,001	0,010	0,002	0,0003
0007	742005	0,140	0,190	0,84	0,009	0,002	0,13	0,03	0,09	0,12	0,001	0,010	0,002	0,0002
0007	742005	0,140	0,190	0,83	0,008	0,002	0,13	0,03	0,08	0,12	0,001	0,010	0,002	0,0003
0008	742007	0,140	0,180	0,83	0,008	0,002	0,13	0,03	0,08	0,11	0,001	0,010	0,002	0,0003
0008	742007	0,140	0,190	0,84	0,008	0,002	0,13	0,03	0,08	0,11	0,001	0,010	0,002	0,0003

93602

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13668

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:
Document No.:
No. du document:

65-320025/001/P

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 5 / 1:
Page:
Page:

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0009	742011	0,140	0,190	0,86	0,009	0,002	0,13	0,03	0,09	0,12	0,002	0,010	0,002	0,0005
0009	742011	0,140	0,190	0,85	0,009	0,002	0,13	0,03	0,08	0,11	0,001	0,010	0,002	0,0002
0014	532774	0,140	0,180	0,79	0,007	0,003	0,13	0,04	0,11	0,14	0,001	0,010	0,002	0,0001
0014	532774	0,130	0,180	0,80	0,007	0,003	0,13	0,04	0,11	0,13	0,001	0,010	0,002	0,0001
0015	742030	0,130	0,200	0,84	0,009	0,003	0,15	0,03	0,09	0,17	0,001	0,010	0,002	0,0003
0015	742030	0,140	0,200	0,86	0,010	0,003	0,15	0,03	0,09	0,17	0,002	0,010	0,002	0,0005
0017	532889	0,140	0,200	0,85	0,009	0,003	0,15	0,03	0,09	0,17	0,001	0,010	0,002	0,0004
0017	532889	0,140	0,200	0,85	0,009	0,003	0,16	0,03	0,09	0,17	0,001	0,010	0,002	0,0004
0018	742021	0,130	0,200	0,85	0,009	0,003	0,15	0,03	0,09	0,17	0,001	0,010	0,002	0,0003
0018	742021	0,140	0,200	0,85	0,009	0,003	0,15	0,03	0,09	0,17	0,001	0,010	0,002	0,0003
0019	532915	0,140	0,180	0,82	0,010	0,002	0,15	0,03	0,09	0,17	0,001	0,010	0,002	0,0002
0019	532915	0,140	0,180	0,82	0,010	0,002	0,15	0,03	0,09	0,18	0,002	0,010	0,002	0,0002
0021	742037	0,140	0,190	0,81	0,009	0,005	0,13	0,03	0,10	0,18	0,001	0,010	0,002	0,0003
0021	742037	0,140	0,190	0,80	0,009	0,004	0,13	0,03	0,10	0,18	0,001	0,010	0,002	0,0003
0022	532916	0,140	0,180	0,81	0,010	0,004	0,14	0,03	0,10	0,16	0,002	0,010	0,002	0,0002
0022	532916	0,130	0,180	0,81	0,010	0,003	0,14	0,03	0,10	0,16	0,002	0,010	0,002	0,0003
0041	532869	0,130	0,180	0,81	0,008	0,002	0,10	0,02	0,08	0,22	0,004	0,010	0,002	0,0002
0041	532869	0,130	0,180	0,81	0,008	0,002	0,10	0,02	0,08	0,22	0,004	0,010	0,002	0,0002
0042	742006	0,140	0,190	0,83	0,008	0,002	0,13	0,03	0,09	0,12	0,001	0,010	0,002	0,0002
0042	742006	0,130	0,190	0,83	0,008	0,002	0,13	0,03	0,09	0,12	0,001	0,010	0,002	0,0003

- Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
- Formel: $CEV = C + F \cdot ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5 \cdot B)) \leq 0,40$
- Formel: $Mn/C \geq 3/1$
- Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

93602

BENTELER
Stahl/Rohr

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13686

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-320025/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 6 / 12
Page:
Page:

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulées	1. Formule	2. Formule	3. Formule	4. Formule
0005	532869	0,310	0,281	6,231	0,424
0005	532869	0,310	0,282	6,231	0,424
0006	532869	0,310	0,281	6,231	0,424
0006	532869	0,310	0,281	6,231	0,424
0007	742004	0,326	0,305	6,000	0,361
0007	742004	0,326	0,306	6,000	0,361
0007	742005	0,326	0,306	6,000	0,371
0007	742005	0,324	0,305	5,929	0,361
0008	742007	0,323	0,304	5,929	0,351
0008	742007	0,325	0,306	6,000	0,351
0009	742011	0,330	0,311	6,143	0,372
0009	742011	0,327	0,307	6,071	0,351
0014	532774	0,323	0,302	5,643	0,421
0014	532774	0,314	0,283	6,154	0,411
0015	742030	0,324	0,293	6,462	0,441
0015	742030	0,337	0,317	6,143	0,442
0017	532889	0,335	0,315	6,071	0,441
0017	532889	0,337	0,317	6,071	0,451
0018	742021	0,325	0,294	6,538	0,441
0018	742021	0,335	0,315	6,071	0,441
0019	532915	0,330	0,309	5,857	0,441
0019	532915	0,331	0,310	5,857	0,452
0021	742037	0,326	0,306	5,786	0,441
0021	742037	0,324	0,305	5,714	0,441
0022	532916	0,327	0,306	5,786	0,432
0022	532916	0,317	0,287	6,231	0,432

93602

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13688

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-320025/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 7 / 12
Page:
Page:

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0041	532869	0,310	0,281	6,231	0,424
0041	532869	0,310	0,281	6,231	0,424
0042	742006	0,325	0,305	5,929	0,371
0042	742006	0,315	0,286	6,385	0,371

Prüfergebnisse / Test results / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch: The tubes have been submitted to a leak tightness test by: Les tubes ont passé un contrôle d'étanchéité par:		Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test pressure/Time-record		PASSED
Augensichtkontrolle: Visual inspection: Examen visuel:	PASSED	Biegeversuch: Bending test: Essai de cintrage: Pos. / Item / Poste: 0005, 0014, 0015, 0021, 0041	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions:
Ringfaltversuch: Flattening test: Essai d'aplatissement: Pos. / Item / Poste: 0006, 0007, 0008, 0009, 0017, 0018, 0019, 0022, 0042	PASSED			

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.

93602 F

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-320025/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 8 / 12
Page:
Page:

Zugversuch Streifenprobe / Tensile test Strip test specimen / Essai de traction Bande decoupee sur tube

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH MPa 280-495	Rm MPa 415-760	A2" % MIN 30	1. Formel 1. Formula 1. Formule	
0005	000001	532869	19,00 X 4,20	409	493	36,00		
0005	000002	532869	19,00 X 4,40	398	490	38,00		
0006	000001	532869	19,00 X 5,00	407	490	38,00		
0006	000002	532869	19,00 X 5,00	406	491	37,00		
0007	000001	742004	25,40 X 5,50	352	481	42,00		
0007	000002	742004	25,40 X 5,50	357	483	40,00		
0007	000001	742005	25,40 X 5,50	357	485	42,00		
0007	000002	742005	25,40 X 5,50	350	481	41,00		
0008	000001	742007	25,40 X 6,00	353	482	41,00		
0008	000002	742007	25,40 X 6,00	355	485	40,00		
0009	000001	742011	25,40 X 6,00	348	481	42,00		
0009	000002	742011	25,40 X 6,00	353	486	40,00		
0014	000001	532774	12,70 X 4,70	406	491	37,00		
0014	000002	532774	12,70 X 4,70	399	491	38,00		
0015	000001	742030	12,70 X 5,10	357	490	37,00		
0015	000002	742030	12,70 X 5,10	349	496	36,00		
0017	000001	532889	19,00 X 7,00	362	478	35,00		
0017	000002	532889	19,00 X 7,00	344	486	36,00		
0018	000001	742021	25,40 X 7,60	355	495	35,00		
0018	000002	742021	25,40 X 7,60	359	493	36,00		
0019	000001	532915	25,40 X 8,40	361	493	44,00		
0019	000002	532915	25,40 X 8,20	355	498	40,00		
0021	000001	742037	19,00 X 8,70	334	470	38,00		

93602

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-320025/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 9 / 1:
Page:
Page:

Zugversuch Streifenprobe / Tensile test Strip test specimen / Essai de traction Bande decoupee sur tube

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH MPa 290-495	Rm MPa 415-760	A2 ⁿ % MIN 30	1. Formel 1. Formula 1. Formule	
0021	000002	742037	19,00 X 8,70	331	470	37,00		
0022	000001	532916	25,40 X 11,20	338	473	46,00		
0022	000002	532916	25,40 X 11,50	344	470	46,00		
0041	000001	532869	19,00 X 3,80	402	491	38,00		
0041	000002	532869	19,00 X 3,80	408	492	38,00		
0042	000001	742006	25,40 X 5,50	357	484	41,00		
0042	000002	742006	25,40 X 5,50	351	485	40,00		

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté	HRC	HB	HV	HRB
Anforderungen Requirements Exigences							
					MAX 200		
0005	000001	532869			134		
0006	000001	532869			134		
0007	000001	742004			136		
0007	000002	742004			136		
0007	000001	742005			137		
0008	000001	742007			136		
0009	000001	742011			137		
0014	000001	532774			134		
0015	000001	742030			142		
0017	000001	532889			141		

93600

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13668

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:

Document No.:

No. du document:

65-320025/001/P

Prüf-Nr.:

Inspection No.:

No. du certificat:

Blatt: 10 /

12

Page:

Page:

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté
Anforderungen Requirements Exigences			HRC HB HV HRB
			MAX 200
0018	000001	742021	141
0019	000001	532915	144
0021	000001	742037	138
0022	000001	532916	138
0041	000001	532869	134
0042	000001	742006	136

Restmagnetismus / Demagnetize / Démagnétiser

Pos. / Item / Poste: 0005, 0018, 0008, 0015, 0041, 0042, 0022, 0006, 0021, 0019, 0007, 0014, 0009, 0017

residual magnetic field intensity max 3,5 millitesla

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0005		P.O. 10819277	06-5578 / 10819277
0006		P.O. 10819277	06-5578 / 10819277
0007		P.O. 10819277	06-5578 / 10819277
0008		P.O. 10819277	06-5578 / 10819277
0009		P.O. 10819277	06-5578 / 10819277
0014		P.O. 10819277	06-5578 / 10819277
0015		P.O. 10819277	06-5578 / 10819277
0017		P.O. 10819277	06-5578 / 10819277
0018		P.O. 10819277	06-5578 / 10819277
0019		P.O. 10819277	06-5578 / 10819277

93602

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13868

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-320025/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 11 / 12
Page:
Page:

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0021		P.O. 10819277	06-5578 / 10819277
0022		P.O. 10819277	06-5578 / 10819277
0041		P.O. 10819277	06-5578 / 10819277
0042		P.O. 10819277	06-5578 / 10819277

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0005, 0015, 0014, 0014, 0021, 0015, 0041, 0041, 0021, 0015, 0014, 0041, 0021, 0021, 0014, 0041, 0015, 0014, 0021
NACE Standard: Hardness acc. to NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.; Bend test: mandrel diameter 12D, bending angle 90 degree

Pos. / Item / Poste: 0006, 0022, 0017, 0042, 0018, 0019, 0018, 0009, 0007, 0017, 0009, 0007, 0008, 0022, 0008, 0022, 0009, 0019, 0007, 0017, 0008, 0042, 0018
NACE Standard: Hardness acc. to NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.

Beiblatt Produktkennzeichnung / Attachment product marking / Supplément marquage du produit

Pos. Item Poste	Produktkennzeichnung Produktkennzeichnung Marquage du produit
0005, 0006, 0007, 0008, 0009, 0014, 0015, 0017, 0018, 0019, 0021, 0022, 0041, 0042	
FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY
	P.O. 10819277

FK = Farbkennzeichnung, colour marking, marquage par couleur FS = Farbschablonierung, point stencilling, marquage par peinture FSD = Farbstrahldrucker, Colour jet printer, imprimante à jet d'encre de couleur LS = Längsschablonierung, longitudinal stencilling, marquage longitudinal par peinture PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette PS = Prägestempel, die stamp, marquage par poinçonnage TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre

Verkäufer(in) / Salesman/ woman in charge / Personne chargée : Mr Seelbach, Tel.: 05254/81-4281, Fax: 4289

93602

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:
Document No.:
No. du document:

65-320025/001/P

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 12 / 1.
Page:
Page:

Dinslaken, 09.03.2006, TEL.: 02064.623-537 FAX: 02064.623-539

Abnahmebeauftragter
Inspection representative
Contrôleur
ROLF TRITTEL / WAG



Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

93602