



CERTIFICATE OF AUTHORIZATION

This certificate accredits the named company as authorized to use the indicated symbol of the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the Code symbol and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this symbol shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

**IPS Manufacturing Limited
LSD: 01-16-40-16-W4M
Halkirk, Alberta T0C 1M0
Canada**

SCOPE:

Manufacture of pressure vessels at the above location only

AUTHORIZED:

October 28, 2005

EXPIRES:

August 20, 2008

CERTIFICATE NUMBER: 31,246

**Chairman of The Boiler
And Pressure Vessel Committee**

Director, Accreditation and Certification



Certificate of Authorization

Quality Control Program

Expiry Date: **August 20, 2008**

Reg. No.: **AQP-1342(S)**

This is to certify that:

IPS MANUFACTURING LIMITED

**LSD 1-16-40-16-W4M
HALKIRK, ALBERTA**

having complied with the provisions of the SAFETY CODES ACT, is hereby authorized to:

Construct, Repair/Alter ASME Section VIII-1 Pressure Vessels

Construct Miniature Pressure Vessels in accordance with CSA B51

Manufacture, Repair/Alter Category 'A', 'E' & 'H' Fittings in accordance with CSA B51

at the above SHOP address.

Construct, Repair/Alter ASME B31.1 Power Piping and ASME B31.3 Process Piping

at the SHOP and FIELD sites controlled from the above address.



Dated at Edmonton, this 7th day of October, 2005

Chief Inspector and Administrator
Certificate No.: 4754

(A) 550 600

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by IPS Manufacturing Limited, LSD: 1-16-40-16-W4M, Alberta Canada (Box 24, Halkirk, AB T0C 1M0)
 (Name and address of Manufacturer)

2. Manufactured for Husky Energy Inc. 707 8th Ave. SW Calgary AB. T2P 3G7
 (Name and address of purchaser)

3. Location of installation LSD: 03-06-49-18 W5M
 (Name and address)

4. Type Horizontal Sep. V-3201-001 R-7101.2 IPS-48H-144 Rev. 0 N/A 2006
 (Horiz. or vert. tank) (Mfg's serial No.) (Drawing No.) (Nat'l. Bd.No.) (Year Built)

5. The chemical and physical properties of all parts meet the requirements of material specification of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conforms to ASME Rules, Section VIII, Division 1 2001
 Year

to 2003 N/A N/A
 Addenda (Date) Code Case Nos. Special Service per UG-120(d)

6. Shell: SA-516-70N 2.0" 0.125" 48" ID 16' 0" S/S
 Mat'l. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams Type 1 Full 100% 1150°F 120 Min. Type 1 Full 1
 Long. (Welded, Dbl., Singl., Lap, Butt) R.T. (Spot or Full) Eff. (%) H.T. Temp (F) Time (hr) Girth (Welded, Dbl Singl., Lap, Butt) R.T. (Spot Eff. (%) No. of Courses or Full)

8. Heads: (a) Material SA-516-70N (b) Material SA-516-70N
 (Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	END(MNWWY)	1.91"	0.125"	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	END	1.91"	0.125"	N/A	N/A	2:1	N/A	N/A	N/A	Concave

If removable, bolts used (describe other fastenings)

N/A

(Mat'l., Spec. No., Gr., Size, No.)

9. MAWP 1440 N/A psi at max. temp 130°F N/A
 Internal External Internal External

Min. design metal temp. - 20°F F at 1440 psi (Hydro., pneu., or comb. test pressure 2160 psi.

10. Nozzels, inspection and safety valve opening:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Materials	How Attached	Location
(M1) MANWAY/INSP.	1	18"	Cl.600RFHB	SA-105N	2.60"	N/A	Fig. UW-16.1(c)	Head
(N2) INLET	1	8"	Cl.600RFHB	SA-105N	2.16"	N/A	Fig. UW-16.1(c)	Shell
(N3) GAS OUTLET	1	8"	Cl.600RFHB	SA-105N	2.16"	N/A	Fig. UW-16.1(c)	Shell
(N4) HLSD	1	3"	Cl.600RFHB	SA-105N	1.24"	N/A	Fig. UW-16.1(c)	Shell(Tan)

11. Supports: Skirt No Lugs Two Legs Two Other N/A Attached Welded to Shell
 (yes or no) (No.) (No.) Describe (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: N/A

(Name of part, item number, Mfg's name and identifying stamp)

Capacity: 213 Cu. Ft.

Continued on U-4 Supplementary Sheet

Construction drawing # V-3201-001 Rev.1

**Heads & Shells Charpy Impact Tested per UG-84 TO -20°F, Other Material Exempt Per UCS-66 Fig.1, UCS-68(c),

UCS-66(b)(2), UCS-66(b)(1)(b), UG-20f & UCS-66(c)

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 31,246, expires August 20, 2008

Date June 14, 2006 Co.name IPS Manufacturing Limited, LSD: 1-16-40-16-W 4M Signed [Signature]
 (Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by IPS Manufacturing Limited, LSD: 1-16-40-16-W4M at Halkirk, Alberta, Canada

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Alberta and employed by ABSA

have inspected the component described in this Manufacturer's Data Report on June 14, 2006, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date June 14, 2006 Signed [Signature] Commissions AB# 261
 Authorized Inspector Nat'l Board (incl. Endorsements) State, Prov. and No.)

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by IPS Manufacturing Limited, LSD: 1-16-40-16-W4M, Alberta Canada (Box 24, Halkirk, AB T0C 1M0)
(Name and address of Manufacturer)

2. Manufactured for Husky Energy Inc. 707 8th Ave. SW Calgary AB. T2P 3G7
(Name and address of Purchaser)

3. Location of installation LSD: 03-06-49-18 W5M
(Name and address)

4. Type: Horizontal Separator V-3201-001
(horizontal, vertical or sphere) (Tank, separator, heat exch., etc.) (Mfg's serial No.)
R-7101.2 IPS-48H-144 Rev. 0 N/A 2006
(CRN) (Drawing No.) (Nat'l. Bd. No.) (Year Built)

Data Report

Item Number	Remarks
(N5) H2O LC CAGE 1	3" Cl.600RFHB SA-105N FVC Flange Fig.UW-16.1 (c) Shell(Tan)
(N6) Cond.LC 1	3" Cl.600RFHB SA-105N FVC Flange Fig.UW-16.1 (c) Shell(Tan)
(N7) PSV 1	3" Cl.600RFHB SA-105N FVC Flange Fig.UW-16.1 (c) Shell
(N8) HSO OUT 1	3" Cl.600RFHB SA-105N FVC Flange Fig.UW-16.1 (c) Shell
(N9) HC OUT 1	3" Cl.600RFHB SA-105N FVC Flange Fig.UW-16.1 (c) Shell
(N10) H2O DRAIN 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell
(N11) HC DRAIN 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell
(N12) PI 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell
(N13) TI 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell
(N14a) SPARE 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell(Tan)
(N14b) Water Drain 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell
(N15a) HC LG 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell
(N15b) HC LG 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell
(N16) SPARE 1	2" Cl.600 RFWN SA-105N Flange /2"NPS Sch 160 (0.344") SA-106B Pipe Fig.UW-16.1 (c) Shell

Certificate of Authorization: Type U No. 31,246 Expires August 20, 2008

Date June 14, 2006 Name IPS Manufacturing Limited. Signed [Signature]
(Manufacturer) (Representative)

Date June 14, 2006 Name [Signature] Commission AB# 261
(Authorized Inspector) (Nat'l board incl. endorsement, State, Province and No.)

IPS MANUFACTURING LIMITED

(AN IPS COMPANY)
MATERIAL CONTROL EXHIBIT # 9.4
TRAVEL SHEET

DO NOT START CONSTRUCTION WITHOUT AI REVIEW				TRAVEL SHEET REVISION NO.: 1					
AI REVIEW: <i>[Signature]</i>				REVIEW DATE: DEC 17/01					
SERIAL NO.: V-3201-001		V-3201-001		VESSEL TYPE: 48" X 16' HORIZONTAL SEPARATOR-1440 PSI					
DRAWING NO.: V-3201-001		DWG. REVISION NO.: 0		TRAVEL SHEET INITIATION BY: <i>[Signature]</i>					
Seq.	Item	Comments	Q.C.I.	Date	A.I. Hold Points	A.I.	Date	Owner	Date
1	Calculations in File		PS	DEC 16/04					
2	Release of App'd Dwg		PS	DEC 16/04		SS	DEC 17/01		
3	Heat Numbers Recorded		EC	SEP 30/05	*	SS	OCT 12/05		
4	MTRs Checked		EC	SEP 30/05	*	J.	JUN 14/06		
5	WPS(s) Checked		PS	DEC 16/04					
6	Welder(s) Qualified		PS	DEC 16/04					
7	Thicknesses Verified & Recorded		EC	SEP 30/05					
8	Shell(s) & Head(s) Fitup Inspection		PS	OCT 2/05	*	SS	OCT 12/05		
9	Nozzle & Fittings Fit-up Inspection		PS	OCT 11/05					
10	Nozzle Orientation		PS	OCT 11/05					
11	Nozzle & Flange Rating Checked		PS	OCT 11/05					
12	Impact Tests	-20°F PER UG-84	PS	JUN 25/05	*				
13	Internals Checked		PS	OCT 11/05	**	SS	OCT 12/05		
14	Final Internal Inspection		PS	OCT 11/05					
15	Weld Size Checked		PS	OCT 11/05					
16	Welder I.D. Checked		PS	OCT 11/05					
17	Final External Inspection		PS	OCT 11/05	*	J.	JUN 14/06		
18	Radiography	Longseams RTI FULL	PS	OCT 11/05	*	J.	JUN 14/06	PS	JUN 14/06
		Circs RTI FULL	PS	OCT 11/05	*	J.	JUN 14/06	PS	JUN 14/06
19	Other N.D.E.		N/A	-					
20	Final Ext. Prior to P.W.H.T.		PS	OCT 12/05	**	SS	OCT 12/05		
21	PWHT Chart Checked		PS	JUN 14/06	*	J.	JUN 14/06	PS	JUN 14/06
22	2160 psi Hydrostatic Test	Shell Side Gauge# 1851 Tube Side Gauge# 1062	PS	JUN 14/06	**	J.	JUN 14/06	PS	JUN 14/06
23	CRN Drawing	CRN # R7101.2	PS	DEC 16/04		SS	DEC 17/01		
24	N.C.R.#		N/A	-					
25	Nameplate Stamping		PS	JUN 14/06	*	J.	JUN 14/06		
26	Manuf. Data Report Completed & Verified	(A) 550600	PS	JUN 14/06	*				
27	Nameplate Installation		PS	JUN 14/06					

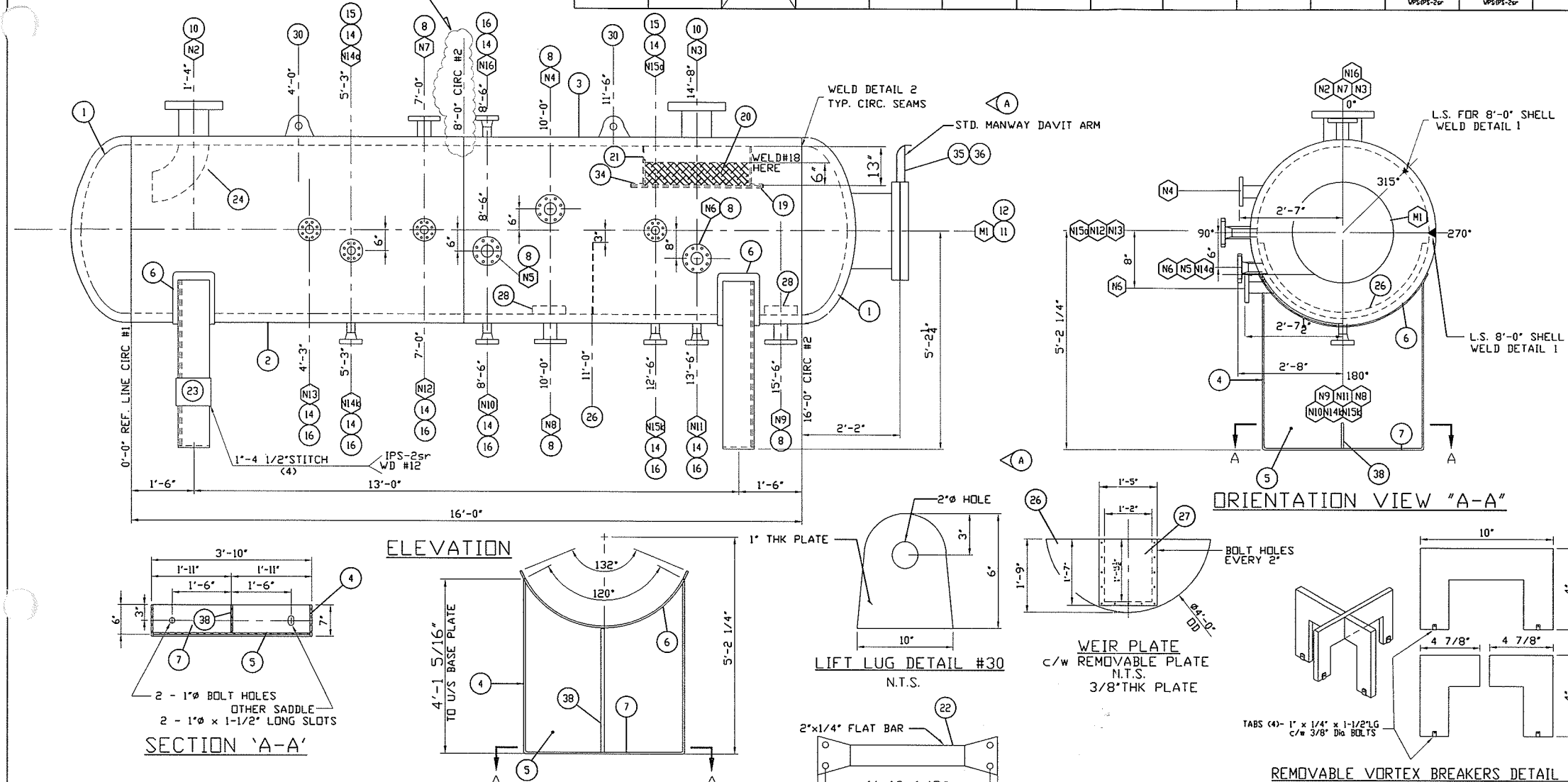
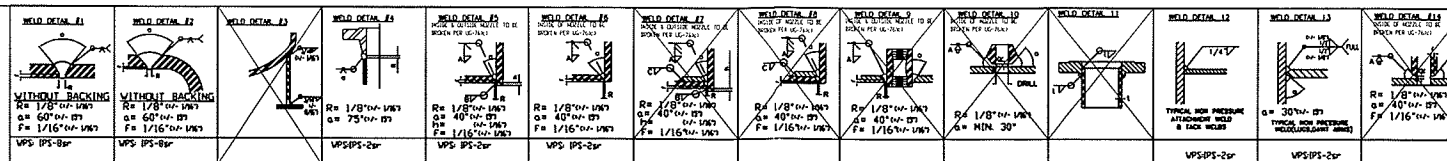
The Authorized Inspector shall be presented with the Travel Sheet prior to construction so that he can designate additional inspection points and/or Hold Points. Any revisions shall be marked with a delta symbol with revision number and described at the bottom of this page.

* Denotes an A.I. Inspection Point

** Denotes an A.I. Hold Point

RT - L1 -
L2 -
C1 -
C2 -
C3 -

IMPORTANT: WELD AND X-RAY
CENTER CIRC #2 BEFORE
CUTTING HOLES FOR NOZZLES.



AS BUILT

NOTE: REMEMBER TO ADD COUPON
WITH LONGSEAM

MAWP EQUALS DESIGN PRESSURE
C.T.S. - CUT TO SUIT
TOLERANCE SPEC AS PER DMV-2002TOL Rev.0
REFERENCE DWG: IPS-48H-144 REV.0
WPS: IPS-8sr, IPS-2sr
HEADS, SHELLS, F.V.C. & REPADS ARE FINE GRAINED PRACTICE

DESIGN DATA
DESIGN AND FABRICATE TO ASME CODE, SECTION VIII DIV. 1 2001 EDITION, 2003 ADDENDA
DESIGN PRESSURE & TEMPERATURE: 1440 PSIG AT 130°F. PREHEAT 200°F. MDMT: -20°F @ 1440 PSIG
IMPACT TESTS: HEADS/SHELLS PRODUCTION IMPACT TEST AS PER UG-84 TO -20°F. OTHER MATERIAL
EXEMPT PER UCS-66 FIG.1, UCS-68(c), UCS-66(b)(2), UCS-66(b)(1)(b), UG-20F &
UCS-66(c)
RADIOGRAPHY: LONG & CIRC. SEAM FULL PER UW-11a
POST WELD HEAT TREATMENT: 1150°F FOR 120 MIN. HYDROSTATIC TEST PRESSURE 2160 PSIG
HEAD MINIMUM THICKNESS: 1.91" CORROSION ALLOWANCE: 1/8"
WEIGHT EMPTY: 23500 LBS. WEIGHT FULL OF WATER: 40000 LBS
STUD & NUTS FOR MANWAY ARE SA-193 B7M & SA-194-2HM/ CAPACITY 213 CU. FT.

OFFICE MNGR: _____ DATE: _____ LAYOUT DONE BY: _____
ISSUED TO FAB MNGR: _____ DATE: _____ CHECKED BY: _____

BILL OF MATERIALS

MK	QTY	DESCRIPTION	MATERIAL
1	2	HEADS: 48" ID x 2" NDM THK. (1.91" MIN.) 2:1 SE C/W 2" SF	SA-516-70N
2	1	SHELL PLATE: 48" ID x 8'-0" S/S x 2" THK.	SA-516-70N
3	1	SHELL PLATE: 48" ID x 8'-0" S/S x 2" THK.	SA-516-70N
4	4	SIDE PLATE: 6' x 7/8" THK x 4'-1" LONG (SHOP FIT)	SA-36
5	2	FACE PLATE: 3'-10" x 3/8" THK x 4'-1" LONG (SHOP FIT)	SA-36
6	2	WEAR PLATE: 60" LONG x 8' x 3/8" THK (ROLL TO 52" ID)	SA-516-70N
7	2	BASE PLATE: 3'-10" LONG x 7' x 3/4" THK.	SA-36
8	6	FLANGE 3" CL600 RFHB (2.90" ID x 1.24" WALL) x 11" LG-CTS	SA-105N
9			
10	2	FLANGE 8" CL600 RFHB (7.62" ID x 2.16" WALL) x 14" LG	SA-105N
11	1	MANWAY FLANGE 18" CL600 RFHB c/w 18" ID (2.60" WALL) x 20" LONG	SA-105N
12	1	BLIND FLANGE: 18" CL600 RF	SA-105N
13			
14	9	FLANGE 2" CL600 RFWN SCH 160 BORE	SA-105N
15	1	PIPE 2" NPS SMLS SCH 160 x 6 1/2" LONG	SA-106-B
16	8	PIPE 2" NPS SMLS SCH 160 x 5 3/8" LONG	SA-106-B
18	8	FLAT PLATE TABS: 1' x 2' x 1/4" THK	SA-36
19	1	PLATE: 26" OD x 18" ID x 12" WIDE SEE DETAIL c/w EXP. METAL: 1/2" THK x 3 POUNDS/FOOT - C.T.S	SA-36
20	1	MISTEX PAD: 20" OD x 6" THK x 9 LBS/CU. FT.-SEE DETAIL	316 S.S.
21	1	MISTEX SUPPORT: PLATE ROLLED TO 21" OD x 3/8" THK x 1'-1" LG	SA-36
22	1	FLAT BAR: 2" WD x 1/4" x 2'-0" LONG	SA-36
23	1	NAME PLATE: 10" x 8" x 1/8"	SA-36
24	1	INLET DEFLECTOR: 8" 90° LR ELBOW Sch. STD.	SA-234-WPB
25	10	FLAT BAR: 1" WD x 1/4" THK x 2" LG	SA-36
26	1	WEIR PLATE: 21" LG x 48" OD x 3/8" THK c/w REMOVABLE PLATE - SEE DETAIL	SA-36
27	1	REMOVABLE PLATE c/w 3/8" Dia BOLTS C.T.S. - SEE DETAIL	SA-36
28	2	REMOVABLE VORTEX BREAKERS: 10" x 4" x 1/4" THK STD- SEE DETAIL	SA-36
29			
30	2	LIFT LUG PLATE: 1" THK x 6" x 10" SEE DETAIL	SA-516-70N
31	10	FLAT BAR: 1" WD x 1/4" THK x 2" LONG	SA-36
32	4	FLAT BAR: 1" WD x 1/4" THK - C.T.S.	SA-36
34	1	MISTEX SUPPORT PLATE: 26" OD x 21" ID x 1/4" THK - CUT IN HALF	SA-36
35	1	STANDARD DAVIT ARM	SA-51670N
36	1	2" NPS SCH.160 SMLS PIPE FOR DAVIT ARM	SA-106B
37			
38	2	RIB PLATE: 7/8" THK x 6" x 2'-11 1/2" C.T.S.	SA-36

NOZZLE WELD SCHEDULE

MARK	SIZE	SCH.	RTG.	TYPE	SERVICE	LOCATION	DSP	ISP (h)	WELD DETAIL	A FILLET	B FILLET	C FILLET	NOZZLE CUT LENGTH
M1	18"	F.V.C.	CL600	RFHB	MANWAY/INSP	HEAD	AS SHWN	2"	5	1/2"	-	-	19 3/8"
N2	8"	F.V.C.	CL600	RFHB	INLET	SHELL	10"	3/4"	5	3/8"	-	-	14"
N3	8"	F.V.C.	CL600	RFHB	GAS OUTLET	SHELL	10"	SF	6	3/8"	-	-	13 1/4"
N4	3"	F.V.C.	CL600	RFHB	HLSD	SHELL (tan)	AS SHWN	SF	6	3/8"	-	-	10 1/8"
N5	3"	F.V.C.	CL600	RFHB	H2O LC CAGE	SHELL (tan)	AS SHWN	SF	6	3/8"	-	-	10 1/8"
N6	3"	F.V.C.	CL600	RFHB	COND. LC	SHELL (tan)	AS SHWN	SF	6	3/8"	-	-	10 1/2"
N7	3"	F.V.C.	CL600	RFHB	PSV	SHELL	8"	SF	6	3/8"	-	-	10 5/8"
N8	3"	F.V.C.	CL600	RFHB	H2O OUT	SHELL	8"	SF	6	3/8"	-	-	10 5/8"
N9	3"	F.V.C.	CL600	RFHB	HC OUT	SHELL	8"	SF	6	3/8"	-	-	10 5/8"
N10	2"	160	CL600	RFWN	H2O DRAIN	SHELL	6"	GF	6 & 4	3/8"	-	-	5 3/8"
N11	2"	160	CL600	RFWN	HC DRAIN	SHELL	6"	GF	6 & 4	3/8"	-	-	5 3/8"
N12	2"	160	CL600	RFWN	PI	SHELL	6"	SF	6 & 4	3/8"	-	-	5 3/8"
N13	2"	160	CL600	RFWN	TI	SHELL	6"	SF	6 & 4	3/8"	-	-	5 3/8"
N14a	2"	160	CL600	RFWN	SPARE	SHELL (tan)	AS SHWN	SF	6 & 4	3/8"	-	-	6 1/2"
N14b	2"	160	CL600	RFWN	WATER DRN	SHELL	6"	GF	6 & 4	3/8"	-	-	5 3/8"
N15a	2"	160	CL600	RFWN	HC LG	SHELL	6"	SF	6 & 4	3/8"	-	-	5 3/8"
N15b	2"	160	CL600	RFWN	HC LG	SHELL	6"	SF	6 & 4	3/8"	-	-	5 3/8"
N16	2"	160	CL600	RFWN	SPARE	SHELL	6"	SF	6 & 4	3/8"	-	-	5 3/8"



MANUFACTURING LIMITED

DATE 04-12-15	DESIGNED BY IPS	IPS MANUFACTURING LIMITED	
DRAWN BY CPRICHARD	CHECKED BY	TITLE HORIZONTAL VESSEL DRAWING 48" ID x 16'-0" S/S 1440 PSIG @ 130°F, 1/8" C.A.	
APPROVED BY	PROJECT NO.	FILENAME 3201-001	CAN NO. R-7101.2
SCALE N.T.S.	SHEET NO. 1 OF 1	DRAWING NO. V-3201-001	REV. NO. A

	DATE	04-04-05		CLIENT	IPS MANUFACTURING LIMITED		
	DESIGNED BY	IPS					
	DRAWN BY	C.PRICHARD		TITLE	HORIZONTAL VESSEL DRAWING		
	CHECKED BY				48" ID x 30'-0" S/S MAWP 1440 PSig @ 130°F, 1/8" C.A.		
	APPROVED BY			PROJECT NO.	FILENAME IPS-48H-144	DRN NO.	
SCALE	N.T.S.		SHEET NO. 1 OF 1	DRAWING NO. IPS-48H-144	REV. NO. 0		

SEP CHECK FOR ALL CONNECTIONS ON VESSELS

VESS
MEDIUM
FIBRE
DIA.:(inches)

50.250

VESSEL REF#:

3201-001

DATE:

DEC.15/2004

VESSEL DESCRIPTION:

48"ID x 16'-0" HORIZ.

SHELL MIN THK(in)

2

CORROSION ALLOWANCE(in.)

0.125

VESSEL OD (in)

52

ENTER DATA IN BOXES

NOZZLE	corroded openings	ELEV(in.)	ORIENTATION	NPS
	#N/A	60	180 DRAIN	
	#N/A	0	0 GASOUT	
N2	7.87	16	0 8"HB	
N3	7.87	176	0 8"HB	
N4	3.15	120	76 3"HB	
N5	3.15	102	104 3"HB	
N6	3.15	162	109 3"HB	
N7	3.15	84	0 3"HB	
N8	3.15	120	180 3"HB	
N9	3.15	186	180 3"HB	
N10	1.937	102	180 2"SCH.160	
N11	1.937	162	180 2"SCH.160	
N12	1.937	84	90 2"SCH.160	
N13	1.937	51	90 2"SCH.160	
N14A	1.937	63	104 2"SCH.160	
N14B	1.937	63	180 2"SCH.160	
N15A	1.937	150	90 2"SCH.160	
N15B	1.937	150	180 2"SCH.160	
N16	1.937	102	0 2"SCH.160	
-	#N/A	-	-	-
	#N/A			
	#N/A			

Chenler
12/15/04

SEPARATION CHECK FOR ALL CONNECTIONS ON VESSELS

VESSEL

MEDIUM

FIBRE

DIA.:(in) **50.250**

VESSEL REF#: 3201-001

DATE: DEC.15/2004

VESSEL DESCRIPTION: 48"ID x 16'-0" HORIZ.

CORROSION ALLOWANCE(in. **0.125**

NOZZLE @ 90° TO EACH OTHER HAVE ADEQUATE SEP.

1st TAG	2nd TAG	ACT SEP	1st ELEV	2nd ELEV	1ST ORIENT.	2ND ORIENT.	=2.5*(d1+d2)		=C	=D	O.K. BY	RESULT	DOUBLE CHK
							MAX. SEP	REQ			MAX. SEP.		
								d1+d2		REQD AS PER UG-36(c)(3)(d)			
N2	N3	160.0000	16	176	0	0	39.35	15.740		39.3500	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N4	109.2094	16	120	0	76	27.55	11.020		26.7615	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N5	97.3440	16	102	0	104	27.55	11.020		25.6237	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N6	153.6250	16	162	0	109	27.55	11.020		26.7295	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N7	68.0000	16	84	0	0	27.55	11.020		27.5500	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N8	130.5616	16	120	0	180	27.55	11.020		24.1871	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N9	187.4309	16	186	0	180	27.55	11.020		26.0127	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N10	116.7319	16	102	0	180	24.5175	9.807		20.6447	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N11	165.9709	16	162	0	180	24.5175	9.807		22.7474	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N12	78.6231	16	84	0	90	24.5175	9.807		22.5299	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N13	52.7502	16	51	0	90	24.5175	9.807		19.5675	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N14A	65.4894	16	63	0	104	24.5175	9.807		20.3643	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N14B	91.8659	16	63	0	180	24.5175	9.807		17.3331	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N15A	139.6910	16	150	0	90	24.5175	9.807		23.9182	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N15B	155.5196	16	150	0	180	24.5175	9.807		22.4820	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	N16	86.0000	16	102	0	0	24.5175	9.807		24.5175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N2	-	#VALUE!	16	-	0	-	#N/A	#N/A		#N/A	#N/A	#N/A	#N/A
N2		#VALUE!	16		0		#N/A	#N/A		#N/A	#N/A	#N/A	#N/A
N2		#VALUE!	16		0		#N/A	#N/A		#N/A	#N/A	#N/A	#N/A
N3	N4	65.1667	176	120	0	76	27.55	11.020		25.2248	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N5	86.9244	176	102	0	104	27.55	11.020		25.0922	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N6	49.8061	176	162	0	109	27.55	11.020		15.6664	MAX.SEP.	SEP PER 'D'	SEP PER 'C'

SEPARATION CHECK FOR ALL CONNECTIONS ON VESSELS

VESSEL

MEDIUM

FIBRE

DIA.:(in)

50.250

VESSEL REF#: 3201-001

DATE: DEC.15/2004

VESSEL DESCRIPTION: 48"ID x 16'-0" HORIZ.

CORROSION ALLOWANCE(in.) 0.125

NOZZLE @ 90° TO EACH OTHER HAVE ADEQUATE SEP.

CORROSION ALLOWANCE(mm.)												
NOZZLE @ 90° TO EACH OTHER HAVE ADEQUATE SEP.												
1st TAG	2nd TAG	ACT SEP	1st ELEV	2nd ELEV	1ST ORIENT.	2ND ORIENT.	=2.5*(D1+D2)	=C	=D	O.K. BY	RESULT	DOUBLE CHK
							MAX. SEP REQ	d1+d2	REQD AS PER UG-	MAX. SEP.		
N5	N8	37.8773	102	120	104	180	15.75	6.300	10.7908	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N9	90.3698	102	186	104	180	15.75	6.300	15.0839	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N10	33.3271	102	102	104	180	12.7175	5.087	5.0870	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N11	68.6345	102	162	104	180	12.7175	5.087	11.7576	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N12	19.0181	102	84	104	90	12.7175	5.087	12.3090	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N13	51.3682	102	51	104	90	12.7175	5.087	12.6628	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N14A	39.0000	102	63	104	104	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N14B	51.3000	102	63	104	180	12.7175	5.087	10.8880	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N15A	48.3910	102	150	104	90	12.7175	5.087	12.6558	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N15B	58.4354	102	150	104	180	12.7175	5.087	11.3548	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N16	45.6055	102	102	104	0	12.7175	5.087	5.0870	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	-	#VALUE!	102	-	104	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N5		#VALUE!	102		104		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N5		#VALUE!	102		104		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N6	N7	91.4803	162	84	109	0	15.75	6.300	14.3575	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N8	52.2815	162	120	109	180	15.75	6.300	13.8916	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N9	39.3110	162	186	109	180	15.75	6.300	12.0694	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N10	67.5970	162	102	109	180	12.7175	5.087	11.8599	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N11	31.1345	162	162	109	180	12.7175	5.087	5.0870	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N12	78.4437	162	84	109	90	12.7175	5.087	12.6743	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N13	111.3123	162	51	109	90	12.7175	5.087	12.6961	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N14A	99.0243	162	63	109	104	12.7175	5.087	12.7156	MAX.SEP.	SEP PER 'D'	SEP PER 'C'

SEPARATION CHECK FOR ALL CONNECTIONS ON VESSELS

VESSEL

MEDIUM

FIBRE

DIA.:(in)

50.250

VESSEL REF#: 3201-001

DATE: DEC.15/2004

VESSEL DESCRIPTION: 48"ID x 16'-0" HORIZ.

CORROSION ALLOWANCE(in.) 0.125

NOZZLE @ 90° TO EACH OTHER HAVE ADEQUATE SEP.

$$=2.5*(d1+d2) =C =D$$

1st TAG	2nd TAG	ACT SEP	1st ELEV	2nd ELEV	1ST ORIENT.	2ND ORIENT	MAX. SEP REQ	d1+d2	REQD AS PER UG-	O.K. BY MAX. SEP.	RESULT	DOUBLE CHK
N9	N12	109.3590	186	84	180	90	12.7175	5.087	12.2034	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	N13	140.6506	186	51	180	90	12.7175	5.087	12.4109	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	N14A	127.4351	186	63	180	104	12.7175	5.087	12.4519	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	N14B	123.0000	186	63	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	N15A	53.4190	186	150	180	90	12.7175	5.087	10.2293	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	N15B	36.0000	186	150	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	N16	115.2664	186	102	180	0	12.7175	5.087	10.6477	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	-	#VALUE!	186	-	180	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N9		#VALUE!	186		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N9		#VALUE!	186		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N10	N11	60.0000	102	162	180	180	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	N12	43.3772	102	84	180	90	9.685	3.874	6.2854	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	N13	64.4871	102	51	180	90	9.685	3.874	8.4697	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	N14A	51.3000	102	63	180	104	9.685	3.874	8.2917	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	N14B	39.0000	102	63	180	180	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	N15A	62.1417	102	150	180	90	9.685	3.874	8.3626	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	N15B	48.0000	102	150	180	180	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	N16	78.9325	102	102	180	0	9.685	3.874	3.8740	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N10	-	#VALUE!	102	-	180	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N10		#VALUE!	102		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N10		#VALUE!	102		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N10	-	#VALUE!	102	-	180	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

N3	N7	92.0000	176	84	0	0	27.55	11.020	27.5500	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N8	96.7799	176	120	0	180	27.55	11.020	20.5848	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N9	79.5634	176	186	0	180	27.55	11.020	13.0976	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N10	108.1959	176	102	0	180	24.5175	9.807	19.8682	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N11	80.1645	176	162	0	180	24.5175	9.807	12.3761	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N12	100.1079	176	84	0	90	24.5175	9.807	23.3261	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N13	131.0824	176	51	0	90	24.5175	9.807	23.8349	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N14A	121.8559	176	63	0	104	24.5175	9.807	23.4484	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N14B	137.8381	176	63	0	180	24.5175	9.807	21.8667	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N15A	47.2608	176	150	0	90	24.5175	9.807	17.8998	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N15B	83.1044	176	150	0	180	24.5175	9.807	14.4093	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	N16	74.0000	176	102	0	0	24.5175	9.807	24.5175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N3	-	#VALUE!	176	-	0	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N3		#VALUE!	176		0		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N3		#VALUE!	176		0		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N4	N5	21.7890	120	102	76	104	15.75	6.300	14.1067	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N6	44.4231	120	162	76	109	15.75	6.300	15.2345	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N7	49.0581	120	84	76	0	15.75	6.300	13.2346	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N8	45.6055	120	120	76	180	15.75	6.300	6.3000	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N9	80.2238	120	186	76	180	15.75	6.300	14.0745	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N10	49.0291	120	102	76	180	12.7175	5.087	7.8884	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N11	61.9988	120	162	76	180	12.7175	5.087	10.2561	MAX.SEP.	SEP PER 'D'	SEP PER 'C'

N6	N14B	103.7803	162	63	109	180	12.7175	5.087	12.3660	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N15A	14.6088	162	150	109	90	12.7175	5.087	11.3548	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N15B	33.3670	162	150	109	180	12.7175	5.087	7.8312	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	N16	76.7115	162	102	109	0	12.7175	5.087	11.0552	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N6	-	#VALUE!	162	-	109	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N6		#VALUE!	162		109		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N6		#VALUE!	162		109		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N7	N8	86.7545	84	120	0	180	15.75	6.300	10.2214	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N9	128.9742	84	186	0	180	15.75	6.300	13.7736	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N10	80.9589	84	102	0	180	12.7175	5.087	6.7835	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N11	110.9700	84	162	0	180	12.7175	5.087	10.4504	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N12	39.4663	84	84	0	90	12.7175	5.087	5.0870	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N13	51.4450	84	51	0	90	12.7175	5.087	9.9817	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N14A	50.2081	84	63	0	104	12.7175	5.087	8.2785	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N14B	81.6783	84	63	0	180	12.7175	5.087	7.0488	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N15A	76.8998	84	150	0	90	12.7175	5.087	11.6359	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N15B	102.8900	84	150	0	180	12.7175	5.087	9.9817	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	N16	18.0000	84	102	0	0	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N7	-	#VALUE!	84	-	0	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N7		#VALUE!	84		0		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N7		#VALUE!	84		0		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N8	N9	66.0000	120	186	180	180	15.75	6.300	15.7500	MAX.SEP.	SEP PER 'D'	SEP PER 'C'

N11	N12	87.4162	162	84	180	90	9.685	3.874	9.0591	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N11	N13	117.8074	162	51	180	90	9.685	3.874	9.3492	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N11	N14A	104.4590	162	63	180	104	9.685	3.874	9.3813	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N11	N14B	99.0000	162	63	180	180	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N11	N15A	41.2503	162	150	180	90	9.685	3.874	5.5645	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N11	N15B	12.0000	162	150	180	180	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N11	N16	99.1481	162	102	180	0	9.685	3.874	7.3906	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N11	-	#VALUE!	162	-	180	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N11		#VALUE!	162		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N11		#VALUE!	162		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N12	N13	33.0000	84	51	90	90	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N12	N14A	21.8790	84	63	90	104	9.685	3.874	9.4515	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N12	N14B	44.7055	84	63	90	180	9.685	3.874	6.6037	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N12	N15A	66.0000	84	150	90	90	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N12	N15B	76.8998	84	150	90	180	9.685	3.874	8.8613	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N12	N16	43.3772	84	102	90	0	9.685	3.874	6.2854	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N12	-	#VALUE!	84	-	90	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N12		#VALUE!	84		90		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N12		#VALUE!	84		90		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N13	N14A	13.4792	51	63	90	104	9.685	3.874	9.0473	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N13	N14B	41.2503	51	63	90	180	9.685	3.874	5.5645	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N13	N15A	99.0000	51	150	90	90	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'

N4	N12	36.5197	120	84	76	90	12.7175	5.087	12.6089	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N13	69.2726	120	51	76	90	12.7175	5.087	12.6875	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N14A	58.3075	120	63	76	104	12.7175	5.087	12.5464	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N14B	72.9990	120	63	76	180	12.7175	5.087	11.0451	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N15A	30.6217	120	150	76	90	12.7175	5.087	12.5626	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N15B	54.5881	120	150	76	180	12.7175	5.087	9.2805	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	N16	37.8773	120	102	76	0	12.7175	5.087	8.7132	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N4	-	#VALUE!	120	-	76	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N4		#VALUE!	120		76		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N4		#VALUE!	120		76		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N5	N6	60.0400	102	162	104	109	15.75	6.300	15.7437	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N5	N7	49.0291	102	84	104	0	15.75	6.300	9.7694	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
1st TAG	2nd TAG	ACT SEP	1st ELEV	2nd ELEV	1ST ORIENT.	2ND ORIENT.	MAX. SEP REQ	d1+d2	REQD AS PER UG-36(c)(3)(d)	O.K. BY MAX. SEP.	RESULT	DOUBLE CHK

OPENINGS

1.09
1.3
1.565

ELEV

0	60
0	0
N2	16

ORIENT

0	180
0	0
N2	0

NPS

DRAIN
GASOUT
8"HB

finished

1/2"	1.09
3/4"	1.3
1"	1.565
1 1/2"	2.15

N8	N10	18.0000	120	102	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N11	42.0000	120	162	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N12	53.4190	120	84	180	90	12.7175	5.087	10.2293	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N13	79.4895	120	51	180	90	12.7175	5.087	11.7106	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N14A	66.0283	120	63	180	104	12.7175	5.087	11.6742	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N14B	57.0000	120	63	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N15A	49.5740	120	150	180	90	12.7175	5.087	9.7046	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N15B	30.0000	120	150	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	N16	80.9589	120	102	180	0	12.7175	5.087	6.7835	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N8	-	#VALUE!	120	-	180	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N8		#VALUE!	120		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N8		#VALUE!	120		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N9	N10	84.0000	186	102	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N9	N11	24.0000	186	162	180	180	12.7175	5.087	12.7175	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
1st TAG	2nd TAG	ACT SEP	1st ELEV	2nd ELEV	1ST ORIENT.	2ND ORIENT.	MAX. SEP REQ	d1+d2	REQD AS PER UG-36(c)(3)(d)	O.K. BY MAX. SEP.	RESULT	DOUBLE CHK

N13	N15B	106.5767	51	150	90	180	9.685	3.874	9.2719	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N13	N16	64.4871	51	102	90	0	9.685	3.874	8.4697	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N13	-	#VALUE!	51	-	90	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N13		#VALUE!	51		90		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N13		#VALUE!	51		90		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N14A	N14B	33.3271	63	63	104	180	9.685	3.874	3.8740	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N14A	N15A	87.2163	63	150	104	90	9.685	3.874	9.6706	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N14A	N15B	93.1649	63	150	104	180	9.685	3.874	9.3005	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N14A	N16	60.0071	63	102	104	0	9.685	3.874	7.6507	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N14A	-	#VALUE!	63	-	104	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N14A		#VALUE!	63		104		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N14A		#VALUE!	63		104		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N14B	N15A	95.5332	63	150	180	90	9.685	3.874	9.1660	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N14B	N15B	87.0000	63	150	180	180	9.685	3.874	9.6850	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N14B	N16	88.0417	63	102	180	0	9.685	3.874	6.4481	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N14B	-	#VALUE!	63	-	180	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N14B		#VALUE!	63		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N14B		#VALUE!	63		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N14B	0	3.0000	63	60	180	180	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N15A	N15B	39.4663	150	150	90	180	9.685	3.874	3.8740	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N15A	N16	62.1417	150	102	90	0	9.685	3.874	8.3626	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N15A	-	#VALUE!	150	-	90	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N15A		#VALUE!	150		90		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N15A		#VALUE!	150		90		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N15B	N16	92.3815	150	102	180	0	9.685	3.874	6.8933	MAX.SEP.	SEP PER 'D'	SEP PER 'C'
N15B	-	#VALUE!	150	-	180	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N15B		#VALUE!	150		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N15B		#VALUE!	150		180		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N16	-	#VALUE!	102	-	0	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N16	0	89.4111	102	60	0	180	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	0	#VALUE!		60		180	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	0	#VALUE!		60		180	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
		#VALUE!					#N/A	#N/A	#N/A	#N/A	#N/A	#N/A



July 15, 2005

Ludwig & Associates Ltd
#4027- 14th St. SE
Calgary, AB
T2G 3K6

Phone: 403-262-7072
Fax: 403-266-3169

Attn: Troy or Steve,

Please find the following information you should need to perform a production impact test on the coupon which was sent over.

IPS WO# 3201-001 PO# 3201-001
Size of Vessel: 48" ID X 16' S/S Horizontal Separator 1/8" CA
Serial Number: V-3201-001

Plate size used for vessel & coupons: 2.0" thk. SA-516-70N Plate.

Heat# for materials used: 0083D-21652
Weld Procedures used: IPS--8sr- GMAW/SMAW

Welder Identification: "S" – Raymond Stirling "B" Welder
Welder Identification: "H" – Matthew Fuller Machine Welder

PWHT: Must be for 120 min @ 1150°F
Please ensure a copy of the PWHT chart accompanies the paperwork you send back to us.

Impact Tests Minimum Requirements & Temperature: As per UG-84 to -20°F

If you require any further information please don't hesitate to contact myself at (403) 884-2442. We look forward to hearing the results as soon as possible.

Regards,

Ron Sobie
QC Manager
IPS Manufacturing Limited.

HEAD OFFICE: #1100, 840 – 7TH Avenue S.W. Calgary, AB T2P 3G2 Phone: [403] 266-0908 / Fax: [403] 266-1639
HALKIRK PLANT: Box 24, Halkirk, AB, T0C 1M0 Phone: [403] 884-2442 / Fax: [403] 884-2106



LUDWIG & ASSOCIATES LTD.

Materials and Welding Engineering

LABORATORY TEST REPORT

LABORATORY
ACCREDITATION
BUREAU
ISO/IEC 17025 ACCREDITED
Certificate Number L2057

CUSTOMER: IPS Manufacturing Limited
Box 24, Hwy. 855 North
Halkirk, Alberta
T0C 1M0

Laboratory Test No.: C05-953.1
Date: June 22, 2005

Attention: Ron Sobie

WPS Number:	IPS-8sr (GMAW/SMAW)	Welder I.D.:	"S" Raymond Stirling, "B" Welder
Vessel Serial No.:	V-3201-001	Welder I.D.:	"H" Matthew Fuller, Machine Welder
Material:	SA 516 Gr. 70N (Ht. No.: 0083D-21652)		
Thickness:	50.8 mm (2.00 in.)		
Thermal Condition:	PWHT @ 621°C (1150°F) for 120 minutes.		

NOTCH-TOUGHNESS TEST

TYPE OF TEST:	Charpy V-Notch	ORIENTATION:	Transverse
TEST TEMPERATURE:	-29°C (-20°F)	SPECIMEN SIZE:	10 x 10 mm

Specimen Number	Notch Location	Impact Values Joules (ft.lbs)	
N2.1	Weld Metal within 1/16 in. of root	203	(150)
N2.2		226	(167)
N2.3		201	(148)
O2.1	Weld Metal @ 1/4T opposite side	183	(135)
O2.2		>260	(>192)
O2.3		>260	(>192)
N3.1	HAZ	152	(112)
N3.2		168	(124)
N3.3		258	(190)

We certify the test results in this report and that the specimen(s) were prepared and tested in accordance with the requirements of ASME Section VIII, Div. 1, UG-84 – 2004 edition and latest addenda. The information regarding material identification (i.e. size, thickness, heat number, etc.) has been provided by the customer whose name appears on this report.

Laboratory Test Conducted By: _____


Dan Nguyen, T.T. / Steve Rieberger, C.E.T.

LUDWIG & ASSOCIATES LTD.

HEAT TREATMENT RECORD

Job Number: C05-953 Date Prepared: July 19, 2005Customer: I.P.S.Material Specification: SA 516 Gr. 70N

Size / Thickness: _____

Type of Heat Treatment: Stress Relief ☒ Full Anneal _____
 Normalize _____ Temper _____
 Harden ... Quench _____
 Temper _____

INSTRUCTIONS

- Temperature to be raised from 800 °F to 1150 °F at a maximum rate of 200 °F/hr
Note: Must not exceed 200°C (400°F) per hour.
- Temperature to be held at 1150 °F ± _____ °F for 120 minutes.
- Temperature to be lowered from 1150°F to 800°F at a maximum rate of 250 °F/hr
Note: Must not exceed 250°C (500°F) per hour.
- Additional requirements _____

Signature 

PROGRAMS FOR OVEN CONTROLLERS

Check File Used: File #1 _____ File #2 _____ File #3 ☒ File #4(specify) _____

File #1 - 800°F to 1150°F at 6.6°F/min. (400°F/hr) 1 hour hold time 1150°F down to 800°F at 8.3°F/min. (500°F/hr).

File #2 - 800°F to 1150°F at 4.4°F/min. (266°F/hr) 3 hours hold time 1150°F down to 800°F at 5.5°F/min. (333°F/hr).

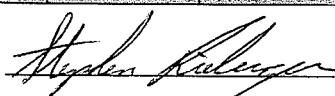
File #3 - 800°F to 1150°F at 3.8°F/min. (228°F/hr) 1.75 hours hold time 1150°F down to 800°F at 4.7°F/min. (286°F/hr).

File #4 (Wpr is 1°F lower than set point for large oven and 2°F for small oven)

Step #	StYP	Set Point	Hour	Minutes	Seconds	Rate	Wpr	End
1	StPt	800				12		
2	StPt	1150				3.33		
3	SoAH		2	-	-		1147	
4	StPt	800				4.16		
5	SoAH				10		800	
6	End							Off

Large Oven ☒

Small Oven _____

Signature 

Date

July 19, 2005

1: 1079.8 °F
4: 50mm/h
07/19 20:00

2: 419.8 °F
3: -

1: LARGE 1
3: -

GRAPHIC CONTROLS CORPORATION

0.0 500.0 1000.0 1500.0 2000.0 °F
1: LARGE 1 2: SMALL 2 1: LARGE 1

Reviewed
Sun 29/05
[Signature]

1: 1147.7 °F
4: 50mm/h
05/07/19 18:00

2: 733.2 °F
3: -

1: LARGE 1
3: -

CHART NO. 15-BL-1000-B

0.0 500.0 1000.0 1500.0 2000.0 °F
2: SMALL 2 1: LARGE 1 2: SMALL 2 1: LARGE 1

PRINTED IN U.S.A.

1: 901.7 °F
4: 50mm/h
05/07/19 18:00

2: 1045.7 °F
3: -

2: SMALL 2
1: LARGE 1

BUFFALO, NEW YORK

0.0 500.0 1000.0 1500.0 2000.0 °F
1: LARGE 1 2: SMALL 2 1: LARGE 1 2: SMALL 2

LARGE over
COS-953.1
1/3 MINUTEMAN LTD.
STRESS RELIEVE @ 150°F
FOR 2 HOURS.

1: 426.8 °F
4: 50mm/h
05/07/19 14:00

2: 554.1 °F
3: -

1: LARGE 1
2: SMALL 2

July 19, 2005
[Signature]

Scale: 50mm = 14mmC.

RADIATION SOURCE

Isotope: IR.192

Focal Spot Size 2.7mmScreens: Lead

Front: .010" Back: .010"

INVOICE NUMBER

13291

FILM CHARGES

____ X ____
____ X ____
____ X ____
____ X ____
____ X ____

SHEET CHARGES

28 4 1/2 X 17
____ 14 X 17
____ 7 X 17

Technician: JBHelper: DEVIN HALEY

JACOB McHOLLISTER
SNT II
CGSB.48.9712 L II
6085

Total	Regular	OT	KM
<u>8</u>	<u>8</u>		<u>30</u>

RADIOGRAPHIC
INTERPRETATION REPORT

Box 248 Stettler, AB T0C 2L0

Ph: (403) 742-HUNT (4868) Fax: (403) 742-4858

☒ Check if
Applicable

WELD DEFECTS

1. Slight 2. Moderate 3. Severe

Report#: 34864Date: JULY 15/05 Page 1 of 2Client: IPS MFG LTD

Inspector

Print

Inspector

Sign:

P.O.#:

A.F.E.#:

Q.C.#:

Job#: V3201-001

Ser.#:

Contractor:

Items Inspected:

48" Vessel
Code: ASME Sect VIII, Div 1, para 51

Field Weld Number(s)	Size	Wall Thickness	No. Of Exposures	Welder Symbol	Material C.S. Carbon Steel S.T. Stainless	Hunt Q.C. Procedure No.	Source to Object Distance	Object to Film Distance	Film Brand and Class	Penetrometer & Placement F.S. Film Side S.S. Source Side	Single Wall Exposure	Double Wall Exposure	Single Wall Viewing	Double Wall Viewing	Window	Crack	Undercut	Slag	Lack of Fusion	Concave Bead	Incomplete Penetration	Idios	Porosity	Low Cover	Burn Through	Crater	High Low	Hollow Bead	Gas Pocket	Suck Back	Excess Penetration	Other	Location:	Accept	Reject	
																																	Remarks			
1																																			1	
2																																			2	
3	cm									AGFA ASTM																									3	
4	0-30	48"	2.000"	1 DX	CS	Rt 7	20"	2.125"	D5	1-BSS	✓		✓																						4	
5	30-60																																			5
6	60-90																																			6
7	90-120																																			7
8	120-150																																			8
9	150-180																																			9
10	180-210																																			10
11	210-240	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓																						11	
12	END																																			12
13																																				13
14																																				14
15	cm									AGFA ASTM																									15	
16	0-30	48"	2.000"	1 HS	CS	Rt 7	20"	2.125"	D5	1-BSS	✓		✓																						16	
17	30-60																																			17
18	60-90																																			18
19	90-120																																			19
20	120-150																																			20
21	150-180																																			21
22	180-210																																			22
23	210-240	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓																						23	
24	END																																			24
25																																				25

White - Client

Green - Billing

Yellow - Q.C.

Pink - Office

Goldenrod - Film

13291

_____ $4\frac{1}{2} \times 17$
 _____ 14×17
 _____ 7×17

Helper

JACOB McHOLLISTER
SNT II
CGSB.48.9712 L II
6085

Total	Regular	OT	KM
-------	---------	----	----

HUNT
INSPECTION LTD

Box 248 Stettler, AB T0C 2L0

Ph: (403) 742-HUNT (4868) Fax: (403) 742-4858

 Check if Applicable

WELD DEFECTS

1. Slight 2. Moderate 3. Severe

34865

Date: July 15, 05 Page 2 of 2

Client: IPS MFG LTD

Inspector

Print

Inspector

Sign

P.O.#:

A.F.E.#:

Q.C.#:

Job#: V3201-001

Ser.#:_____

Contractor:

Items Inspected: _____

48" Vessel

Code ASME Sect VIII, Div 1 CW 51[illegible]

White - Client

Green - Billing

Yellow - Q.C.

Pink - Office

Goldenrod - Film

RADIATION SOURCE

Isotope: IR.192

Focal Spot Size 3.1mm

Screens: Lead

Front: .010" Back: .010"

INVOICE NUMBER

13308

FILM CHARGES

____ X ____
____ X ____
____ X ____
____ X ____
____ X ____

SHEET CHARGES

13 4 1/2 X 17
____ 14 X 17
____ 7 X 17

Technician: Rod Fraser
Helper: Jeff Dyck

ROD FRASER SNT LEVEL II
CGSB 48.9712 LEVEL II #10361

Total	Regular	OT	KM
<u>4</u>	<u>4</u>		<u>48</u>

RADIOGRAPHIC
INTERPRETATION REPORT

Box 248 Stettler, AB T0C 2L0
Ph: (403) 742-HUNT (4868) Fax: (403) 742-4858

☒ Check if
Applicable

WELD DEFECTS

1. Slight 2. Moderate 3. Severe

Report#: 37633Date: July 26/05 Page 1 of 2Client: LPS MFG LTD

Inspector

Print

Inspector

Sign:

P.O.#: _____

A.F.E.#: _____

Q.C.#: _____

Job#: V3201-001

Ser.#: _____

Contractor: _____

Items Inspected: 48" VesselCode: ASME Sec VIII, Div 1 uWSI

	Field Weld Number(s)	Size	Wall Thickness	No. Of Exposures	Welder Symbol	Material C.S. Carbon Steel S.T. Stainless	Hunt Q.C. Procedure No.	Source to Object Distance	Object to Film Distance	Film Brand and Class	Penetrameter & Placement F.S. Film Side S.S. Source Side	Single Wall Exposure	Double Wall Exposure	Single Wall Viewing	Double Wall Viewing	Window	Crack	Undercut	Slag	Lack of Fusion	Concave Bead	Incomplete Penetration	Icicles	Porosity	Low Cover	Burn Through	Crater	High Low	Hollow Bead	Gas Pocket	Suck Back	Excess Penetration	Other	Location: Paintearth Facilities		Accept	Reject		
																																		Remarks					
1	<u>C.M.</u>									<u>AGFA ASTM</u>																													
2																																							
3	<u>210-0</u>	<u>48"</u>	<u>2.000"</u>	<u>1 HS</u>	<u>C.S.</u>	<u>RT-7</u>	<u>20"</u>	<u>2.125"</u>	<u>DS</u>	<u>1B SS</u>	☒	☒																											
4																																							
5																																							
6																																							
7																																							
8	<u>0-35</u>	<u>48"</u>	<u>2.000"</u>	<u>1 SHEG</u>	<u>C.S.</u>	<u>RT-4</u>	<u>24"</u>	<u>2.125"</u>	<u>DS</u>	<u>1B SS</u>	☒	☒																											
9	<u>35-70</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
10	<u>70-105</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
11	<u>105-140</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
12	<u>140-175</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
13	<u>175-210</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
14	<u>210-245</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
15	<u>245-280</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
16	<u>280-315</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
17	<u>315-350</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
18	<u>350-385</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
19	<u>385-0</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																										
20																																							
21																																							
22																																							
23																																							
24																																							
25																																							

White - Client

Green - Billing

Yellow - Q.C.

Pink - Office

Goldenrod - Film

RADIATION SOURCE

Isotope: IR.192

Focal Spot Size 3.1mm

Screens: Lead

Front: .010" Back: .010"

INVOICE NUMBER

13308

FILM CHARGES

____ X ____
____ X ____
____ X ____
____ X ____
____ X ____

SHEET CHARGES

12 4 1/2 X 17
____ 14 X 17
____ 7 X 17

Technician: Rod FraserHelper: Jeff Dyck

ROD FRASER SNT LEVEL II
CGSB 48.9712 LEVEL II #10361

Total Regular OT KM

RADIOGRAPHIC
INTERPRETATION REPORT

Box 248 Stettler, AB T0C 2L0
Ph: (403) 742-HUNT (4868) Fax: (403) 742-4858

✓ Check if
Applicable

WELD DEFECTS

1. Slight 2. Moderate 3. Severe

Report#: 37634Date: July 26/05 Page 2 of 2Client: IPS MFG LTD

Inspector

Print

Inspector

Sign:

P.O.#: _____

A.F.E.#: _____

Q.C.#: _____

Job#: V3201-001

Ser.#: _____

Contractor: _____

Items Inspected: 48" VesselCode: ASME Sec VIII, Div 1 UW-51

	Field Weld Number(s)	Size	Wall Thickness	No. Of Exposures	Welder Symbol	Material C.S. Carbon Steel S.T. Stainless	Hunt Q.C. Procedure No.	Source to Object Distance	Object to Film Distance	Film Brand and Class	Penetrameter & Placement F.S. Film Side S.S. Source Side	Single Wall Exposure	Double Wall Exposure	Single Wall Viewing	Double Wall Viewing	Window	Crack	Undercut	Slag	Lack of Fusion	Concave Bead	Incomplete Penetration	Idios	Porosity	Low Cover	Burn Through	Crater	High Low	Hollow Bead	Gas Pocket	Suck Back	Excess Penetration	Other	Location: Paintearth Facilities	Remarks	Accept	Reject		
1	<u>C.M.</u>									<u>AGFA ASTM</u>																											1		
2																																						2	
3																																						3	
4	<u>0-35</u>	<u>48"</u>	<u>2.000"</u>	<u>1</u>	<u>SXG</u>	<u>C.S.</u>	<u>RT-4</u>	<u>24"</u>	<u>2.125"</u>	<u>D5</u>	<u>1B SS</u>	✓	✓																									4	
5	<u>35-70</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									5	
6	<u>70-105</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									6	
7	<u>105-140</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									7	
8	<u>140-175</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									8	
9	<u>175-210</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									9	
10	<u>210-245</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									10	
11	<u>245-280</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									11	
12	<u>280-315</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									12	
13	<u>315-350</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									13	
14	<u>350-385</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									14	
15	<u>385-0</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																									15	
16																																							16
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23																																							23
24																																							24
25																																							25

White - Client

Green - Billing

Yellow - Q.C.

Pink - Office

Goldenrod - Film

FAXED

P. 001/001

Reviewed
June 5/06
[Signature]

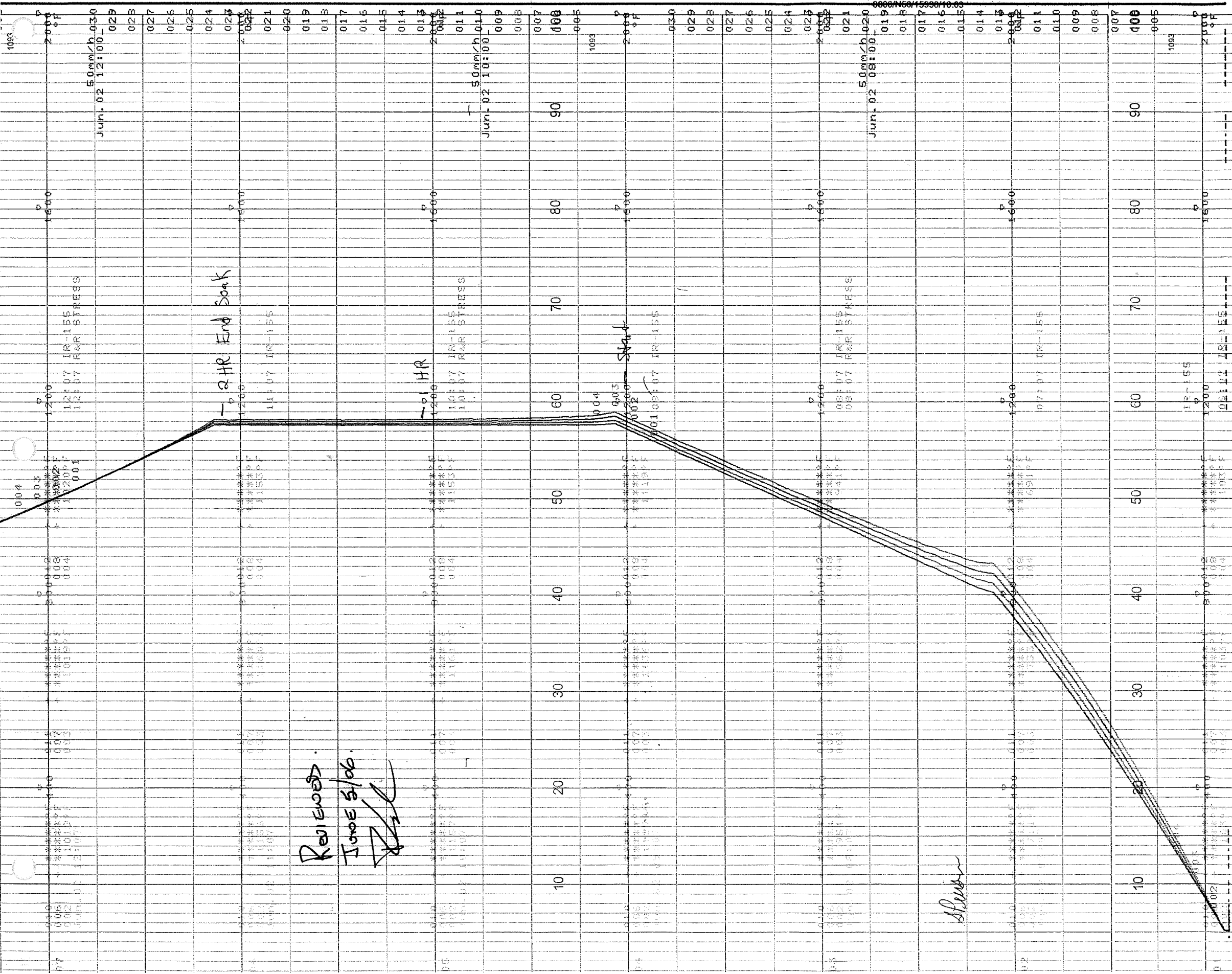
- 2 HR End Soak

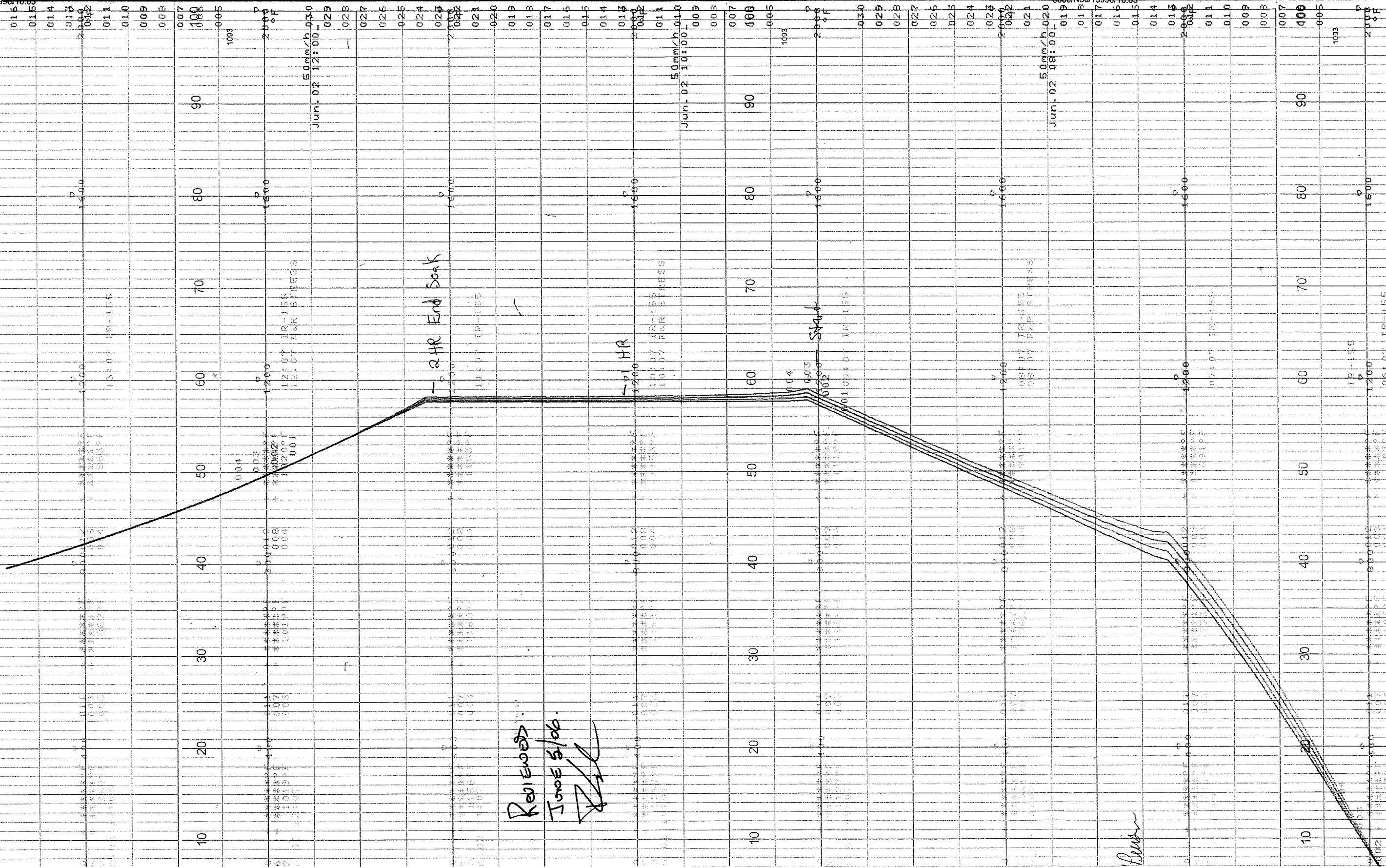
- 1 HR

Soak

[Signature]

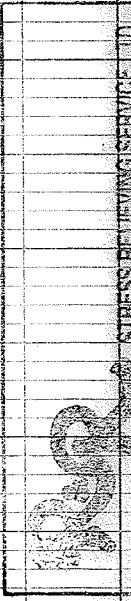
STRESS RELIEVING SERVICE LTD		
CLIENT	IPS	
DATE	JUN 22/06	
CHART NO.	ED9-060903	
CHART SPEED	30mm/hr	
P.O.#		
OPERATOR S. Peirson		
REC. NO.	LOCATION	DESCRIPTION & COMMENTS
IR185	1-4	V-3201-001, 48" ED X
		16" Horizontal Separator
		23500 lbs

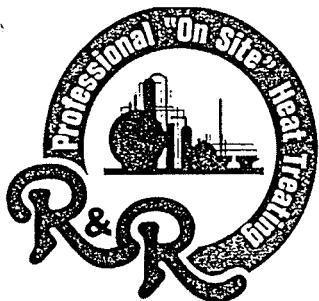




Reviewed
JUNE 3/06
[Signature]

[Signature]





R & R Stress Relieving Service Ltd.

Nisku: 2103 - 6 Street • T9E 7X8 Tel: (780) 955-7559 • Fax: (780) 955-2903 • 1-800-499-HEAT(4328)
Blackfalds: #13 Burbank Industrial Park • Tel: (403) 885-2280 • Fax: (403) 885-0177
Calgary: (403) 236-8986

CERTIFICATE OF CONFORMANCE OF RECORDING INSTRUMENTS

CERTIFIED BY: R & R Stress Relieving Service Ltd.
TEST NUMBER: RR0131
DATE: January 31, 2006
DATE DUE: July 31, 2006
INSTRUMENT MFG: Yokogawa
MODEL NUMBER: DR241-12-33-1W/C7/H1/D2
SERIAL NUMBER: 12AC14978
RECORDER NUMBER: IR-155

This instrument has been calibrated and it is within the manufacturers specifications.

REFERENCE STANDARDS

DIGI MITE 311600 S/N48430-5522 CERT DATE OCT 24/05
DIG. INDICATOR/CALIR. 028-8427113 CERT DATE OCT 24/05

The calibration of all standards and measuring instruments used in the calibration are traceable to the National Research Council of Canada in Ottawa or to the National Bureau of Standards in Washington, D.C.


Steve Pierson



R & R Stress Relieving Service Ltd.

2103 - 6 Street * Nisku, AB * T9E 7X8

Tel: 780- 955-7559 * Fax: 780- 955-2903 * 1-800-499-HEAT(4328)

Blackfalds * #13 Burbank Industrial Park * (403) 885-2280

Calgary (403) 236-8986

FURNACE OPERATION REPORT

CHART NO: F29-060905

DATE: June 2, 2006

CLIENT: IPS Manufacturing Ltd.
PO Box 24
Halkirk AB T0C 1M0

PHONE: 403-884-2442
FAX: 403-884-2106

CLIENT NO. 15

CLIENT REF. NO:
CLIENT PO NO: Not Required

Quantity	Description	Price
V-3201-001, 48" ID X 16' Horizontal Separator, 23500 lbs.		
	Furnace Base Rate	1100.00
	Excess Weight Charge	140.00
1	Additional Hold Time	80.00/HR 80.00
	15% Fuel Surcharge	\$198.00
	After Hour Charges	/HR
	Other Charges	
	Subtotal	\$1,518.00
	GST	\$106.26
	Total	\$1,624.26

SPECIFICATION:

ASME SECTION VIII - DIV 1

P# MATERIAL:

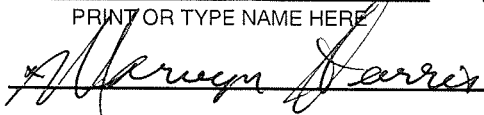
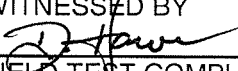
AMBIENT TO 800°F AT MODERATE RATE
FROM 800°F TO 1150°F AT 200°F/HR
SOAK 1150°F ± 25°F FOR 2 HR MIN
COOL FROM 1150°F TO 800°F AT 250°F/HR
COOL FROM 800°F TO AMB IN ENCLOSED
FURNACE

COMMENTS:

R&R Stress Relieving Service Ltd. will not be responsible for any damage or distortion caused by Heat Treatment Process.

INVOICE TO FOLLOW UNDER SEPARATE COVER. Thank you for your patronage.

PRESSURE TEST / CERTIFICATE

ISSUED V-3201-001		DATE JUNE 14/06	
LOCATION ISSUED IPS Manufacturing Shop			
DESIGN PRESSURE 1440 PSI	TEST PRESSURE REQUIRED 2160 PSI	GAUGE NO'S USED: Two (2)	
TEST HOLD TIME REQUIRED 60 MIN		ID NO: PI-1851	RANGE:
		ID NO: PI-1062	0 - 6000 psi
TEST MEDIUM H₂O	MEDIUM TEMPERATURE REQUIRED 50°F		
PRESSURE INCREASE NOT TO EXCEED 1,000 kPa / MINUTE			
DESCRIPTION EQUIPMENT / SYSTEM			
* HYDRO TEST 1 (ONE) 48" ID X 16' HORIZONTAL SEPARATOR			
SERIAL NUMBER V-3201-001			
NOTES:			
1. EQUIPMENT / SYSTEM TO BE INSPECTED BY QUALITY CONTROL REPRESENTATIVE AND AUTHORIZED INSPECTOR BEFORE HYDROSTATIC TEST.			
2. SEAL ALL NOZZLES USING BLANK FLANGES AND GASKETS - NO GREASE OR OTHER COMPOUNDS TO BE APPLIED TO GASKET SURFACE.			
3. COUPLINGS AND WELD-O-LETS ETC. TO BE PLUGGED AND TEFLON TAPE OR WHITELEAD MIXTURE MAY BE USED FOR SEALING.			
4. PROVIDE AT LEAST ONE (1) VENT OPENING AT HIGHEST POINT DURING FILLING.			
5. WATER TEMPERATURES SHOULD BE AS SPECIFIED BUT NOT LESS THAN 50°F OR MORE THAN 120°F FOR ALLOY STEELS.			
6. ONE PRESSURE GAUGE SHALL BE USED ON THE TEST PIECE AND ONE GAUGE ON THE PUMP.			
7. TEST GAUGES SHOULD SHOW CALIBRATION DATE WITHIN 12 MONTHS OF DATE OF USE.			
8. TEST PRESSURE SHOULD BE HELD AS SPECIFIED BEFORE VIEWING.			
CONTRACTOR IPS MANUFACTURING LIMITED PRINT OR TYPE NAME HERE		OWNER _____ PRINT OR TYPE NAME HERE	
JUNE 14/06 DATE		_____ DATE	
		_____ QUALITY ASSURANCE ENGINEER	
WITNESSED BY 	DATE JUNE 14/06	WITNESSED BY 	DATE JUNE 14/06
FIELD TEST COMPLIANCE CERTIFICATE			
This is to certify the above listed equipment / system was tested as stated above and not witnessed by the Authorized Inspector			
WITNESSED BY	DATE	SIGNATURE	OF OWNER QUALITY ASSURANCE



CPW VALVE & INSTRUMENT LTD.
MANUFACTURER OF
CPW HYDRO-POISE OIL FILLED PRESSURE GAUGES
#100, 7503 GIRARD RD EDMONTON, ALBERTA T6B 2H2
PH: 780-451-6888 FAX: 780-451-6878



DEADWEIGHT CERTIFICATION REPORT

CUSTOMER NAME: IPS Manufacturing Ltd.

PO ORDER # 3128

SERIAL # PI/1062

MANUFACTURER: CPW

DIAL SIZE: 4.5"

PRESSURE RANGE: 0-6000 D/S

SUB DIVISIONS: 100 PSI

CONNECTION: 0.5"

INSPECTOR: Lynn Zaraska

AMBIENT TEMPERATURE: 21C

MODEL: 901

TESTING DEVICE: Deadweight

TEST MEDIUM: Oil

MAXIMUM ERROR: 0 PSI

DATE: November 10, 2005

LOCATION TESTED: #100, 7503 Girard Rd.
EDMONTON, ALBERTA
T6B 2H2

Lynn Zaraska

Deadweight Tester: Ashcroft Model 1305B Serial Number GN 118

The Ashcroft Deadweight Tester was calibrated against a Chandler Model 23-145, S/N 21270 Deadweight Tester traceable through Institute for National Measurement Standards (I.N.M.S.) Ottawa, Canada, Report Number MS-214-A

<u>READING</u> <u>NO.</u>	<u>DEADWEIGHT</u> <u>PSI</u>	<u>GAUGE READING</u> <u>PSI</u>
1	1000	1000
2	2000	2000
3	3000	3000
4	4000	4000
5	5000	5000
6	6000	6000



CPW VALVE & INSTRUMENT LTD.

MANUFACTURER OF
CPW HYDRO-POISE OIL FILLED PRESSURE GAUGES
#100, 7503 GIRARD RD EDMONTON, ALBERTA T6B 2H2
PH: 780-451-6888 FAX: 780-451-6878



DEADWEIGHT CERTIFICATION REPORT

CUSTOMER NAME: IPS Manufacturing Ltd.

PO ORDER # 15599

SERIAL # PI/1851

MANUFACTURER: CPW

DIAL SIZE: 4.5"

PRESSURE RANGE: 0 - 6000 D/S

SUB DIVISIONS: 100 PSI

CONNECTION: 0.5"

INSPECTOR: Mark Dukes

AMBIENT TEMPERATURE: 21C

MODEL: 502

TESTING DEVICE: Deadweight

TEST MEDIUM: Oil

MAXIMUM ERROR: 20 PSI

DATE: July 18, 2005

LOCATION TESTED: #100, 7503 Girard Rd.
EDMONTON, ALBERTA
T6B 2H2

Deadweight Tester: Ashcroft Model 1305B Serial Number GN 118

The Ashcroft Deadweight Tester was calibrated against a Chandler Model 23-145, S/N 21270 Deadweight Tester traceable through Institute for National Measurement Standards (I.N.M.S.) Ottawa, Canada, Report Number MS-214-A

<u>READING</u>	<u>DEADWEIGHT</u>	<u>GAUGE READING</u>
<u>NO.</u>	<u>PSI</u>	<u>PSI</u>
1	1000	1000
2	2000	2000
3	3000	3000
4	4000	4000
5	5000	4980
6	6000	6000

NAMEPLATE FACSIMILIE

U
W
RT1
HT

CERTIFIED BY



YEAR BLT.

SERIAL No.

VESSEL TYPE

M.A.W.P. PSI AT °F

M.D.M.T. °F AT PSI

SHELL TK. IN HEAD TK. IN

CRN C.A. IN

A#:

JOB #

Mailing Address: Box 24, Halkirk, Alberta, Canada, T0C 1M0

U

W

RT 1

HT

CERTIFIED BY



MANUFACTURING LIMITED

YEAR BUILT 2006

SERIAL NO. V-3201-001

VESSEL TYPE 48 IDX 160 HORIZ SEPARATOR

MAWP 1440

PSI

AT

130

°F

MD MT -20

°F

AT

1440

PSI

SHELL TK 2.000

IN

HEAD TK

1.910

IN

CRN R-7101.2

C.A.

0.125

IN

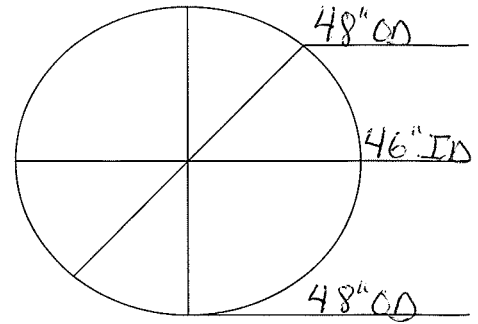
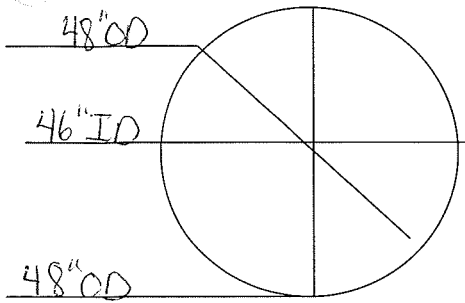
AS (A) 550600

JOB 5325-001

MAILING ADDRESS: BOX 24 HALKIRK ALBERTA CANADA T0C 1M0

EXHIBIT 7.3 MATERIAL CONTROL REPORT
JOB # V-3201-001 48"ID X 16'0" S/S HORIZONTAL VESSEL
1440 psi 1/8"CA

Date: July 12/05

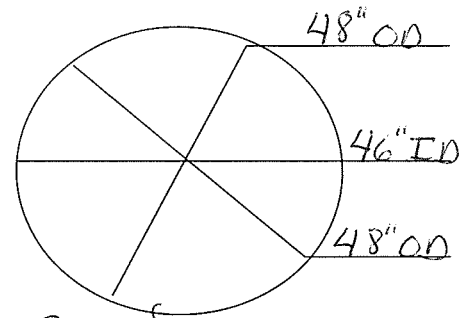
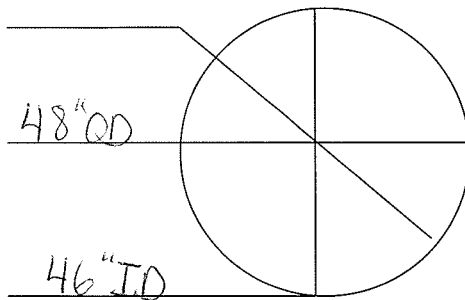


Heads

48" ID x 2" NOM. THK.
 (1.91" min) 2:1 SE C/W 2" S.F
SA 516 70N

Heat# 40022-48725 min: 1.9590

Heat# 40022-48725 min: 1.9590

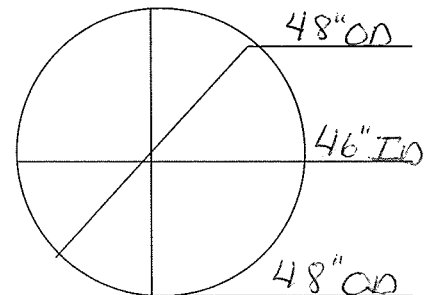
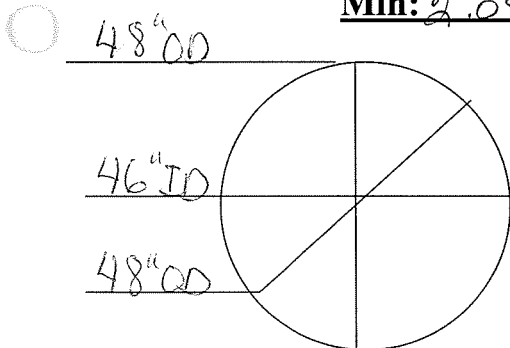


Shell

48" ID x 8'0" S/S
 2" THK. SA 516 70N

Min: 2.058 Heat #00830-21652

Min: 2.058



Shell

48" ID x 8'0" S/S
 2" THK. SA 516 70N

Min: 2.056 Heat #00830-21652

Min: 2.056

1	Pipe 2" Sch.160 x 6 1/2" Long SA-106B HT#	423541
8	Pipe 2" Sch. 160 x 5 3/8" Long SA-106B HT#	423541
1	Manway Flange: 18" 600# RFHB c/w 18" ID (2.60" Wall) x 18" Long SA105N Ht#	D465AN
1	Blind Flange: 18" 600# RF SA 105N Ht#	A7L
2	Flanges 8" 600# RFHB (7.62" ID x 2.16" Wall) x 14" Long SA 105N Ht#	C677AN
6	Flanges 3" 600# RFHB (2.90" ID x 1.24" Wall) x 11" Long SA 105N Ht#	6055AN

EXHIBIT 7.3 MATERIAL CONTROL REPORT
JOB # V-3201-001 48"ID X 16'0" S/S HORIZONTAL VESSEL
1440 psi 1/8"CA

	Flanges: 2" 600# RFWN Sch. 160 SA 105N Ht#	1041583 8013288
4	Side Plates: 6" x 7/8" Thk x 4'11" long SA 36 Ht#	7541C
2	Face plate: 3'10" x 3/8" thk x 4'11" long SA 36 Ht#	AAW
2	Base plate: 3'10" long x 7" x 3/4" thk SA 36 Ht#	575145
2	Wear plate: 60" long x 8" x 3/8" thk (Roll to 52" ID) SA 516 70N Ht#	75121-NA810-1 + 49076-05713
8	Flat Plate Tabs: 1" x 2" x 1/4" Thk SA-36 HT#	N3-7802
1	Plate: 26"OD x 18" ID x 12" Wide SA-36 HT#	522120
	Mistex Pad: 20" OD x 6" Thk x 9#/cu foot 316 SS NA	N/A
1	Mistex Support: Plate rolled to 21" OD x 3/8" Thk x 1'1" Long SA 36 HT#	581220
1	Mistex Support Plate: 26" OD x 21"ID x 1/4" Thk SA-36 HT#	522120
1	Inlet Diverter: 8" 90 LR Elbow Sch. Std SA 234 WPB HT#	04C00075
1	Flat Bar: 2"WD x 1/4" Thk 2'0" Long SA 36 Ht#	522120
1	Weir Plate: 21" long x 48" OD x 3/8" Thk c/w Removable Plate SA 36 Ht#	7375-1
1	Removeable Plate: 17"lg. x 22"WD x 3/8" Thk. SA 36 Ht#	4228C 2
	Removable Vortex Breakers 10" x 4" x 1/4" Thk SA 36 HT#	4228C
2	Lift Lugs 1" Thk x 6" x 10" SA 516 70N Ht#	0314\$-27571
10	Flatbar: 1"WD x 1/4" Thk x 2" Long SA 36 W Ht#	1 N3-7802
4	Flatbar: 1"WD x 1/4" Tnk CTS SA 36 HT#	N3-7802
2	Rib Plate: 7/8" Thk x 6" x 2'11 1/2" Long SA 36 Ht#	7541C
1	Standard Davit Arm SA 516 70N Ht#	0314\$ -27571
1	2" Sch.160 Pipe For Davit Arm SA 106B Ht#	423541
1	Nameplate SA 36 Ht#	ACN ABK

EDMONTON EXCHANGER & MANUFACTURING LTD.
5545 - 89 STREET, EDMONTON, ALBERTA T6E 5W9
TELEPHONE (780) 468-6722 FAX (780) 466-5155

QCC-001
REV. 6
DATE: APR. 12/00
APPROVED BY: S.Z.

CERTIFICATE OF COMPLIANCE - HEADS

CUSTOMER IPS MANUFACTURING LIMITED		PURCHASE ORDER 0026527		WORK ORDER C54452	DATE 2004/12/06	PAGE 1 OF 1	
ITEM #	QTY	DESCRIPTION	HEAT #	CERTIFIED MIN. THK.	BRINELL HARDN	WELD PROCEDURE	FORMING PROC
H54452-1	2	HEAD(S) - Semi-Elliptical 2:1 - 2.0000" NOM (1.9100" MIN) X 48" ID (MATERIAL SPEC: SA 516-70 N)	40022-48725	1.9590"	164	-	1

Forming Procedure:

1. Hot Formed @ 1650F/899C and Air Cooled
2. Hot Formed @ 1975F/1080C and Air Cooled
3. Normalized @ 1650F/899C for 25 min/inch and Air Cooled
4. Cold Formed
5. Renormalized @ 1650F/899C for 25 min/inch and Air Cooled After Forming
6. Renormalized @ 1750F/954C for 25 min/inch and Air Cooled After Forming
7. Re-Solution Annealed @ 1975F/1080C and Air Cooled After Forming
8. Stress Relieved @ 1150F/621C PER UCS-56 OR PW-39(where applicable)

NOTE: ALL ITEMS WHICH WERE HEAT TREATED DURING OR AFTER FORMING SHALL BE INCLUDED ON THE FORMING PROCEDURE LISTED ABOVE AS PER UCS-79(e).

BRINELL EQUIPMENT: NEWAGE CALIBRATION PIN
BRINELL HARDNESS TESTER

SUPPLEMENTARY REQUIREMENTS:
H54452-1: conforms to NACE MR-01-75-2000

THE HEADS LISTED ABOVE COMPLY WITH THE REQUIREMENTS OF ASME CODE SECTION I (PG-29 & 81), AND SECTION VIII, DIV. 1, INCLUDING PARAGRAPHS UG-79 AND UG-81. COLD FORMED HEADS COMPLY WITH PARAGRAPH UCS-79(d). MATERIAL BEING SUPPLIED CONFORMS TO THE LATEST ASME CODE SECTION II, PART A, 2001 EDITION, JULY 1, 2003 ADDENDA.
STEVE ZUBRYCKYJ (QAM)
EDMONTON EXCHANGER & MANUFACTURING LTD.

SUPPLEMENTARY EXAMINATION - ITEMS



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02	ABNAHMEPRUEFZEUGNIS	3.1.B	DIN EN 10204 - EN 10204 - DIN 50049	A09	Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
	CERTIFICAT DE RECEPTION	3.1.B	NF EN 10204				
	INSPECTION CERTIFICATE	3.1.B	BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		99169-23.03.03	263076-001	1/...
A05	Established Inspecting body DH	A06	Purchaser ARCELOR CANADA, BURLI	A07.1	No. SAP10029298	B01 Product HOT ROLLED PLATES	
			Final receiver EDMONTON STEEL, EDMON	A07.2	No. E10244-J1010LG		

B02/ Steel grade **SA516-70**
B03 Specifica- **ASME-2A:01+A02**
tions **+SA20-S5**

B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
INCH									
01	1	0,7500 x	200,00000 x	400,00000	7718	N	39501	46385-01	ITEM 01
01	1	0,7500 x	200,00000 x	400,00000	7718	N	39501	46385-02	ITEM 01
**	2				15436				
02	1	0,8750 x	204,72000 x	412,00000	9494	N	39504	46381-01	ITEM 02
02	1	0,8750 x	204,72000 x	412,00000	9494	N	39504	46381-02	ITEM 02
**	2				18988				
03	1	1,0000 x	136,00000 x	408,00000	7138	N	39273	43047-01	ITEM 03
03	1	1,0000 x	136,00000 x	408,00000	7138	N	39273	43047-02	ITEM 03
**	2				14276				
04	1	1,0000 x	164,00000 x	328,00000	6920	N	39273	43048-01	ITEM 04
04	1	1,0000 x	164,00000 x	328,00000	6920	N	39273	43048-02	ITEM 04
**	2				13840				
05	1	1,7500 x	136,00000 x	408,00000	12491	N	39461	45005-01	ITEM 05
05	1	1,7500 x	136,00000 x	408,00000	12491	N	39461	45006-01	ITEM 05
**	2				24982				
06	1	2,0000 x	120,00000 x	480,00000	14819	N	39504	46380-01	ITEM 06
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48715-01	ITEM 06
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48716-01	ITEM 06
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48717-01	ITEM 06
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48718-01	ITEM 06
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48719-01	ITEM 06
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48720-01	ITEM 06
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48724-01	ITEM 06



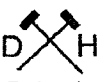
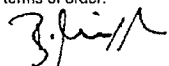
08811

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.				AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department				A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990				 B. MUELLER Der Werkssachverständige	 Inspector's stamp	Date 25.03.03	PP 1	



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 99169-23.03.03		A08/ Manufacturer's order/ A03 Certificate No. 263076-001		Sheet 2/...				
A05 Established inspecting body DH		A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON		A07.1 No. SAP10029298 A07.2 No. E10244-J1010LG		B01 Product HOT ROLLED PLATES				
B02/ Steel grade SA516-70										
B03 Specifica- tions ASME-2A:01+A02 +SA20-S5										
B01-B99 Product description										
B09 Item No.	B10 Quantity	B11 Thickness	B12 Width INCH	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference	
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48725-01	ITEM 06	
06	1	2,0000 x	120,00000 x	480,00000	14819	N	40022	48726-01	ITEM 06	
**	10				148190					
07	1	2,0000 x	204,72000 x	206,00000	10850	N	39501	46383-01	ITEM 07	
07	1	2,0000 x	204,72000 x	206,00000	10850	N	39501	46383-02	ITEM 07	
**	2				21700					
08	1	2,2500 x	96,00000 x	480,00000	13337	N	40022	48721-01	ITEM 08	
08	1	2,2500 x	96,00000 x	480,00000	13337	N	40022	48722-01	ITEM 08	
**	2				26674					
09	1	2,5000 x	96,00000 x	480,00000	14819	N	39954	47530-01	ITEM 09	
09	1	2,5000 x	96,00000 x	480,00000	14819	N	39954	47532-01	ITEM 09	
**	2				29638					
10	1	2,7500 x	96,00000 x	480,00000	16301	N	39948	47561-01	ITEM 10	
10	1	2,7500 x	96,00000 x	480,00000	16301	N	39948	47563-01	ITEM 10	
**	2				32602					
11	1	3,0000 x	96,00000 x	480,00000	17783	N	39948	47565-01	ITEM 11	
11	1	3,0000 x	96,00000 x	480,00000	17783	N	39948	47566-01	ITEM 11	
11	1	3,0000 x	96,00000 x	480,00000	17783	N	39948	47567-01	ITEM 11	
11	1	3,0000 x	96,00000 x	480,00000	17783	N	39948	47568-01	ITEM 11	
**	4				71132					
12	1	3,5000 x	96,00000 x	244,00000	10546	N	39954	47533-01	ITEM 12	
12	1	3,5000 x	96,00000 x	244,00000	10546	N	39954	47533-02	ITEM 12	
**	2				21092					
A04		Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001 since 14 March 1990						AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department		A01
 Trademark		 B. MUELLER Der Werkssachverständige						 Inspector's stamp		Date 25.03.03 PP 1



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049		A09 Advice of dispatch No / Date of dispatch		A08/ Manufacturer's order / A03 Certificate No		Sheet			
CERTIFICAT DE RECEPTION 3.1.B NF EN 10204									
INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		99169-23.03.03		263076-001		3/...			
A05 Established inspecting body DH		A06 Purchaser ARCELOR CANADA, BURLI		A07.1 No. SAP10029298		B01 Product			
		Final receiver EDMONTON STEEL, EDMON		A07.2 No. E10244-J1010LG		HOT ROLLED PLATES			
B02/ Steel grade SA516-70									
B03 Specifica- tions ASME-2A:01+A02 +SA20-S5									
B01-B99 Product description									
B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
			INCH						
13	1	5,5000 x	96,00000 x	330,00000	22414	N	39213	42485-01	ITEM 13
13	1	5,5000 x	96,00000 x	330,00000	22414	N	39213	42486-01	ITEM 13
13	1	5,5000 x	96,00000 x	330,00000	22414	N	39213	42487-01	ITEM 13
**	3				67242				
***	37				505792				
B04 Delivery condition / Heat treatment of plates									
ITEM NO.: 01-13									
N: HT: 1634 GR.F +27 -27 GR.F									
SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,5 MIN/MM (25-38 MIN/INCH)									
COOLING IN STILL AIR									
B06 Marking									
ITEM NO.: 01-13									
STEEL GRADE SA516 70 MTLTV SA516 60 MTLTV									
HEAT NO. / TRADEMARK / ROLLED PLATE NO./TEST NO. / INSPECTOR'S STAMP									
C10-C29 Tensile test									
B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01 C02/ C01	C03 Temp. GR.F	C10 C11 KSI RP02	C12 RM	C13 A % LO=2IN	C14-C15 A % LO=8IN
01	39501	46385		K4 Q	RT	50,2	73,5	53,5	28,4
02	39504	46381		K4 Q	RT	51,0	73,4	57,5	30,4
03	39273	43047		K4 Q	RT	48,3	74,5	59,4	31,9
04	39273	43048		K4 Q	RT	50,5	74,2	61,4	30,9
A04		Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.						A01	
		QM-System: Certification as per ISO 9001 since 14 March 1990						AG der Dillinger Hüttenwerke	
Trademark						B. MUELLER		Postfach 1580, D-66748 Dillingen/Saar	
						Der Werkssachverständige		Inspection department	
						Inspector's stamp		Date 25.03.03	
								PP 1	



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02	ABNAHMEPRUEFZEUGNIS	3.1.B	DIN EN 10204 - EN 10204 - DIN 50049	A09	Advice of dispatch No / Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
	CERTIFICAT DE RECEPTION	3.1.B	NF EN 10204				
	INSPECTION CERTIFICATE	3.1.B	BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		99169-23.03.03	263076-001	4/...
A05	Established inspecting body DH	A06	Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1	No. SAP10029298	B01 Product HOT ROLLED PLATES	
				A07.2	No. E10244-J1010LC		
B02/	Steel grade	SA516-70					
B03	Specifica- tions	ASME-2A:01+A02 +SA20-S5					

C10-C29 Tensile test

B09	B08	B07	B05	C01	C02/	C03	C10	C11	C12	C13	A	A	C14-C15
Item	Heat No.	Roll.plate/ Test No.	Reference condition	C01	C01	Temp. GR.F		KSI RP02	RM		% LO=2IN	% LO=8IN	
05	39461	45005		K4	QV	RT		48,3	73,7		36,7		
05	39461	45006		K4	QV	RT		48,0	73,7		37,0		
06	39504	46380		K4	QV	RT		48,0	73,4		37,4		
06	40022	48715		K4	QV	RT		46,8	72,8		36,6		
06	40022	48716		K4	QV	RT		47,4	74,0		36,9		
06	40022	48717		K4	QV	RT		48,6	74,0		35,8		
06	40022	48718		K4	QV	RT		47,7	74,4		36,9		
06	40022	48719		K4	QV	RT		47,4	72,8		37,0		
06	40022	48720		K4	QV	RT		48,4	74,4		36,0		
06	40022	48724		K4	QV	RT		47,1	73,2		36,4		
06	40022	48725		K4	QV	RT		48,3	74,2		36,1		
06	40022	48726		K4	QV	RT		46,7	73,4		36,8		
07	39501	46383		K4	QV	RT		47,1	73,1		36,8		
08	40022	48721		K4	QV	RT		47,0	72,5		35,1		
08	40022	48722		K4	QV	RT		47,3	73,5		36,8		
09	39954	47530		K4	QV	RT		48,0	76,0		35,9		
09	39954	47532		K4	QV	RT		45,7	76,0		35,6		
10	39948	47561		K4	QV	RT		45,8	74,2		34,2		
10	39948	47563		F4	QV	RT		47,4	74,8		35,9		
11	39948	47565		K4	QV	RT		46,5	74,1		36,9		
11	39948	47566		F4	QV	RT		47,3	75,1		35,9		
11	39948	47567		K4	QV	RT		46,5	75,0		36,2		
11	39948	47568		K4	QV	RT		46,4	75,1		35,2		

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.			A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990			
	B. MUELLER Der Werkssachverständige			
	Inspector's stamp			
	Date 25.03.03			
	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department			
	PP 1			



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02	ABNAHMEPRUEFZEUGNIS	3.1.B	DIN EN 10204 - EN 10204 - DIN 50049	A09	Advice of dispatch No / Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
	CERTIFICAT DE RECEPTION	3.1.B	NF EN 10204				
	INSPECTION CERTIFICATE	3.1.B	BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		99169-23.03.03	263076-001	5/...

A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI	A07.1 No. SAP10029298	B01 Product HOT ROLLED PLATES
	Final receiver EDMONTON STEEL, EDMON	A07.2 No. E10244-J1010LG	

B02/ Steel grade **SA516-70**B03 Specifica-
tions **ASME-2A:01+A02
+SA20-S5****C10-C29 Tensile test**

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01 C02/ C01	C03 Temp. GR.F	C10 C11 KSI RP02	C12 RM	C13 A % L0=2IN	C14-C15 A % L0=8IN
12	39954	47533		K4	QV	RT	47,4	75,1	36,6
13	39213	42485		K4	QV	RT	45,7	75,0	32,9
13	39213	42486		K4	QV	RT	46,0	73,8	31,0
13	39213	42487		K4	QV	RT	44,2	74,4	29,4

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01 C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C46 Energy	C45 C42 Individual values AV=FT,LBF	C43 Average value
01	39501	46385		K4	LV	-51	CHP-V			AV 141 95 128	121
02	39504	46381		K4	LV	-51	CHP-V			AV 103 94 109	102
03	39273	43047		K4	LV	-51	CHP-V			AV 111 50 86	82
04	39273	43048		K4	LV	-51	CHP-V			AV 125 126 124	125
05	39461	45005		K4	LV	-51	CHP-V			AV 101 80 89	90
05	39461	45006		K4	LV	-51	CHP-V			AV 89 102 100	97
06	39504	46380		K4	LV	-51	CHP-V			AV 134 122 94	117
06	40022	48715		K4	LV	-51	CHP-V			AV 84 93 69	82
06	40022	48716		K4	LV	-51	CHP-V			AV 74 72 91	79
06	40022	48717		K4	LV	-51	CHP-V			AV 95 52 96	81
06	40022	48718		K4	LV	-51	CHP-V			AV 55 37 57	50
06	40022	48719		K4	LV	-51	CHP-V			AV 72 98 74	81
06	40022	48720		K4	LV	-51	CHP-V			AV 51 59 33	48
06	40022	48724		K4	LV	-51	CHP-V			AV 75 56 53	61
06	40022	48725		K4	LV	-51	CHP-V			AV 86 30 76	64
06	40022	48726		K4	LV	-51	CHP-V			AV 35 91 86	71

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990 B. MUELLER Der Werkssachverständige	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department Inspector's stamp Date 25.03.03 PP 1

**DILLINGER HÜTTE**

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

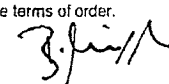
A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No / Date of dispatch 99169-23.03.03	A08/ Manufacturer's order/ A03 Certificate No. 263076-001	Sheet 6/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. SAP10029298 A07.2 No. E10244-J1010LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70 B03 Specifica- ASME-2A:01+A02 tions +SA20-S5				

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C46 Energy	C45	C42 Individual values AV=FT.LBF	C43 Average value
07	39501	46383		K4	LV	-51		CHP-V			AV	98 44 83	75
08	40022	48721		K4	LV	-51		CHP-V			AV	81 89 94	88
08	40022	48722		K4	LV	-51		CHP-V			AV	33 74 91	66
09	39954	47530		K4	LV	-51		CHP-V			AV	89 87 24	67
09	39954	47532		K4	LV	-51		CHP-V			AV	49 82 38	56
10	39948	47561		K4	LV	-51		CHP-V			AV	21 67 83	57
10	39948	47563		F4	LV	-51		CHP-V			AV	37 35 24	32
11	39948	47565		K4	LV	-51		CHP-V			AV	59 52 49	53
11	39948	47566		F4	LV	-51		CHP-V			AV	46 93 49	63
11	39948	47567		K4	LV	-51		CHP-V			AV	60 72 64	65
11	39948	47568		K4	LV	-51		CHP-V			AV	49 21 89	53
12	39954	47533		K4	LV	-51		CHP-V			AV	105 91 89	95
13	39213	42485		K4	LV	-51		CHP-V			AV	24 76 63	54
13	39213	42486		K4	LV	-51		CHP-V			AV	66 58 69	64
13	39213	42487		K4	LV	-51		CHP-V			AV	21 72 42	45

C70-C99 Chemical composition % - Heat analysis

B08 Heat	C70	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
39213	Y	0,209	0,340	1,14	0,009	0,0007	0,0062	0,029	0,024	0,004	0,036	0,224	0,001	0,000	0,002
39273	Y	0,179	0,370	1,17	0,010	0,0007	0,0055	0,040	0,029	0,003	0,046	0,022	0,000	0,000	0,000
39461	Y	0,173	0,376	1,19	0,008	0,0010	0,0075	0,038	0,021	0,028	0,035	0,044	0,001	0,000	0,002
39501	Y	0,178	0,328	1,16	0,011	0,0011	0,0081	0,035	0,013	0,021	0,027	0,049	0,000	0,000	0,000
39504	Y	0,181	0,356	1,12	0,008	0,0018	0,0073	0,038	0,019	0,003	0,030	0,018	0,000	0,000	0,000
39948	Y	0,175	0,378	1,17	0,008	0,0012	0,0075	0,036	0,027	0,005	0,027	0,214	0,000	0,000	0,001

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 Inspector's stamp	Date 25.03.03 PP 1



DILLINGER HÜTTE

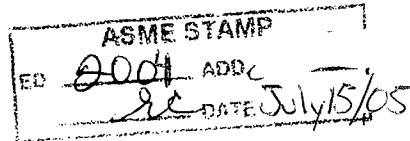
Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02	ABNAHMEPRUEFZEUGNIS CERTIFICAT DE RECEPTION INSPECTION CERTIFICATE	3.1.B 3.1.B 3.1.B	DIN EN 10204 - EN 10204 - DIN 50049 NF EN 10204 BS EN 10204 - ISO 10474	MATERIAL TEST REPORT	A09	Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
						99169-23.03.03	263076-001	7/...

A05 Established inspecting body DH	A06 Purchaser Final receiver	ARCELOR CANADA, BURLI EDMONTON STEEL, EDMON	A07.1 No. SAP10029298 A07.2 No. E10244-J1010TG	B01 Product HOT ROLLED PLATES
B02/ Steel grade	SA516-70			
B03 Specifica- tions	ASME-2A:01+A02 +SA20-S5			

C70-C99 Chemical composition % - Heat analysis

B08 Heat	C70	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
39954	Y	0,174	0,371	1,19	0,010	0,0015	0,0065	0,031	0,025	0,033	0,032	0,219	0,000	0,000	0,002
40022	Y	0,178	0,345	1,15	0,010	0,0005	0,0064	0,031	0,019	0,005	0,032	0,026	0,000	0,000	0,001
B08 Heat	C70	TI	B												
39213	Y	0,002	0,0001												
39273	Y	0,002	0,0001												
39461	Y	0,001	0,0000												
39501	Y	0,002	0,0001												
39504	Y	0,002	0,0001												
39948	Y	0,002	0,0001												
39954	Y	0,002	0,0000												
40022	Y	0,002	0,0000												



C94 Heat analysis Carbon equivalent / Alloying restrictions

B08 Heat	FO-02=	FO-55=	FO-78=	FO-91=
39213	0,45	0,29	0,23	5,5
39273	0,38	0,10	0,03	6,5
39461	0,39	0,13	0,07	6,9
39501	0,39	0,11	0,07	6,5
39504	0,38	0,07	0,02	6,2
39948	0,42	0,27	0,22	6,7
39954	0,43	0,31	0,25	6,8
40022	0,38	0,08	0,03	6,5

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.				A01
	QM-System: Certification as per ISO 9001 since 14 March 1990			AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	
Trademark		B. MUELLER Der Werkssachverständige	Inspector's stamp	Date 25.03.03	PP 1



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Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02	ABNAHMEPRUEFZEUGNIS CERTIFICAT DE RECEPTION INSPECTION CERTIFICATE	3.1.B 3.1.B 3.1.B	DIN EN 10204 - EN 10204 - DIN 50049 NF EN 10204 BS EN 10204 - ISO 10474	MATERIAL TEST REPORT	A09	Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No	Sheet
						99169-23.03.03	263076-001	8/...
A05	Established Inspecting body DH	A06	Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. SAP10029298 A07.2 No. E10244-J1010LG	B01 Product HOT ROLLED PLATES			
B02/	Steel grade	SA516-70						
B03	Specifica- tions	ASME-2A:01+A02 +SA20-S5						

C95 Ladle treatment

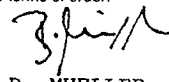
ITEM NO.: 01-13

HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

C70-C99 Chemical composition % - Product analysis

B08 Heat	B07 Test No.	C01	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
39213	42486	K4	0,210	0,327	1,14	0,008	0,0007	0,0063	0,027	0,024	0,005	0,035	0,226	0,001	0,000	0,001
39273	43047	K4	0,181	0,371	1,17	0,009	0,0013	0,0053	0,043	0,027	0,003	0,043	0,021	0,000	0,000	0,000
39461	45006	K4	0,171	0,361	1,16	0,008	0,0009	0,0076	0,035	0,022	0,028	0,034	0,046	0,000	0,000	0,000
39501	46383	K4	0,180	0,319	1,15	0,010	0,0011	0,0078	0,036	0,012	0,022	0,026	0,049	0,000	0,000	0,000
39501	46385	K4	0,174	0,330	1,15	0,011	0,0010	0,0076	0,035	0,016	0,018	0,031	0,047	0,001	0,000	0,001
39504	46380	K4	0,179	0,341	1,11	0,007	0,0019	0,0075	0,039	0,018	0,004	0,030	0,017	0,000	0,000	0,000
39504	46381	K4	0,177	0,354	1,11	0,008	0,0016	0,0071	0,039	0,018	0,005	0,030	0,016	0,000	0,000	0,001
39948	47561	K4	0,171	0,360	1,15	0,007	0,0009	0,0071	0,035	0,026	0,005	0,028	0,210	0,000	0,000	0,001
39948	47566	F4	0,172	0,359	1,16	0,007	0,0012	0,0071	0,034	0,028	0,005	0,026	0,213	0,000	0,000	0,001
39954	47532	K4	0,175	0,360	1,18	0,010	0,0015	0,0068	0,032	0,025	0,034	0,030	0,221	0,001	0,000	0,002
39954	47533	K4	0,173	0,382	1,17	0,009	0,0016	0,0062	0,033	0,023	0,038	0,031	0,219	0,001	0,000	0,002
40022	48721	K4	0,180	0,341	1,13	0,010	0,0007	0,0065	0,032	0,019	0,002	0,032	0,026	0,000	0,000	0,000
40022	48726	K4	0,175	0,347	1,11	0,010	0,0006	0,0062	0,037	0,012	0,004	0,019	0,033	0,000	0,000	0,000

B08 Heat	B07 Test No.	C01	TI	B
39213	42486	K4	0,002	0,0000
39273	43047	K4	0,002	0,0000
39461	45006	K4	0,002	0,0001
39501	46383	K4	0,002	0,0001
39501	46385	K4	0,001	0,0000
39504	46380	K4	0,002	0,0002

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 Inspector's stamp
		Date 25.03.03	PP 1



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

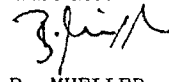
A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No / Date of dispatch 99169-23.03.03	A08/ Manufacturer's order/ A03 Certificate No. 263076-001	Sheet 9/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. SAP10029298 A07.2 No. E10244-J1010LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70 B03 Specifications ASME-2A:01+A02 +SA20-S5				

C70-C99 Chemical composition % - Product analysis

B08 Heat	B07 Test No.	C01	Ti	B
39504	46381	K4	0,001	0,0000
39948	47561	K4	0,002	0,0000
39948	47566	F4	0,002	0,0000
39954	47532	K4	0,002	0,0000
39954	47533	K4	0,002	0,0002
40022	48721	K4	0,002	0,0000
40022	48726	K4	0,003	0,0000

C94 Product analysis Carbon equivalent / Alloying restrictions

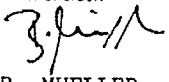
B08 Heat	B07 Test No.	C01					
39213	42486	K4	FO-02=	0,45	FO-55=	0,29	FO-91= 5,4
39273	43047	K4	FO-02=	0,39	FO-55=	0,09	FO-91= 6,5
39461	45006	K4	FO-02=	0,38	FO-55=	0,13	FO-91= 6,8
39501	46383	K4	FO-02=	0,39	FO-55=	0,11	FO-91= 6,4
39501	46385	K4	FO-02=	0,38	FO-55=	0,11	FO-91= 6,6
39504	46380	K4	FO-02=	0,37	FO-55=	0,07	FO-91= 6,2
39504	46381	K4	FO-02=	0,37	FO-55=	0,07	FO-91= 6,3
39948	47561	K4	FO-02=	0,41	FO-55=	0,27	FO-91= 6,7
39948	47566	F4	FO-02=	0,41	FO-55=	0,27	FO-91= 6,7
39954	47532	K4	FO-02=	0,43	FO-55=	0,31	FO-91= 6,7
39954	47533	K4	FO-02=	0,42	FO-55=	0,31	FO-91= 6,8
40022	48721	K4	FO-02=	0,38	FO-55=	0,08	FO-91= 6,3
40022	48726	K4	FO-02=	0,37	FO-55=	0,07	FO-91= 6,3

A04	 Trademark	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 Inspector's stamp	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar inspection department	A01
					Date 25.03.03	PP 1



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No / Date of dispatch 99169-23.03.03	A08/ Manufacturer's order/ A03 Certificate No. 263076-001 Sheet 10
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. SAP10029298 A07.2 No. E10244-J1010LG	B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70	B03 Specifications ASME-2A:01+A02 +SA20-S5		
C94 Carbon equivalent formula / Alloying restrictions FO-02 = C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15 FO-55 = CU+MO+NI+CR FO-78 = CR+MO FO-91 = MN/C			
D01 Checking of marking, surface, shape and dimensions ITEM NO.: 01-02,07 RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS SURFACE AS PER ASME-SA20 THICKNESS AS PER ASME-SA20:01+A02 LENGTH AND WIDTH AS PER ASME-SA20:01+A02 ITEM NO.: 03-06,08-11 RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS SURFACE AS PER ASME-SA20 THICKNESS AS PER ASME-SA20:01+A02 LENGTH AND WIDTH AS PER ASME-SA20:01+A02 FLATNESS AS PER 1/2 ASME-SA20:01+A02 ITEM NO.: 12-13 RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS SURFACE AS PER ASME-SA20 THICKNESS AS PER ASME-SA20:01+A02 LENGTH AND WIDTH AS PER ASME-SA20:01+A02 FLATNESS AS PER ASME-SA20:01+A02			
A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001 since 14 March 1990 		A01 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department   B. MUELLER Der Werkssachverständige  Inspector's stamp Date 25.03.03 PP 1

Edmonton Exchanger & Manufacturing Ltd.

5545-89 Street, Edmonton, Alberta T6E 5W9
Telephone (780) 468-6722 Fax (780) 466-5155

QCC-004
Rev.3
Date: April 12, 2000
Approved By: S.Z.

Certificate of Compliance

Customer: IPS MANUFACTURING LIMITED Purchase Order: 0029343 Work Order: C56778 Date: 2005/04/04 Page 1 of 1

Item#	Description	Qty	Heat#	Brinell Hardn.	Weld Proc.	Form. Proc.
S56778-1	SHELL(S) - 2.0000" NOM X 48" ID X 96" (Material Spec: SA 516-70 N) Conforms to NACE MR-01-75-2000	1	0083D-21652	145	WP600	4
S56778-1	SHELL(S) - 2.0000" NOM X 48" ID X 96" (Material Spec: SA 516-70 N) Conforms to NACE MR-01-75-2000	1	0083D-21652	145	WP600	4
S56778-1	COUPON(S) - 2.0000" NOM X 24" X 6" (Material Spec: SA 516-70 N) Conforms to NACE MR-01-75-2000	2	0083D-21652	145	-	-

Forming Procedure:
4. Cold Formed

NOTE: All items which were heat treated during or after forming shall be included on the forming procedure listed above as per UCS-79(e).

Brinell Equipment: Newage Calibration Pin
Brinell Hardness Tester

The items listed above comply with the requirements of ASME Code Section I (PG-80) and Section VIII, Div. 1, UCS-79(d), UG-79 & UG-80. All welders and procedures are qualified to ASME Code Section IX. For tacking carbon steel items, roundbar used is 1018 Cold Rolled. Material being supplied conforms to the latest ASME Code Section II, Part A, 2004-07-01 Edition.

Steve Zubryckyj (QAM)

Supplementary Examination - Items

ALGOMA STEEL INCORP. 105 West St., Sault Ste. Marie, Ontario, Canada, P6A 7B4

CUSTOMER PO. NO E10524-J1010LG	ENTRY DATE 2004/12/03	SHIP DATE 2005/02/17	TALLY NUMBER 255110	SHIPPERS NUMBER 02-	CARRIER DWC -605686	MILL ORDER 61901
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CHARGE TO CUSTOMER NAME&ADDRESS

EDMONTON STEEL PLATE

5545 - 89TH STREET

EDMONTON, ALBERTA

T6E 5W9

SHIP TO CUSTOMER NAME&ADDRESS

EDMONTON STEEL PLATE

SWITCH 2057 / EAST EDMONTON

EDMONTON, AB

MILL TEST REPORT

ALGOMA STEEL INC. HEREBY CERTIFIES THAT MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO/IEC GUIDE 25-1990 AS CONTAINED IN THE COMPANY RECORDS.

B. Thomson
MANAGING METALLURGIST

CUSTOMER SPECIFICATION

HR PLATE - CARBON - ASME SA516 GR 70 (01) - CVNL 15/12 FT LBS AT -50 F - AS

PER SA20 - ESP-03 REV1,03-02-28 - NORMALIZED 1650F NOM FOR 5 MIN/INCH MIN. -

PVQ - NORMALIZED - /ISO9002 DIN50049 3.1.B/EN 10204 3.1.B(91) - SULPHIDE SHAPE

CONTROL

SUPPLEMENTARY INSTRUCTIONS FAX SM/TR TO 780-466-4668 - ATTN WILMA HIEMSTRA

THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ALGOMA STEEL INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-2624 COLLECT FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF THE DOCUMENT.

INSP/TR: TEST REPORTS REQ'D - INCL C.E. & BORON PRODUCT ANALYSIS

CUST USE: VESSEL STOCK 2005/02/17 19:53

MEETS EN 10204 3.1.B AND DIN 50049 3.1.B

MEETS ISO 9001:2000 REGISTERED

ALL HEATS FULLY KILLED

HEATS INDICATED WITH (*) FINE GRAINED



10593

***** PRODUCT SHIPPED *****

CUSTOMER ITEM 006 OUR ITEM 006 DIMENSIONS 2.000 X 97 X 480 "

PLATE NUMBER	HEAT	NO. PIECES	WEIGHT	PLATE NUMBER	HEAT	NO. PIECES	WEIGHT
21477	0083D-55	1	26408	21650	0083D-03	1	26408
21652	0083D-04	1	26408	21655	0083D-53	1	26408
21656	0083D-53	1	26408	21657	0083D-54	1	26408

***** MECHANICAL PROPERTIES *****

TENSILE TESTS:

PLATE HEAT NUMBER	* SAMPLE *	* * TEST * *	YIELD TENSILE
SRCE	GAUGE	COND METH DIR	KSI KSI % ELONG
0083D 21477	166"	2.0000 N .2 T	52.5 80.5 32(2")
0083D 21650	166"	2.0000 N .2 T	48.5 75.5 34(2")
0083D 21652	166"	2.0000 N .2 T	49.9 75.5 29(2")
0083D 21655	166"	2.0000 N .2 T	50.0 76.5 32(2")
0083D 21656	166"	2.0000 N .2 T	48.9 74.5 31(2")
0083D 21657	166"	2.0000 N .2 T	51.0 76.0 31(2")

****WARNING**** The test results and values reported herein indicate on that (1) the particular steel for which this certificate is issued meets the minimum specified yield strength and (2) the chemical analysis and physical properties of such steel are in conformance with the requirements of the specification indicated. The results or values reported herein cannot be used to qualify the steel for any specification other than the one indicated and cannot be relied upon for any purpose (including design or calculations) as representing the actual strength of such steel.

ALGOMA STEEL INCORP. 105 West St., Sault Ste. Marie, Ontario, Canada, P6A 7B4

CUSTOMER PO. NO E10524-J1010LG	ENTRY DATE 2004/12/03	SHIP DATE 2005/02/17	TALLY NUMBER 255110	SHIPPERS NUMBER 02-	CARRIER DWC -605686	MILL ORDER 61901
CHARGE TO CUSTOMER NAME&ADDRESS EDMONTON STEEL PLATE 5545 - 89TH STREET EDMONTON, ALBERTA T6E 5W9			SHIP TO CUSTOMER NAME&ADDRESS EDMONTON STEEL PLATE SWITCH 2057 / EAST EDMONTON EDMONTON, AB		MILL TEST REPORT ALGOMA STEEL INC. HEREBY CERTIFIES THAT MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO/IEC GUIDE 25-1990 AS CONTAINED IN THE COMPANY RECORDS. B. Thomson MANAGING METALLURGIST	
CUSTOMER SPECIFICATION HR PLATE - CARBON - ASME SA516 GR 70 (01) - CVNL 15/12 FT LBS AT -50 F - AS PER SA20 - ESP-03 REV1,03-02-28 - NORMALIZED 1650F NOM FOR 5 MIN/INCH MIN. - PVQ - NORMALIZED - /ISO9002 DIN50049 3.1.B/EN 10204 3.1.B(91) - SULPHIDE SHAPE CONTROL						THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ALGOMA STEEL INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-2624 COLLECT FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF THE DOCUMENT.
SUPPLEMENTARY INSTRUCTIONS FAX SM/TR TO 780-466-4668 - ATTN WILMA HIEMSTRA						
INSP/TR: TEST REPORTS REQ'D - INCL C.E. & BORON PRODUCT ANALYSIS						
CUST USE: VESSEL STOCK 2005/02/17 19:53						
***** MECHANICAL PROPERTIES *****						

IMPACT TESTS:

PLATE	GAUGE	COND	METH	DIR	SIZE	TEMP	FTLB	AVG
HEAT NUMBER SRCE IN								
0083D 21477 166"	2.0000	N	CVN	L	FULL	-50F	61 73	62 65
0083D 21650 166"	2.0000	N	CVN	L	FULL	-50F	58 80	65 68
0083D 21652 166"	2.0000	N	CVN	L	FULL	-50F	62 66	53 60
0083D 21655 166"	2.0000	N	CVN	L	FULL	-50F	57 63	66 62
0083D 21656 166"	2.0000	N	CVN	L	FULL	-50F	73 54	52 60
0083D 21657 166"	2.0000	N	CVN	L	FULL	-50F	72 67	69 69

PRODUCT ANALYSIS TESTS:

HEAT	C	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B
0083D	.21	1.12	.011	.005	.38	.02	.15	.03	.01	.035	.004	.018	.0000
	.001		.0040										

***** PRODUCT ANALYSIS OF PLATE 21475

***** CHEMICAL PROPERTIES *****

HEAT	C	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B
0083D*	.20	1.13	.013	.006	.34	.02	.15	.03	.01	.032	.003	.017	.0000
	.001		.0059										



WARNING The test results and values reported herein indicate on that (1) the particular steel for which this certificate is issued meets the minimum specified yield strength and (2) the chemical analysis and physical properties of such steel are in conformance with the requirements of the specification indicated. The results or values reported herein cannot be used to qualify the steel for any specification other than the one indicated and cannot be relied upon for any purpose (including design or calculations) as representing the actual strength of such steel.

Contract No: 04HGC08164

L/C NO. 4FA1105-00803

Name of Customer: CE FRANKLIN

P.O.NO: 1133013-OR-2100

Description: Seamless Carbon Steel Pipe For Oil And Gas Use

TOTAL: 3854 PIECES, 121 BUNDLES, 188.423 MT, 77080 FT

HUNAN HENGYANG STEEL TUBE (GROUP) CO., LTD

MILL TEST REPORT

Date: NOV. 10, 2004

Page: 3/4

Add: 10 Dalixincun, Hengyang City, Hunan, China

Tel and Fax: +86 734 8873739 8872942

Cable: 6993

P.C. 421001

SPEC: ASTM A53B-2001/A106B-99/A530/A530M-99, ASME SA53B-2001/SA106B-99, API 5LB/X42, PSL1-2000, NACE MR-0175-99

CERTIFICATE NO: 0411008

99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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REMARKS: 1. We hereby certify that the material has been manufactured, sampled, tested and inspected in accordance with the required standards.

2. Properties compliance to DIN 50049 3.1.B/UNI EN 10204 3.1B.

3. BRINELL /Rockwell hardness certified to NACE MR-0175-99.

4. SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2")

A. For pipes ≤ 1" full length specimen were used;

B. For pipes > 1" longitudinal strip specimen were used; the width of the gauge length portion is 3/4".

5. Origin: Made in China.

6. Materials confirm to Ansi B36.10.

QUALITY MANAGER:

ASME STAMP

ED. 2004 ADD.

CS DATE July 18/05

JAN 11 2005



Forged Vessel Connections, Canada Limited
A division of Ameri-Forge Limited

MTR # A126443

MATERIAL TEST REPORT

7410A-5 Street S.E.
Calgary, Alberta Canada T2H-2L9
TEL: (403) 255-9011
FAX: (403) 255-7239

<http://www.fvc.cc>
QA-C@fvc.cc

S.O. No: C5-0020 Date: 01/07/2005 REV #
Purchaser: IPS MANUFACTURING LIMITED Distributor:
P.O. No.: 27407 Distributor's Order No: Page 1

ITEM NO	QTY	DESCRIPTION	SPEC	HEAT #	HEAT TREAT
1	2	HB,SA105N, 600#, 8 x 14",RF&D	SA105N 2004 Ed No ADD	C677AN	Normalized

CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES

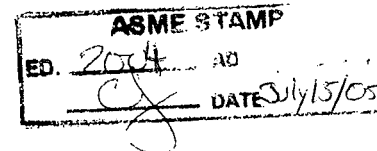
Heat #: C677AN

207C724

C	Mn	P	S	Si	Cr	Ni	Mo
.19	1.18	.008	.005	.22	.07	.07	.02
Cu	Al	V	As	Sb	Sn	Co	N
.21	.022	.010					
Ti	Ta	(Nb) Cb	O	H			
		<.001					

TENSILE (PSI)	YIELD (PSI)	ELONG (IN 2")	R.A. (%)	CHARPYS (FT - LBS)	TEMP ° F	COMMENTS
73600	48800	35.0	72.0			Test Bar: 159-159 BHN
SHEAR %		LATERAL EXPANSION (MILS)			BHN	
					< 187	
FVC STANDARD MANUFACTURING PRACTICES: 1) FLANGE DIMENSIONS & BOLTING COMPLY - ASME B16.5 2) SELF-REINFORCING NOZZLES COMPLY WITH SPECIFICATION OF SECT. VIII DIV. 1 OR DIV.2 PER CUSTOMER DESIGN/FVC DESIGN. 3) MATERIAL SPECIFICATION COMPLIES WITH ASME SECT. II. PART A. 4) ALL FVC MATERIAL MANUFACTURED PER FINE GRAIN PRACTICE. 5) ALL FVC MATERIAL CERTIFIED PER EN 10204, 3.1.B UNLESS OTHERWISE SPECIFIED 6) CERTIFICATE OF INSURANCE AVAILABLE UPON REQUEST.						

ASME STAMP
ED. 2004 AD
DATE July 15/04



Quality Assurance

PO# 23418 Mar 23/04 101 FOROI



Forged Vessel Connections, Canada Limited
A division of Ameri-Forge Limited

MTR # A116044

MATERIAL TEST REPORT

7410A-5 Street S.E.
Calgary, Alberta Canada T2H-2L9
TEL: (403) 255-9011
FAX: (403) 255-7239

<http://www.fvc.cc>
QA-C@fvc.cc

S.O. No:	C4-0201	Date:	03/22/2004	REV #	
Purchaser:	IPS MANUFACTURING LIMITED	Distributor:			
P.O. No.:	23418	Distributor's Order No:		Page	1

ITEM NO	QTY	DESCRIPTION	SPEC	HEAT #	HEAT TREAT
1	9	HB,SA105N, 600#, 3 x 12",RF&D	SA105N 2001 Edition	G055AN	Normalized

CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES

Heat #: G055AN

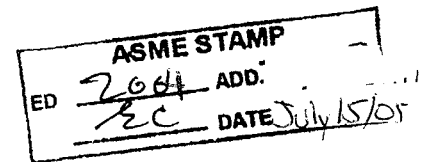
21302

C	Mn	P	S	Si	Cr	Ni	Mo
.20 ✓	1.18 ✓	.014 ✓	.006 ✓	.24 ✓	.05 ✓	.14 ✓	.04 ✓
Cu	Al	V	As	Sb	Sn	Co	N
.16 ✓	.035	.005 ✓	.009	.0100	.006		
Ti	Ta	(Nb) Cb	O	H	CALCIUM		
		.010 ✓			.0015		

TENSILE (PSI)	YIELD (PSI)	ELONG (IN 2")	R.A. (%)	CHARPYS (FT - LBS)	TEMP ° F	COMMENTS
81400 ✓	57600 ✓	33.0 ✓	71.0			
SHEAR %		LATERAL EXPANSION (MILS)			BHN	
					< 187	

FVC STANDARD MANUFACTURING PRACTICES:

- 1) FLANGE DIMENSIONS & BOLTING COMPLY - ASME B16.5
- 2) SELF-REINFORCING NOZZLES COMPLY WITH SPECIFICATION OF SECT. VIII DIV. 1 OR DIV.2 PER CUSTOMER DESIGN/FVC DESIGN.
- 3) MATERIAL SPECIFICATION COMPLIES WITH ASME SECT. II. PART A.
- 4) ALL FVC MATERIAL MANUFACTURED PER FINE GRAIN PRACTICE.
- 5) ALL FVC MATERIAL CERTIFIED PER EN 10204, 3.1.B UNLESS OTHERWISE SPECIFIED
- 6) CERTIFICATE OF INSURANCE AVAILABLE UPON REQUEST.



[Signature]
Quality Assurance

MILL 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.tw20 HOLLY STREET, SUITE 205
TORONTO, M4S 3B1, CANADA
TEL: 416-4810191 FAX: 416-4811790

CERT NO.: SE-4342BN

DATE : 11/01/2004

ORDER NO.: 4342(2) NATIONAL

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 SOU SERVICE)					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.	15042 600# VNRF S160	2"	100 PCE	0.210	0.190	0.920	0.015	0.008	0.190	0.060	0.060	0.008	0.002	0.002	0.000	0.394	
2.	11557 150# SORF	1"	61 PCE	0.210	0.170	1.060	0.011	0.012	0.080	0.070	0.050	0.005	0.003	0.009	0.005	0.412	
3.	3744 150# SORF	2"	300 PCE	0.200	0.170	1.060	0.017	0.014	0.090	0.140	0.080	0.014	0.003	0.005	0.008	0.420	
4.	4049 150# THRF	3"	268 PCE	0.210	0.190	0.920	0.015	0.008	0.190	0.060	0.060	0.008	0.002	0.002	0.000	0.394	
5.	4050 150# THRF	4"	83 PCE	0.200	0.210	1.060	0.012	0.005	0.070	0.060	0.060	0.005	0.003	0.005	0.009	0.399	
6.	11115 600# THRF	1"	42 PCE	0.200	0.210	1.050	0.011	0.006	0.050	0.040	0.030	0.015	0.003	0.005	0.007	0.392	

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			
1.	41583	515.50	327.30	34.6	147	71.3	NORMALIZED	JIANGYIN	NORMALIZATION: 880°C X2HRS CONFORMS TO MEET NACE MR-01-75 LATEST EDITION
2.	34296	511.60	307.70	35.6	157	65.9	NORMALIZED	OENK	
3.	34203	504.70	311.70	32.2	147	66.8	NORMALIZED	OENK	
4.	41583	515.50	327.30	34.6	147	71.3	NORMALIZED	JIANGYIN	
5.	31097	504.70	396.90	36.6	171	66.8	NORMALIZED	OENK	
6.	38794	504.70	329.30	33.0	157	64.0	NORMALIZED	OENK	

ASME

ED. 2004

84955

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

MANAGER

TEST CHIEF

Sam Je See
Heich Cheryl L

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

MILL TEST CERTIFICATE
=====

EN10204-3.1.B(DIN50049/3.1.B)

CUSTOMER : SEYBOLD INTERNATIONAL CORP.

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

CERT NO.: SE-4343BN

DATE : 11/01/2004

ORDER NO.: 4343(2) NATIONAL

L/C NO. :

PAGE : 1 OF 3

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 (2245.12 CAT I GR.248 SUUR SERVICE)				ASME B16.5-98a									
ITEM NO.	D E S C R I P T I O N		Q U A N T I T Y	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.	25660 150# WNRF S160	2"	90 PCE	0.200	0.210	1.050	0.011	0.006	0.050	0.040	0.030	0.015	0.003	0.005	0.007	0.392
2.	15042 600# WNRF S160	2"	37 PCE	0.190	0.190	1.030	0.014	0.007	0.090	0.130	0.090	0.006	0.003	0.005	0.009	0.402
3.	3744 150# SORF	2"	300 PCE	0.210	0.130	1.070	0.011	0.023	0.060	0.050	0.030	0.005	0.003	0.005	0.007	0.406
4.	3746 150# SORF	4"	300 PCE	0.210	0.200	0.930	0.017	0.021	0.180	0.080	0.050	0.008	0.002	0.002	0.000	0.398
5.	3748 150# SORF	8"	85 PCE	0.200	0.160	1.060	0.014	0.007	0.080	0.060	0.050	0.005	0.003	0.005	0.009	0.399
6.	4047 150# THRF	2"	100 PCE	0.210	0.230	1.050	0.011	0.006	0.040	0.050	0.030	0.009	0.003	0.005	0.008	0.402
7.	4049 150# THRF	3"	300 PCE	0.210	0.190	0.920	0.015	0.008	0.190	0.060	0.060	0.008	0.002	0.002	0.000	0.394
8.	4051 150# THRF	6"	62 PCE	0.210	0.200	0.950	0.013	0.008	0.050	0.060	0.060	0.010	0.001	0.008	0.005	0.391
9.	4056 600# THRF	3"	44 PCE	0.200	0.210	1.060	0.012	0.005	0.070	0.060	0.060	0.005	0.003	0.005	0.009	0.399
10.	11444 150# SWRF XS	3/4"	104 PCE	0.210	0.130	1.090	0.017	0.007	0.060	0.080	0.050	0.008	0.003	0.005	0.009	0.418

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			NORMALIZATION: 880°C X2HRS CONFORMS TO MEET NACE MR-01-75 LATEST EDITION
1.	38794	504.70	329.30	33.0	157	64.0	NORMALIZED	OENK	84956
2.	13288	527.30	359.70	38.4	166	70.4	NORMALIZED	OENK	
3.	49418	511.60	335.20	35.8	152	68.6	NORMALIZED	OENK	
4.	41573	494.90	335.20	35.6	152	64.9	NORMALIZED	JIANG YIN	
5.	40646	507.70	357.70	35.2	162	65.9	NORMALIZED	OENK	
6.	45995	523.40	343.00	36.0	147	67.7	NORMALIZED	OENK	
7.	41583	515.50	327.30	34.6	147	71.3	NORMALIZED	JIANGYIN	
8.	16202	513.60	337.10	36.4	152	66.8	NORMALIZED	OENK	
9.	31097	504.70	396.90	36.6	171	66.8	NORMALIZED	OENK	
10.	13074	507.70	357.70	36.0	171	66.8	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 CERTIFYING

San Je Lee
MANAGER

Heik Chang
TEST CHIEF





2853
Forged Vessel Connections, Canada Limited
A division of Ameri-Forge Limited

MTR # A123018

MATERIAL TEST REPORT

7410A-5 Street S.E.
Calgary, Alberta Canada T2H-2L9
TEL: (403) 255-9011
FAX: (403) 255-7239

<http://www.fvc.cc>
QA-C@fvc.cc

S.O. No: C4-0710 Date: 10/05/2004 REV #
Purchaser: IPS MANUFACTURING LIMITED Distributor:
P.O. No.: 25884 Distributor's Order No: Page 1

ITEM NO	QTY	DESCRIPTION	SPEC	HEAT #	HEAT TREAT
2	1	HB,SA105N, 600#,18 x 18",RF&D	SA105N 2004 Ed No ADD	D465AN	Normalized

CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES

Heat #: D465AN

0482425

C	Mn	P	S	Si	Cr	Ni	Mo
.21 ✓	1.17 ✓	.021 ✓	.007 ✓	.24 ✓	.03 ✓	.01 ✓	.01 ✓
Cu	Al	V	As	Sb	Sn	Co	N
.00 ✓	.031	.003 ✓	.001		.000		
Ti	Ta	(Nb) Cb	O	H			
.002		.003 ✓					

TENSILE (PSI)	YIELD (PSI)	ELONG (IN 2")	R.A. (%)	CHARPYS (FT - LBS)	TEMP ° F	COMMENTS
71600 ✓	47800 ✓	36.0 ✓	65.0			Test Bar: 159-159 BHN
SHEAR %		LATERAL EXPANSION (MILS)			BHN	ASME STAMP EC 2004 DATE Sep 30 05
					< 187	
FVC STANDARD MANUFACTURING PRACTICES: 1) FLANGE DIMENSIONS & BOLTING COMPLY - ASME B16.5 2) SELF-REINFORCING NOZZLES COMPLY WITH SPECIFICATION OF SECT. VIII DIV. 1 OR DIV.2 PER CUSTOMER DESIGN/FVC DESIGN. 3) MATERIAL SPECIFICATION COMPLIES WITH ASME SECT. II. PART A. 4) ALL FVC MATERIAL MANUFACTURED PER FINE GRAIN PRACTICE. 5) ALL FVC MATERIAL CERTIFIED PER EN 10204, 3.1.B UNLESS OTHERWISE SPECIFIED 6) CERTIFICATE OF INSURANCE AVAILABLE UPON REQUEST.						

3
Quality Assurance

Tac 21727

105 West Street, Sault Ste. Marie, Ontario Canada P6A 7B4

CP

-317129

MAIL ORDER
60277

SHIP TO CUSTOMER NAME AND ADDRESS

RUSSEL METALS INC
5724 - 40TH STREET SE
CALGARY ALBERTA

MILL TEST REPORTS

ALGOMA STEEL INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO9001 GUIDE 25-1990 AS CONTAINED IN THE COMPANY RECORDS.

B. Thomson

MANAGING METALLURGIST

THIS MILL TEST REPORT MAY NOT BE
REPRODUCED EXCEPT IN FULL WITHOUT
WRITTEN APPROVAL OF ALGOMA STEEL, INC.
IF YOU RECEIVE THIS DOCUMENT AND ARE
NOT THE INTENDED RECEIVER, PLEASE CALL
(708) 845-2824 COLLECT FOR INSTRUCTIONS
ON METHOD OF DISPOSAL OF DOCUMENT

CUSTOMER SPECIFICATION

FOR MULTIPLE CERTIFIED PLATE - CARBON - CSA G40.21 44W/ASTM A36 (04)(04) -

SUPPLEMENTARY INSTRUCTIONS

FAX 1 COPY OF S/M & T/R TO 1-403-279-3269 ATTN: C. SPEERS

TEST REPORTS REQUIRED

CUST RESALE

MEETS EN 10204 3.1.B AND DIN 50049 3.1.B
MEETS ISO 9001:2000 REGISTERED
ALL HEATS FULLY KILLED
HEATS INDICATED WITH (X) FINE GRAINED

2004/12/07 12:51

CUSTOMER ITEM 002 OUR ITEM 002 DIMENSIONS 1.000 X 48 X 96 "

PLATE NUMBER	HEAT	NO. PIECES	WEIGHT	PLATE NUMBER	HEAT	NO. PIECES	WEIGHT
06419	7541C-03	15	19590	06420	7541C-53	16	20896

TENSILE TESTS: MECHANICAL PROPERTIES

HEAT	SAMPLE	TEST	YIELD	TENSILE	ELONG
75410	SRC# GAUGE	COND METH DIR	KSI	KSI	%
166	7500	AR -2 T	51.5	72.5	26(8#)
166	1.0000	AR -2 T	50.0	72.5	30(2#)

XXXXXXXXXXXXXXXXXXXXCHEMICAL PROPERTIESXXXXXXXXXXXXXXXXXXXX

HEAT C MN P S SI CR NI CU MO AL CB V B TI SN N
7541C .15 1.12 .009 .005 .21 .02 .01 .01 .01 .040 .000 .032 .001

ED. umg DATE July 15/74

ASME STAMP
ED. 2024 ADD.
DATE July 15/05

PAGE 8 OF 8

THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.

ALGOMA STEEL INC.

105 West St., Sault Ste. Marie, Ontario, Canada, P6A 7B4

106 28157

INVOICE PURCHASE ORDER NUMBER 03008706	ENTRY DATE 2005/03/18	SHIP DATE 2005/05/16	TALLY NUMBER 281105	SHIPPER'S NUMBER 02-	CARRIER CP	MILL ORDER 65283
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CHARGE TO CUSTOMER NAME & ADDRESS

RUSSEL METALS RED DEER
6724 GOLDEN WEST AVENUE
RED DEER, ALBERTA
T4P 1A8

SHIP TO CUSTOMER NAME & ADDRESS

RUSSEL METALS INC
C/O BATES CALGARY
CALGARY, ALBERTA

MILL TEST REPORTS

ALGOMA STEEL INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO/IEC GUIDE 25-1990 AS CONTAINED IN THE COMPANY RECORDS.

B. Thomson
MANAGING METALLURGIST

CUSTOMER SPECIFICATION

HR MULTIPLE CERTIFIED PLATE - CARBON - CSA G40.21 44W/ASTM A36 (04) (04) -
FLATNESS TOLERANCE TO 1/2 A-6

SUPPLEMENTARY INSTRUCTIONS

FAK 1 COPT OF S/M & T/R TO 403-346-1966 ATT'N DAVE AND 403-279-
3269 ATT'N CAROL SPEERS

INSP T/R TEST REPORTS REQUIRED
CUST USE RESALE

2005/05/16 07:03

MEETS EN 10204 3.1.B AND DIN 50049 3.1.B
MEETS ISO 9001:2000 REGISTERED
ALL HEATS FULLY KILLED
HEATS INDICATED WITH (*) FINE GRAINED

***** PRODUCT SHIPPED *****
CUSTOMER ITEM 003 OUR ITEM 003 DIMENSIONS .375 X 48 X 96 "

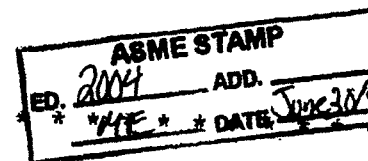


PLATE NUMBER	HEAT	NO. PIECES	WEIGHT	PLATE NUMBER	HEAT	NO. PIECES	WEIGHT
34281	2001D-53	18	9820	34282	2001D-54	18	9820
35331	2285D-55	14	6860				

***** MECHANICAL PROPERTIES *****

TENSILE TESTS:

HEAT	SAMPLE	GAUGE	COND METH	DIR	YIELD KSI	TENSILE KSI	% ELONG
2001D	166"	.5000	AR	.2 T	53.0	74.0	26(8")
2285D	166"	.3750	AR	.2 T	54.0	75.0	25(8")
	166"	.3750	AR	.2 T	54.0	75.5	23(8")

***** CHEMICAL PROPERTIES *****

HEAT	C	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B
2001D*	.15	1.09	.010	.009	.22	.04	.02	.03	.02	.032	.000	.035	
	.001												

PO 30498
AAW 0.380 LAB
ALG
ALG
ALG

WARNING

THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.

PAGE 1 OF 8

002

RUSSEL METALS RED DEER

1966 403 346 FAX 403:32 THU 04:32 06/30/05

EDMONTON EXCHANGER & MANUFACTURING LTD.
 5545 - 89 STREET, EDMONTON, ALBERTA T6E 5W9
 TELEPHONE (780) 468-6722 FAX (780) 466-5155

QCC-004
 REV. 3
 DATE: APR. 12/00
 APPROVED BY: S.Z.

CERTIFICATE OF COMPLIANCE

CUSTOMER IPS MANUFACTURING LIMITED	PURCHASE ORDER 0026527	WORK ORDER C54452	DATE 2004/12/03	PAGE 1 OF 1
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ITEM #	QTY	DESCRIPTION	HEAT #	TAG CODE	BRINELL HARDN	WELD PROCEDURE	FORMING PROC
S54452-2-1	1	SHELL(S) - 2.0000" NOM X 48" ID X 120" (MATERIAL SPEC: SA 516-70 N)	50449-13069		164	WP63	4
S54452-3	1	COUPON(S) - 2.0000" NOM X 24" X 6" (MATERIAL SPEC: SA 516-70 N)	50449-13069				
S54452-4	2	ROLLED REPAD(S) - 0.3750" NOM X 8" X 60" (MATERIAL SPEC: SA 516-70 N)	75121-NA810-1		177		4

Forming Procedure:
 1. Hot Formed @ 1650F/899C and Air Cooled
 2. Hot Formed @ 1975F/1080C and Air Cooled
 3. Normalized @ 1650F/899C for 25 min/inch and Air Cooled
 4. Cold Formed
 5. Renormalized @ 1650F/899C for 25 min/inch and Air Cooled After Forming
 6. Renormalized @ 1750F/954C for 25 min/inch and Air Cooled After Forming
 7. Re-Solution Annealed @ 1975F/1080C and Air Cooled After Forming
 8. Stress Relieved @ 1150F/621C PER UCS-56 OR PW-39(where applicable)

SUPPLEMENTARY EXAMINATION - ITEMS

NOTE: ALL ITEMS WHICH WERE HEAT TREATED DURING OR AFTER FORMING SHALL BE INCLUDED ON THE FORMING PROCEDURE LISTED ABOVE AS PER UCS-79(e).

BRINELL EQUIPMENT: NEWAGE CALIBRATION PIN
 BRINELL HARDNESS TESTER

SUPPLEMENTARY REQUIREMENTS:
 S54452-2: conforms to NACE MR-01-75-2000
 S54452-4: conforms to NACE MR-01-75-2000

THE ITEMS LISTED ABOVE COMPLY WITH THE REQUIREMENTS OF ASME CODE SECTION I (PG-80) AND SECTION VIII, DIV. 1, UCS-79(d), UG-79 & UG-80. ALL WELDERS AND PROCEDURES ARE QUALIFIED TO ASME CODE SECTION IX. FOR TACKING CARBON STEEL ITEMS, ROUND BAR USED IS 1018 COLD ROLLED. MATERIAL BEING SUPPLIED CONFORMS TO THE LATEST ASME CODE SECTION II, PART A, 2001 EDITION, JULY 1, 2003 ADDENDA.
 STEVE ZUBRYCKYJ (QAM)
 EDMONTON EXCHANGER & MANUFACTURING LTD.



Corus UK Limited
Corus Construction & Industrial
P.O. Box 1, Scunthorpe,
North Lincolnshire, DN16 1BP
Telephone: 01724 404040
Fax: 402353 Telex: 52601

INSPECTION CERTIFICATE

In Accordance with DIN.50049/EN10204 3.1B

3/ 6

Date	2/ 7/04	Z1
Cert No.	SPLA/04/00000214/1	A3

Customer	Management System	Corus Ref. No.	66523/ 2	Works Order/Item No.	83/ 189/ 1	A8	
CORUS AMERICA INC (EDMONTON EXCHANGER VANCOUVER) 475 NORTH MARTINGALE ROAD SUITE 400, SCHAUMBURG, ILLINOIS, 60173 USA (INCLUDING PUERTO RICO)		Customers Order No.	111178	A7			
		Specification/Product	ASME SA516/SA516M 2001/03 70/485				B1/B2
		Plate 40'0.000" X 120.000" X 0.3750" Piece Weight 2780.0Kg "N"- Normalised at 890/930 Degrees C for a minimum of 1.5 minutes per mm of thickness.					



B6/A10 EDMONTON EXCHANGERS/ P.O.E-10088-J1010LG/ VAN B.C.

L=Longitudinal		T=Transverse		Z=Through Thickness		S=Sub-Surface		M=Mid-Thickness		Q=Quarter-Thickness		TH=Third-Thickness		BS=Bottom Surface		A=Supply Condition		N=Normalised		SR=Stress Relieved		SA=Strain Aged		C70
B10	B8	B7	C00	C2	B5	C11	C12	C14	C13	C2	C1	B5	Charpy Impact		C40	Steelmaking Process:		B.D.S.		Vacuum Degassed.		Other Tests		C50-C69
Quantity	Cast/Heat No.	Piece No.	Test Piece No.	D i s t r i b u t i o n	Test Condition	Yield Stress Re	Tensile Strength Rm	Rm %	Elong% A	D i s t r i b u t i o n	P o s i t i o n	Test Condition	10x7.5x2mmV		C41									
													Units	C42	C43									
													Joules											
													15 Av/ 10 Ind @ -46C											
1	75121	Specification	Min			38	70		17				-46C	52	37	74	54							
		NA810/ 1	Max	T		55	78		23	L	Q													
ANALYSIS %		C71-C92	C	Si	Mn	P	S	Cr	Mo	Ni	Al	Cu	Nb	N	Sn	Ti	V					Cr+Mo+Ni+Cu		CEV
Specification		Min		.15	.05	.035	.015	.025	.080	.250	.020	.200	.020			.030	.030					0.700		.43
Cast/Heat		Max	23	.40	1.20	.015	.007	.016	.002	.019	.032	.010	.001	.008	.001	.001	.002					0.047		.39
Specification		Min		.13	.079	.035	.015	.025	.080	.250		.200	.030			.040	.040					0.700		.43
Product on NA751		Max	23	.45	1.30	.014	.008	.015	.002	.020	.036	.011	.002	.008	.002	.002	.001					0.048		.39

ASME 9001

2001

2003

Dec 14/11

APPROVED

2003

2001

Dec 14/11

On behalf of Corus UK Limited, the manufacturer.
Certified by Corus UK Limited and comply



On behalf of Corus UK Limited, the manufacturer.
These results are certified by Corus UK Limited and comply
with the requirements of the Product Description.

M. D. Houghton

M.D. Houghton, Test House Manager, Scunthorpe A5 H091s

All original Inspection Certificates issued by Corus UK Limited will contain either an embossed seal, or be impregnated with a Corus UK Limited watermarked logo, or a combination of both. Any receipt of a copy of a Corus UK Limited Inspection Certificate without either the seal or watermarking should ensure from the supplier that it is a true and accurate reproduction of the original.

EDMONTON EXCHANGER & MANUFACTURING LTD.5545 - 89 STREET, EDMONTON, ALBERTA T6E 5W9
TELEPHONE (780) 468-6722 FAX (780) 466-5155QCC-004
REV. 3
DATE: APR. 12/00
APPROVED BY: S.Z.**CERTIFICATE OF COMPLIANCE**

CUSTOMER	PURCHASE ORDER	WORK ORDER	DATE	PAGE
IPS MANUFACTURING LIMITED	0025849	C53468	2004/10/05	1 OF 1

ITEM #	QTY	DESCRIPTION	HEAT #	TAG BRINELL		WELD		FORMING	
				CODE	HARDN	PROCEDURE		PROC	
S53468-3	1	COUPON(S) - 2.0000" NOM X 24" X 6" (MATERIAL SPEC: SA 516-70 N)	50455-12932			-	-	-	
S53468-4	4	ROLLED REPAD(S) - 0.3750" NOM X 8" X 60" (MATERIAL SPEC: SA 516-70 N)	49076-05713			164	-	4	

Forming Procedure:

1. Hot Formed @ 1650F/899C and Air Cooled
2. Hot Formed @ 1975F/1080C and Air Cooled
3. Normalized @ 1650F/899C for 25 min/inch and Air Cooled
4. Cold Formed
5. Renormalized @ 1650F/899C for 25 min/inch and Air Cooled After Forming
6. Renormalized @ 1750F/954C for 25 min/inch and Air Cooled After Forming
7. Re-Solution Annealed @ 1975F/1080C and Air Cooled After Forming
8. Stress Relieved @ 1150F/621C PER UCS-56 OR PW-39(where applicable)

SUPPLEMENTARY EXAMINATION - ITEMS

NOTE: ALL ITEMS WHICH WERE HEAT TREATED DURING OR AFTER FORMING SHALL BE INCLUDED ON THE FORMING PROCEDURE LISTED ABOVE AS PER UCS-79(e).

BRINELL EQUIPMENT: NEWAGE CALIBRATION PIN
BRINELL HARDNESS TESTER

SUPPLEMENTARY REQUIREMENTS:
S53468-4: conforms to NACE MR-01-75-2000

THE ITEMS LISTED ABOVE COMPLY WITH THE REQUIREMENTS OF ASME CODE SECTION I (PG-80) AND SECTION VIII, DIV. 1, UCS-79(d), UG-79 & UG-80. ALL WELDERS AND PROCEDURES ARE QUALIFIED TO ASME CODE SECTION IX. FOR TACKING CARBON STEEL ITEMS, ROUND BAR USED IS 1018 COLD ROLLED. MATERIAL BEING SUPPLIED CONFORMS TO THE LATEST ASME CODE SECTION II, PART A, 2001 EDITION, JULY 1, 2003 ADDENDA.
STEVE ZUBRYCKYJ (QAM)
EDMONTON EXCHANGER & MANUFACTURING LTD.



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 1/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70				
B03 Specifica- ASME-2A:01+A02+SA20-S5 tions DIL-HUE1-31.10.03				

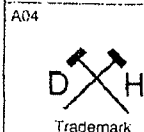
A01-A99 Further commercial information - Concession requests

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B16 Concession request no.	Date
03	49076	05713-01	TO/W111/2004	04.03.04



B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
INCH									
01	1	0,2500 x	96,00000 x	480,00000	1482	N	49074	04633-01	ITEM 1
01	1	0,2500 x	96,00000 x	480,00000	1482	N	49074	04633-02	ITEM 1
01	1	0,2500 x	96,00000 x	480,00000	1482	N	49074	04639-02	ITEM 1
01	1	0,2500 x	96,00000 x	480,00000	1482	N	49074	04689-02	ITEM 1
01	1	0,2500 x	96,00000 x	480,00000	1482	N	49288	04708-01	ITEM 1
01	1	0,2500 x	96,00000 x	480,00000	1482	N	49288	04708-02	ITEM 1
01	1	0,2500 x	96,00000 x	480,00000	1482	N	49715	04714-02	ITEM 1
**	7				10374				
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04634-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04634-02	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04639-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04689-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04694-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04694-02	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04699-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04700-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04701-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04701-02	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04703-01	ITEM 2



Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001 since 14 March 1990

B. Mueller
B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

A01

Date 16.03.04

KW 1



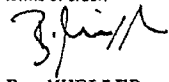
DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049		A09 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
CERTIFICAT DE RECEPTION 3.1.B NF EN 10204				
INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		132421-15.03.04	277236-002	2/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI	A07.1 No. 31943	B01 Product HOT ROLLED PLATES	
	Final receiver EXCHANGER, EDMONTON	A07.2 No. E10277-J1010-LG		
B02/ Steel grade SA516-70				
B03 Specifications ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
INCH									
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	04703-02	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	08260-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	23232-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	23232-02	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	23288-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	49074	23288-02	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	50601	32557-01	ITEM 2
02	1	0,2500 x	120,00000 x	480,00000	1852	N	50601	32558-01	ITEM 2
**	19				35188				
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05710-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05710-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05712-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05712-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05713-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05713-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05723-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49076	05723-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04710-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04710-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04711-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04711-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04712-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04712-02	ITEM 3

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 Inspector's stamp	Date 16.03.04	KW 1



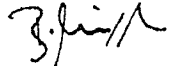
DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 3/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70				
B03 Specifica- tions ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width INCH	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04713-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	49288	04713-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	50705	18887-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	50705	18887-02	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	50705	18888-01	ITEM 3
03	1	0,3750 x	96,00000 x	480,00000	2223	N	50705	18888-02	ITEM 3
**	20				44460				
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49074	04640-01	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49074	04640-02	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05683-01	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05683-02	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05695-01	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05695-02	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05704-01	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05704-02	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05707-01	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	49076	05707-02	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	50705	18943-01	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	50705	18943-02	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	50705	18956-01	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	50705	18956-02	ITEM 4
04	1	0,3750 x	120,00000 x	480,00000	2779	N	50937	30520-01	ITEM 4
**	15				41685				

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
	Inspector's stamp		Date 16.03.04
	KW		1



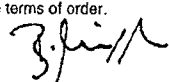
DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049		A09 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
CERTIFICAT DE RECEPTION 3.1.B NF EN 10204				
INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		132421-15.03.04	277236-002	4/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI	A07.1 No. 31943	B01 Product HOT ROLLED PLATES	
	Final receiver EXCHANGER, EDMONTON	A07.2 No. E10277-J1010-LG		
B02/ Steel grade	SA516-70			
B03 Specifications	ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03			

B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
INCH									
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16583-01	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16583-02	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16583-03	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16584-01	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16584-02	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16584-03	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16585-01	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16585-02	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16585-03	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16586-01	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16586-02	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16586-03	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16596-02	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16597-02	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16597-03	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16601-01	ITEM 5
05	1	0,5000 x	96,00000 x	480,00000	2964	N	50594	16601-03	ITEM 5
**	17				50388				
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16613-02	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16613-03	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16614-01	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16614-03	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16617-01	ITEM 6

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
		Inspector's stamp	Date 16.03.04 KW 1

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A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 5/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07 1 No. 31943 A07 2 No. E10277-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70 B03 Specifications ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width INCH	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16617-02	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16617-03	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16618-01	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16618-02	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16618-03	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16623-01	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16623-02	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16623-03	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16626-01	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16626-02	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50593	16626-03	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50594	16587-02	ITEM 6
06	1	0,5000 x	120,00000 x	480,00000	3705	N	50594	16595-03	ITEM 6
**	18				66690				
***	96				248785				

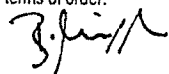
B04 Delivery condition / Heat treatment of plates

ITEM NO.: 01-06

N: HT: 1634 GR.F +27 -27 GR.F

SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,5 MIN/MM (25-38 MIN/INCH)

COOLING IN STILL AIR

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
		Inspector's stamp	Date 16.03.04
		KW	1



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Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

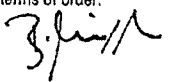
A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No / Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No 277236-002	Sheet 6/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70				
B03 Specifica- tions ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

B06 Marking

ITEM NO.: 01-06
STEEL GRADE SA516 70 MTLTV SA516 60 MTLTV
HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

C10-C29 Tensile test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01 C02/ C01	C03 Temp. GR.F	C10 C11 KSI RP02	C12 RM	C13 A % LO=8IN	C14-C15 A % LO=2IN
01	49074	04633		K4	Q RT	53,7	75,8	25,5	53,5
01	49074	04639		K4	Q RT	54,1	74,4	25,5	47,6
01	49074	04689		K4	Q RT	52,9	75,7	25,0	45,7
01	49288	04708		K4	Q RT	50,9	73,7	27,0	47,6
01	49715	04714		K4	Q RT	50,8	73,2	27,0	45,7
02	49074	04634		K4	Q RT	52,1	74,0	28,0	45,7
02	49074	04639		K4	Q RT	54,1	74,4	25,5	47,6
02	49074	04689		K4	Q RT	52,9	75,7	25,0	45,7
02	49074	04694		K4	Q RT	52,9	75,5	25,5	45,7
02	49074	04699		K4	Q RT	53,5	76,0	25,5	45,7
02	49074	04700		K4	Q RT	53,4	75,3	27,5	37,8
02	49074	04701		K4	Q RT	53,9	74,7	25,5	45,7
02	49074	04703		K4	Q RT	53,5	76,1	26,5	41,7
02	49074	08260		K4	Q RT	52,8	74,2	25,0	43,7
02	49074	23232		K4	Q RT	53,1	74,7	27,0	45,7
02	49074	23288		K4	Q RT	53,1	74,7	25,0	43,7
02	50601	32557		K4	Q RT	52,5	75,0	26,0	43,7
02	50601	32558		K4	Q RT	51,9	75,0	24,5	45,7
03	49076	05710		K4	Q RT	52,8	74,7	27,0	49,6

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
		Inspector's stamp	Date 16.03.04
		KW	1



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A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 7/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70				
B03 Specifications ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

C10-C29 Tensile test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C10	C11 KSI RP02	C12 RM	C13 A % LO=8IN	C14-C15 A % LO=2IN
03	49076	05712		K4	Q	RT		52,8	75,5	24,5	43,7
03	49076	05713		K4	Q	RT		52,3	76,0 ✓	27,0	49,6 ✓
03	49076	05723		K4	Q	RT		53,8	76,3	26,5	47,6
03	49288	04710		K4	Q	RT		50,8	74,5	26,5	47,6
03	49288	04711		K4	Q	RT		50,2	74,0	25,5	47,6
03	49288	04712		K4	Q	RT		51,3	74,7	28,0	51,6
03	49288	04713		K4	Q	RT		50,2	74,2	29,4	49,6
03	50705	18887		K4	Q	RT		50,9	71,9	27,5	47,6
03	50705	18888		K4	Q	RT		51,0	72,8	25,5	45,7
04	49074	04640		K4	Q	RT		52,6	75,3	25,0	43,7
04	49076	05683		K4	Q	RT		53,7	76,1	26,5	49,6
04	49076	05695		K4	Q	RT		53,5	76,3	24,5	43,7
04	49076	05704		K4	Q	RT		51,6	75,5	27,0	43,7
04	49076	05707		K4	Q	RT		54,8	77,4	25,5	45,7
04	50705	18943		K4	Q	RT		51,0	72,9	29,4	53,5
04	50705	18956		K4	Q	RT		51,9	73,4	29,4	53,5
04	50937	30520		K4	Q	RT		53,7	76,3	27,0	51,6
05	50594	16583		K4	Q	RT		53,1	75,4	29,4	49,6
05	50594	16584		K4	Q	RT		53,1	75,4	28,0	51,6
05	50594	16585		K4	Q	RT		52,6	75,3	28,0	49,6
05	50594	16586		K4	Q	RT		52,9	75,1	28,0	49,6
05	50594	16596		K4	Q	RT		50,9	74,0	29,9	53,5
05	50594	16597		K4	Q	RT		50,3	74,2	28,0	51,6

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department		A01
	QM-System: Certification as per ISO 9001 since 14 March 1990				
Trademark		B. MUELLER Der Werkssachverständige	Inspector's stamp	Date 16.03.04	KW 1

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Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 8/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70				
B03 Specifications ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

C10-C29 Tensile test

B09 Item No.	B08 Heat No.	B07 Rol. plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C10 C11	C12	C13	A % L0=8IN	A % L0=2IN	C14-C15
							KSI RP02	RM				
05	50594	16601		K4	Q	RT	50,3	73,1		28,0	51,6	
06	50593	16613		K4	Q	RT	49,9	73,4		29,4	51,6	
06	50593	16614		K4	Q	RT	50,3	73,5		27,5	51,6	
06	50593	16617		K4	Q	RT	50,2	73,2		28,0	49,6	
06	50593	16618		K4	Q	RT	50,8	74,2		28,4	49,6	
06	50593	16623		K4	Q	RT	52,5	75,1		29,4	53,5	
06	50593	16626		K4	Q	RT	50,5	74,1		28,0	47,6	
06	50594	16587		K4	Q	RT	51,8	74,4		27,0	49,6	
06	50594	16595		K4	Q	RT	49,9	73,7		27,5	47,6	

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Rol. plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C46 Energy	C45 C42 Individual values AV=FT.LBF	C43 Average value
01	49074	04633		K4	LV	-51	1/2	CHP-V			AV 44 46 50	47
01	49074	04639		K4	LV	-51	1/2	CHP-V			AV 71 44 75	63
01	49074	04689		K4	LV	-51	1/2	CHP-V			AV 39 48 41	43
01	49288	04708		K4	LV	-51	1/2	CHP-V			AV 46 69 72	62
01	49715	04714		K4	LV	-51	1/2	CHP-V			AV 72 42 47	54
02	49074	04634		K4	LV	-51	1/2	CHP-V			AV 54 51 89	65
02	49074	04639		K4	LV	-51	1/2	CHP-V			AV 71 44 75	63
02	49074	04689		K4	LV	-51	1/2	CHP-V			AV 39 48 41	43
02	49074	04694		K4	LV	-51	1/2	CHP-V			AV 44 45 48	46
02	49074	04699		K4	LV	-51	1/2	CHP-V			AV 45 49 44	46
02	49074	04700		K4	LV	-51	1/2	CHP-V			AV 37 33 36	35

A04

Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



QM-System: Certification as per ISO 9001 since 14 March 1990

B. MUELLER

Der Werkssachverständige

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

A01

Inspector's stamp

Date 16.03.04

KW 1



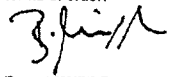
DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 9/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG		
B02/ Steel grade SA516-70 B03 Specifica- ASME-2A:01+A02+SA20-S5 tions DIL-HUE1-31.10.03		B01 Product HOT ROLLED PLATES		

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Ref. plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C46 Energy	C45 C42 Individual values AV=FT.LBF	C43 Average value
02	49074	04701		K4	LV	-51	1/2	CHP-V			AV 41 45 41	42
02	49074	04703		K4	LV	-51	1/2	CHP-V			AV 50 74 46	57
02	49074	08260		K4	LV	-51	1/2	CHP-V			AV 46 45 46	46
02	49074	23232		K4	LV	-51	1/2	CHP-V			AV 58 80 58	65
02	49074	23288		K4	LV	-51	1/2	CHP-V			AV 51 58 74	61
02	50601	32557		K4	LV	-51	1/2	CHP-V			AV 44 46 59	50
02	50601	32558		K4	LV	-51	1/2	CHP-V			AV 58 75 55	63
03	49076	05710		K4	LV	-51	3/4	CHP-V			AV 148 95 97	113
03	49076	05712		K4	LV	-51	3/4	CHP-V			AV 141 97 104	114
03	49076	05713		K4	LV	-51	3/4	CHP-V			AV 102 94 150	115
03	49076	05723		K4	LV	-51	3/4	CHP-V			AV 150 131 134	138
03	49288	04710		K4	LV	-51	3/4	CHP-V			AV 105 89 128	107
03	49288	04711		K4	LV	-51	3/4	CHP-V			AV 105 100 111	105
03	49288	04712		K4	LV	-51	3/4	CHP-V			AV 130 103 136	123
03	49288	04713		K4	LV	-51	3/4	CHP-V			AV 94 104 94	97
03	50705	18887		K4	LV	-51	3/4	CHP-V			AV 173 117 162	151
03	50705	18888		K4	LV	-51	3/4	CHP-V			AV 154 150 141	148
04	49074	04640		K4	LV	-51	3/4	CHP-V			AV 137 92 134	121
04	49076	05683		K4	LV	-51	3/4	CHP-V			AV 114 148 128	130
04	49076	05695		K4	LV	-51	3/4	CHP-V			AV 135 147 130	137
04	49076	05704		K4	LV	-51	3/4	CHP-V			AV 108 153 119	127
04	49076	05707		K4	LV	-51	3/4	CHP-V			AV 145 131 91	122
04	50705	18943		K4	LV	-51	3/4	CHP-V			AV 166 148 155	156
04	50705	18956		K4	LV	-51	3/4	CHP-V			AV 176 157 154	162

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
		Inspector's stamp	Date 16.03.04 KW 1

**DILLINGER HÜTTE**

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

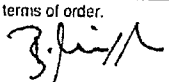
A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 10/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG		
B02/ Steel grade SA516-70 B03 Specifica- tions ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03		B01 Product HOT ROLLED PLATES		

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C46 Energy	C45 C42 Individual values AV=FT.LBF	C43 Average value
04	50937	30520		K4	LV	-51	3/4	CHP-V			AV 159 140 136	145
05	50594	16583		K4	LV	-51		CHP-V			AV 204 125 131	153
05	50594	16584		K4	LV	-51		CHP-V			AV 152 170 232	185
05	50594	16585		K4	LV	-51		CHP-V			AV 108 217 120	148
05	50594	16586		K4	LV	-51		CHP-V			AV 190 135 201	175
05	50594	16596		K4	LV	-51		CHP-V			AV 55 114 44	71
05	50594	16597		K4	LV	-51		CHP-V			AV 107 142 83	111
05	50594	16601		K4	LV	-51		CHP-V			AV 122 226 87	145
06	50593	16613		K4	LV	-51		CHP-V			AV 205 215 116	179
06	50593	16614		K4	LV	-51		CHP-V			AV 225 121 196	181
06	50593	16617		K4	LV	-51		CHP-V			AV 183 196 190	190
06	50593	16618		K4	LV	-51		CHP-V			AV 91 107 153	117
06	50593	16623		K4	LV	-51		CHP-V			AV 194 110 131	145
06	50593	16626		K4	LV	-51		CHP-V			AV 196 207 203	202
06	50594	16587		K4	LV	-51		CHP-V			AV 56 29 193	93
06	50594	16595		K4	LV	-51		CHP-V			AV 128 103 162	131

C70-C99 Chemical composition % - Heat analysis

B08 Heat	C70	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
49074	Y	0,167	0,347	1,13	0,008	0,0009	0,0057	0,034	0,011	0,044	0,081	0,061	0,001	0,000	0,000
49076	Y	0,177	0,380	1,14	0,007	0,0007	0,0058	0,036	0,017	0,015	0,047	0,030	0,000	0,000	0,001
49288	Y	0,177	0,257	1,15	0,010	0,0012	0,0064	0,046	0,023	0,005	0,037	0,027	0,001	0,000	0,001
49715	Y	0,170	0,285	1,14	0,009	0,0012	0,0065	0,034	0,035	0,015	0,037	0,041	0,001	0,000	0,003
50593	Y	0,174	0,327	1,16	0,009	0,0009	0,0066	0,030	0,014	0,017	0,041	0,045	0,000	0,000	0,000

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990		 B. MUELLER Der Werkssachverständige	 Inspector's stamp	Date 16.03.04 KW 1



DILLINGER HÜTTE

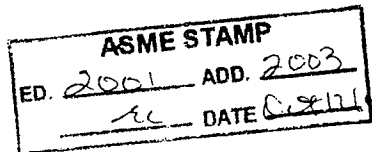
Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 11/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG		
B02/ Steel grade SA516-70		B01 Product HOT ROLLED PLATES		
B03 Specifications ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

C70-C99 Chemical composition % - Heat analysis

B08 Heat	C70	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
50594	Y	0,171	0,319	1,16	0,009	0,0007	0,0056	0,034	0,024	0,049	0,043	0,065	0,000	0,000	0,001
50601	Y	0,181	0,324	1,13	0,011	0,0007	0,0052	0,036	0,022	0,005	0,039	0,028	0,000	0,000	0,001
50705	Y	0,141	0,336	1,15	0,010	0,0006	0,0048	0,037	0,017	0,021	0,032	0,043	0,000	0,000	0,001
50937	Y	0,175	0,349	1,16	0,009	0,0007	0,0058	0,044	0,016	0,031	0,069	0,051	0,000	0,001	0,001

B08 Heat	C70	TI	B
49074	Y	0,002	0,0000
49076	Y	0,001	0,0001
49288	Y	0,001	0,0001
49715	Y	0,002	0,0000
50593	Y	0,001	0,0001
50594	Y	0,001	0,0001
50601	Y	0,002	0,0001
50705	Y	0,002	0,0001
50937	Y	0,001	0,0001



C94 Heat analysis Carbon equivalent / Alloying restrictions

B08 Heat	FO-02=	0,38	FO-55=	0,20	FO-78=	0,11	FO-91=	6,8
49074	FO-02=	0,38	FO-55=	0,11	FO-78=	0,05	FO-91=	6,4
49076	FO-02=	0,38	FO-55=	0,09	FO-78=	0,03	FO-91=	6,5
49288	FO-02=	0,38	FO-55=	0,13	FO-78=	0,06	FO-91=	6,7
49715	FO-02=	0,38	FO-55=	0,12	FO-78=	0,06	FO-91=	6,7
50593	FO-02=	0,39	FO-55=	0,18	FO-78=	0,11	FO-91=	6,8
50594	FO-02=	0,38	FO-55=	0,09	FO-78=	0,03	FO-91=	6,2
50601	FO-02=	0,38	FO-55=	0,09	FO-78=	0,03	FO-91=	6,2

A04 Z01:Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



QM-System: Certification as per ISO 9001 since 14 March 1990

B. MUELLER
Der Werkssachverständige



AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Inspector's stamp Date 16.03.04

KW 1

**DILLINGER HÜTTE**

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No / Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 12/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70				
B03 Specifications ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

C94 Heat analysis Carbon equivalent / Alloying restrictionsB08
Heat

50705	FO-02=	0,35	FO-55=	0,11	FO-78=	0,06	FO-91=	8,2
50937	FO-02=	0,39	FO-55=	0,17	FO-78=	0,08	FO-91=	6,6

C95 Ladle treatment

ITEM NO.: 01-06

HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

C70-C99 Chemical composition % - Product analysis

B08 Heat	B07 Test No.	C01	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
49074	04641	K4	0,169	0,332	1,13	0,008	0,0012	0,0057	0,033	0,010	0,042	0,078	0,057	0,000	0,000	0,000
49074	23232	K4	0,172	0,304	1,15	0,007	0,0011	0,0055	0,031	0,011	0,021	0,040	0,043	0,000	0,000	0,000
49076	05701	K4	0,178	0,360	1,14	0,007	0,0010	0,0062	0,034	0,015	0,024	0,058	0,038	0,000	0,000	0,000
49288	04707	K4	0,175	0,248	1,12	0,009	0,0009	0,0069	0,041	0,021	0,006	0,036	0,027	0,000	0,000	0,000
49288	04708	K4	0,168	0,260	1,16	0,009	0,0010	0,0062	0,045	0,022	0,006	0,038	0,028	0,000	0,000	0,001
49715	04714	K4	0,160	0,294	1,15	0,008	0,0008	0,0068	0,036	0,036	0,016	0,037	0,039	0,000	0,000	0,003
49715	04716	K4	0,163	0,286	1,14	0,008	0,0010	0,0077	0,035	0,036	0,017	0,036	0,039	0,000	0,000	0,002
50593	16627	K4	0,168	0,312	1,14	0,008	0,0009	0,0064	0,031	0,014	0,016	0,042	0,043	0,000	0,001	0,001
50594	16610	K4	0,171	0,318	1,15	0,008	0,0008	0,0059	0,034	0,023	0,043	0,042	0,061	0,000	0,000	0,001
50601	32557	K4	0,174	0,322	1,13	0,010	0,0006	0,0052	0,036	0,026	0,005	0,039	0,022	0,000	0,000	0,000
50705	18887	K4	0,142	0,331	1,14	0,010	0,0007	0,0049	0,036	0,016	0,020	0,032	0,050	0,001	0,000	0,000
50937	30520	K4	0,172	0,359	1,14	0,009	0,0006	0,0067	0,044	0,017	0,034	0,079	0,050	0,001	0,001	0,000

A04



Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001 since 14 March 1990

B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

A01

Date 16.03.04

KW 1

**DILLINGER HÜTTE**

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

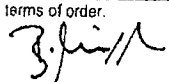
A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 132421-15.03.04	A08/ Manufacturer's order/ A03 Certificate No. 277236-002	Sheet 13/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EXCHANGER, EDMONTON	A07.1 No. 31943 A07.2 No. E10277-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70				
B03 Specifica- tions ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				

C70-C99 Chemical composition % - Product analysis

B08 Heat	B07 Test No.	C01	Ti	B
49074	04641	K4	0,001	0,0000
49074	23232	K4	0,001	0,0001
49076	05701	K4	0,002	0,0000
49288	04707	K4	0,001	0,0000
49288	04708	K4	0,001	0,0000
49715	04714	K4	0,002	0,0000
49715	04716	K4	0,002	0,0001
50593	16627	K4	0,001	0,0001
50594	16610	K4	0,002	0,0001
50601	32557	K4	0,001	0,0001
50705	18887	K4	0,001	0,0000
50937	30520	K4	0,001	0,0001

C94 Product analysis Carbon equivalent / Alloying restrictions

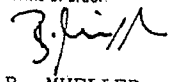
B08 Heat	B07 Test No.	C01		
49074	04641	K4	FO-02= 0,38	FO-55= 0,19
49074	23232	K4	FO-02= 0,38	FO-55= 0,12
49076	05701	K4	FO-02= 0,39	FO-55= 0,14
49288	04707	K4	FO-02= 0,37	FO-55= 0,09
49288	04708	K4	FO-02= 0,37	FO-55= 0,09
49715	04714	K4	FO-02= 0,37	FO-55= 0,13
49715	04716	K4	FO-02= 0,37	FO-55= 0,13
50593	16627	K4	FO-02= 0,37	FO-55= 0,12
50594	16610	K4	FO-02= 0,39	FO-55= 0,17
50601	32557	K4	FO-02= 0,37	FO-55= 0,09

A04  Trademark	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001 since 14 March 1990	 B. MUELLER Der Werkssachverständige	 Inspector's stamp	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar inspection department	A01 Date 16.03.04 KW 1
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DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS CERTIFICAT DE RECEPTION INSPECTION CERTIFICATE		3.1.B DIN EN 10204 - EN 10204 - DIN 50049	A09 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.	Sheet
A05 Established inspecting body DH		A06 Purchaser Final receiver	ARCELOR CANADA, BURLI EXCHANGER, EDMONTON		A07.1 No. 31943 A07.2 No. E10277-J1010-LG	132421-15.03.04 277236-002 14
B02/ Steel grade B03 Specifications		SA516-70 ASME-2A:01+A02+SA20-S5 DIL-HUE1-31.10.03				B01 Product HOT ROLLED PLATES
C94 Product analysis Carbon equivalent / Alloying restrictions						
B08 Heat	B07 Test No.	C01				
50705	18887	K4 FO-02= 0,35 FO-55= 0,12				
50937	30520	K4 FO-02= 0,39 FO-55= 0,18				
C94 Carbon equivalent formula / Alloying restrictions						
FO-02 = C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15						
FO-55 = CU+MO+NI+CR						
FO-78 = CR+MO						
FO-91 = MN/C						
D01 Checking of marking, surface, shape and dimensions						
ITEM NO.: 01-06						
RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS						
SURFACE AS PER ASME-SA20						
THICKNESS AS PER ASME-SA20						
LENGTH AND WIDTH AS PER ASME-SA20						
FLATNESS AS PER 1/2-ASME-SA20						
						
A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.					A01
 Trademark		QM-System: Certification as per ISO 9001 since 14 March 1990		 B. MUELLER Der Werkssachverständige		 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
				Inspector's stamp	Date 16.03.04	KW 1



TAC 18983-18984 Product Test Certificate

PO# 23835 Apr: 11/14/04 101RUS01

P.O. Box 1670, Regina, Saskatchewan, Canada S4P 3C7

Customer: RUSSEL METALS INC - RED DEER 6724 GOLDEN WEST AVENUE RED DEER AB T4P1A8			Customer Order No.: M63006945				Mill Order No.: 41-056610-07				Shipping Tally: 388-571					
			Grade Description : CSA G40.21(98/00) 44W/300W				Ship Date: 17 Feb 04				Cert No.: 204388					
			Tensile Tests													
Heat Number	Product ID	Product Description	YS (PSI)	UTS (PSI)	Elong % of 2IN 8IN	Bend Test	Average Hardness									
462537	D-75	0.750 X 48.00 X 96.00	59000	74000	43 21											
574847	A-08	0.750 X 48.00 X 96.00	60000	72000	49 24											
462333	A-07	0.750 X 48.00 X 96.00	59000	72000	50 25											
575145	D-64	0.750 X 48.00 X 96.00	58000✓	73000✓	45✓ 23											
Heat Chemical Analysis, (%)																
Heat Number	C	Mn	S	P	Si	Cu	Ni	Cr	V	Cb	Mo	Al	N	Ti	B	
462537	.07	1.14	.0101	.011	.13	.37	.16	.05	.007	.036	.056	.015	.012	.001	.0003	
574847A 8	.05	1.11	.0122	.009	.14	.35	.12	.05	.002	.037	.035	.028	.001	.0005		
462333A 7	.05	1.09	.0122	.009	.15	.34	.12	.05	.002	.036	.033	.026	.001	.0005		
575145	.05✓	1.15✓	.0116✓	.011✓	.18✓	.38✓	.17	.08	.004	.035	.059	.034	.008	.001	.0006	
ASME STAMP ED <u>2004</u> ADD. <u>2C</u> DATE <u>July 15/05</u>																
QA-012 Rev 1 July 1999								QUALITY ASSURANCE APPROVAL Colin D' Souza TECHNICAL SUPERVISOR(S)								

PO# 3240 Mar 23/04 TAG 19252
101 Rusol



CHEMICAL AND PHYSICAL TEST REPORT
MADE IN CANADA

Page 16 of 18

CAMBRIDGE STEEL MILL
METALLURGICAL DEPARTMENT

Shippers Number: N-015250

160 ORION PLACE, CAMBRIDGE, ON N1T 1R9

PRODUCING MILL IS KNOWN BY HEAT ID PREFIX B=CARTERSVILLE BB, C=CHARLOTTE, G=CARTERSVILLE, J=JACKSONVILLE, K=KNOXVILLE,
N=CAMBRIDGE, O=ORRVILLE BB, P=PERTH AMBOY, S=SAYREVILLE, V=JACKSON TN, W=WHITBY

SHIP TO: RUSSEL METALS CALGARY 5724 40TH STREET SE CALGARY AB T2C 2A1		INVOICE TO: RUSSEL METALS INC CALGARY 5724 - 40TH STREET SE CALGARY, ALBERTA AB T2C 2A1		SHIP DATE 02/11/04	
				CUST. ACCOUNT NO. 60142676	

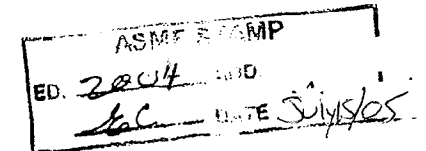
SHAPE AND SIZE		GRADE	SPECIFICATION													SALES ORDER			CUSTOMER P.O. NUMBER				
HEAT I.D. NO.	ACTUAL TAG HEAT NO.	C	MN	P	S	V	SI	CR	CU	NI	SN	AL	MO	N	NB	B	ZR	TI	CA	ZN	C	EQU	
F 1/4 X1		44W	CSA G40.21.300W/350W-98/44W/50W													3091229			M64013430				
N3-7802	4011213	.19	.85	.015	.033	.004	.25	.07	.32	.11	.020	.001	.052		.002	.0000	.001					.38	
YIELD PT LBS/SQ IN: 56819; TENSIL LBS/SQ IN: 83676; % ELONG 8 IN: 24.0; BEND: ; DEF: ; % LIGHT/HEAVY: METRIC EQUIVALENT: YIELD = 391.75 MPA; TENSILE = 576.93 MPA; %ELONG./200MM = 24.0 DEF. = MM																							
REDUCTION RATIO: 100:1																							
F 1/4 X1		44W	CSA G40.21.300W/350W-98/44W/50W													3091229			M64013430				
N3-7802	4011213	.19	.85	.015	.033	.004	.25	.07	.32	.11	.020	.001	.052		.002	.0000	.001					.38	
YIELD PT LBS/SQ IN: 55350; TENSIL LBS/SQ IN: 80829; % ELONG 8 IN: 25.0; BEND: ; DEF: ; % LIGHT/HEAVY: METRIC EQUIVALENT: YIELD = 381.62 MPA; TENSILE = 557.30 MPA; %ELONG./200MM = 25.0 DEF. = MM																							
REDUCTION RATIO: 100:1																							
F 1/4 X1 1/2		44W	CSA G40.21.44W/50W-98; ASTM A36M-01													3091229			M64013430				
N3-7467	3122109	.16	.74	.015	.037	.019	.19	.18	.36	.12	.024	.002	.046		.003	.0000	.002					.36	
YIELD PT LBS/SQ IN: 55762; TENSIL LBS/SQ IN: 75072; % ELONG 8 IN: 21.0; BEND: ; DEF: ; % LIGHT/HEAVY: METRIC EQUIVALENT: YIELD = 384.47 MPA; TENSILE = 517.60 MPA; %ELONG./200MM = 21.0 DEF. = MM																							
REDUCTION RATIO: 66.7:1																							
F 1/4 X1 1/2		44W	CSA G40.21.44W/50W-98; ASTM A36M-01													3091229			M64013430				
N3-7467	3122109	.16	.74	.015	.037	.019	.19	.18	.36	.12	.024	.002	.046		.003	.0000	.002					.36	
YIELD PT LBS/SQ IN: 55750; TENSIL LBS/SQ IN: 75262; % ELONG 8 IN: 20.0; BEND: ; DEF: ; % LIGHT/HEAVY: METRIC EQUIVALENT: YIELD = 384.38 MPA; TENSILE = 518.91 MPA; %ELONG./200MM = 20.0 DEF. = MM																							
REDUCTION RATIO: 66.7:1																							
F 3/8 X1 1/2		44W	CSA G40.21.44W/50W-98; ASTM A36M-01													3091229			M64013430				
N3-7526	3122204	.17	.84	.012	.037	.022	.23	.14	.29	.11	.030	.001	.042		.002	.0000	.001					.38	
YIELD PT LBS/SQ IN: 55102; TENSIL LBS/SQ IN: 79013; % ELONG 8 IN: 26.5; BEND: ; DEF: ; % LIGHT/HEAVY: METRIC EQUIVALENT: YIELD = 379.91 MPA; TENSILE = 544.78 MPA; %ELONG./200MM = 26.5 DEF. = MM																							
REDUCTION RATIO: 44.4:1																							
F 3/8 X1 1/2		44W	CSA G40.21.44W/50W-98; ASTM A36M-01													3091229			M64013430				
N3-7526	3122204	.17	.84	.012	.037	.022	.23	.14	.29	.11	.030	.001	.042		.002	.0000	.001					.38	
YIELD PT LBS/SQ IN: 55093; TENSIL LBS/SQ IN: 77919; % ELONG 8 IN: 24.0; BEND: ; DEF: ; % LIGHT/HEAVY: METRIC EQUIVALENT: YIELD = 379.85 MPA; TENSILE = 537.23 MPA; %ELONG./200MM = 24.0 DEF. = MM																							
REDUCTION RATIO: 44.4:1																							

This material, including the billets, was produced and manufactured in Canada.

A. J. Turner
Quality Assurance Manager
Mill Group

A. J. Turner

THE ABOVE FIGURES ARE CERTIFIED EXTRACTS FROM THE ORIGINAL CHEMICAL AND PHYSICAL TEST REPORT AS CONTAINED IN THE PERMANENT RECORDS OF THE COMPANY.



Purchaser : NATIONAL OILWELL INC.

INSPECTION CERTIFICATE

EN 10204 3.1B

BENKAN

D M Y Certificate No.

E-No. Purchase*Order No. Job No.

M-842

4810005-00

P/O 10535842

11/05/2004 T- 2004200402

No.	BENKAN No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe					Specification for Inspection		Visual Examination	Dimensional Inspection
			ASTM A234-02/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2000					ASME / ANSI B16.9		Good	Good
			Product & Size (T*1)					Quantity	Heat Treatment (Note 1)	Item No.	
1		04D00018	90 EL WPB 6 S40					188	A	7510462	
2		04C00076	90 EL WPB 8 S40					104	A	7510489	
3		04B00014	90 EL WPB 12 STD					7/21	A	7510535	
4		04C00077	90 EL WPB 12 STD					14/21	A	7510535	
5		04C00030	45 EL WPB 1 1/2 S40					49	A	7511159	

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	50	58	40	40	40	15	80	20			585		

1	J715203	21	22	76	20	8	1	2	2	0	0	1	34	325	522	35	
2	58016	20	17	62	10	1	5	3	4	2	1	1	32	286	464	40	
3	J3LB042	19	21	73	16	6	3	3	6	0	0	0	33	314	486	43	
4	58556	19	18	69	10	2	6	3	3	4	1	1	33	252	452	38	
5	J3L8209	19	19	73	16	7	2	3	6	0	0	0	33	330	501	47	

(NOTE 1) A : HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620 C - 980 C, AIR COOLING

DOCUMENTARY CREDIT NO. 118572/207486

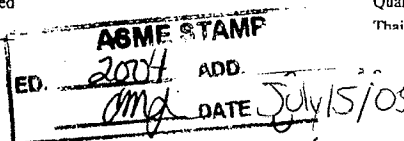
C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

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
Q-065/1

* A Hot Finished Condition

Quality Assurance Manager
Thai Benkan Co., Ltd.1 Watkrunai, Bangkru, Prapadaeng,
ukarn, 10130 Thailand.

Ref 22567 Apr:15/05 3201 RUSO1

TAG 22525

02/08/05 ATM HC

ALEXANDRIA NATIONAL IRON & STEEL CO. S.A.E.

Dmc Po 51014482-13

1/4" PLATE
SA36

40018228-02

MILL INSPECTION CERTIFICATE FOR FLAT STEEL



Customer : ARCELOR INTERNATIONAL CANADA INC.
Commodity : HOT ROLLED STEEL COILS
Thickness : 6.35 mm NOMINAL
Width : 1524 mm

ISO 9001/2000
ISO 14001

Specification : HSLA GR.50 CLASS 1 ASTM A 1011M-00

Certificate No. : 007884
Issuance Date : OCT. 25, 2004
Contract / Line No. : E04080030 04
Delivery order No. :

SN.	Coil No.	Heat No.	Net Weight (Tons)	Chemical Composition (%)						Mechanical Properties		
				C *	Si *	Mn *	P *	S *		YP N/mm2	TS N/mm2	EL %
1	199191	522119	20.260	5	8	124	8	2	1137297	416	507	24
2	199198	522120	20.150	6	6	128	8	3	1137293-96	389	487	25
3	199199	522120	19.690	6	6	128	8	3	1137280	389	487	25
4	199200	522120	19.950	6	6	128	8	3	1137309-10	389	487	25
5	199201	522120	19.850	6	6	128	8	3		389	487	25
6	199202	522120	17.680	6	6	128	8	3		389	487	25
7	199203	522120	19.510	6	6	128	8	3		389	487	25

RUSSEL METALS
This Test Certificate Applies To:
Customer: A/M R. D. Dora
Year PO #: 63008341
DMS COR #: 51236232
Heat #: 522120
Product: PL

THIS CERTIFICATE IS ACCORDING TO EN 10204 3.1.B
Total net weight : 137.090 M Tons
Total gross weight : 137.090 M Tons
Transport and inspection date : 2004/10/18
Notes :
Cr, Ni, Cu, Mo < 0.02 % Ti, V, Nb < 0.008 %
LOT I

A&ME STAMP
ED. 2004 MR DATE 2005/10/03

We hereby certify that, the material described herein complies with and has been tested and inspected in accordance to the above specification.

Quality Control Section Manager

04/15/05 FRI 10:58 FAX 403 346 1966
 04/15/2005 10:48 FAX 780 439 0147

RUSSEL METALS RED DEER
 RMI-RED DEER

001

7375-1

УКРАИНА
 UKRAINE



ОАО АЛЧЕВСКИЙ МЕТАЛЛУРГИЧЕСКИЙ КОМБИНАТ
 JOINT STOCK COMPANY "ALCHEVSK IRON & STEEL WORKS"

94202 г. Алчевск, ул. Шмидта, 4
 тел.: (06442) 9-23-14
 факс: (06442) 9-43-47, 3-71-47

94202, Ukraine, Alchevsk, Schmidt str. 4,
 Tel: (06442) 9-23-14
 Fax: (06442) 9-43-47, 3-71-47

ЗАВОДСКОЙ СЕРТИФИКАТ КАЧЕСТВА №
 MILL'S QUALITY CERTIFICATE №

73034

Дата 25.08.04
 Date

Лист из листов
 Sheet 1 of 1 sheets

Свидетельство о приемочных испытаниях
 Inspection certificate

EN 10204/3.1.B

Контракт № 2000-207/1 пост-
 Contract № 026/0109-09-997

Заводской заказ № 4202
 Manufacturer's production order №

Заказчик: Corporation "Industrial Union of Donbass" for firm "DUFERCO SA"
 для фирмы "Дуферко СА"

Customer: Корпорация "Индустриальный Союз Донбасса" (ИСД)

LOT 3

Верон № 56554429
 RW-car №

RW-car №		горячекатаный стальной лист с обрезными кромками		Стандарт: Standard:			
Наименование товара:		hot rolled steel plates with sheared edges		ASTM A36/A36M CSA G40.21 ASTM A8/A8M			
Description of goods:							
Марка стали		ASTM A36/CSA G40.21-44W					
Grade of steel							
Состояние поставки:		горячекатаный					
Delivery condition:		hot-rolled					
№ позиц.	Номера плавков	Номера партий	Размеры, дюйм			Количество товара, шт/мест	Теоретический вес, тн
			Dimensions, inch				
Item	Cast №	Test №	Толщина	Ширина	Длина	Quantity/pcs	Theoretical weight, tn
			Thickness	Width	Length		
26	7375-1	3889	0.375	96	288	5	6.670
Total quantity (pcs):			5			Total theoretical weight (tn): 6.670	

41218

21078

УКРАИНА
UKRAINEО А О АЛЧЕВСКИЙ МЕТАЛЛУРГИЧЕСКИЙ КОМБИНАТ
JOINT STOCK COMPANY "ALCHEVSK IRON & STEEL WORKS"94202 г. Алчевск, ул. Шмидта, 4
тел.: (06442) 9-23-14
факс: (06442) 9-43-47, 3-71-4794202, Ukraine, Alchevsk, Schmidt str. 4,
Tel: (06442) 9-23-14
Fax: (06442) 9-43-47, 3-71-47ЗАВОДСКОЙ СЕРТИФИКАТ КАЧЕСТВА №
MILL'S QUALITY CERTIFICATE №

73412

Дата
Date

01.07.04

Лист из листов
Sheet 1 of 1 sheetsСвидетельство о приемочных испытаниях
Inspection certificate

EN 10204/3.1.B

Контракт № 2000-207/1пст-
Contract № 026/D108-0y-997Заводской заказ № 4202
Manufacturer's production order №

Заказчик:

Corporation "Industrial Union of Donbass" for firm "DUFERCO SA"
для фирмы "Дуферко СА"

Customer:

Корпорация "Индустриальный Союз Донбасса" (ИСД)

LOT 3

Варок №

RW-car № 66790015

Наименование товара:

горячекатаный стальной лист с
обрезными кромками
hot rolled steel plates with sheared
edgesСтандарт:
Standard:ASTM A36/A36M
CSA G40.21
ASTM A6/A6MМарка стали
Grade of steel

ASTM A36/CSA G40.21-44W

Состояние поставки:
Delivery condition:горячекатаный
hot-rolled

№ позиц. Item	Номера плавов Cast №	Номера партий Test №	Размеры, дюйм Dimensions, inch			Количество товара, шт/мест Quantity/pcs	Теоретический вес, тн Theoretical weight, tn
			Толщина Thickness	Ширина Width	Длина Length		
26	7375-1	3699	0.375	96	288	1	1.334 ✓
22	7372-2	8641	2.000	96	190	1	4.693
19	2587	8299	1.250	72	240	1	2.779
16	7378-1	8553	1.000	72	240	2	4.446
29	8370-1	8285	0.625	96	240	3	5.556 ✓
23	8370-1	3459	0.375	72	204	1	0.709 ✓
25	2623	3941	0.375	96	252	1	1.167 ✓
27	2623	3942	0.500	96	240	1	1.482 ✓
40	8382-2	8519	1.750	96	205	2	8.860 ✓
30	2623	3945	0.625	96	288	10	22.230 ✓
Total quantity (pcs):			23	Total theoretical weight (tn):			53.256

TAG 20868
↓

RUSSEL METALS RED DEER
RUSSEL METALS

Заводской сертификат качества №
Mill's quality certificate №

Номер плавки Cast No	Химический состав, %								Chemical composition, %							
	C	Mn	Si	S	P	Cr	Ni	Cu	Al	N	V	Mo	Ti	As	Nb	B
	X 100			X 1000		X 100			X 1000							
7375-1	✓ 16	✓ 101	✓ 26	✓ 36	✓ 19	6	4	6	11	8	<8	<20	5	7	<8	

TEST RESULTS

№ партии <

Маркировка: конфигурация
made in Ukraine, grade of steel, dimensions, cert. No. 1401 No. Canada, 1408, RUSSEL METALS, mark of the works.

Классовая: № 1400 К
 Класс: № 1400 К

Hard stamp: cast No. grade of steel mark of the works. 1408 K stamp
Цветная маркировка: поз. 10-22 - одна зеленая, одна красная; поз. 23-41 - одна зеленая, одна белая полоса по торцу диска.
Color marking: 10-22 - one green, one red; 23-41 - one green, one white stripe on transversal edge of the disk.

Подпись
Signature

[illegible]

ASME STAMP
ED. 2004 ADD. _____
DATE APR 15/05

PO 3031 Aug.10/05 4051 FAB01



Test Certificate

Form TC1: Revision 1: Date 31 Oct 2000

Customer: FAB-U-TECH INDUSTRIES INC 1204 - 8TH STREET NISKU AB T9E7M1			Customer P.O. No.: 15876-A			Mill Order No.: 41-108934-02			Shipping Manifest : CT016489			
			Product Description: CSA G40.21(98/00)44W/300W / ASTM A36(04) A709(01A)36/ASME SA36(01ED)						Ship Date: 29 Jul 05 Cert Date: 29 Jul 05		Cert No: 051019692	
			Size: 0.375 X 72.00 X 120.0 (IN)									

Tested Pieces			Tensiles				Charpy Impact Tests													
Heat Id	Piece Id	Piece Dimensions	YS (PSI)	UTS (PSI)	Elong % of 2in 8in		Bend Test	Average Hardness	Absorbed Energy(FTLB)				% Shear				Test Temp	Test Dir	Test Size	BDWTT
									1	2	3	Avg	1	2	3	Avg				
581220	D74	0.375 X 72.00 (CUT)	58000	70000	38	19														
581220	D75	0.375 X 72.00 (CUT)	57000	70000	42	22														
			58000	70000	41	20														
			61000	73000	42	19														

Heat Id	Chemical Analysis																ORGN
	C	Mn	P	S	Si	Tot Al	Cu	Ni	Cr	Mo	Cb	V	Ti	B	N		
581220	✓.05	✓.61	✓.012	✓.002	✓.17	.028	.36	.18	.18	.07	.025	.001	.002	.0001	.0085	CAN	

MATERIAL MARKED WITH AN ASTERISK IS PRODUCED FROM COIL
 * 581220 D72 PCES: 6, WGT: 5513

ASME STAMP

ED. 2004 ADD. _____

MF DATE Aug 10/05

(u) Cust Part #: AUG 3/05 60 pcs	WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATION	Rob Mackenzie CHECKED BY _____
----------------------------------	--	-----------------------------------

08/04/04

TAG 20491

ALGOMA STEEL INCORP. 105 West St., Sault Ste. Marie, Ontario, Canada, P6A 7B4

CUSTOMER PURCHASE ORDER NUMBER 51014074	ENTRY DATE 2004/06/17	SHIP DATE 2004/07/21	TALLY NUMBER 394692	SHIPPERS NUMBER 06-	CARRIER SSAM	-62407	MILL ORDER 56798
CHARGE TO CUSTOMER NAME&ADDRESS DRUMMOND MCCALL INC PO BOX 39 WINNIPEG MANITOBA R3C 2G3			SHIP TO CUSTOMER NAME&ADDRESS DRUMMOND MCCALL INC 1359 ST JAMES STREET WINNIPEG MANITOBA			MILL TEST REPORT	
CUSTOMER SPECIFICATION HOT ROLLED STEEL SHEET - HSLA - TO CHEMISTRY OF CSA G40.21 44W (00) - UNPROCESSED - CUT EDGE ACCEPTABLE - RESTRICTED GAUGE 1/2 TOL - HEAVY THICKNESS - COIL END TESTS ONE PER HEAT FOR INFO ONLY						ALGOMA STEEL INC. HEREBY CERTIFIES THAT MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO/IEC GUIDE 25:1990 AS CONTAINED IN THE COMPANY RECORDS. H. Haldenby MANAGING METALLURGIST	
SUPPLEMENTARY INSTRUCTION FAX SM ATTN SCOTT WILKIE AND TR ATTN BRANDY KOMISHIN (204) 788-5567.						THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ALGOMA STEEL INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-2624 COLLECT FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF THE DOCUMENT.	
INSP/TR TEST REPORTS REQUIRED CUST USE STRUCTURAL-IMPROVED SHAPE						2004/07/21 22:05	

MEETS EN 10204 3.1.B AND DIN 50049 3.1.B

***** PRODUCT SHIPPED *****

CUSTOMER ITEM 1 OUR ITEM 001 DIMENSIONS .236 MIN X 48 X COIL

COIL NUMBER	HEAT	NO. PIECES	WEIGHT	COIL NUMBER	HEAT	NO. PIECES	WEIGHT
72315141	4228C-05	1	39043	72315142	4228C-55	1	38746
72315143	4228C-06	1	39043				

***** MECHANICAL PROPERTIES *****

TENSILE TESTS:

HEAT	* SAMPLE *	* TEST *	YIELD TENSILE
	SRCE	GAUGE	COND METH DIR KSI KSI % ELONG
4228C	DSPC	.2360	AR .2 T 57.0 77.5 24(8")

***** CHEMICAL PROPERTIES *****

HEAT	C	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B	TI	SN	N
4228C	.18	.84	.014	.003	.23	.04	.03	.02	.02	.034	<.005	.023		<.008		

DRUMMOND
Customer Ref: 4228C
Your Ref: 63007564
DMC Ref: 51713916
Heat #: 4228C
Initiated: [Signature]

ASME STAMP
ED. 2004
PB
DATE: July 15/05

MECHANICAL TESTING
REPORT MUST ACCOMPANY
THIS DOCUMENT

Warning The test results and values reported herein indicate on that (1) the particular steel for which this certificate is issued meets the minimum specified yield strength and (2) the chemical analysis and physical properties of such steel are in conformance with the requirements of the specification indicated. The results or values reported herein cannot be used to qualify the steel for any specification other than the one indicated and cannot be relied upon for any purpose (including design or calculations) as representing the actual strength of such steel.

EDMONTON EXCHANGER & MANUFACTURING LTD.
 5545 - 89 STREET, EDMONTON, ALBERTA T6E 5W9
 TELEPHONE (780) 468-6722 FAX (780) 466-5155

QCC-004
 REV. 3
 DATE: APR. 12/00
 APPROVED BY: S.Z.

CERTIFICATE OF COMPLIANCE

CUSTOMER DELANEY ENERGY	PURCHASE ORDER 0004315	WORK ORDER C33204	DATE 2001/04/16	PAGE 1 OF 1
----------------------------	---------------------------	----------------------	--------------------	-------------

ITEM #	QTY	DESCRIPTION	HEAT #	TAG CODE	BRINELL HARDN	WELD PROCEDURE	FORMING PROC
S33204-4	1	ROLLED REPAD(S) - 1" X 112" X 112" (MATERIAL SPEC: SA 516-70 N)	0314S-27571		-	-	4
S33204-5	2	ROLLED REPAD(S) - .5" X 11" X 140" (MATERIAL SPEC: SA 516-70 N)	9941P-25117		-	-	4

FORMING PROCEDURE:

1. HOT FORMED @ 1650F/899C AND AIR COOLED
2. HOT FORMED @ 1975F/1080C AND AIR COOLED
3. NORMALIZED @ 1650F/899C FOR 25 MIN/INCH AND AIR COOLED
4. COLD FORMED
5. RENORMALIZED @ 1650F/899C AND AIR COOLED AFTER FORMING
6. SOLUTION ANNEALED @ 1950F/1065C AFTER FORMING
7. STRESS RELIEVED @ 1150F/621C PER UCS-56 OR PW-39(where applicable)

NOTE: ALL ITEMS WHICH WERE HEAT TREATED DURING OR AFTER FORMING SHALL BE INCLUDED ON THE FORMING PROCEDURE LISTED ABOVE AS PER UCS-79(e).

BRINELL EQUIPMENT: NEWAGE CALIBRATION PIN
 BRINELL HARDNESS TESTER

PPLEMENTARY REQUIREMENTS:

THE ITEMS LISTED ABOVE COMPLY WITH THE REQUIREMENTS OF ASME CODE SECTION I (PG-80) AND SECTION VIII, DIV. 1, UCS-79(d), UG-79 & UG-80. ALL WELDERS AND PROCEDURES ARE QUALIFIED TO ASME CODE SECTION IX. MATERIAL BEING SUPPLIED CONFORMS TO THE LATEST ADDENDA OF THE ASME CODE.

STEVE ZUBRYCKYJ (QAM)
 EDMONTON EXCHANGER & MANUFACTURING LTD.

SUPPLEMENTARY EXAMINATION - ITEMS

*Note: This repad was rolled into a shell.
 Remanring was mad into flat plate.*

ALGOMA STEEL INC.

P.O. Box 1400, Sault Ste. Marie, Ontario Canada P6A 5P2

CUSTOMER PURCHASE ORDER NUMBER M53942-J1010LG	ENTRY DATE 2000/11/28	SHIP DATE 2001/01/08	TALLY NUMBER 216366	SHIPPER'S NUMBER 02-	CARRIER WC	-39517	MILL ORDER 16548
--	--------------------------	-------------------------	------------------------	-------------------------	---------------	--------	---------------------

CHARGE TO CUSTOMER NAME AND ADDRESS

EDMONTON STEEL PLATE
5545 - 89TH STREET
EDMONTON, ALBERTA
T6E 5W9

SHIP TO CUSTOMER NAME AND ADDRESS

EDMONTON EXCHANGER
SWITCH 2057 / EAST EDMONTON
EDMONTON, AB

MILL TEST REPORTS

ALGOMA STEEL INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO/IEC GUIDE 25-1990 AS CONTAINED IN THE COMPANY RECORDS.

B. Thomson

B. Thomson
MANAGING METALLURGIST

CUSTOMER SPECIFICATION

HR MULTIPLE CERTIFIED PLATE - HSLA - ASME SA 516 70 (98) / SA537 CL1 (98) / ASTM A572 50 (00) - CVNL 15/12 FT LBS AT -50 F - PVQ - NORMALIZED - FLAME CUT - TRIPLE CERTIFIED TO ASTM A572 GR 50 (00) & ASME SA516 GR 70 (98) (2000-07-01 ADDENDUM) & ASME SA537 CL 1 (98) - CVNL AS PER SA20 - TO COMPLY TO ISO 9002 DIN 50049 3.1.B/EN 10204 3.1.B (91) - MEETS ALL REQUIREMENTS OF EDMONTON STEEL PLATE SPEC ESP-01, REV 0, 2000-11-01

SUPPLEMENTARY INSTRUCTIONS

FAX SM/TR TO 780-466-4668 - ATTN WILMA HIEMSTRA

THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ALGOMA STEEL INC.

INSP T/R

TEST REPORTS REQ'D - INCL C.E.

CUST
USE

VESSEL STOCK



06954

***** PRODUCT SHIPPED *****

CUSTOMER ITEM 3 OUR ITEM 003 DIMENSIONS 1.000 X 120 X 480 "

PLATES NORMALIZED FOR A MINIMUM OF 15 MINUTES @ 1650F.

PLATE NUMBER	HEAT	NO. PIECES	WEIGHT	PLATE NUMBER	HEAT	NO. PIECES	WEIGHT
27552	0314S 51	1	16335	27555	0314S 52	1	16335
27557	0314S 53	1	16335	27560	0314S 54	1	16335
27561	0314S 54	1	16335	27564	0314S 55	1	16335
27566	0314S 56	1	16335	27571	0314S 59	1	16335
27572	0314S 60	1	16335				

***** MECHANICAL PROPERTIES *****

HEAT	PLATE NUMBER	SAMPLE GAUGE	TEST COND.	TEST METH.	TEST DIR.	YIELD KSI	TENSILE KSI	* % ELONG 2" 8"
0314S	27552	1.0000	N	.2	T	56	83	33
0314S	27555	1.0000	N	.2	T	54	80	30
0314S	27557	1.0000	N	.2	T	55	80	33
0314S	27560	1.0000	N	.2	T	51	78	35
0314S	27561	1.0000	N	.2	T	51	78	35
0314S	27564	1.0000	N	.2	T	50	77	34
0314S	27566	1.0000	N	.2	T	51	78	34
0314S	27571	1.0000	N	.2	T	52	79	35
0314S	27572	1.0000	N	.2	T	51	79	33

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ALGOMA STEEL INC.

P.O. Box 1400, Sault Ste. Marie, Ontario Canada P6A 5P2

CUSTOMER PURCHASE ORDER NUMBER M53942-J1010LG	ENTRY DATE 2000/11/28	SHIP DATE 2001/01/08	TALLY NUMBER 216366	SHIPPER'S NUMBER 02-	CARRIER WC	-39517	MILL ORDER 16548
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CHARGE TO CUSTOMER NAME AND ADDRESS

EDMONTON STEEL PLATE
5545 - 89TH STREET
EDMONTON, ALBERTA
T6E 5W9

SHIP TO CUSTOMER NAME AND ADDRESS

EDMONTON EXCHANGER
SWITCH Z057 / EAST EDMONTON
EDMONTON, AB

MILL TEST REPORTS

ALGOMA STEEL INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO/IEC GUIDE 28-1990 AS CONTAINED IN THE COMPANY RECORDS.

A. Thomson

B. Thomson
MANAGING METALLURGIST

THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ALGOMA STEEL INC.

CUSTOMER SPECIFICATION

HR MULTIPLE CERTIFIED PLATE - HSLA - ASME SA 516 70(98)/SA537 CL1(98)/ASTM A572 50(00) - CVNL 15/12 FT LBS AT -50 F - PVQ - NORMALIZED - FLAME CUT - TRIPLE CERTIFIED TO ASTM A572 GR 50 (00) & ASME SA516 GR 70 (98)-(2000-07-01 ADDENDUM) & ASME SA537 CL 1 (98) - CVNL AS PER SA20 - TO COMPLY TO ISO 9002 DIN 50049 3.1.B/EN 10204 3.1.B (91) - MEETS ALL REQUIREMENTS OF EDMONTON STEEL PLATE SPEC ESP-01, REV 0, 2000-11-01

SUPPLEMENTARY INSTRUCTIONS

FAX SM/TR TO 780-466-4668 - ATTN WILMA HIEMSTRA

INSP T/R

TEST REPORTS REQ'D - INCL C.E.

CUST
USE

VESSEL STOCK

***** MECHANICAL PROPERTIES *****

IMPACT TESTS

HEAT	PLATE NUMBER	SAMPLE GAUGE	TEST COND.	TEST METH.	TEST DIR.	COUPON SHAPE	TEST TEMP.	* FULLSIZE ENERGY *	FTLB	FTLB	FTLB	AVG.
0314S	27552	1.0000	N	CVN	L	FULL	-50F	86	101	121	102	
0314S	27555	1.0000	N	CVN	L	FULL	-50F	107	99	87	98	
0314S	27557	1.0000	N	CVN	L	FULL	-50F	83	90	81	85	
0314S	27560	1.0000	N	CVN	L	FULL	-50F	120	103	108	110	
0314S	27561	1.0000	N	CVN	L	FULL	-50F	97	87	101	95	
0314S	27564	1.0000	N	CVN	L	FULL	-50F	102	90	106	100	
0314S	27566	1.0000	N	CVN	L	FULL	-50F	106	94	81	93	
0314S	27571	1.0000	N	CVN	L	FULL	-50F	106	111	67	95	
0314S	27572	1.0000	N	CVN	L	FULL	-50F	96	88	92	92	

ASME STAMP

ED. 2004 ADI

DATE July 15/05

PRODUCT ANALYSIS TESTS

PRODUCT ANALYSIS TESTS																	
HEAT		C	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B	TI	N	DO
0314S	27036	.19	1.05	.009	.005	.31	.17	.14	.01	.01	.037	.001	.023	.0000	.001	.0000	.42

***** CHEMICAL PROPERTIES *****

HEAT	C	MN	P	S	SI	CR	NI	CU	MO	ALT	ALS	CB	V	B	TI	SN	N	D.O.
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001			.0047	.44
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001			.0047	.44
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001			.0047	.44
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001			.0047	.44
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001			.0047	.44
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001			.0047	.44

PAGE 4 OF 5

****WARNING**** THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.

ALGOMA STEEL INC.

P.O. Box 1400, Sault Ste. Marie, Ontario Canada P6A 5P2

CUSTOMER PURCHASE ORDER NUMBER M53942-J1010LG	ENTRY DATE 2000/11/28	SHIP DATE 2001/01/08	TALLY NUMBER 216366	SHIPPER'S NUMBER 02-	CARRIER WC	-39517	MILL ORDER .16548
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CHARGE TO CUSTOMER NAME AND ADDRESS

EDMONTON STEEL PLATE
5545 - 89TH STREET
EDMONTON, ALBERTA
T6E 5W9

SHIP TO CUSTOMER NAME AND ADDRESS

EDMONTON EXCHANGER
SWITCH 2057 / EAST EDMONTON
EDMONTON, AB

MILL TEST REPORTS

ALGOMA STEEL INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN HEREIN AS CONTAINED IN THE COMPANY RECORDS AND WITHIN THE SCOPE OF ACCREDITATION OF ISO/IEC GUIDE 25:1990 AS CONTAINED IN THE COMPANY RECORDS.

A. Deibel

B. Thomson
MANAGING METALLURGIST

CUSTOMER SPECIFICATION

HR MULTIPLE CERTIFIED PLATE - HSLA - ASME SA 516 70(98)/SA537 CL1(98)/ASTM A572 50(00) - CVNL 15/12 FT LBS AT -50 F - PVO - NORMALIZED - FLAME CUT - TRIPLE CERTIFIED TO ASTM A572 GR 50 (00) & ASME SA516 GR 70 (98)-(2000-07-01 ADDENDUM) & ASME SA537 CL 1 (98) - CVNL AS PER SA20 - TO COMPLY TO ISO 9002 DIN 50049 3.1.B/EN 10204 3.1.B (91) - MEETS ALL REQUIREMENTS OF EDMONTON STEEL PLATE SPEC ESP-01, REV 0, 2000-11-01

SUPPLEMENTARY INSTRUCTIONS

FAX SM/TR TO 780-466-4668 - ATTN WILMA HIEMSTRA

THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ALGOMA STEEL INC.

INSP TR

TEST REPORTS REQ'D - INCL C.E.

CUST USE

VESSEL STOCK

***** CHEMICAL PROPERTIES *****																
HEAT	C	MN	P	S	SI	CR	NI	CU	MO	ALT	ALS	CB	V	B	TI	SN
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001		.0047
0314S	.20	1.10	.007	.005	.33	.20	.14	.01	.01	.040	.038	<.005	.026	<.001		.0047



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Certificate No. 3907002 -0926190

(성적서번호)

Customer CCTB

(주문치) SA/A105-01

Materials
(재질)

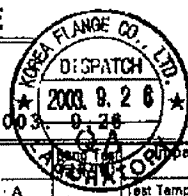
P.O.No. 4015429-00
(附票附費)

INSPECTION CERTIFICATE

〈시행실적서〉

W/O No. 3907002
(작업지시번호):

Issued date: 2003-0-28

**KOF**

KOREA FLANGE CO.,LTD.

한국프랜차이즈공업주식회사

194. DongBu-Dong, Dong-Ku.

Ulsan-Metropolitan, KOREA

울산광역시 동구 동부동 194번지

1130

Item No. (품번)	Article (품명)	Quantity (수량)	Lot No. (제조번호) (Control No)	Mechanical Properties (기계적성질) <i>(Reference)</i>	Tension Test (인장시험)				Impact Test(Charpy) (충격시험)		Hardness Test (경도시험)	CODE NO (제품번호)
					Y.S (항복강도)	T.S (인장강도)	E.L (연신율)	R.A (단면수축률)	Radius (반경)	Test Temp: (시험온도)		
					psi	psi	%	%				
					36000 Min (최소)	70000 MIN	22.0 Min (최소)	30.0 Min (최소)				
009	AN 600 WN RF XS 24	6346	4	A4M	49500	75500	34.8	70.4			MAX 146	
012	AN 600 BL RF 18	1133	4	A7L	47900	74600	33.2	68.2			146	
013	AN 600 BL RF 20	1141	2	SR7	48200	74800	31.9	57.7			149	
013	AN 600 BL RF 20	1141	2	A8Q	46800	75800	33.8	66.5			146	
					*****	B L A N K	*****					

Chemical Composition (화학성분) (%)	C 1/100	Si 1/100	Mn 1/100	P 1/1000	S 1/1000	Ni 1/100	Cr 1/100	Mo 1/1000	V 1/1000	Cu 1/100	Cb 1/1000	N 1/1000		Ceq 1/100	Heat treatment (열처리)	
Lot No. (발주번호) (Control No)	MAX 35	10 35	60 105	MAX 35	MAX 40	MAX 40	MAX 300	MAX 120	MAX 80	MAX 400	MAX 20				Normalizing (소둔)	900℃ 3.5h A.C.
A4M	20	27	87	17	8	8	70	20	8	70	5				Quenching (소입)	c h
A7L	19 ✓	29 ✓	107 ✓	13 ✓	4 ✓	2 ✓	10 ✓	<.02% ✓	<.02% ✓	20 ✓	<.02% ✓				Annealing (소둔)	c h
SR7	18	32	112	16	3	2	20	<.02%	1	20	<.02%				Tempering (소려)	c h
A6Q	20	28	106	14	5	2	20	<.02%	3	10	<.02%				Solution (고용열처리)	c
							*****	B L	A	N	K	*****				

Others
(기 타)

Works Test Certificate to EN 10204/3.1B
Flanges supplied to ASME B16.5.

ASME STAMP
ED. 2004 ADD.
EC DATE Sept 30

Visual & Dimension Inspection
(치수 및 외관검사)

GOOD

B. a. leep

QA Department Manager
(품질보증부장)

Surveyor To:

We hereby certify that material described herein has been tested and satisfied as above in accordance with the specification.

Po 31621 Sept 23/05 101 ACB07

AGN

ALGOMA STEEL INC. 105 West St., Sault Ste. Marie, Ontario, Canada, P6A 7B4

CUSTOMER PURCHASE ORDER NUMBER 07233-JK	ENTRY DATE 2005/06/20	SHIP DATE 2005/07/15	TALLY NUMBER 994971	SHIPPER'S NUMBER 09-	CARRIER CP	MILL ORDER 68361
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CHARGE TO CUSTOMER NAME & ADDRESS ALBERTA INDUSTRIAL METALS LTD 4821 - 78TH STREET RED DEER ALBERTA T4P 1N5	SHIP TO CUSTOMER NAME & ADDRESS ALBERTA INDUSTRIAL METALS LTD 4821 - 78TH STREET RED DEER ALBERTA
---	---

CUSTOMER SPECIFICATION HOT ROLLED STEEL SHEET - CARBON - TO THE CHEM OF ASTM A36 (05) - STRL Q - CUT EDGE ACCEPTABLE - RESTRICTED GAUGE 3/4 TOL - STRUCTURAL STANDARD SURFACE - COIL END TEST ONE/HEAT INFO ONLY
--

B. Thomson MANAGING METALLURGIST

SUPPLEMENTARY INSTRUCTIONS FAK RAIL BL AND SM TO (403-343-1311) ATTN J.KING	THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ALGOMA STEEL INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-2624 COLLECT FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF DOCUMENT.
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WSP T/R TEST REPORTS REQUIRED	2005/07/15 17:41
CUST USE RESALE	

MEETS EN 10204 3.1.B AND DIN 50049 3.1.B

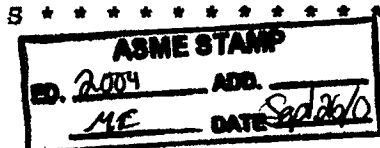
***** PRODUCT SHIPPED *****

CUSTOMER ITEM 001 OUR ITEM 001 DIMENSIONS .183 X 60 X COIL

COIL NUMBER	HEAT	NO. PIECES	WEIGHT	COIL NUMBER	HEAT	NO. PIECES	WEIGHT
82505019	4588D-04	1	26499				

***** MECHANICAL PROPERTIES *****

TENSILE TESTS:										ASME STAMP ED. 2004 ADD. ME DATE Sep 26/0		LAB
* SAMPLE *		** TEST **		YIELD TENSILE								
HEAT	SRCE	GAUGE	COND	METH	DIR	KSI	KSI	% ELONG			ALG	
4588D	DSPC	.1830	AR	.2	T	✓51.0	✓70.5	✓27(8")				



LAB
ALG

***** CHEMICAL PROPERTIES *****

HEAT	C	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B
4588D	✓.21 .001	✓.85	✓.012	✓.006	✓.02	.03	.01	✓.02	.01	.026	.000	.002	

AGN



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P.2/2
TO: 4033842106
SEP-23-2005 09:31 FROM: AB INDUSTRIAL METALS 14033431311