PENFABCO. LTD.

TRAVEL SHEET FOR PRESSURE VESSELS FABRICATION & REPAIR / ALTERATION

VESSEL SIZE & DESCRIPTION

SERIAL NO. PE 13307

CRN: V7840.21

VESSEL TITLE Vertical Separator

VESSEL SIZE: 24" O.D. x 10' 0" s/s

"A" NUMBER

VESSEL DESIGN PRESSURE: 1440 PSIG

DWG. NO. & REV. PE 13306 Rev 1

ITEM	COMMENTS	DATE INSPECTION COMPLETED & INITIALS		
		3RD PARTY	Q.C.M.	A.I.
TRAVEL SHEET REVIEWED BY A.I.		DS 21 03 14	MB MAR 21 2014	R MAR 21 2014
CALCULATIONS ON FILE	PE-15002 Shts 1,2 Rev 3	DS 21 03 14	MB MAR 21 2014	R MAR 21 2014
DESIGN DRAWINGS APPROVED BY ABSA	PE-15002 Shts 1,2 Rev 3	DS 21 03 14	MB MAR 21 2014	R MAR 21 2014
PRODUCTION IMPACT TEST - COUPONS	-20 °F			
WPS(s) CHECKED	PEN-19LT-1 R1	DS 21 03 14	MB MAR 21 2014	
WELDERS QUALIFIED		DS 21 03 14	MB MAR 21 2014	
MATERIAL CHECKED AGAINST DRAWING		DS 21 03 14	MB MAR 21 2014	
HEAT NO'S, THK. RECORDED ON MAT'L REPORT		DS 21 03 14	MB MAR 21 2014	I MAR 21 2014
MILL TEST REPORT VERIFIED TO COMPLY WITH CODE		DS 21 03 14	MB MAR 21 2014	R
VESSEL LAYOUT		DS 21 03 14	MB MAR 21 2014	
FIT UP - SHELL & HEADS		DS 21 03 14	MB MAR 21 2014	
FIT UP - NOZZLES & FITTINGS (UG-93)		DS 21 03 14	MB MAR 21 2014	
TRAYS, BAFFLES & OTHER INTERNALS CHECKED		DS 21 03 14	MB MAR 21 2014	
INTERNAL CHECK & INSPECTION		DS 21 03 14	MB MAR 21 2014	H MAR 21 2014
WELDER'S I.D. & WELD SIZES & PROFILE VERIFIED		DS 27 03 14	MB MAR 27 2014	I MAR 27 2014
RADIOGRAPHS	RT-2	DS 27 03 14	MB MAR 27 2014	R MAR 27 2014
OTHER N.D.E.	Preheat to 50° F	DS 27 03 14	MB MAR 27 2014	
NOZZLES & FITTINGS - RATING & ORIENTATION		DS 27 03 14	MB MAR 27 2014	
CLOSING CIRC SEAM CHECKED & INSPECTED		DS 27 03 14	MB MAR 27 2014	
EXTERNAL AFTER COMPLETION OF ALL WELDING	MANADATORY HOLD POINT FOR ALL PWHT VESSELS	DS 27 03 14	MB MAR 27 2014	H MAR 27 2014
ANY NON-CONFORMITIES				
HEAT TREATMENT CHECKED	N/A			
HYDROSTATIC TEST GAUGES G7, G8	2160 Psig	DS 27 03 14	MB MAR 27 2014	H MAR 27 2014
NAME PLATE		DS 27 03 14	MB MAR 27 2014	H MAR 27 2014
MANUFACTURERS' DATA REPORT	UIA	DS 27 03 14	MB MAR 27 2014	H MAR 27 2014

CANADIAN WELDING BUREAU C726 David R. Cuttle Level 2 CSA W178.2 CERTIFIED WELDING INSPECTOR

AUTHORIZED INSPECTOR HOLD POINTS DESIGNATED BY: "H" for Hold, "I" for Inspection, "R" for Review, "W" for Witness

PENFABCO LTD.

MATERIAL REPORT

SERIAL NUMBER PE 13307 **TYPE OF VESSEL** Vertical Separator

1 | 3 | 2

DATE (Month/Day/Year) 17-Mar-14 **CUSTOMER** Husky c/o RJV **FILLED BY** M.B. **DWG NO.** PE-13306 Rev. 1

ITEM	DIA	ITEM NO.	HEAT NO.	SLAB NO.	MATERIAL SPEC.	REQ'D THK	VER THK
Top Head	24"	1	381402	35205-02	SA-516-70N	.9375"	0.976"
Bottom Head	24"	2	381402	35217-02	SA-516-70N	.9375"	0.999"
Shell	24"	3	362477	12835	SA-516-70N	1.000"	1.006"
Pad Support		25	SE1310354302		G40.21-44W (Rd)	.500"	
Vortex Brkr,Flt Shield		23, 24	115941		G40.21-44W (Pl)	.250"	
PIPE - Nozzles, Drains Etc.						**SCH**	**NOM.THK**
Skirt	24"		923078		SA-106B	Std	.375"
Neck	2"	N3	575122		SA-106B	XXH	.436"
Neck	2"	N10	20444		SA-106B	160	.343"
FLANGES AND FITTINGS						**SCH**	**RATING**
RF LWN x 9"	3"	N1,N2,N11	G859		SA 105N		CL 600
RF LWN x 9"	3"	N12 to N14	G859		SA 105N		CL 600
RFWN	2"	N3	TL10005612		SA 105N	XXH	CL 600
RFWN	2"	N10	12/30773		SA 105N	160	CL 600
Cplg	1"	C5,C6	4246		SA 105N		CL 6000
Cplg	3/4"	C2,C3A/B	3982		SA 105N		CL 6000
Cplg	3/4"	C4A/B	3982		SA 105N		CL 6000
Cplg	1/2"	C1	3933		SA 105N		CL 6000
Elbow	2"	N10	13E00064		SA-234-WPB	160	

CERTIFICATE OF COMPLIANCE

edmonton exchanger
& manufacturing ltd.

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/22 CofC# 47423 Page 1 of 1

Item#	Description	Qty	Heat#	Brinell Hardn.	Required Min Thk	Recorded Min Thk	Form. Proc.
H102744-2	HEAD(S) - Semi-Elliptical 2:1 - 1.0000" NOM (0.9375"_MIN) X 24" OD (Material Spec: SA 516-70 Normalized)	2	SQ11705-A407669-01	MTR	0.9375"	0.9380"	1
		5	381402-35205-02	MTR	0.9375"	0.9380"	1
	Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A *Conforms to NACE MR0103 2007*	1	381402-35217-02	MTR	0.9375"	0.9480"	1

Forming Procedure:
1. Hot Formed @ 1650F/899C and Air Cooled

Brinell Equipment: Newage Calibrated Pin
Brinell Hardness Tester

Supplementary Requirements

Normalized Material Identification Marking:
'MT' indicates normalized by the mill per ASME Code Section II, Part A, SA 20, Paragraph 13.1.1.
'GMT' indicates normalized by Edmonton Exchanger per ASME Code Section II, Part A, SA 20, Paragraph 13.1.2.
'GT' indicates normalized by Edmonton Exchanger per ASME Code Section VIII Division 1, UG-85 or ASME Code Section I, PG-77.4.

The item(s) listed above comply with the requirements of ASME Code Section I, PG-29, PG-81 and ASME Code Section VIII, Division 1, UCS-79(d), UG-79 & UG-81. All welders and procedures are qualified to ASME Code Section IX. Material being supplied conforms to the latest ASME Code Section II, Part A, 2013 Edition.

Supplementary Examination - Items

PE-13304 T&B
PE-13305 T&B
PE-13306 T&B
PE-13307 TOP
PE-13307 BTM

WELDING SUPERVISOR 6725 David P. Puffin Level II WELDING INSPECTOR

CONFORMANCE VERIFIED
TO ASME VIII-DIV 1
CODE: ED 2013 A
DATE: Mar 3/14
BY: MB

edmonton exchanger
& manufacturing ltd.

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

CERTIFICATE OF COMPLIANCE

MTR List

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/22 CofC# 47423

MTR ID	Pages	Heat#	Thickness	Material Grades
17668	9	381402-35205-02	1"	SA 516-70 N
		381402-35217-02	1"	SA 516-70 N
18214	8	SQ11705-A407669-01	1"	SA 516-70 N

Heat#	Material Grades	MTR ID
381402-35205-02	SA 516-70 N	17668
381402-35217-02	SA 516-70 N	17668
SQ11705-A407669-01	SA 516-70 N	18214

Heat#	Thickness	Grade	HIC Report Filename

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 1/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No. ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.

B01 Product: HEAVY PLATES

17668

B02/ Steel design. SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
			INCH						
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381401	35303-01	
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381401	35303-02	
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381401	35304-01	
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381582	59860-01	
**	4				21708				
02	1	0,7500 x	150,00000 x	451,00000	6527	N	381402	35234-01	
02	1	0,7500 x	150,00000 x	451,00000	6527	N	381402	35234-02	
**	2				13054				
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35309-01	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35309-02	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35311-01	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35311-02	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35311-03	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381401	35306-03	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381402	35220-01	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381402	35220-02	
**	8				52080				
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381401	35306-01	
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381401	35306-02	
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381402	35216-01	
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381582	54939-01	
**	4				30460				
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35206-01	

CONFORMANCE VERIFIED
TO ASME VIII - DIV 1
CODE: ED 2013 A
DATE: Mon 3/11
BY: MB

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

Date 07.02.13

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001

Sheet: 2/...

A05 Established inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON — A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON — A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
			INCH						
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35206-02	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35207-01	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35207-02	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35207-03	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35217-03	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35219-01	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35219-02	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35219-03	
**	9				53631				
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35205-01	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35205-02	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35205-03	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35217-01	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35217-02	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381404	35302-01	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381404	35302-02	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381404	35302-03	
**	8				59520				
***	35				230453				

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 3/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

B04 Product delivery condition

ITEM NO.: 01-06
N: HT: 1670 GR.F +36 -27 GR.F
SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)
COOLING IN STILL AIR

B06 Marking of the product

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

B07-B99 Further information about the product

ITEM NO.: 01-06
THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED (CF. A/SA20 PAR. 5.3)

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C10 C11 KSI RP02	C12 RM	C13	C14-C15 A % LO=8IN
01	381401	35303		K1	Q	RT	49,2	74,7		26
01	381401	35304		K1	Q	RT	49,4	74,5		28
01	381582	59860		K1	Q	RT	48,3	74,1		26
02	381402	35234		K1	Q	RT	49,6	74,8		29
03	381397	35309		K1	Q	RT	49,4	73,8		28
03	381397	35311		K1	Q	RT	49,3	73,7		29
03	381401	35306		K1	Q	RT	49,0	74,7		29
03	381402	35220		K1	Q	RT	49,2	73,8		31
04	381401	35306		K1	Q	RT	49,0	74,7		29

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 4/...

A05 Established inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C10	C11 KSI RP02	C12 RM	C13	C14-C15 A % L0=8IN
04	381402	35216		K1	Q	RT		48,1	74,0		28
04	381582	54939		K1	Q	RT		48,0	73,5		29
05	381402	35206		K1	Q	RT		48,4	73,2		29
05	381402	35207		K1	Q	RT		48,4	73,4		30
05	381402	35217		K1	Q	RT		48,3	72,9		30
05	381402	35219		K1	Q	RT		47,9	73,4		30
06	381402	35205		K1	Q	RT		48,0	72,9		30
06	381402	35217		K1	Q	RT		48,3	72,9		30
06	381404	35302		K1	Q	RT		48,4	73,8		30

C30-C39 Hardness test

B14 Item. No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35	C31 Individual values			C32 Mean value
01	381401	35303		K1	O	RT	HBW 10/3000	HB	145	146	147	146
01	381401	35304		K1	O	RT	HBW 10/3000	HB	149	146	144	146
01	381582	59860		K1	O	RT	HBW 10/3000	HB	140	139	136	138
02	381402	35234		K1	O	RT	HBW 10/3000	HB	148	145	143	145
03	381397	35309		K1	O	RT	HBW 10/3000	HB	140	140	138	139
03	381397	35311		K1	O	RT	HBW 10/3000	HB	137	133	136	135
03	381401	35306		K1	O	RT	HBW 10/3000	HB	145	144	144	144
03	381402	35220		K1	O	RT	HBW 10/3000	HB	143	143	142	143
04	381401	35306		K1	O	RT	HBW 10/3000	HB	145	144	144	144
04	381402	35216		K1	O	RT	HBW 10/3000	HB	145	147	148	147
04	381582	54939		K1	O	RT	HBW 10/3000	HB	136	137	138	137

A04 Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

Inspector's stamp

Date 07.02.13

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 5/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL,EDMON A07.1 No. ED10610-J1010-ER

Final receiver: EDMONTON STEEL,EDMON A07.2 No.

B01 Product: HEAVY PLATES

B02/ Steel design. SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C30-C39 Hardness test

B14 Item. No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35 C31 Individual values			C32 Mean value
05	381402	35206		K1	O	RT	HBW 10/3000	HB 141	140	140	140
05	381402	35207		K1	O	RT	HBW 10/3000	HB 140	140	139	140
05	381402	35217		K1	O	RT	HBW 10/3000	HB 146	143	145	145
05	381402	35219		K1	O	RT	HBW 10/3000	HB 141	142	144	142
06	381402	35205		K1	O	RT	HBW 10/3000	HB 146	148	150	148
06	381402	35217		K1	O	RT	HBW 10/3000	HB 146	143	145	145
06	381404	35302		K1	O	RT	HBW 10/3000	HB 146	146	147	146

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45 C42 Individual values AV=FT.LBF			C43 Mean value
01	381401	35303		K1	LV	-51		CHP-V			AV 116	202	110	143
01	381401	35304		K1	LV	-51		CHP-V			AV 199	187	131	172
01	381582	59860		K1	LV	-51		CHP-V			AV 128	167	110	135
02	381402	35234		K1	LV	-51		CHP-V			AV 212	122	207	180
03	381397	35309		K1	LV	-51		CHP-V			AV 114	71	103	96
03	381397	35311		K1	LV	-51		CHP-V			AV 121	115	108	115
03	381401	35306		K1	LV	-51		CHP-V			AV 122	220	136	159
03	381402	35220		K1	LV	-51		CHP-V			AV 126	111	205	147
04	381401	35306		K1	LV	-51		CHP-V			AV 122	220	136	159
04	381402	35216		K1	LV	-51		CHP-V			AV 128	131	113	124
04	381582	54939		K1	LV	-51		CHP-V			AV 116	145	67	109
05	381402	35206		K1	LV	-51		CHP-V			AV 117	131	104	117
05	381402	35207		K1	LV	-51		CHP-V			AV 111	117	215	148

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13 PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 6/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45	C42 Individual values AV=FT.LBF			C43 Mean value
05	381402	35217		K1	LV	-51		CHP-V			AV	120	208	211	180
05	381402	35219		K1	LV	-51		CHP-V			AV	118	111	144	124
06	381402	35205		K1	LV	-51		CHP-V			AV	218	114	234	189
06	381402	35217		K1	LV	-51		CHP-V			AV	120	208	211	180
06	381404	35302		K1	LV	-51		CHP-V			AV	127	91	125	114

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
381397	Y	0,171	0,373	1,17	0,010	0,0009	0,0061	0,028	0,013	0,044	0,032	0,002	0,000	0,001	0,003
381401	Y	0,174	0,374	1,18	0,010	0,0011	0,0062	0,017	0,006	0,029	0,030	0,000	0,000	0,000	0,003
381402	Y	0,169	0,379	1,18	0,009	0,0007	0,0060	0,019	0,007	0,026	0,030	0,000	0,000	0,001	0,003
381404	Y	0,172	0,377	1,19	0,008	0,0007	0,0063	0,020	0,013	0,035	0,030	0,001	0,000	0,000	0,003
381582	Y	0,167	0,369	1,19	0,007	0,0011	0,0054	0,036	0,020	0,036	0,042	0,000	0,000	0,002	0,003

B07.2 Heat	C70	B	CA	AL-T
381397	Y	0,0003	0,0011	0,033
381401	Y	0,0003	0,0022	0,038
381402	Y	0,0002	0,0016	0,035
381404	Y	0,0003	0,0012	0,036
381582	Y	0,0003	0,0017	0,036

A04 Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

Inspector's stamp

Date 07.02.13

PP 1

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 7/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C94 Heat analysis Carbon equivalent / Alloying restrictions

B07.2 Heat								
381397	FO-02= 0,38	FO-51= 0,002	FO-55= 0,12	FO-78= 0,05	FO-91= 6,8
381401	FO-02= 0,38	FO-51= 0,000	FO-55= 0,08	FO-78= 0,04	FO-91= 6,8
381402	FO-02= 0,38	FO-51= 0,000	FO-55= 0,08	FO-78= 0,04	FO-91= 7,0
381404	FO-02= 0,38	FO-51= 0,001	FO-55= 0,10	FO-78= 0,04	FO-91= 6,9
381582	FO-02= 0,38	FO-51= 0,000	FO-55= 0,13	FO-78= 0,06	FO-91= 7,1

C95 Ladle treatment

ITEM NO.: 01-06
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

C95 Further information about ladle treatment

ITEM NO.: 01-06
CALCIUM TREATED

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C01	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
381397	35309	K1	0,165	0,366	1,15	0,010	0,0010	0,0066	0,027	0,012	0,044	0,032	0,002	0,000	0,000	0,003
381401	35303	K1	0,172	0,358	1,15	0,008	0,0012	0,0060	0,015	0,006	0,028	0,029	0,000	0,000	0,000	0,003
381401	35306	K1	0,172	0,366	1,16	0,008	0,0009	0,0055	0,016	0,006	0,029	0,029	0,000	0,000	0,000	0,003
381402	35205	K1	0,178	0,378	1,18	0,008	0,0008	0,0054	0,019	0,006	0,025	0,029	0,001	0,000	0,000	0,004
381402	35220	K1	0,173	0,380	1,18	0,009	0,0008	0,0055	0,019	0,006	0,024	0,030	0,001	0,000	0,000	0,004
381402	35234	K1	0,174	0,372	1,17	0,008	0,0010	0,0055	0,017	0,006	0,027	0,029	0,000	0,000	0,000	0,003
381404	35302	K1	0,171	0,373	1,17	0,008	0,0008	0,0054	0,019	0,011	0,032	0,029	0,001	0,000	0,000	0,003
381582	54939	K1	0,167	0,363	1,18	0,007	0,0009	0,0047	0,035	0,019	0,036	0,042	0,000	0,000	0,001	0,003
381582	59860	K1	0,164	0,363	1,18	0,007	0,0009	0,0050	0,035	0,019	0,036	0,042	0,000	0,000	0,001	0,004

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13 PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 8/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL,EDMON A07.1 No.: EDI0610-J1010-ER

Final receiver: EDMONTON STEEL,EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C01	B	CA	AL-T
381397	35309	K1	0,0003	0,0012	0,029
381401	35303	K1	0,0000	0,0021	0,038
381401	35306	K1	0,0002	0,0023	0,036
381402	35205	K1	0,0003	0,0013	0,034
381402	35220	K1	0,0003	0,0013	0,034
381402	35234	K1	0,0000	0,0017	0,035
381404	35302	K1	0,0003	0,0013	0,034
381582	54939	K1	0,0001	0,0015	0,035
381582	59860	K1	0,0002	0,0014	0,035

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2 Heat	B07.1 Test No.	C01						
381397	35309	K1	FO-02=	0,37	FO-51=	0,002	FO-55=	0,12
381401	35303	K1	FO-02=	0,37	FO-51=	0,000	FO-55=	0,08
381401	35306	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08
381402	35205	K1	FO-02=	0,38	FO-51=	0,001	FO-55=	0,08
381402	35220	K1	FO-02=	0,38	FO-51=	0,001	FO-55=	0,08
381402	35234	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08
381404	35302	K1	FO-02=	0,38	FO-51=	0,001	FO-55=	0,09
381582	54939	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,13
381582	59860	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,13

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02	A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)	445070-07.02.13	380705-001	9

A05 Established Inspecting body	A06 Purchaser		A07.1 No.	B01 Product
DH		EDMONTON STEEL, EDMON	ED10610-J1010-ER	HEAVY PLATES
	Final receiver	EDMONTON STEEL, EDMON	A07.2 No.	

B02/ Steel design.	SA516-70	SA20-S5
B03 Any suppl. requirements	ASME-IIA:2010+ADDENDA-2011A	
	DIL-HUE-2:R33-2012-10-01	

C94 Carbon equivalent formula / Alloying restrictions

FO-02 = C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15
FO-51 = V +NB
FO-55 = CU+MO+NI+CR
FO-78 = CR+MO
FO-91 = MN/C

D01 Marking and identification, surface appearance, shape and dimensional properties

ITEM NO.: 01-06
EXAMINATION OF MARKING, SURFACE, SHAPE AND DIMENSIONS: THE RESULTS MEET THE REQUIREMENTS.

SURFACE	AS PER ASME-SA20
THICKNESS	AS PER ASME-SA20
LENGTH AND WIDTH	AS PER ASME-SA20
FLATNESS	AS PER 1/2-ASME-SA20

MTR APPROVED EDMONTON EXCHANGER

A04 Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13 PP 1

CERTIFICATE OF COMPLIANCE

edmonton exchanger
& manufacturing ltd.

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/22 CofC# 47423 Page 1 of 1

Item#	Description	Qty	Heat#	Brinell Hardn.	Required Min Thk	Recorded Min Thk	Form. Proc.
H102744-2	HEAD(S) - Semi-Elliptical 2:1 - 1.0000" NOM (0.9375"_MIN) X 24" OD (Material Spec: SA 516-70 Normalized)	2	SQ11705-A407669-01	MTR	0.9375"	0.9380"	1
		5	381402-35205-02	MTR	0.9375"	0.9380"	1
		1	381402-35217-02	MTR	0.9375"	0.9480"	1
	Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A						
	Conforms to NACE MR0103 2007						

Forming Procedure:
1. Hot Formed @ 1650F/899C and Air Cooled

Brinell Equipment: Newage Calibrated Pin
Brinell Hardness Tester

Supplementary Requirements

Normalized Material Identification Marking:
'MT' indicates normalized by the mill per ASME Code Section II, Part A, SA 20, Paragraph 13.1.1.
'GMT' indicates normalized by Edmonton Exchanger per ASME Code Section II, Part A, SA 20, Paragraph 13.1.2.
'GT' indicates normalized by Edmonton Exchanger per ASME Code Section VIII Division 1, UG-85 or ASME Code Section I, PG-77.4.

The item(s) listed above comply with the requirements of ASME Code Section I, PG-29, PG-81 and ASME Code Section VIII, Division 1, UCS-79(d), UG-79 & UG-81. All welders and procedures are qualified to ASME Code Section IX. Material being supplied conforms to the latest ASME Code Section II, Part A, 2013 Edition.

Supplementary Examination - Items

PE-13304 T&B
PE-13305 T&B
PE-13306 T&B
PE-13307 TOP
PE-13307 BTM

0735 David R. Dutkin Level II

CONFORMANCE VERIFIED
TO ASME VIII-DIV 1
CODE: ED 2013 A
DATE: Mar 3/14
BY: MB

edmonton exchanger
& manufacturing ltd.
5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

CERTIFICATE OF COMPLIANCE

MTR List

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/22 CofC# 47423

MTR ID	Pages	Heat#	Thickness	Material Grades
17668	9	381402-35205-02	1"	SA 516-70 N
		381402-35217-02	1"	SA 516-70 N
18214	8	SQ11705-A407669-01	1"	SA 516-70 N

Heat#	Material Grades	MTR ID
381402-35205-02	SA 516-70 N	17668
381402-35217-02	SA 516-70 N	17668
SQ11705-A407669-01	SA 516-70 N	18214

Heat#	Thickness	Grade	HIC Report Filename

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 1/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No. ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.

B01 Product: HEAVY PLATES

17669

B02/ Steel design. SA516-70 SA20-S5

B03 Any suppl. requirements ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
			INCH						
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381401	35303-01	
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381401	35303-02	
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381401	35304-01	
01	1	0,6250 x	150,00000 x	450,00000	5427	N	381582	59860-01	
**	4				21708				
02	1	0,7500 x	150,00000 x	451,00000	6527	N	381402	35234-01	
02	1	0,7500 x	150,00000 x	451,00000	6527	N	381402	35234-02	
**	2				13054				
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35309-01	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35309-02	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35311-01	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35311-02	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381397	35311-03	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381401	35306-03	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381402	35220-01	
03	1	0,8750 x	120,50000 x	480,00000	6510	N	381402	35220-02	
**	8				52080				
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381401	35306-01	
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381401	35306-02	
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381402	35216-01	
04	1	0,8750 x	150,00000 x	451,00000	7615	N	381582	54939-01	
**	4				30460				
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35206-01	

CONFORMANCE VERIFIED
TO ASME VIII - DIV 1
CODE: ED 2013 A
DATE: 07 Mar 2014
BY: MB

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

AHB Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13 PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001

Sheet: 2/...

A05 Established inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON — A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON — A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
			INCH						
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35206-02	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35207-01	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35207-02	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35207-03	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35217-03	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35219-01	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35219-02	
05	1	1,0000 x	96,50000 x	480,00000	5959	N	381402	35219-03	
**	9				53631				
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35205-01	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35205-02	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35205-03	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35217-01	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381402	35217-02	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381404	35302-01	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381404	35302-02	
06	1	1,0000 x	120,50000 x	480,00000	7440	N	381404	35302-03	
**	8				59520				
***	35				230453				

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001

Sheet: 3/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL,EDMON A07.1 No. ED10610-J1010-ER

Final receiver: EDMONTON STEEL,EDMON A07.2 No.

B01 Product: HEAVY PLATES

B02/ Steel design. SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

B04 Product delivery condition

ITEM NO.: 01-06
N: HT: 1670 GR.F +36 -27 GR.F
SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)
COOLING IN STILL AIR

B06 Marking of the product

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

B07-B99 Further information about the product

ITEM NO.: 01-06
THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED (CF. A/SA20 PAR. 5.3)

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C10	C11 KSI RP02	C12 RM	C13	C14-C15 A % L0=8IN
01	381401	35303		K1	Q	RT		49,2	74,7		26
01	381401	35304		K1	Q	RT		49,4	74,5		28
01	381582	59860		K1	Q	RT		48,3	74,1		26
02	381402	35234		K1	Q	RT		49,6	74,8		29
03	381397	35309		K1	Q	RT		49,4	73,8		28
03	381397	35311		K1	Q	RT		49,3	73,7		29
03	381401	35306		K1	Q	RT		49,0	74,7		29
03	381402	35220		K1	Q	RT		49,2	73,8		31
04	381401	35306		K1	Q	RT		49,0	74,7		29

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13 PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 4/...

A05 Established inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C10	C11 KSI RP02	C12 RM	C13	C14-C15 A % L0=8IN
04	381402	35216		K1	Q	RT		48,1	74,0		28
04	381582	54939		K1	Q	RT		48,0	73,5		29
05	381402	35206		K1	Q	RT		48,4	73,2		29
05	381402	35207		K1	Q	RT		48,4	73,4		30
05	381402	35217		K1	Q	RT		48,3	72,9		30
05	381402	35219		K1	Q	RT		47,9	73,4		30
06	381402	35205		K1	Q	RT		48,0	72,9		30
06	381402	35217		K1	Q	RT		48,3	72,9		30
06	381404	35302		K1	Q	RT		48,4	73,8		30

C30-C39 Hardness test

B14 Item. No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35	C31 Individual values			C32 Mean value
01	381401	35303		K1	O	RT	HBW 10/3000	HB	145	146	147	146
01	381401	35304		K1	O	RT	HBW 10/3000	HB	149	146	144	146
01	381582	59860		K1	O	RT	HBW 10/3000	HB	140	139	136	138
02	381402	35234		K1	O	RT	HBW 10/3000	HB	148	145	143	145
03	381397	35309		K1	O	RT	HBW 10/3000	HB	140	140	138	139
03	381397	35311		K1	O	RT	HBW 10/3000	HB	137	133	136	135
03	381401	35306		K1	O	RT	HBW 10/3000	HB	145	144	144	144
03	381402	35220		K1	O	RT	HBW 10/3000	HB	143	143	142	143
04	381401	35306		K1	O	RT	HBW 10/3000	HB	145	144	144	144
04	381402	35216		K1	O	RT	HBW 10/3000	HB	145	147	148	147
04	381582	54939		K1	O	RT	HBW 10/3000	HB	136	137	138	137

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13 PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001

Sheet: 5/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C30-C39 Hardness test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35 C31 Individual values			C32 Mean value
05	381402	35206		K1	O	RT	HBW 10/3000	HB 141	140	140	140
05	381402	35207		K1	O	RT	HBW 10/3000	HB 140	140	139	140
05	381402	35217		K1	O	RT	HBW 10/3000	HB 146	143	145	145
05	381402	35219		K1	O	RT	HBW 10/3000	HB 141	142	144	142
06	381402	35205		K1	O	RT	HBW 10/3000	HB 146	148	150	148
06	381402	35217		K1	O	RT	HBW 10/3000	HB 146	143	145	145
06	381404	35302		K1	O	RT	HBW 10/3000	HB 146	146	147	146

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45 C42 Individual values AV=FT.LBF			C43 Mean value
01	381401	35303		K1	LV	-51		CHP-V			AV 116	202	110	143
01	381401	35304		K1	LV	-51		CHP-V			AV 199	187	131	172
01	381582	59860		K1	LV	-51		CHP-V			AV 128	167	110	135
02	381402	35234		K1	LV	-51		CHP-V			AV 212	122	207	180
03	381397	35309		K1	LV	-51		CHP-V			AV 114	71	103	96
03	381397	35311		K1	LV	-51		CHP-V			AV 121	115	108	115
03	381401	35306		K1	LV	-51		CHP-V			AV 122	220	136	159
03	381402	35220		K1	LV	-51		CHP-V			AV 126	111	205	147
04	381401	35306		K1	LV	-51		CHP-V			AV 122	220	136	159
04	381402	35216		K1	LV	-51		CHP-V			AV 128	131	113	124
04	381582	54939		K1	LV	-51		CHP-V			AV 116	145	67	109
05	381402	35206		K1	LV	-51		CHP-V			AV 117	131	104	117
05	381402	35207		K1	LV	-51		CHP-V			AV 111	117	215	148

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

AHB Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001 Sheet: 6/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45	C42 Individual values AV=FT.LBF			C43 Mean value
05	381402	35217		K1	LV	-51		CHP-V			AV	120	208	211	180
05	381402	35219		K1	LV	-51		CHP-V			AV	118	111	144	124
06	381402	35205		K1	LV	-51		CHP-V			AV	218	114	234	189
06	381402	35217		K1	LV	-51		CHP-V			AV	120	208	211	180
06	381404	35302		K1	LV	-51		CHP-V			AV	127	91	125	114

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
381397	Y	0,171	0,373	1,17	0,010	0,0009	0,0061	0,028	0,013	0,044	0,032	0,002	0,000	0,001	0,003
381401	Y	0,174	0,374	1,18	0,010	0,0011	0,0062	0,017	0,006	0,029	0,030	0,000	0,000	0,000	0,003
381402	Y	0,169	0,379	1,18	0,009	0,0007	0,0060	0,019	0,007	0,026	0,030	0,000	0,000	0,001	0,003
381404	Y	0,172	0,377	1,19	0,008	0,0007	0,0063	0,020	0,013	0,035	0,030	0,001	0,000	0,000	0,003
381582	Y	0,167	0,369	1,19	0,007	0,0011	0,0054	0,036	0,020	0,036	0,042	0,000	0,000	0,002	0,003

B07.2 Heat	C70	B	CA	AL-T
381397	Y	0,0003	0,0011	0,033
381401	Y	0,0003	0,0022	0,038
381402	Y	0,0002	0,0016	0,035
381404	Y	0,0003	0,0012	0,036
381582	Y	0,0003	0,0017	0,036

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

Date 07.02.13

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

A01

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001

Sheet: 7/...

A05 Established inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON — A07.1 No.: ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON — A07.2 No.:

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C94 Heat analysis Carbon equivalent / Alloying restrictions

B07.2 Heat									
381397	FO-02=	0,38	FO-51=	0,002	FO-55=	0,12	FO-78=	0,05	FO-91=	6,8
381401	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08	FO-78=	0,04	FO-91=	6,8
381402	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08	FO-78=	0,04	FO-91=	7,0
381404	FO-02=	0,38	FO-51=	0,001	FO-55=	0,10	FO-78=	0,04	FO-91=	6,9
381582	FO-02=	0,38	FO-51=	0,000	FO-55=	0,13	FO-78=	0,06	FO-91=	7,1

C95 Ladle treatment

ITEM NO.: 01-06
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

C95 Further information about ladle treatment

ITEM NO.: 01-06
CALCIUM TREATED

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C01	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
381397	35309	K1	0,165	0,366	1,15	0,010	0,0010	0,0066	0,027	0,012	0,044	0,032	0,002	0,000	0,000	0,003
381401	35303	K1	0,172	0,358	1,15	0,008	0,0012	0,0060	0,015	0,006	0,028	0,029	0,000	0,000	0,000	0,003
381401	35306	K1	0,172	0,366	1,16	0,008	0,0009	0,0055	0,016	0,006	0,029	0,029	0,000	0,000	0,000	0,003
381402	35205	K1	0,178	0,378	1,18	0,008	0,0008	0,0054	0,019	0,006	0,025	0,029	0,001	0,000	0,000	0,004
381402	35220	K1	0,173	0,380	1,18	0,009	0,0008	0,0055	0,019	0,006	0,024	0,030	0,001	0,000	0,000	0,004
381402	35234	K1	0,174	0,372	1,17	0,008	0,0010	0,0055	0,017	0,006	0,027	0,029	0,000	0,000	0,000	0,003
381404	35302	K1	0,171	0,373	1,17	0,008	0,0008	0,0054	0,019	0,011	0,032	0,029	0,001	0,000	0,000	0,003
381582	54939	K1	0,167	0,363	1,18	0,007	0,0009	0,0047	0,035	0,019	0,036	0,042	0,000	0,000	0,001	0,003
381582	59860	K1	0,164	0,363	1,18	0,007	0,0009	0,0050	0,035	0,019	0,036	0,042	0,000	0,000	0,001	0,004

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 445070-07.02.13

A08/ Manufacturer's order/ A03 Certificate No.: 380705-001

Sheet: 8/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No. ED10610-J1010-ER

Final receiver: EDMONTON STEEL, EDMON A07.2 No.

B01 Product: HEAVY PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-IIA:2010+ADDENDA-2011A
DIL-HUE-2:R33-2012-10-01

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C01	B	CA	AL-T
381397	35309	K1	0,0003	0,0012	0,029
381401	35303	K1	0,0000	0,0021	0,038
381401	35306	K1	0,0002	0,0023	0,036
381402	35205	K1	0,0003	0,0013	0,034
381402	35220	K1	0,0003	0,0013	0,034
381402	35234	K1	0,0000	0,0017	0,035
381404	35302	K1	0,0003	0,0013	0,034
381582	54939	K1	0,0001	0,0015	0,035
381582	59860	K1	0,0002	0,0014	0,035

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2 Heat	B07.1 Test No.	C01						
381397	35309	K1	FO-02=	0,37	FO-51=	0,002	FO-55=	0,12
381401	35303	K1	FO-02=	0,37	FO-51=	0,000	FO-55=	0,08
381401	35306	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08
381402	35205	K1	FO-02=	0,38	FO-51=	0,001	FO-55=	0,08
381402	35220	K1	FO-02=	0,38	FO-51=	0,001	FO-55=	0,08
381402	35234	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08
381404	35302	K1	FO-02=	0,38	FO-51=	0,001	FO-55=	0,09
381582	54939	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,13
381582	59860	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,13

A04 Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above-mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)	A10 Advice of dispatch No./ Date of dispatch 445070-07.02.13	A08/ Manufacturer's order/ A03 Certificate No. 380705-001	Sheet 9

A05 Established Inspecting body. DH	A06 Purchaser Final receiver	EDMONTON STEEL, EDMON EDMONTON STEEL, EDMON	A07.1 No. ED10610-J1010-ER A07.2 No.	B01 Product HEAVY PLATES

B02/ Steel design.	SA516-70	SA20-S5
B03 Any suppl. requirements	ASME-IIA:2010+ADDENDA-2011A DIL-HUE-2:R33-2012-10-01	

C94 Carbon equivalent formula / Alloying restrictions

FO-02 = C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15
FO-51 = V +NB
FO-55 = CU+MO+NI+CR
FO-78 = CR+MO
FO-91 = MN/C

D01 Marking and identification, surface appearance, shape and dimensional properties

ITEM NO.: 01-06
EXAMINATION OF MARKING, SURFACE, SHAPE AND DIMENSIONS: THE RESULTS MEET THE REQUIREMENTS.

SURFACE	AS PER ASME-SA20
THICKNESS	AS PER ASME-SA20
LENGTH AND WIDTH	AS PER ASME-SA20
FLATNESS	AS PER 1/2-ASME-SA20

MTR APPROVED 2044 EDMONTON EXCHANGER

A04 Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 07.02.13

PP 1

edmonton exchanger
& manufacturing ltd.

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

CERTIFICATE OF COMPLIANCE

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/26 CofC# 47527

Item#	Description	Qty	Heat#	Brinell Hardn.	Weld Proc.	Form. Proc.
S102744-1-1	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) *Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A* *Conforms to NACE MR0103 2007*	1	365945-84628 PE-13304	MTR	WP600	4
S102744-1-2	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) *Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A* *Conforms to NACE MR0103 2007*	1	362477-12841 PE-13305	MTR	WP600	4
S102744-1-3	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) *Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A* *Conforms to NACE MR0103 2007*	1	362477-12841 PE-13306	MTR	WP600	4
S102744-1-4	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) *Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A* *Conforms to NACE MR0103 2007*	1	362477-12835 PE-13307	MTR	WP600	4

Forming Procedure:
4. Cold Formed

Brinell Equipment: Newage Calibrated Pin
Brinell Hardness Tester

Supplementary Requirements

Item S102744-1-1 had cosmetic surface repairs done in accordance with ASME Sec.VIII, Div.1 and ASME Sec.IX. Repairs were done per approved Weld Procedure WP-2 (as welded) or WP-63 (PWHT). All repaired areas were MT examined.

Normalized Material Identification Marking:
'MT' indicates normalized by the mill per ASME Code Section II, Part A, SA 20, Paragraph 13.1.1.
'GMT' indicates normalized by Edmonton Exchanger per ASME Code Section II, Part A, SA 20, Paragraph 13.1.2.
'GT' indicates normalized by Edmonton Exchanger per ASME Code Section VIII Division 1, UG-85 or ASME Code Section I, PG-77.4.

The item(s) listed above comply with the requirements of ASME Code Section I, PG-80 and ASME Code Section VIII, Division 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, 2013 Edition.

CANADIAN WELDING BUREAU 6725 David R. Quinn Level 3 CERTIFIED WELDING INSPECTOR

CONFORMANCE VERIFIED
TO ASME VIII-DIV 1
CODE: ED 2013 A
DATE: Mar 3/14
BY: MO

CERTIFICATE OF COMPLIANCE

edmonton exchanger
& manufacturing ltd.

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/26 CofC# 47527

Supplementary Examination - Items

Edmonton Exchanger

MPI - Dry MPI

(for -1-1)

Acceptable to ASME Code

X SEC. VIII, DIV.1	_ SEC. IV
_ SEC. VIII, DIV.2	_ B31.1
_ SEC. I	_ B31.3
_ Bevelled Edge	_ Backgouge
_ Completed Welds	
X Surface Repair Area	

EE Procedure: **MPI-001 REV.13**
Material: **SA 516-70 N**
Thickness: **1"**
Parker B300 Yoke
Magnaflux 8A-Red (Dry)
AC Continuous
Light: Natural
Tech: **Tracy Enman (#11226)**
CGSB / SNT: **Level II**
Date: **2014/02/25**
Time: **Day Shift**

edmonton exchanger
& manufacturing ltd.
5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

CERTIFICATE OF COMPLIANCE

MTR List

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/26 CofC# 47527

MTR ID	Pages	Heat#	Thickness	Material Grades
16426	5	362477-12835	1"	SA 516-70 N
		362477-12841	1"	SA 516-70 N
16686	14	365945-84628	1"	SA 516-70 N

Heat#	Material Grades	MTR ID
362477-12835	SA 516-70 N	16426
362477-12841	SA 516-70 N	16426
365945-84628	SA 516-70 N	16686

Heat#	Thickness	Grade	HIC Report Filename

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 396447-11.08.11

A08/ Manufacturer's order/ A03 Certificate No.: 366720-001 Sheet: 1/...

A05 Established inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No. ED10571-J1010-ER REV01

Final receiver: EDMONTON STEEL, EDMON A07.2 No.

B01 Product: HOT ROLLED PLATES

B02/ Steel design. SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-II-A:10
DIL-HUE-2:R31-2010-11-22

16426

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
			INCH						
05	1	0,8750 x	150,00000 x	451,00000	7615	N	362163	84583-01	
05	1	0,8750 x	150,00000 x	451,00000	7615	N	362163	84583-02	
**	2				15230				
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12835-01	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12835-02	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12836-01	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12836-02	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12841-01	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12841-02	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12858-01	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12858-02	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12861-01	
09	1	1,0000 x	120,50000 x	480,00000	7440	N	362477	12861-02	
**	10				74400				
***	12				89630				

B04 Product delivery condition

ITEM NO.: 05,09
N: HT: 1670 GR.F +36 -27 GR.F
SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)
COOLING IN STILL AIR

CONFORMANCE VERIFIED
TO ASME VIII - DIV 1
CODE: ED 2015A
DATE: Mar 5/19
BY: MB

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

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

A01

Date 11.08.11 BM 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 396447-11.08.11

A08/ Manufacturer's order/ A03 Certificate No.: 366720-001 Sheet: 2/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No. ED10571-J1010-ER REV01

Final receiver: EDMONTON STEEL, EDMON A07.2 No.

B01 Product: HOT ROLLED PLATES

B02/ Steel design. SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-II-A:10
DIL-HUE-2:R31-2010-11-22

B06 Marking of the product

ITEM NO.: 05,09
STEEL DESIGNATION **SA516 70 MTLTV SA516 60 MTLTV**
HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

B07-B99 Further information about the product

ITEM NO.: 05,09
THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED (CF. A/SA20 PAR. 5.3)

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C10	C11 KSI RP02	C12 RM	C13	C14-C15 A % L0=8IN
05	362163	84583		K1	Q	RT		48,1	75,3		26
09	362477	12835		K1	Q	RT		46,0	72,8		29
09	362477	12836		K1	Q	RT		46,0	73,1		32
09	362477	12841		K1	Q	RT		47,9	73,4		29
09	362477	12858		K1	Q	RT		46,1	73,1		29
09	362477	12861		K1	Q	RT		47,4	73,4		28

C30-C39 Hardness test

B14 Item. No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35	C31 Individual values			C32 Mean value
05	362163	84583		K1	O	RT	HBW 10/3000	HB	146	146	145	146
09	362477	12835		K1	O	RT	HBW 10/3000	HB	142	145	146	144
09	362477	12836		K1	O	RT	HBW 10/3000	HB	144	143	143	143
09	362477	12841		K1	O	RT	HBW 10/3000	HB	144	144	144	144
09	362477	12858		K1	O	RT	HBW 10/3000	HB	144	144	144	144

A04 Manufacturer's mark: D H

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

Inspector's stamp: AHB

Date 11.08.11 BM 1

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 396447-11.08.11

A08/ Manufacturer's order/. A03 Certificate No.: 366720-001 Sheet: 3/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON A07.1 No.: ED10571-J1010-ER REV01

Final receiver: EDMONTON STEEL, EDMON A07.2 No.:

B01 Product: HOT ROLLED PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-II-A:10
DIL-HUE-2:R31-2010-11-22

C30-C39 Hardness test

B14 Item. No.	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35 C31 Individual values			C32 Mean value
09	362477	12861		K1	O	RT	HBW 10/3000	HB 145	145	146	145

C40-C49 Impact test

B14 Item No:	B07.2 Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45	C42 Individual values AV=FT.LBF			C43 Mean value
05	362163	84583		K1	LV	-51		CHP-V			AV	135	139	113	129
09	362477	12835		K1	LV	-51		CHP-V			AV	106	95	87	96
09	362477	12836		K1	LV	-51		CHP-V			AV	100	37	89	75
09	362477	12841		K1	LV	-51		CHP-V			AV	102	138	100	113
09	362477	12858		K1	LV	-51		CHP-V			AV	75	39	99	71
09	362477	12861		K1	LV	-51		CHP-V			AV	82	104	93	93

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
362163	Y	0,177	0,379	1,18	0,009	0,0006	0,0073	0,019	0,008	0,026	0,030	0,001	0,000	0,001	0,002
362477	Y	0,176	0,361	1,16	0,009	0,0008	0,0066	0,018	0,004	0,022	0,029	0,001	0,000	0,001	0,002

B07.2 Heat	C70	B	CA	AL-T
362163	Y	0,0001	0,0010	0,030
362477	Y	0,0003	0,0012	0,044

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

AHB Inspector's stamp.

Date 11.08.11

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

BM 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991
MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch: 396447-11.08.11

A08/ Manufacturer's order/ A03 Certificate No.: 366720-001

Sheet: 4/...

A05 Established Inspecting body: DH

A06 Purchaser: EDMONTON STEEL, EDMON — A07.1 No.: ED10571-J1010-ER REV01

Final receiver: EDMONTON STEEL, EDMON — A07.2 No.:

B01 Product: HOT ROLLED PLATES

B02/ Steel design.: SA516-70 SA20-S5

B03 Any suppl. requirements: ASME-II-A:10
DIL-HUE-2:R31-2010-11-22

C94 Heat analysis Carbon equivalent / Alloying restrictions

B07.2 Heat									
362163	FO-02=	0,38	FO-51=	0,001	FO-55=	0,08	FO-78=	0,04	FO-91= 6,7
362477	FO-02=	0,38	FO-51=	0,001	FO-55=	0,07	FO-78=	0,03	FO-91= 6,6

C95 Ladle treatment

ITEM NO.: 05,09
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

C95 Further information about ladle treatment

ITEM NO.: 05,09
CALCIUM TREATED

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C01	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
362163	84583	K1	0,175	0,374	1,16	0,008	0,0004	0,0074	0,019	0,009	0,027	0,029	0,000	0,000	0,001	0,002
362477	12858	K1	0,173	0,361	1,15	0,008	0,0010	0,0069	0,018	0,003	0,022	0,028	0,002	0,000	0,000	0,002

B07.2 Heat	B07.1 Test No.	C01	B	CA	AL-T
362163	84583	K1	0,0001	0,0009	0,030
362477	12858	K1	0,0000	0,0011	0,043

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2 Heat	B07.1 Test No.	C01						
362163	84583	K1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08
362477	12858	K1	FO-02=	0,37	FO-51=	0,002	FO-55=	0,07

A04 Manufacturer's mark: D H

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B
Inspector's stamp

A01
AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 11.08.11 BM 1

QM-System: Certification as per ISO 9001

DILLINGER HÜTTE

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

A02	A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)	396447-11.08.11	366720-001	5

A05 Established Inspecting body	A06 Purchaser	A07.1 No.	B01 Product
DH	EDMONTON STEEL, EDMON	ED10571-J1010-ER REV01	HOT ROLLED PLATES
	Final receiver EDMONTON STEEL, EDMON	A07.2 No.	

B02/ Steel design. SA516-70 SA20-S5

B03 Any suppl. requirements ASME-II-A:10
DIL-HUE-2:R31-2010-11-22

C94 Carbon equivalent formula / Alloying restrictions

FO-02 = C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15
FO-51 = V +NB
FO-55 = CU+MO+NI+CR
FO-78 = CR+MO
FO-91 = MN/C

D01 Marking and identification, surface appearance, shape and dimensional properties

ITEM NO.: 05,09
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

MTR APPROVED

A04 D H Manufacturer's mark

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B. BALDAUF
Test House Manager

A H B Inspector's stamp

A01 AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 11.08.11 BM 1

SOLD TO: RUSSEL - EDMONTON
P O BOX 4128
EDMONTON AB T6E 4T2
CANADA

SHIP TO: RUSSEL METALS INC
7016 99TH STREET
EDMONTON AB T6E 4T2
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

61A049177

Ship from:

Nucor Steel Seattle, Inc.
2424 SW Andover
SEATTLE, WA 98106-1100
206-933-2222

Date: 7-Aug-2013
B.L. Number: 454925
Load Number: 285689

Material Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative.

NBMG-08 January 1, 2012

LOT # / HEAT #	DESCRIPTION	PHYSICAL TESTS: YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% / DEF	CHEMICAL TESTS: C / Ni	Mn / Cr	P / Mo	S / V	Si / Cb	Cu / Sn	C.E.
	4x4 DUNNAGE REQUIRED. RECEIVING HRS MONDAY THRU FRIDA												
PO# ->	M61043583												
SE1310235601	Nucor Steel - Seattle Inc	51,924	74,896	24.2%		***	.15	.94	.011	.043	.16	.43	.37
SE13102356	5/8" (.6250) Round	358MPa	516MPa				.13	.10	.020	.006	.006		
	20' A36/44W	51,288	74,032	25.0%									
	CSA G40.21-04 44W/ASTM A36/A36M-08	354MPa	510MPa										
	ASTM A709/A709M-11 GR 36 [250]												
	ASME SA36-2007 EDITION-2011 ADDENDA												
	ASTM A36/A36M-08, A709/709M-11 GR36, ASME SA36-10 Ed '11 Ad.												
PO# ->	M61043583												
SE1310354302	Nucor Steel - Seattle Inc	53,041	74,635	28.1%		***	.17	.86	.011	.034	.18	.28	.36
SE13103543	1/2" (.5000) Round	366MPa	515MPa				.08	.10	.020	.003	.001		
	20' A36/44W	53,418	74,765	27.3%									
	CSA G40.21-04 44W/ASTM A36/A36M-08	368MPa	515MPa										
	ASTM A709/A709M-11 GR 36 [250]												
	ASME SA36-2007 EDITION-2011 ADDENDA												
	ASTM A36/A36M-08, A709/709M-11 GR36, ASME SA36-10 Ed '11 Ad.												

1/2" RD BAR

TO 2013 EDITION
JAN 7, 2014

ADD. ED 2010 & 2011
DATE: Sept 10, 2013

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.
1.) Weld repair was not performed on this material.
2.) Melted and Manufactured in the United States.
3.) Mercury, Radium, or Alpha source materials in any form have not been used in the production of this material.

QUALITY ASSURANCE: Erik Nissen

Nucor Steel 8/8/2013 9:32:31 AM PAGE 1/001 Fax Server

ArcelorMittal Dofasco Inc.
P.O. Box 2460
Hamilton, Ontario
L8N 3J5

TEST REPORT
RAPPORT D'ESSAI

Page 1 of 1

Attention: Dayna Katchma
Email: dkatchma@russelmetals.com
Date: 05/27/2013

Purchase Order/Bon de Commande	Customer/Client	Sales Order/Bon de Commande	Vendor/Vendeur
M51038199-05 MAY	243000	PCS 306204060	
Bill of Lading/Connaissement	Packing Slip/Bordereau de Charge	Vehicle or Carrier/Vehicule ou Transporteur	
636705		TBA/TBA/C	

Sold To/Vendu A
RUSSEL METALS INC.
P.O. BOX 19
WINNIPEG, MB.
R3C 2G3

Ship To/Expedier A
RUSSEL METALS INC.
1359 ST. JAMES ST.
WINNIPEG, MB.
R3H 0K9

05106188

Spec/Norm et Spec.
DOFASCO G40.21 44W/50W FOR CONV TO PLATE
STANDARD THICKNESS TOLERANCE
TEST REPORTS REQUIRED
CODE QID 4427-32

Material Description/Description du Material
PLATE-IN-COIL FOR CONVERSION
STRUCTURAL STEEL
COILS
MILL EDGE PLAIN DRY

.2360 MIN .2480 X 60 X COIL
Weight - 55210 LBS
Test Method
ASTM A370, E1019, E415

MECHANICAL PROPERTIES

TEST UNITS KSI GAUGE LENGTH 2 INCH

HEAT COULEE	SERIAL NUMBER NOMBRE DE SERIE	LIFT NUMBER NOMBRE DE FARDEAU	YIELD STRENGTH RESISTANCE A LA D'ELASTICITE	ULTIMATE STRENGTH RESISTANCE A LA TRACTION	%ELONG ALLONG
115941	F71656/00	5444339	66	74	31.6

1/4" 44 W PLATE

CANADIAN WELDING BUREAU
3725
David P. Guillu
Level 2
GBA WIRA
CERTIFIED WELDING INSPECTOR

REVISED TO 2013 EDITION ADDENDA
JAN 7, 2014

CONFORMANCE VERIFIED
TO ASME VIII - DIV I
CODE: ED 2010 A 2011
DATE: Dec 17/13
BY: MB

HEAT COULEE	C	Mn	P	S	Si	Cu	Ni	Cr	Sn	Mo	Als	Alt	Cb	V	Ti	Ca	N	B	O
115941	.07	.65	.01	.003	.03	.12	.06	.08	.014	.020	.023	.025	.047	.003	.012	.004	.0061	.0002	

ArcelorMittal Dofasco Inc. as per Diane Skupny-MacBride - CMTL Supervisor
The Results Relate Only To The Items Tested
This Report Shall Not Be Reproduced Except In Full Without The Expressed Written Approval of The CMTL Supervisor.

This Contract Is Subject To The Terms And Conditions Of Sale Shown On The Order Acknowledgement.
Ce Contrat est Sujet aux Termes et Conditions de Vente Indiques Sur l'Accuse de Reception de Commande.

Tenaris

INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero	Page / Pagina
01/12/12566	1 / 7

Date / Data: August 11, 2012

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Item: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: 1220215/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2	Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3		Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20	Length / Lunghezza: 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz; 790,78 ft; 241.03 mt; 79910,8 lb; 36247 kg	Nominal Weight / Peso nominale: 94.52 lb/ft / 141.11 Kg/m

DELIVERY NOTES / AVVISI DI SPEDIZIONE

Delivery Notes / Avvisi di spedizione	Delivery Notes / Avvisi di spedizione
Job number: 0031052297 / 000070 Shipping note: 82259465 - 10/08/2012 Address: 2875-64TH AVENUE	Town: T6P 1R EDMONTON Country: Canada

TENSILE TEST / PROVA DI TRAZIONE

Heat N° / Colata N°	Sample N° / Prova N°	Specimen condition / Condizioni della provetta: Ls	Sc	Type / Tipo	Ori	Specimen dimensions / Dimensioni della provetta: Size / Dimensioni	Area	Test temp / Temp. di prova	Y.S. EUL 0.5% Min: 420.00 Max: 718.00	U.T.S. Req. Min: 600.00 Max: 907.00	Y.S./U.T.S. Req. Max.	Elongation / Allungamento: Lo	Min.	Min.	Obt.
						mm	mm2	°C	KSI*10	KSI*10	0.93	cal.	mm	%	%
923078	M2824	B	AM	Ss	L	38.10 x 10.10	384,80	+20	513.00	684.00	0.75	2"	50.0	28.0%	48.0%
929239	M2826	B	AM	Ss	L	38.10 x 10.00	381,00	+20	558.00	718.00	0.77	2"	50.0	28.0%	46.0%

CONFORMANCE VERIFIED TO ASME VIII - DIV 1 CODE: ED 2010 A 2011 DATE: DEC 4, 2013 BY:

AM: As manufactured / Come laminato
B: Body / Corpo
L: Longitudinal / Longitudinale
Lo: Initial length / Lunghezza iniziale
Ls: Location of sample / Ubicazione provetta
Max: Maximum / Massimo
Min: Minimum / Minimo
Obt: Obtained / Ottenuto
Ori: Orientation / Orientamento
Req. Max: Required maximum / Massimo richiesto
Req: Required / Richiesto
Sc: Specimen condition / Condizioni Provetta
Ss: Strip specimen / Rettangolare
U.T.S: Ultimate Tensile Strength / Rottura
Y.S: Yield Strength / Snervamento

REVISED TO 2013 EDITION FEB 24, 2014

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FOR03171

24" STD SA-106 B

VL QA Approved

Tenaris

INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero	Page / Pagina
01/12/12566	2 / 7
Date / Data: August 11, 2012	

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Item: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: 1220215/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2		Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3	Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20	Length / Lunghezza: 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz; 790,78 ft; 241.03 mt; 79910,8 lb; 36247 kg	Nominal Weight / Peso nominale: 94.62 lb/ft; 141.11 Kg/m

CHEMICAL COMPOSITION / COMPOSIZIONE CHIMICA

			Composition % / Composizione %														
			X 100								X 1000					X 10000	
			C	Mn	Si	Ni	Cr	Mo	Cu	F1	CC	P	S	Ti	Nb	V	B
		H Max	25	135	50	40	40	15	40	100	40	30	35	110	110	80	10
		Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--
Heat N° / Colata N°	Sample N° / Prova N°	P Max	25	135	50	40	40	15	40	100	40	30	35	110	110	80	10
		Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--
923078		H	11	103	20	12	12	6	14	47	27.7	13	3	2	1	30	2
923078	M2824	P	10	99	18	11	11	5	15	45	25	10	2	2	2	30	1
929239		H	11	103	20	12	14	6	14	51	28.3	15	3	2	1	50	2
929239	M2826	P	11	98	19	10	14	5	15	49	27.5	12	2	2	2	50	1

CC: C +Fx*(Mn/6+Si/24+Cu/15+Ni/20+(Cr+Mo+V +Nb)/5+5*B)

F1: (V +Ni+Cr+Mo+Cu)

H: Heat / Colata

Max: Maximum / Massimo

Min: Minimum / Minimo

P: Product / Prodotto

THROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPESSORE

Required values / Valori richiesti		Individuals / Individuali: Min: -- Max: 248.0 Var: --			Average / Media: Min: -- Max: -- Var: --					Hardness type: Vickers / Tipo di durezza												Var.
					OD						MW						ID					
Heat N° / Colata N°	Sample N° / Prova N°	Specimen condition / Sc	Quad.	Scale / Scala	1	2	3	4	Dist. (mm)	Avg.	1	2	3	4	Avg.	1	2	3	4	Dist. (mm)	Avg.	
923078	M2824	AM	1	HV10	132.0	131.0	131.0	131.0	-1.5	131.3	129.0	131.0	133.0	134.0	131.8	133.0	131.0	131.0	135.0	1.5	132.5	1.2
929239	M2826	AM	1	HV10	144.0	142.0	143.0	142.0	-1.5	142.8	140.0	146.0	145.0	143.0	143.5	158.0	154.0	151.0	154.0	1.5	154.3	11.5

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FOR03171

Tenaris

INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero:	Page / Pagina
01/12/12566	3 / 7

Date / Data: August 11, 2012

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Item: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: 1220215/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2		Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3	Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20 / .	Length / Lunghezza: . / 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz — 790,73 ft — 79910,8 lb / 241.03 mt — 36247 kg	Nominal Weight / Peso nominale: 94.82 lb/ft / 141.11 Kgrm

THROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPESSORE

AM: As manufactured / Come laminato
Avg: Average / Media
Dist: Distance from outer diameter / Distanza dal diametro esterno
ID: Internal Diameter / Diametro interno
Max: Maximum / Massimo
Min: Minimum / Minimo
MW: Middle Wall / Centro da espessura
OD: Outside Diameter / Diametro esterno
Quad: Quadrant / Quadrante
Sc: Specimen condition / Condizioni Provetta
Var: Variation / Variazione

FLATTENING TEST / PROVA DI SCHIACCIAMENTO

Standard / Norma:

Heat N° / Colata N°	Sample N° / Prova N°	Zone / Zona	Sc	Test Frequency / Frequenza prova	Result / Esito
923078	M2823	E1	AM	pipes of the lot	Good /Buono

Standard / Norma:

Heat N° / Colata N°	Sample N° / Prova N°	Zone / Zona	Sc	Test Frequency / Frequenza prova	Result / Esito
929239	M2825	E1	AM	pipes of the lot	Good /Buono

AM: As manufactured / Come laminato
E1 / E2: Ends of Sampling / Estremità della provetta
Sc: Specimen condition / Condizioni Provetta

HYDROSTATIC TEST / PROVA IDRAULICA

Pressure / Pressione		Time / Tempo	Results / Risultato
Unit / Unità	Value / Valore	Seconds / Secondi	
psi	1,181.1	5	Satisfactory / Soddisfacente

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FOR03171

Tenaris

INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero:	Page / Pagina:
01/12/12566	4 / 7
Date / Data: August 11, 2012	

CANADIAN WELDING BUREAU 6725 David P. Butlin Level 2 CSA W178.2 CERTIFIED WELDING INSPECTOR

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Iten: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: 122021/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2		Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3	Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20	Length / Lunghezza: 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz — 790,76 ft — 79910,8 lb — 241.03 mt — 36247 kg	Nominal Weight / Peso nominale: 94.62 lb/ft — 141.11 Kg/m

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARIE

STANDARD EDITIONS / EDIZIONI NORME	
Standard:CSA Z245.1 Year:2007	Norma:CSA Z245.1 Anno:2007
Standard:ASTM A 106 Year:2010	Norma:ASTM A 106 Anno:2010
Standard:ASME SA 106 Year:2010 Revision:ADD. Revision year:2011A	Norma:ASME SA 106 Anno:2010 Revisione:ADD. Anno della revisione:2011A
Standard:NACE MR0175/ISO 15156 Year:2003	Norma:NACE MR0175/ISO 15156 Anno:2003
Standard:NACE MR0103 Year:2007	Norma:NACE MR0103 Anno:2007

PRODUCT DESCRIPTION NOTES / NOTE DI DESCRIZIONE DEL PRODOTTO	
Note 1 is the full description of the 'Product type'	La nota 1 è la descrizione completa del 'Tipo prodotto'
SEAMLESS HOT FINISHED PIPES FOR HIGH TEMPERATURE USES (WITH EXTRA REQUIREMENTS)	TUBI S.S. DI QUALITA' FINITI A CALDO PER IMPIEGHI AD ALTA TEMPERATURA (FUORI STANDARD)
Note 2 is the full description of the 'Standard or specification'	La nota 2 è la descrizione completa delle 'Norme o specifiche'
ACCORDING TO ASTM A 106 , ASME SA 106, CSA Z245.1, PSP 00373/1 + TEMPLATE LP CANADA REV.6	NORMA ASTM A 106 , ASME SA 106, CSA Z245.1, PSP 00373/1 + TEMPLATE LP CANADA REV.6
Note 3 is the full description of the 'Steel grade'	La nota 3 è la descrizione completa del 'Grado acciaio'
STEEL GR. B ASTM A 106 /SA 106/290 CSA Z245.1 CAT.I SS NDF	ACCIAIO GR. B ASTM A 106 /SA 106/290 CSA Z245.1 CAT.I SS NDE
Note 4 is the full description of the 'Surface'	La nota 4 è la descrizione completa della 'Superficie'
INTERNALLY BARE, EXTERNALLY VARNISHED , WITH QUAKERCOAT 854 CLEAR	GREZZI INTERNAMENTE , OLEATI ESTERNAMENTE CON QUAKERCOAT 854 CLEAR
Note 5 is the full description of the 'Ends'	La nota 5 è la descrizione completa delle 'Estremità'
BEVEL API 5L 44 ED / ISO 3183-07 CT4:8825	SMUSSATI SECONDO API 5L 44 ED / ISO 3183-07 CT4:8825

Supplementary Information / Informazioni supplementari	
AFTER INSPECTION OPERATION, THE MATERIAL HAS NOT A RESIDUAL MAGNETISM GREATER THAN 20 GAUSS	DOPO LE OPERAZIONI DI CONTROLLO, IL MATERIALE NON PRESENTA UN MAGNETISMO RESIDUO SUPERIORE A 20 GAUSS
HARDNESS HRC 22 MAX, ACCORDING TO NACE MR-01-75/ISO 15156	DUREZZA HRC 22 MAX, IN ACCORDO ALLA SPEC. NACE MR-01-75/ISO 15156

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Tenaris

INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero:	Page / Pagina:
01/12/12566	5 / 7
Date / Data: August 11, 2012	

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Item: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma Posizione: 1220215/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2		Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3	Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20 / .	Length / Lunghezza: . / 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz — 790,78 ft — 79910,8 lb / 241.03 mt — 36247 kg	Nominal Weight / Peso nominale: 94.62 lb/ft / 141.11 Kg/m

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARIE

Supplementary Information / Informazioni supplementari	
HARDNESS HBW 225 MAX, ACCORDING TO NACE MR-01-03	DURE77A HBW 225 MAX, IN ACCORDO ALLA SPEC. NACE MR-01-03
ALL PIPES HAVE BEEN TESTED BY ELECTROMAGNETIC TEST FOR LONGITUDINAL OUTSIDE DEFECTS (NOTCH 10%), WITH SATISFACTORY RESULT	I TUBI SONO STATI SOTTOPOSTI AL CONTROLLO ELETTROMAGNETICO PER LA RICERCA DI DIFETTI LONGITUDINALI ESTERNI (TARATURA 10%), CON ESITO SODDISFACENTE
ALL PIPES HAVE BEEN TESTED FOR LAMINATION DETECTION BY U.T., WITH SATISFACTORY RESULT	I TUBI SONO STATI CONTROLLATI PER LA RICERCA DI DOPPI SPESSORI CON ULTRASUONI, CON ESITO POSITIVO
THE ENDS (FOR 150 mm) HAVE BEEN TESTED BY DRY MAGNETIC PARTICLES INT./EXT., WITH SATISFACTORY RESULT	LE ESTREMITA' DEI TUBI SONO STATE CONTROLLATE (PER 150 mm) CON PARTICELLE MAGNETICHE SECCHE, CON ESITO SODDISFACENTE
BEVELS HAVE BEEN TESTED BY DRY MAGNETIC PARTICLES, WITH SATISFACTORY RESULT	TUTTI I TUBI SONO STATI CONTROLLATI CON U.S. PER LA RICERCA DI DIFETTI TRASVERSALI/LONGITUDINALI INTERNI/ESTERNI
ALL PIPES HAVE BEEN TESTED BY ULTRASONIC INSPECTION FOR TRANSVERSAL/LONGITUDINAL INSIDE/OUTSIDE DEFECTS (NOTCH 10.0 %), WITH SATISFACTORY RESULT	(TARATURA 10,0 %), CON ESITO SODDISFACENTE
THE UNINSPECTED ENDS HAVE BEEN EXAMINED BY MANUAL U.T. FOR DEFECTS, WALL THICKNESS, LAMINATION, LONGITUDINAL/TRANSVERSAL INSIDE/OUTSIDE, WITH SATISFACTORY RESULT	LE ESTREMITA' NON CONTROLLATE IN AUTOMATICO SONO STATE CONTROLLATE CON U.S. MANUALI PER RICERCA DIFETTI LONG./TRASV. INTERNI/ESTERNI CONTROLLO SPESSORI, DOPPI SPESSORI, CON ESITO SODDISFACENTE
SEAMLESS HOT FINISHED PIPES	TUBI SENZA SALDATURA FINITI A CALDO
VISUAL AND DIMENSIONAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT	IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE
STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACE TO A FINE GRAIN PRACTICE	L'ACCIAIO E' DI TIPO CALMATO, A GRANO FINE, PRODOTTO AL FORNO ELETTRICO
THE PRODUCT SUPPLIED IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER.	IL MATERIALE FORNITO E' IN ACCORDO AI REQUISITI DELL'ORDINE
MANUFACTURED BY TENARIS DALMINE	FABBRICATO DA TENARIS DALMINE
NO WELD REPAIR, MERCURY AND RADIATION FREE	NON RIPARATO MEDIANTE SALDATURA, ESENTE DA MERCURIO E RADIAZIONI
Tenaris IT identification number for MTC: 56+hlUg>	Numero Identificativo Tenaris IT per MTC: 56+hlUg>

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Tenaris

INSPECTION CERTIFICATE
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Number / Numero:	Page / Pagina:
01/12/12566	6 / 7

Date / Data: August 11, 2012

CANADIAN WELDING BUREAU 6725 David P. Butlin Level 2 CSA W178.2 CERTIFIED WELDING INSPECTOR

Customer / Cliente: **VAN LEEUWEN-EDMONTON**		Customer's Order Item / Rifer. Ordine Cliente - Item: **45001523**	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: **1220215/001**
Manufacture Process / Processo di fabbricazione		Product Type / Tipo di prodotto: **See note nr.1** **Vedi nota nr.1**		Surface / Superficie: **See note nr.4** **Vedi nota nr.4**
Standard or Specification / Norme o specifica: **See note nr.2** **Vedi nota nr.2**			Steel Grade / Grado dell'Acciaio: **See note nr.3** **Vedi nota nr.3**	Ends / Estremità: **See note nr.5** **Vedi nota nr.5**
Dimensions / Dimensioni: **ø 24.000" O.D. x .375" W.T.** **ø 610mm O.D. x 9.53mm W.T.**	Schedule / Schedula: 20	Length / Lunghezza: **10800 mm ÷ 11800 mm**	Quantity / Quantità: **21Pcs/Pz** **790,78 ft** **241.03 mt**	**79910,8 lb** **36247 kg**	Nominal Weight / Peso nominale: **94.82 lb/ft** **141.11 Kg/m**

MARKING / MARCATURA

Marking / Marcatura	
STENCILING 1220215/001 _COLATA 407,3 X 16,2 ACC. 190 _T ASTM ASME ASA 106 CSA Z245.1-07 B/290 CAT I SS S 24 X 0,375 OD 1%94,71 PSI:1181/NDE _DATHEAT: _COLATA FT _FT LBS _LBS NR. _NR MADE IN ITALY LEGEND _COLATA = Heat Number _T = TENARIS Logo _FT = Pipe/Tube Length in feets _LBS = Pipe/Tube Weight in pounds _NR = Pipe/Tube Identifier	VERNICIATURA 1220215/001 _COLATA 407,3 X 16,2 ACC. 190 _T ASTM ASME ASA 106 CSA Z245.1-07 B/290 CAT I SS S 24 X 0,375 OD 1%94,71 PSI:1181/NDE _DATHEAT. _COLATA FT _FT LBS _LBS NR. _NR MADE IN ITALY LEGENDA _COLATA = Numero di colata _T = Logo TENARIS _FT = Lunghezza del tubo in piedi _LBS = Peso del tubo in libbre _NR = Identificativo numerico del tubo

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Tenaris

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(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero:	Page / Pagina:
01/12/12566	7 / 7
Date / Data: August 11, 2012	

CANADIAN WELDING BUREAU 6725 David P. Bullin Level 2 CERTIFIED WELDING INSPECTOR

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Item: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Work Order N° / Conferma-Posizione: 1220215/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2		Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3	Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20	Length / Lunghezza: 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz; 790,78 ft; 241.03 mt; 79910,8 lb; 36247 kg	Nominal Weight / Peso nominale: 94.82 lb/ft; 141.11 Kg/m

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

Si certifica che il prodotto descritto è stato prodotto, provato, testato e controllato in conformità ai requisiti dell'ordine del cliente. Questo certificato non è una dichiarazione d'origine e non può essere usato come tale.

CUSTOMER - THIRD PARTY	TENARIS QUALITY DEPARTMENT SIGNATURE	
INSPECTION COMPANY / COMPAGNIA D'ISPEZIONE	QUALITY CERTIFICATION DEPT. / UFFICIO CERTIFICAZIONE QUALITA' BONAITA Paolo	CHIEF OF QUALITY CERTIFICATION DEPT. / RESPONSABILE DELL'UFFICIO CERTIFICAZIONE QUALITA' RAVANELLI Pietro

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FOR03171

Tenaris

HARDNESS CERTIFICATE
CERTIFICATO DI DUREZZA

Number / Numero:	Page / Pagina:
01/12/12566	1 / 4
Date / Data: August 11, 2012	

CANADIAN WELDING BUREAU — CERTIFIED WELDING INSPECTOR — 6725 — David P. Butlin — Level 2 — CSA W178.2

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Iten: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: 1220215/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2		Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3	Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20	Length / Lunghezza: 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz — 790,78 ft — 79910,8 lb — 241.03 mt — 36247 kg	Nominal Weight / Peso nominale: 94.82 lb/ft — 141.11 Kg/m

DELIVERY NOTES / AVVISI DI SPEDIZIONE

Delivery Notes / Avvisi di spedizione	Delivery Notes / Avvisi di spedizione
Job number: 0031052297 / 000070 Shipping note: 82259466 - 10/08/2012 Address: 2875-64TH AVENUE	Town: T6P 1R EDMONTON Country: Canada

THROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPESSORE

	Required values / Valori richiesti	Individuals / Individuali Min: –	Max: 248.0	Var: –	Average / Media Min: –	Max: –	Var: –	Hardness type vickers / Tipo di durezza														Var.
								OD						MW					ID					
Heat N° / Colata N°	Sample N° / Prova N°	Specimen condition / Sc	Quad.	Scale / Scala	1	2	3	4	Dist. (mm)	Avg.	1	2	3	4	Avg.	1	2	3	4	Dist. (mm)	Avg.	
923078	M2824	AM	1	HV10	132.0	131.0	131.0	131.0	-1.5	131.3	129.0	131.0	133.0	134.0	131.8	133.0	131.0	131.0	135.0	1.5	132.5	1.2
929239	M2826	AM	1	HV10	144.0	142.0	143.0	142.0	-1.5	142.8	140.0	146.0	145.0	143.0	143.5	158.0	154.0	151.0	154.0	1.5	154.3	11.5

AM: As manufactured / Come laminato
Avg: Average / Media
Dist: Distance from outer diameter / Distanza dal diametro esterno
ID: Internal Diameter / Diametro Interno
Max: Maximum / Massimo
Min: Minimum / Minimo
MW: Middle Wall / Centro da espessura
OD: Outside Diameter / Diametro esterno
Quad: Quadrant / Quadrante
Sc: Specimen condition / Condizioni Provetta
Var: Variation / Variazione

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARIE

PRODUCT DESCRIPTION NOTES / NOTE DI DESCRIZIONE DEL PRODOTTO

Note 1 is the full description of the 'Product type' / La nota 1 è la descrizione completa del 'Tipo prodotto'

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Tenaris

HARDNESS CERTIFICATE
CERTIFICATO DI DUREZZA

Number / Numero:	Page / Pagina:
01/12/12566	2 / 4
Date / Data: August 11, 2012	

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Item: 45001523	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: 1220215/001
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: See note nr.1 / Vedi nota nr.1		Surface / Superficie: See note nr.4 / Vedi nota nr.4
Standard or Specification / Norme o specifica: See note nr.2 / Vedi nota nr.2		Steel Grade / Grado dell'Acciaio: See note nr.3 / Vedi nota nr.3	Ends / Estremità: See note nr.5 / Vedi nota nr.5
Dimensions / Dimensioni: ø 24.000" O.D. x .375" W.T. / ø 610mm O.D. x 9.53mm W.T.	Schedule / Schedula: 20	Length / Lunghezza: 10800 mm ÷ 11800 mm	Quantity / Quantità: 21Pcs/Pz; 790,78 ft; 241.03 mt; 79910,8 lb; 36247 kg	Nominal Weight / Peso nominale: 94.82 lb/ft / 141.11 Kg/m

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARIE

PRODUCT DESCRIPTION NOTES NOTE DI DESCRIZIONE DEL PRODOTTO	
SEAMLESS HOT FINISHED PIPES FOR HIGH TEMPERATURE USES (WITH EXTRA REQUIREMENTS)	TUBI S.S. DI QUALITA' FINITI A CALDO PER IMPIEGHI AD ALTA TEMPERATURA (FUORI STANDARD)
Note 2 is the full description of the 'Standard or specification'	La nota 2 è la descrizione completa delle 'Norme o specifiche'
ACCORDING TO ASTM A 106 , ASME SA 106, CSA Z245.1, PSP 00373/1 + TEMPLATE LP CANADA REV.6	NORMA ASTM A 106 , ASME SA 106, CSA Z245.1, PSP 00373/1 + TEMPLATE LP CANADA REV.6
Note 3 is the full description of the 'Steel grade'	La nota 3 è la descrizione completa del 'Grado acciaio'
STEEL GR. B ASTM A 106 /SA 106/290 CSA Z245.1 CAT.I SS NDE	ACCIAIO GR. B ASTM A 106 /SA 106/290 CSA Z245.1 CAT.I SS NDE
Note 4 is the full description of the 'Surface'	La nota 4 è la descrizione completa della 'Superficie'
INTERNALLY BARE, EXTERNALLY VARNISHED , WITH QUAKERCOAT 854 CLEAR	GREZZI INTERNAMENTE , OLEATI ESTERNAMENTE CON QUAKERCOAT 854 CLEAR
Note 5 is the full description of the 'Ends'	La nota 5 è la descrizione completa delle 'Estremità'
BEVEL API 5L 44 ED / ISO 3183-07 CT4:8825	SMUSSATI SECONDO API 5L 44 ED / ISO 3183-07 CT4:8825

Supplementary Information Informazioni supplementari	
SEAMLESS HOT FINISHED PIPES	TUBI SENZA SALDATURA FINITI A CALDO
VISUAL AND DIMENSIONAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT	IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE
STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACE TO A FINE GRAIN PRACTICE	L'ACCIAIO E' DI TIPO CALMATO, A GRANO FINE, PRODOTTO AL FORNO ELETTRICO
THE PRODUCT SUPPLIED IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER.	IL MATERIALE FORNITO E' IN ACCORDO AI REQUISITI DELL'ORDINE.
MANUFACTURED BY TENARIS DALMINE	FABBRICATO DA TENARIS DALMINE
NO WELD REPAIR, MERCURY AND RADIATION FREE	NON RIPARATO MEDIANTE SALDATURA, ESENTE DA MERCURIO E RADIAZIONI
Tenaris IT identification number for MTC: 56+hl^#	Numero identificativo Tenaris IT per MTC: 56+hl^#

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Tenaris

HARDNESS CERTIFICATE
CERTIFICATO DI DUREZZA

Number / Numero:	Page / Pagina:
01/12/12566	3 / 4
Date / Data: August 11, 2012	

CANADIAN WELDING BUREAU CERTIFIED WELDING INSPECTOR 6725 David P. Butlin Level 2 CSA W178.2

Customer / Cliente: VAN LEEUWEN-EDMONTON	Customer's Order Item / Rifer. Ordine Cliente - Iten	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione:
	45001523		1220215/001

Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto:	Surface / Superficie
	See note nr.1 Vedi nota nr.1	See note nr.4 Vedi nota nr.4

Standard or Specification / Norme o specifica:	Steel Grade / Grado dell'Acciaio:	Ends / Estremità:
See note nr.2 Vedi nota nr.2	See note nr.3 Vedi nota nr.3	See note nr.5 Vedi nota nr.5

Dimensions / Dimensioni:	Schedule / Scheduta:	Length / Lunghezza:	Quantity / Quantità: 21Pcs/Pz		Nominal Weight / Peso nominale:
ø 24.000" O.D. x .375" W.T. ø 610mm O.D. x 9.53mm W.T.	20	10800 mm ÷ 11800 mm	790,78 ft 241.03 mt	79910,8 lb 36247 kg	94.82 lb/ft 141.11 Kg/m

MARKING / MARCATURA

Marking Marcatura	
STENCILING 1220215/001 _COLATA 407,3 X 16,2 ACC. 190 _T ASTM ASME ASA 106 CSA Z245.1-07 B/290 CAT I SS S 24 X 0,375 OD 1%94,71 PSI:1181/NDE _DATHEAT: _COLATA FT _FT LBS _LBS NR. _NR MADE IN ITALY LEGEND _COLATA = Heat Number _T = TENARIS Logo _FT = Pipe/Tube Length in feets _LBS = Pipe/Tube Weight in pounds _NR = Pipe/Tube Identifier	VERNICIATURA 1220215/001 _COLATA 407,3 X 16,2 ACC. 190 _T ASTM ASME ASA 106 CSA Z245.1-07 B/290 CAT I SS S 24 X 0,375 OD 1%94,71 PSI:1181/NDE _DATHEAT: _COLATA FT _FT LBS _LBS NR. _NR MADE IN ITALY LEGENDA _COLATA = Numero di colata _T = . ogo TENARIS _FT = Lunghezza del tubo in piedi _LBS = Peso del tubo in libbre _NR = Identificativo numerico del tubo

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Tenaris

HARDNESS CERTIFICATE
CERTIFICATO DI DUREZZA

Number / Numero:	Page / Pagina:
01/12/12566	4 / 4

Date / Data: **August 11, 2012**

CANADIAN WELDING BUREAU — CERTIFIED WELDING INSPECTOR — 6725 David P. Butlin Level 2 CSA W178.2

Customer / Cliente: **VAN LEEUWEN-EDMONTON**	Customer's Order Item / Rifer. Ordino Cliente - Item: **45001523**	Customer's Reference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: **1220215/001**
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: **See note nr.1** **Vedi nota nr.1**		Surface / Superficie: **See note nr.4** **Vedi nota nr.4**
Standard or Specification / Norme o specifica: **See note nr.2** **Vedi nota nr.2**		Steel Grade / Grado dell'Acciaio: **See note nr.3** **Vedi nota nr.3**	Ends / Estremità: **See note nr.5** **Vedi nota nr.5**
Dimensions / Dimensioni: **ø 24.000" O.D. x .375" W.T.** **ø 610mm O.D. x 9.53mm W.T.**	Schedule / Schedule: **20**	Length / Lunghezza: **10800 mm ÷ 11800 mm**	Quantity / Quantità: **21Pcs/Pz** **790,78 ft** **241.03 mt** **79910,8 lb** **36247 kg**	Nominal Weight / Peso nominale: **94.82 lb/ft** **141.11 Kg/m**

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

Si certifica che il prodotto descritto è stato prodotto, provato, testato e controllato in conformità ai requisiti dell'ordine del cliente. Questo certificato non è una dichiarazione d'origine e non può essere usato come tale.

CUSTOMER - THIRD PARTY	TENARIS QUALITY DEPARTMENT SIGNATURE	
	INSPECTION COMPANY COMPAGNIA D'ISPEZIONE	QUALITY CERTIFICATION DEPT UFFICIO CERTIFICAZIONE QUALITA' BONAITA Paolo	CHIEF OF QUALITY CERTIFICATION DEPT RESPONSABILE DELL'UFFICIO CERTIFICAZIONE QUALITA' RAVANELLI Pietro

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2" XXH (.436) SMLS PIPE
A106 GR B B.E (S.R.L.)
(APPROVED MANUFACTURER)

Heat Number: 575122
Trans Am Piping Products Ltd. - Rev'd By: SB
Shipment/Seq No.: S13 - 1006 11

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13666

BENTELER
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

Trans Am Piping Products Ltd.
1711 - 66th Avenue
EDMONTON AB T6P 1Y9
CANADA

Dokument-Nr.: **Document No.:** No. du document:	65-726634/001/P	Prüf-Nr.: **Inspection No.:** No. du certificat:	Blatt: 1 / 5 **Page:** Page:
Kunden-Bestell-Nr.: **Purchase Order No.:** No. de commande du client:	BST 12-5609 / Trans Am CI-12-522	Hersteller: **Manufacturer:** Producteur:	Warmrohrwerk Dinslaken (DIN EN ISO 9001, ISO/TS-16949 CERTIFIED BY TUEV NORD CERT) (PED 97/23/EC CERTIFIED BY TUEV NORD SYSTEMS)
Benteler Auftrags-Nr.: **Benteler Order No.:** No. de commande Benteler:	1579940	Herstellerzeichen: **Manufacturer's brand:** Marque du producteur:	
Versandanzeigen-Nr.: **Dispatch Note No.:** No. d'avis d'expédition:	6577380	Stempel des Abnahmebeauftragten: **Stamp of the inspection representative:** Poinçon du contrôleur:	WA
Produkt: **Product:** Produit:	NAHTLOSE STAHLROHRE SEAMLESS STEEL TUBES TUBES D' ACIER SANS SOUDURE	Stahlerschmelzungsverfahren: **Steelmaking process:** Procédé d'élaboration de l'acier:	ELEKTROSTAHL ELECTRIC FURNACE FOUR ELECTRIQUE

Lieferbedingungen: **Terms of delivery:** Conditions de livraison:	ASME SA-106, ASME Section II Part A Edition 2010 Addenda 2011a, S6, ASTM-A 106-2011, S6, API Specification 5L Forty-Fourth Edition, October 2007, ISO 3183:2007, PSL 1, incl. ADDENDUM 3, CSA Standard Z245.1-07 Category I, Sour Service, ANSI/NACE MR0175/ISO 15156-1: 2009, ANSI/NACE MR0175/ISO 15156-2: 2009
Maße - Toleranzen: **Dimensions-tolerances:** Dimensions-tolérances:	ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2010 Addenda 2011a, ASTM-A 530-2004a
Stahlsorte: **Steel grade:** Nuance d'acier:	GRADE 290, GRADE B, GRADE X 42
Lieferzustand: **Delivery condition:** État de livraison:	Hot rolled
Produktkennzeichnung: **Product marking:** Marquage du produit:	FS: BENTELER Z.245.1-07 - ISO 3183 - A 106-S6 - SA-106-S6 Spec 5L-0151 API SIGN1112 PSL1 B/X42/290 SS HEAT-NO. TEST PRESSURE NDE DIMENSIONS TUBES-LENGTH FEET WA GERMANY P.O. CI-12-522

CONFORMANCE VERIFIED
TO ASME VIII - DIV 1
CODE: ED 2013 A
DATE: 6-16-14
BY: TMB

AEZ = Ätztintenbeschriftung, Etching Ink marking, Gravure à l'encre . FK = Farbkennzeichnung, colour marking, marquage par couleur . FS = Farbschablonierung, paint stenciling, marquage par peinture FSD = Farbstrahldrucker, Colour jet printer, Imprimante à jet d'encre de couleur . LK = Laserkennzeichnung, Laser marking, Marquage laser . PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette PS = Prägestempel, die stamp, marquage par poinçonnage . TS = Tintenstrahlkennzeichnung, Ink jet spray marking, Imprimante à jet d'encre

Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur feet	Gewicht Weight Poids lbs	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve PSI	s	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlängen Multiple lengths Longueurs multiples
		feet							
0003	99	2" NPS * Sched. 80 20 FT - 22 FT	2164,70	10977	572720	3000	5		

2" XXH SA-106-B # 575122

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13666

BENTELER Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-726634/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

0005	20	4" NPS * Sched. 160 20 FT - 22 FT	436,68	9938	575122	3000	S	
0006	59	2" NPS * XXS 20 FT - 22 FT	1288,39	11720	575122	3000	S	←
0007	29	3" NPS * XXS 20 FT - 22 FT	624,61	11821	575122	3000	S	

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0003	572720	0,140	0,240	0,75	0,009	0,001	0,08	0,03	0,05	0,08	0,003	0,014	0,002	0,0001
0005	575122	0,130	0,190	0,74	0,012	0,001	0,09	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0006	575122	0,130	0,190	0,74	0,012	0,001	0,09	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0007	575122	0,130	0,190	0,74	0,012	0,001	0,09	0,03	0,06	0,11	0,002	0,013	0,002	0,0001

1. Formel: CE IIW= C+ (Mn/6)+ ((Cr+ Mo+ V)/5)+ ((Cu+ Ni)/15)< = 0,40 %
2. Formel: CEV= C+ F* ((Mn/6)+ (Si/24)+ (Cu/15)+ (Ni/20)+ ((Cr+ Mo+ V+ Nb)/5) + (5* B)) < = 0,40
3. Formel: Mn/C> = 3/1
4. Formel: Cr+ Cu+ Mo+ Ni+ V< = 1,00 %

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule
0003	572720	0,296	0,283	5,357	0,243
0005	575122	0,289	0,265	5,692	0,292
0006	575122	0,289	0,265	5,692	0,292
0007	575122	0,289	0,265	5,692	0,292

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0003	572720	0,140	0,240	0,73	0,008	0,001	0,07	0,03	0,05	0,08	0,003	0,014	0,002	0,0001
0003	572720	0,140	0,240	0,74	0,009	0,001	0,08	0,03	0,05	0,08	0,003	0,014	0,002	0,0001

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13666

BENTELER Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: / **Document No.:** / No. du document: 65-726634/001/P

Prüf-Nr.: / **Inspection No.:** / No. du certificat:

Produktanalyse [%] / **Product analysis [%]** / Analyse sur produit [%]

Pos. / Item / Poste	Schmelzen-Nr. / Heat No. / No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0005	575122	0,130	0,190	0,74	0,011	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0005	575122	0,140	0,190	0,75	0,010	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0006	575122	0,130	0,180	0,72	0,011	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0006	575122	0,130	0,190	0,74	0,010	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0007	575122	0,130	0,190	0,73	0,011	0,001	0,08	0,03	0,05	0,11	0,002	0,013	0,002	0,0001
0007	575122	0,140	0,190	0,74	0,010	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001

1. Formel: CE IIW= C+ (Mn/6)+ ((Cr+ Mo+ V)/5)+ ((Cu+ Ni)/15)< = 0,40 %
2. Formel: CEV= C+ F* ((Mn/6)+ (Si/24)+ (Cu/15)+ (Ni/20)+ ((Cr+ Mo+ V+ Nb)/5) + (5* B)) < = 0,40
3. Formel: Mn/C> = 3/1
4. Formel: Cr+ Cu+ Mo+ Ni+ V< = 1.00 %

Formelergebnisse / **Formula results** / Résultats des formules

Pos. / Item / Poste	Schmelzen-Nr / Heat No. / No. de coulée	1. Formel / 1. Formula / 1. Formule	2. Formel / 2. Formula / 2. Formule	3. Formel / 3. Formula / 3. Formule	4. Formel / 4. Formula / 4. Formule
0003	572720	0,290	0,279	5,214	0,233
0003	572720	0,294	0,282	5,285	0,243
0005	575122	0,287	0,264	5,692	0,282
0005	575122	0,298	0,283	5,357	0,282
0006	575122	0,283	0,261	5,538	0,282
0006	575122	0,286	0,263	5,692	0,272
0007	575122	0,285	0,262	5,615	0,282
0007	575122	0,297	0,282	5,285	0,282

Prüfergebnisse / **Test results** / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch:
The tubes have been submitted to a leak tightness test by:
Les tubes ont passé un contrôle d'étanchéité par:

Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test pressure/Time-record — PASSED

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13666

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

BENTELER
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-726634/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt. 4 / 5
Page:
Page:

Die Rohre wurden zerstörungsfrei geprüft: ET-test: acc. to CSA Z245.1; for imperfections: drilled hole: 3,20 mm PASSED
The tubes are non destructive tested:
Les tubes ont passé un essai non destructif:

Augensichtkontrolle:	PASSED	Biegeversuch:	PASSED	Maßkontrolle:	PASSED
Visual inspection:		**Bending test:**		**Dimensions examination:**	
Examen visuel:		Essai de cintrage:		Vérification des dimensions:	
		Pos. / Item / Poste: 0003, 0006			

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probennahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'echantillonage etait realise aux longueurs multiples.

Zugversuch längs Streifenprobe / Tensile test longitudinal Strip test specimen / Essai de traction longitudinale Bande decoupee sur tube

Pos. / Item / Poste	Proben-Nr. / Specimen No. / No. de l'éprouvette	Schmelzen-Nr. / Heat No. / No. de coulée	Probenabmessung / Specimen dimensions / Dimensions de l'éprouv.	Streckgrenze / Yield strength / Limite élastique	Zugfestigkeit / Tensile strength / Résistance à la traction	Dehnung / Elongation / Allongement	Einschnürung / Area reduction / Coefficient de striction
Anforderungen / Requirements / Exigences			mm	ReH PSI MIN 42061	Rm PSI 60191-90649	A2" % MIN 30	1. Formel / 1. Formula / 1. Formule
0003	000001	572720	19,00 X 6,00	53084	70488	34	
0005	000001	575122	25,40 X 13,55	48443	65847	42	
0006	000001	575122	19,00 X 11,10	48878	66282	42	
0007	000001	575122	25,40 X 15,90	46992	65557	42	

Härteprüfung / Hardness test / Essai de dureté

Pos. / Item / Poste	Proben-Nr. / Specimen No. / No. de l'éprouv.	Schmelzen-Nr. / Heat No. / No. de coulée	Härte / Hardness / Dureté				
Anforderungen / Requirements / Exigences			HRC	HB MAX 200	HV	HRB	HBW
0003	000001	572720		139			
0005	000001	575122		138			
0006	000001	575122		139			
0007	000001	575122		137			

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BENTELER
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: / **Document No.:** / No. du document: 65-726634/001/P

Prüf-Nr.: / **Inspection No.:** / No. du certificat:

Blatt: 5 / 5 **Page:** / Page:

Restmagnetismus / **Demagnetize** / Démagnétiser

demagnetized tubes; 1 measurement per 4 hours on both tube ends Two readings 180°apart around the circumference. Average value max 3.0 Millitesla (24 A/cm), individual value max 3.5 Millitesla (28 A/cm)

Vermerk / **Remark** / Remarque

Pos. / **Item** / Poste: 0003, 0006, 0006, 0006, 0006
NACE Standard: Hardness acc. to ANSI/NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103, Region 3, in accordance to Figure 1 and Appendix A.2, ANSI/NACE MR0175/ISO 15156-2:2009; Certificate remarks: The Material is Aluminium deoxydized and inclusion shape controlled with Calcium-Silicon treatment, It is the end user's responsibility to ensure that all environmental requirements as well as the requirements regarding engineering, construction and operation of facilities are fulfilled in the country of use. Fit for purpose of the parts as well as homologation is not the scope of this contract., This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-07 meets the requirement for micro hardness of max. 248 HV 500 gf., No weld repair has been carried out; Bend test: mandrel diameter 12D; Bending angle: 90 °

Pos. / **Item** / Poste: 0005, 0007, 0007
NACE Standard: Hardness acc. to ANSI/NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103, Region 3, in accordance to Figure 1 and Appendix A.2, ANSI/NACE MR0175/ISO 15156-2:2009; Certificate remarks: The Material is Aluminium deoxydized and inclusion shape controlled with Calcium-Silicon treatment, It is the end user's responsibility to ensure that all environmental requirements as well as the requirements regarding engineering, construction and operation of facilities are fulfilled in the country of use. Fit for purpose of the parts as well as homologation is not the scope of this contract., This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-07 meets the requirement for micro hardness of max. 248 HV 500 gf., No weld repair has been carried out

Grain size: acc. to ASTM-E 112; Grain size and finer: 6

Verkäufer(in) / **Salesman/ woman in charge** / Personne chargée : Mrs Schöneweis, Tel.: 05254/81-4234, Fax: 4289

Dinslaken, 04.12.2012, TEL.: 02064.623-5370 FAX: 02064.623-5390

Abnahmebeauftragter
Inspection representative
Contrôleur
DR. BASEL KEITA / Thei

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen.Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification.This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande.Ce document a été établi par traitement électronique de l'information et est valide sans signature.

CANADIAN WELDING BUREAU CERTIFIED WELDING INSPECTOR 6725 David P. Butlin Level 2

Tenaris

INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Número:	Page / Página:
659146	1 / 6

Date / Día: May 08, 2012

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE	Customer's Order Item / Orden Cliente - Item: PO 45001464-00010	Customer's Reference / Ref. del Cliente: N/A	Manufacturer's Works Order N° / Confirmación de Venta: 55190/07
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED	Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE /EXT VARNISHED
Standard or Specification / Normas o Especificaciones: ASTM/ASME A/SA106+CSA Z245.1-07 CAT.I SSPSP00373/1+NACE MR0175/0103+IPRO LP-006		Steel Grade / Grado de acero: B/290 CAT I SS	Ends / Extremos: BEVELLED AT 30 DEG. ASTM

Dimensions / Dimensiones:	Schedule / Cédula:	Length / Longitud:	Quantity / Cantidad: 140 Pcs/pz		Nominal Weight / Peso Nominal:
2 3/8 X 0.344 INCH	160		3056.4 FT	23303 LB	7.46 LB/FT
60.30 X 8.74 MM		S.R. (SP)	931.59 MTS	10570 KG	11.11 KG/M

TENSILE TEST / ENSAYO DE TENSIÓN

Heat N° / Colada N°	Sample N° / Muestra N°	Zone / Zona	Pipe N° / Tubo N°	Specimen condition / Condición de la probeta				Specimen dimensions / Dimensiones de la probeta		Test temp / Temp. ensayo	Y.S. Eu 0.50 % Min: 290 Max: --	U.T.S. Req. Min: 415 Max: 625	Y.S./U.T.S. Req. Max. 0.93	Elongation / Alargamiento Lo 2"		
				Ls	Sc	Type / Tipo	Ori	Size / Tamaño	Area / Sección						Min.	Obt.
								mm	mm2	°C	mpa	mpa		mm	%	%
20444	1851266	M	1	B	AM	Ss	L	19.24 x 8.90	175,67	RT	371	525	0.71	50,8	24.0	31.5

AM: As manufactured / Según proceso de fabricación
B: Body / Cuerpo
L: Longiturdinal / Longitudinal
Lo: Initial length / Longitud inicial
Ls: Location of sample / Ubicación de la muestra
M: Middle / Medio
Max: Maximum / Máximo
Min: Minimum / Mínimo
Obt: Obtained / Obtenido
Ori: Orientation / Orientación
Req. Max: Required maximum / Máximo requerido
Req: Required / Requerido
RT: Room temperature / Temperatura ambiente
Sc: Specimen condition / Condición de la probeta
Ss: Strip specimen / Muestra rectangular
U.T.S: Ultimate tensile strength / Resistencia
Y.S: Yield strength / Fluencia

CHEMICAL COMPOSITION / COMPOSICIÓN QUÍMICA

Heat N° / Colada N°	Sample N° / Muestra N°	Lot N° / Lote N°	Pipe N° / Tubo N°		Composition % / Composición %																														
					X 100						X 1000												X 10000							X 100		X 10000		
					C	Mn	Si	Cr	Mo	Al sol	S	P	Ni	V	Cu	Al	Sn	As	Nb	Ti	Pb	Sb	Co	Zr	Bi	Ca	B	N	Mg	W	Ce.1	Ce.2	F.1		
				H Max	25	135	50	40	15	--	10	30	400	80	400	--	--	--	110	110	--	--	--	--	--	--	10	--	--	--	42	40	99		
				Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
				P Max	25	135	50	40	15	--	10	30	400	80	400	--	--	--	110	110	--	--	--	--	--	--	10	--	--	--	42	40	99		
				Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
20444				H	16	108	24	6	1	3	1	12	36	29	100	28	6	4	1	5	1	1	7	20	22	17	2	83	2	20	37	36	23.5		

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law

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FOR03171

2" SCH 160 SA-106-B

REVISED TO 2013 EDITION

JAN 9, 2014

CONFORMANCE VERIFIED
TO ASME VIII - DIV 1
CODE: ED 2010 A 2011
DATE: Sept 12/12
BY: MB.

VL QA Approved

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

Tenaris

INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Número:	Page / Página:
659146	2 / 6

Date / Día: May 08, 2012

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE	Customer's Order Item / Orden Cliente - Item: PO 45001464-00010	Customer's Reference / Ref. del Cliente: N/A	Manufacturer's Works Order N° / Confirmación de Venta: 55190/07
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED	Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE /EXT VARNISHED
Standard or Specification / Normas o Especificaciones: ASTM/ASME A/SA106+CSA Z245.1-07 CAT.I SSPSP00373/1+NACE MR0175/0103+IPRO LP-006		Steel Grade / Grado de acero: B/290 CAT I SS	Ends / Extremos: BEVELLED AT 30 DEG. ASTM

Dimensions / Dimensiones:	Schedule / Cédula:	Length / Longitud:	Quantity / Cantidad. 140 Pcs/pz		Nominal Weight / Peso Nominal:
2 3/ 8 X 0.344 INCH	160		3056.4 FT	23303 LB	7.46 LB/FT
60.30 X 8.74 MM		S.R. (SP)	931.59 MTS	10570 KG	11.11 KG/M

CHEMICAL COMPOSITION / COMPOSICIÓN QUÍMICA

					Composition % / Composición %																													
					X 100						X 1000													X 10000							X 100		X 1000
					C	Mn	Si	Cr	Mo	Al sol	S	P	Ni	V	Cu	Al	Sn	As	Nb	Ti	Pb	Sb	Co	Zr	Bi	Ca	B	N	Mg	W	Ce.1	Ce.2	F.1
				H Max	25	135	50	40	15	--	10	30	400	80	400	--	--	--	110	110	--	--	--	--	--	--	10	--	--	--	42	40	99
				Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heat N°	Sample N°	Lot N°	Pipe N°	P Max	25	135	50	40	15	--	10	30	400	80	400	--	--	--	110	110	--	--	--	--	--	--	10	--	--	--	42	40	99
Colada N°	Muestra N°	Lote N°	Tubo N°	Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20444	1851266	0	1	P	16	109	25	6	2	--	3	12	36	27	100	32	9	5	2	5	2	2	7	30	22	20	2	82	3	20	37	37	24.3
20444	1851267	0	2	P	16	110	24	6	2	--	4	14	35	27	100	30	8	5	3	4	1	2	7	20	22	19	2	85	2	20	37	37	24.2

Ce.1: C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15 (5°B))

Ce.2: C+F((MN/6)+(SI/24)+(CU/15)+(NI/20)+(CR+MO+V+NB)/5+ F.1: CR+CU+MO+NI+V

H: Heat / Colada P: Product / Producto

Max: Maximum / Maximo Min: Minimum / Mínimo

THROUGH WALL HARDNESS / DUREZA EN EL ESPESOR

	Required values / Valores requeridos		Individuals / Individuales			Average / Promedio				Hardness type HV10 / Tipo de dureza													
			Min: --	Max: --	Var: --	Min: --	Max: 248.0	Var: --															
Heat N°	Sample N°	Zone	Lot N°	Pipe N°	Specimen condition	Quad.	OD					MW					ID					Var.
Colada N°	Muestra N°	Zona	Lote N°	Tubo N°	Ls		1	2	3	4	Avg.	1	2	3	4	Avg.	1	2	3	4	Avg.	
20444	1851266	M	0	1	B	1	144.0	150.0	147.0	151.0	148.0	150.0	151.0	151.0	152.0	151.0	149.0	153.0	146.0	145.0	148.3	3.0

Avg: Average / Promedio Ls: Location of sample / Ubicación de la muestra Min: Minimum / Mínimo Quad: Quadrant / Cuadrante

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INSPECTION CERTIFICATE

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Number / Número:	Page / Página:
659146	3 / 6
Date / Día: May 08, 2012	

CANADIAN WELDING BUREAU CERTIFIED WELDING INSPECTOR 6725 David P. Bullin Level 2 CSA W178.2

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE	Customer's Order Item / Orden Cliente - Item: PO 45001484-00010	Customer's Reference / Ref. del Cliente: N/A	Manufacturer's Works Order N° / Confirmación de Venta: 55190/07
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED	Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE /EXT VARNISHED
Standard or Specification / Normas o Especificaciones: ASTM/ASME A/SA106+CSA Z245.1-07 CAT.I SSPSP00373/1+NACE MR0175/0103+IPRO LP-006		Steel Grade / Grado de acero: B/290 CAT I SS	Ends / Extremos: BEVELLED AT 30 DEG. ASTM

Dimensions / Dimensiones:	Schedule / Cédula:	Length / Longitud:	Quantity / Cantidad: 140 Pcs/pz		Nominal Weight / Peso Nominal:
2 3/8 X 0.344 INCH	160		3056.4 FT	23303 LB	7.46 LB/FT
60.30 X 8.74 MM		S.R. (SP)	931.59 MTS	10570 KG	11.11 KG/M

THROUGH WALL HARDNESS / DUREZA EN EL ESPESOR

B: Body / Cuerpo — M: Middle / Medio — MW: Middle wall / Centro — Var: Variation / Variación

ID: Internal diameter / Diámetro interno — Max: Maximum / Máximo — OD: Outside diameter / Diámetro externo

BENDING / DOBLEZ

Standard / Norma:

Heat N° Colada N°	Sample N° Muestra N°	Ls	Result Resultado
20444	1851266	B	Good / Bueno

B: Body / Cuerpo — Ls: Location of sample / Ubicación de la muestra

HYDROSTATIC TEST / PRUEBA HIDRAULICA

Pressure / Presión		Time / Tiempo	Results / Resultado
Unit / Unidad.	Value / Valor	Seconds / Segundos	
PSI	3,000	5	Satisfactory / Satisfactorio

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Number / Número:	Page / Página:
659146	4 / 6
Date / Día: May 08, 2012	

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Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED	Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE /EXT VARNISHED
Standard or Specification / Normas o Especificaciones: ASTM/ASME A/SA106+CSA Z245.1-07 CAT.I SSPSP00373/1+NACE MR0175/0103+IPRO LP-006		Steel Grade / Grado de acero: B/290 CAT I SS	Ends / Extremos: BEVELLED AT 30 DEG. ASTM

Dimensions / Dimensiones:	Schedule / Cédula:	Length / Longitud:	Quantity / Cantidad: 140 Pcs/pz		Nominal Weight / Peso Nominal:
2 3/8 X 0.344 INCH	160		3056.4 FT	23303 LB	7.46 LB/FT
60.30 X 8.74 MM		S.R. (SP)	931.59 MTS	10570 KG	11.11 KG/M

SPECIAL REQUIREMENTS / REQUERIMIENTOS ESPECIALES

Condition / Condición	Description / Descripción
Pipe residual magnetism / Magnetismo remanente de tubo	30 GAUSS
End protectors / Protector de extremo	NON LIFTABLE CLOSED PLASTIC PROTECTOR FOR FLAT / BEVELED PIPE. SUPPLIER METALCENTRO.

SUPPLEMENTARY INFORMATION / INFORMACIÓN SUPLEMENTARIA

Supplementary Information Información Suplementaria	
"MANUFACTURED BY TENARIS SIDERCA"	"FABRICADO POR TENARIS SIDERCA"
"ACIERAGE PROCESS"	"PROCESO DE ACERACIÓN"
STEEL MAKING PROCESS: E.A.F./L.F. AND CONTINUOUS CASTING - FULL ALUMINIUM KILLED AND FINE GRAIN PRACTICE.	FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELECTRICO Y COLADO CONTINUO - ACERO CALMADO AL ALUMIN PRACTICA DE GRANO FINO
-THE LF PRACTICE INCLUDES ARGON RINSE AND A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL.	-LA PRÁCTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE AGITACION POR ARGON Y UNA INYECCIÓN FINAL DE U VARILLA DE SILICIURO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROINCLUSIONES.
-MATERIAL FREE FROM MERCURY CONTAMINATION.	-MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO.
"ROLLING PROCESS"	"PROCESO DE LAMINACIÓN"
-MANUFACTURING PROCESS : SEAMLESS HOT ROLLED.	-FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.
"CONTROLS"	"CONTROLES"
-VISUAL AND DIMENSIONAL INSPECTION : SATISFACTORY.	-CONTROL VISUAL Y DIMENSIONAL: SATISFACTORIO.
"MATERIAL CONDITIONS"	"CONDICIONES DEL MATERIAL"
-NOT REPAIRED BY WELDING.	-NO REPARADO POR SOLDADURA.
"STANDARDS"	"NORMAS"
-EDITION OF REGULATION: ASTM A 106/A 106M-2011	-EDICIÓN DE LA NORMA: ASTM A 106/A 106M-2011
-EDITION REGULATION: ASME SA 106/ 2010	-EDICIÓN DE LA NORMA: ASME SA 106/ 2010
-EDITION OF REGULATION: NACE MR-01-03 EDITION 2010	- EDICIÓN DE LA NORMA: NACE MR-01-03 EDICION 2010

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Tenaris

INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Número:	Page / Página:
659146	5 / 6
Date / Día: May 08, 2012	

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE	Customer's Order Item / Orden Cliente - Item: PO 45001464-00010	Customer's Reference / Ref. del Cliente: N/A	Manufacturer's Works Order N° / Confirmación de Venta: 55190/07

Manufacturing Process / Proceso de Manufactura:	Product Type / Tipo de Producto:	Surface / Superficie
SEAMLESS HOT ROLLED	CARBON STEEL PIPE-HIGH TEMPERATURE SERV.	INT BARE /EXT VARNISHED

Standard or Specification / Normas o Especificaciones:	Steel Grade / Grado de acero:	Ends / Extremos:
ASTM/ASME A/SA106+CSA Z245.1-07 CAT.I SSPSP00373/1+NACE MR0175/0103+IPRO LP-006	B/290 CAT I SS	BEVELLED AT 30 DEG. ASTM

Dimensions / Dimensiones:	Schedule / Cédula:	Length / Longitud:	Quantity / Cantidad: 140 Pcs/pz		Nominal Weight / Peso Nominal:
2 3/ 8 X 0.344 INCH	160		3056.4 FT	23303 LB	7.46 LB/FT
60.30 X 8.74 MM		S.R. (SP)	931.59 MTS	10570 KG	11.11 KG/M

SUPPLEMENTARY INFORMATION / INFORMACION SUPLEMENTARIA

Supplementary Information Información Suplementaria	
-EDITION OF REGULATION: NACE MR 01-75 - ISO 15156-2 : 2009 -EDITION OF REGULATION : CSA Z245 : 2007	-EDICIÓN DE LA NORMA: NACE MR 01-75 - ISO 15156-2 : 2009 EDICIÓN DE LA NORMA : CSAZ245: 2007

Additional Information Informacion Adicional	Additional Information Informacion Adicional
HEAT TREATMENT: AS ROLLED. NON DESTRUCTIVE TEST: SATISFACTORY.	INSPECTION METHODS: U.T. LONG. (EXT) NOTCH NOTCH 5 % + U.T. LONG. (INT) NOTCH 10 % + U.T. TRANSV. (INT/EXT) NOTCH 10 % + M.P.I. LONG./TRANSV. (EXT./INT.) ENDS + W.M.P.I ON BEVELS.

MARKING / MARCACION

Marking Marcación	Marking Marcación
- & = Monograma / Monogram SIDERCA - NNNNN = Número de tubo / Nbr of pipe - LLL = Longitud / length - PPP = Peso / Weight	- @ = Monograma / Monogram API - MM.YY = Mes / Año Month / Year - Y/T = Año / Trimestre Year / Quarter - HNXXXXX = Colada / Heat

Stencilling (Pipe) Estarcido (Tubo)	Stencilling (Pipe) Estarcido (Tubo)
TENARIS SD MM.YY ASTM/ASME A/SA106 60,3 8,74 11,11 2 SCH160 B/290 CAT I SS SEAMLESS 207KPAX100 NDE	CSA Z245.1-07 45001464 MADE IN ARGENTINA HNXXXXX NNNNN LLLL PPPPP

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

Este certificado se emite mediante sistema computarizado y es validado con firma electrónica. El certificado original posee impreso el logo Tenaris color verde. En caso de que el poseedor del certificado entregue una copia, deberá garantizar la conformidad con el original haciéndose responsable por cualquier uso ilegal o indebido. Cualquier alteración y/o falsificación estará sujeta a la ley.

Tenaris

INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

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Date / Dia: May 08, 2012

CANADIAN WELDING BUREAU
6725
David P. Butlin
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CERTIFIED WELDING INSPECTOR

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE	Customer's Order Item / Orden Cliente - Item: PO 45001464-00010	Customer's Reference / Ref. del Cliente: N/A	Manufacturer's Works Order N° / Confirmación de Venta: 55190/07
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED	Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE /EXT VARNISHED
Standard or Specification / Normas o Especificaciones: ASTM/ASME A/SA106+CSA Z245.1-07 CAT.I SSPSP00373/1+NACE MR0175/0103+IPRO LP-006		Steel Grade / Grado de acero: B/290 CAT I SS	Ends / Extremos: BEVELLED AT 30 DEG. ASTM
Dimensions / Dimensiones: 2 3/8 X 0.344 INCH 60.30 X 8.74 MM	Schedule / Cédula: 160	Length / Longitud: S.R. (SP)	Quantity / Cantidad. 140 Pcs/pz 3056.4 FT 23303 LB 931.59 MTS 10570 KG	Nominal Weight / Peso Nominal: 7.46 LB/FT 11.11 KG/M

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

Por el presente certificamos que el material aquí descrito ha sido fabricado, muestreado, ensayado e inspeccionado de acuerdo a los requisitos de su orden de compra. Este certificado no es, ni puede ser usado, como una declaración de origen

CUSTOMER . THIRD PARTY	TENARIS QUALITY DEPARTMENT SIGNATURE	
INSPECTION COMPANY COMPAÑIA DE INSPECCIÓN Company Name: N/A Employee Name: N/A	QUALITY CERTIFICATION DEPT. DEPTO. DE CERTIFICACIÓN DE CALIDAD REALE Jorge	CHIEF OF QUALITY CERTIFICATION DEPT RESPONSABLE DEL DEPTO DE CERTIFICACIÓN DE CALIDAD AYERBE Eduardo

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law

Este certificado se emite mediante sistema computarizado y es válido con firma electrónica. El certificado original posee impreso el logo Tenaris color verde En caso de que el poseedor del certificado entregue una copia, deberá garantizar la conformidad con el original haciéndose responsable por cualquier uso ilegal o indebido. Cualquier alteración y/o falsificación estará sujeta a la ley.

FCI FORGED COMPONENTS INC. 24/7
14527 Smith Rd.
Rumble, Texas 77396
TEL: (281) 441-4088
FAX: (281) 441-8899

REPORT NUMBER 77919
DATE 8/15/2013
FCI ORDER NUMBER 61433
Processed I.A.W. EN10204 3.1
I.A.W. NACE MR0175

CUSTOMER ORDER NUMBER 14423
SOLD/SHIPPED TO PENFABCO LTD
5715 56 AVE NW
EDMONTON AB T6B 3G3 CANADA

Item	Quantity	Description
1	145	3" X 600 X 9" LG RF LWN

HEAT NUMBER: G859
MATERIAL TYPE: SA105N
I.A.W. ASME 2010 ED 11AD

CHEMICAL ANALYSIS

C	.200
Mn	.920
P	.0290
S	.0170
Si	.230
Cr	.085
Mo	.010
V	.002
Cu	.056
Ni	.047
Cb	.001
C E	.38

PHYSICAL PROPERTIES

Yield PSI	40,030
Tensile PSI	73,099
Elongation	37
Reduction of Area	64
Hardness	149/159 HBW

CANADIAN WELDING BUREAU CERTIFIED WELDING INSPECTION 6725 David P. Butlin Level 2 CSA W178.2

CONFORMANCE Verified
TO ASME VIII - DIV 1
CODE: ED 2010 A 2011
DATE: Aug 19/13
BY:

Heat Treatment	NORMALIZED
Temperature	1670 °F
Time at Temperature	1/2 HR/IN THK MIN
Cooling Media	AIR

REVISED TO 2013 Edition
2014-7/14

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by Melissa Hernandez
Name: Melissa Hernandez Title: QA Representative

Date printed: 8/15/2013 10:52:32 AM

Heat Number: TL10005612
Trans Am Piping Products Ltd. - Rev'd By: APS
P.O./Seq #: EL-14 - 5432 1

2" CL 600 W/N FLANGE RF XXH BORE A105N

TRILAD Flanges and Fittings, Inc.

30 WOODSLEE AVE.
PARIS, ON, CANADA N3L 3V1
(PHONE) 519-442-6520
(FAX) 519-442-7658
www.tri-lad.com

ISO 9001:2008

CERTIFIED MATERIAL TEST REPORT

Certificate No. 13167320

EN 10204 3.1

Date of Report 5/13/2013

Customer
ALLIED EDMONTON - CAD$
172 TURBO DRIVE
SHERWOOD PARK AB T8H 2J6

Customer Order No. 399436

Quantity 2

Tri-Lad Order No. 573464

Line No. 1

Specification: SA105N SECT II 2010 EDITION 2011A ADDENDA	Heat Treatment: NORMALISED
Item Description: 2 600 WN XXS RF A105N (2003)	Temperature: Init 1634 F 890 C
Shop Order/Trace No.	Time: N=1.15HRS / Lot Definition:
Lot No.	
Heat Code: TL10005612	
C.E. .42 / Melt Practice:	

Chemical Composition

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V
Heat Product	.22	.92	.029	.010	.21	.07	.06	.13	.06	.008
Heat Product										
Heat Product										

Mechanical Properties

Yield	Tensile	Elongation	Reduction of Area	Hardness	Impact Test Temperature	Impact Values	Shear Fracture
Ksi 55 Mpa 382	Ksi 84 Mpa 576	30 %	58 %	BHN 163 BHN 167			
Tensile Specimen: STD RD							

Lateral Expansion	Impact Type	Impact Orientation	Starting Material	Impact Specimen

Notes

CONFORMANCE VERIFIED
TO ASME VIII-DIV 1
CODE ED. 2013 A
DATE 9 JAN 14/14
BY: MB

NACE MR0103 LATEST ED.
NACE MR0175/ISO15156-09

Material is in accordance with the applicable Standard to which it is ordered including: ASME Sect II, ASME B16.5, B16.9, B16.36, B16.47, CSA, MSS, AWWA C-207.
NO WELD REPAIR
Material conforms to both ASTM (A) and ASME (SA) applicable specifications.
We hereby certify that all information presented on this CMTR conforms to the above specification.
We hereby certify the results to be a true copy of the records of the company.

Les Mansfield, CET
Quality Assurance Manager

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

2" CL 600 W/N FLANGE RF
SCH 160 BORE A105N

PO# 14274 Item# 3
Heat Num.e.r.: 12/30773
Trans Am Piping Products Ltd. - Rev'd By: SB
Shipment/Seq #: S12 - 1580

METALFAR
PRODOTTI INDUSTRIALI S.P.A.
STAMPAGGIO A CALDO DI ACCIAI COMUNI - LEGATI E INOSSIDABILI

SEDE AMMINISTRATIVA E STABILIMENTO:
23861 CESANA BRIANZA (LC) - Italy
Via G. Parini, 28
Tel. +39 031.655441
Fax +39 031.655149
quality.mf@farmas.com

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

Certif. N. 3308	Del/Dated 02.07.2012	Fattura / Invoice N.	Del/Dated
DDT / Del Note N.	Del/Dated	Ns.Ord. / Our ref. N.	Del/Dated

TRANS AM PIPING PRODUCTS LTD
9335 ENDEAVOR DRIVE S.E.
T3S 0A1 CALGARY, ALBERTA CA

SALA PROVE E ANALISI MATERIALI / MATERIAL TEST DEPARTMENT

Pag. 1 - 1

COD COL. / HEAT CODE	COLATA / HEAT	POS. / ITEM	VS.ORDINE / YOUR REFERENCE	Q.TA' / Q.TY	DESCRIZIONE / DESCRIPTION	DIM.IN ACC. A / DIM. ACCORDANCE TO	VISIVO E DIMENS. / VIS. & DIMENS.
	12/30773			260,00	W/N 600 RF 2" 160 A105N	ASME/ANSI B16.5 -2009	SATISFACTORY

MATERIALE / MATERIAL	C%	Si%	Mn%	S%	P%	Cr%	Ni%	Mo%	Ti%	Cu%	V%	Nb%	N%	Al%	C.E.%
ASTM A105 (LADLE)	0,200	0,230	0,950	0,008	0,011	0,090	0,050	0,010	0,016	0,100	0,002	0,002	0,000	0,025	0,389

PROVETTA / TEST SPECIMEN SEZ. mm2 / SECT. mm2	LUNG. mm / LENGHT mm	FORMA / SHAPE 1=○ 2=□	SNERVAMENTO YIELD POINT N/mm2 >=0,2%	ROTTURA TENSILE STRENGHT N/mm2 >=	ALLUNGAMENTO ELONGATION %>=	CONTRAZIONE REDUCTION OF AREA %>=	DUREZZA HARDNESS HBW	RESILIENZA / IMPACT TEST - JOULE/cm2 TIPO / TYPE 10x10mm	°C	1	2	3	SNERVAMENTO YIELD POINT N/mm2 >=1,0%	N.RIF. OUR REF.
126,60	50,80	1	345,0	523,0	31,0	59,0	159,0 - 163,0	KV	20	83	87	85	0,0	

MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO
ASTM/ASME A 105/SA 105 M - 11 ASME CODE SECT. II, PART A, ED. 2010
CSA Z245.12 GRADE 248 CAT.I

TRATTAMENTO TERMICO / HEAT TREATMENT
NORMALIZED AT 920 C - COOLED IN STILL AIR

FORNO / FURNACE
ELECTRIC FURNACE

ORIGINE / ORIGIN
EUROPE

COD. COL. / HEAT CODE	COLATA / HEAT	POS. / ITEM	VS.ORDINE / YOUR REFERENCE	Q.TA' / Q.TY	DESCRIZIONE / DESCRIPTION	DIM.IN ACC. A / DIM. ACCORDANCE TO	VISIVO E DIMENS. / VIS. & DIMENS.
	11/79881			222,00	W/N 600 RF 3" XS A105N	ASME/ANSI B16.5 -2009	SATISFACTORY

MATERIALE / MATERIAL	C%	Si%	Mn%	S%	P%	Cr%	Ni%	Mo%	Ti%	Cu%	V%	Nb%	N%	Al%	C.E.%
ASTM A105 (LADLE)	0,180	0,250	1,080	0,006	0,011	0,070	0,040	0,010	0,020	0,110	0,002	0,002	0,000	0,031	0,363

PROVETTA / TEST SPECIMEN SEZ. mm2 / SECT. mm2	LUNG. mm / LENGHT mm	FORMA / SHAPE 1=○ 2=□	SNERVAMENTO YIELD POINT N/mm2 >=0,2%	ROTTURA TENSILE STRENGHT N/mm2 >=	ALLUNGAMENTO ELONGATION %>=	CONTRAZIONE REDUCTION OF AREA %>=	DUREZZA HARDNESS HBW	RESILIENZA / IMPACT TEST - JOULE/cm2 TIPO / TYPE 10x10mm	°C	1	2	3	SNERVAMENTO YIELD POINT N/mm2 >=1,0%	N.RIF. OUR REF.
126,60	50,80	1	335,0	539,0	31,5	59,0	163,0 - 165,0	KV	20	85	85	89	0,0	

MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO
ASTM/ASME A 105/SA 105 M - 11 ASME CODE SECT. II, PART A, ED. 2010
CSA Z245.12 GRADE 248 CAT.I

TRATTAMENTO TERMICO / HEAT TREATMENT
NORMALIZED AT 920 C - COOLED IN STILL AIR

FORNO / FURNACE
ELECTRIC FURNACE

ORIGINE / ORIGIN
EUROPE

2" SCH160 600#

...TED TO 2013 EDITION

Feb 28/14

CANADIAN WELDING BUREAU
CERTIFICATION INSPECTOR
6725
David P. Butlin
Level 2
CSA W178.2

CONFORMANCE VERIFIED
TO ASME VIII - DIV 1
CODE: ED 2010 A 2011
DATE: May 29/13
BY: MB

NOTE / NOTES	UFFICIO CONTROLLO QUALITA' / QUALITY CONTROL DEPARTEMENT	ENTE UFFICIALE DI COLLAUDO / INSPECTION AUTHORITY	MARCHIO PRODUZIONE / MANUFACTURER'S SYMBOL
MANUFACTURING IN ACCORDANCE WITH ORDER AND SPECIFICATION MATERIAL IN ACCORDANCE WITH NACE MR-0175/2009 ISO 15156-2009 MATERIAL IN ACCORDANCE WITH NACE MR-0103/2010	S. Corti		MFF

4303855

CERTIFIED MILL TEST REPORT

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

LOG NO. 326153 PAGE 1

BONNEY FORGE
P.O. BOX 330 • 1400 CROGHAN PIKE • MOUNT UNION, PA 17066-0330
(814) 542-2516 • (800) 345-7646 • FAX (814) 542-4906
www.bonneyforge.com

CUSTOMER

CUSTOMER'S Order No.:

SHIPPED TO:

Date 09/16/08

Bonney Order No. 2000039173

REVISED TO 2012 EDITION
Mar 3, 2014

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION AND CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, HEAT TREATMENT
			SA/A105N
051	93	4246 7526849	1 6000 A105N COUP T

C .200 MN 1.000 P .008 S .018 SI .210
NI .040 CU .160 CO .003 CR .060 MO .020
V .000 AL .021 NB .014
CE(LONG FORMULA) = 0.40
T/S 77875 Y/S 54875 EL 32.90 RA 65.85
BRINELL HARDNESS1: 132 HARDNESS2: 132

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
3. CERTIFYING ASTM A105-05 / ASME SA105-04 EDITION.
4. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.
5. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
6. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2007 AND NACE MR0175/ISO 15156.

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

CONFORMANCE VERIFIED
TO ASME VIII-DIV 1
CODE: ED 2007 A 2008
DATE: APR 08/09
BY:

REVISED TO 2010 2011 ADDENDA
May 27, 2012

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

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

BY
Cris Boozel
QUALITY PROCESS MANAGER

CMTR: REV 1

3/4" 6000# Full Cplg

MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN 10204 :2004 3.1

柏維鐵工股份有限公司
BOTH-WELL STEEL FITTINGS CO., LTD.
高雄市仁武區烏林里仁心路303號
NO.303, REN-SIN ROAD, REN-WU DISTRICT, KAOHSIUNG CITY, TAIWAN R.O.C.(81460)
TEL: +886-7-3711536, 3710497, 3720260 FAX: +886-7-3713864, 3713882
Web site: http://www.bothwell.com.tw e-mail: box@bothwell.com.tw

CUSTOMER :
CERT. NO : 132292 L/C NO :
ORDER NO : 7006995 DATE : 07/24/2013
INVOICE NO : BW01310205025 PAGE : 13 ORIGIN : TAIWAN

ITEM	BW HT.CD.	RAW MATERIAL HEAT NO.	DESCRIPTION	QUANTITY	SPECIFICATION FOR MATERIAL	SPECIFICATION FOR FITTING	INSPECTION SURFACE	INSPECTION DIM.
041	4138	336211	TEE 3" 3000# NPT	32 PC	ASTM A105N -12	ASME B16.11 - 2011	GOOD	GOOD
042	3843A	X12401602	TEE 4" 3000# NPT	45 PC	ASME SA105N -A08			
047	3982	330757	FULL CPLG 3/4" 6000# NPT	270 PC				
048	3885	330361	FULL CPLG 1-1/2" 6000# NPT	20 PC				
049	3972A	X12201340	CROSS 2" 6000# NPT	3 PC				

CHEMICAL COMPOSITION (%)

ITEM	BW HT.CD.	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)	N	Al	Ti	Zr	CE	MATERIAL SUPPLIER
Min		-	0.10	0.60	-	-	-	-	-	-	-	-	-				-	
Max		0.35	0.35	1.05	0.035	0.040	0.40	0.30	0.40	0.12	0.08	-	-				0.43	
041	4138	0.19	0.20	0.85	0.015	0.008	0.12	0.07	0.06	0.01	0.002	0.001	-				0.360	
042	3843A	0.200	0.240	0.980	0.020	0.008	0.040	0.037	0.031	0.000	0.000	0.000	-				0.375	
047	3982	0.19	0.20	0.82	0.013	0.011	0.12	0.05	0.04	0.01	0.002	0.002	-				0.350	
048	3885	0.21	0.20	0.84	0.011	0.011	0.09	0.06	0.04	0.01	0.002	0.001	-				0.373	
049	3972A	0.19	0.23	0.95	0.013	0.020	0.04	0.03	0.03	0.00	0.00	0.00	-				0.359	

MECHANICAL PROPERTIES

ITEM	BW HT.CD.	T. S. (KSI)	Y. S. (KSI)	EL. (%)	R of A (%)	Hardness (HBW)(AVG)	Charpy Impact °F / 0 °C MIN./AVG. / (Joule) 1	2	3	AVG.	HEAT TREATMENT
Min		70	36	22	30	-					NORMALIZED
Max		-	-	-	-	187					
041	4138	77.0	53.3	34.8	65.5	143 145					
042	3843A	72.9	50.2	31.2	65.1	143 145					900℃ A.C.
047	3982	74.2	49.7	36.2	65.3	140 142					
048	3885	76.5	54.3	35.0	61.4	142 144					
049	3972A	74.9	54.1	36.4	64.5	142 145					

ADDITIONAL TEST/REMARKS
CONFORMS TO NACE MR0175-09 /MR0103-10
STEEL MAKING PROCESS : ELECTRIC FURNACE
CONFORMS TO NACE ISO15156-3 2009

WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE TERMS OF THE ORDER CONTRACT.

C. C. Huang
Q.C.MANAGER
CHEN CHI HUANG

Y. Y. Chang
INSPECTOR
YUAN YAO CHANG

BW-D0839 REV: 2

CANADIAN WELDING BUREAU CERTIFIED WELDING INSPECTOR David P. Butlin 6725 Level 2 CSA W178.2

CONFORMANCE VERIFIED TO ASME VIII - DIV 1
CODE: ED 2013 A
DATE: 8/14
BY:

1/2" 6000# Cplg

MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN 10204 :2004 3.1

柏維鋼工股份有限公司
BOTH-WELL STEEL FITTINGS CO., LTD.
NO.303, REN-SIN ROAD, REN-WU DISTRICT, KAOHSIUNG CITY, TAIWAN R.O.C.(81460)
TEL: +886-7-3711536, 3710497, 3720250 FAX: +886-7-3713864, 3713882
Web site: http://www.bothwell.com.tw e-mail: box@bothwell.com.tw

CUSTOMER :
CERT. NO : 130149 L/C NO :
ORDER NO : 7006405 DATE : 01/21/2013
INVOICE NO : BW01210111137 PAGE : 20 ORIGIN : TAIWAN

ITEM	BW HT.CD.	RAW MATERIAL HEAT NO.	DESCRIPTION	QUANTITY	SPECIFICATION FOR MATERIAL	SPECIFICATION FOR FITTING	INSPECTION SURFACE	INSPECTION DIM.
070	3963	331453	90D ELBOW 1-1/2" 6000# NPT	10 PC	ASTM A105 -11	ASME B16.11 - 2011	OOOD	OOOD
071	3973A	X12201338	90D ELBOW 3" 6000# NPT	5 PC				
072	3933	330045	FULL CPLG 1/2" 6000# NPT	180 PC				
073	3913	330758	FULL CPLG 3/4" 6000# NPT	70 PC				
074	3624A	11109292	CROSS 2" 6000# NPT	80 PC				

CHEMICAL COMPOSITION (%)

ITEM	BW HT.CD.	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)	N	Al	Ti	Zr	CE	MATERIAL SUPPLIER
Min		-	0.10	0.60	-	-	-	-	-	-	-	-	-				-	
Max		0.35	0.35	1.05	0.035	0.040	0.40	0.30	0.40	0.12	0.08	-	-				0.47	
070	3963	0.20	0.20	0.84	0.019	0.008	0.15	0.09	0.05	0.01	0.002	0.001	-				0.374	
071	3973A	0.20	0.23	0.95	0.015	0.010	0.03	0.03	0.03	0.00	0.00	0.000	-				0.368	
072	3933	0.21	0.20	0.84	0.017	0.011	0.13	0.11	0.05	0.02	0.002	0.002	-				0.388	
073	3913	0.19	0.21	0.85	0.013	0.009	0.13	0.05	0.05	0.01	0.002	0.002	-				0.356	
074	3624A	0.200	0.200	0.990	0.023	0.025	0.040	0.035	0.039	0.000	0.000	0.000	-				0.377	

MECHANICAL PROPERTIES

ITEM	BW HT.CD.	T. S. (KSI)	Y. S. (KSI)	EL. (%)	R of A (%)	Hardness (HBW)(AVG)	Charpy Impact °F / 0 °C MIN./AVG. / (Joule) 1	2	3	AVG.	HEAT TREATMENT
Min		70	36	22	30	-					NORMALIZED
Max		-	-	-	-	187					
070	3963	78.1	54.1	35.2	65.5	143 141					860℃ A.C.
071	3973A	75.7	54.1	35.0	68.2	141 143					
072	3933	75.7	51.2	36.0	63.5	142 145					
073	3913	74.4	47.6	37.2	63.5	141 143					
074	3624A	71.3	48.3	35.2	65.5	140 142					

ADDITIONAL TEST / REMARKS
CONFORMS TO NACE MR0175-09 /MR0103-10
STEEL MAKING PROCESS : ELECTRIC FURNACE
CONFORMS TO NACE ISO15156-3-2009

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE TERMS OF THE ORDER CONTRACT.

C. C. Huang
Q.C. MANAGER
CHEN CHI HUANG

Y. Y. Chang
INSPECTOR
YUAN YAO CHANG

㊣ BW-D0839 REV: 2

CONFORMANCE VERIFIED
TO ASME VIII-DIV 1
CODE: ED 2013 A
DATE: Jan 8/14
BY: MB

2" SCH 160 LR 90 BW ELBOW A234-WPB

Heat Number : 13E00064
Trans Am Piping Products Ltd. - Rev'd By: SB
Shipment/Seq #: S13 - 1474 60

Purchaser : TRANS-AM PIPING PRODUCTS LTD.

INSPECTION CERTIFICATE

TO EN10204 3.1

Thai Benkan Co., Ltd.
58 Soi Wattrunai, Bangkru, Prapradaeng,
Samutprakarn, 10130 Thailand.

E-No.	Purchase Order No.	Job No.	D M Y	Certificate No.
MD-047	CI-12-648		02/07/2013	T- 2013180103

No.		MFG. No.	Specification for Material Made from Seamless Pipe ASTM A234-11/ASME SA234-10 Gr.WPB CSA Z245.1 Gr.241 CAT.I ISO 3183 PSL2 2007	Specification for Inspection ASME B16.9-2007 ,B16.25-2007	Visual Examination	Dimensional Inspection
					Good	Good
			Product & Size (T:*1)	Quantity	Heat Treatment (Note 1)	Hardness Actual Data
1		13E00023	90 EL WPB 12 XS	18/30	A	HB : 120 - 150
2		13E00034	45 EL WPB 2 S80	150	A	HB : 130 - 160
3		13B20023	RC WPB 4 X 3 S80	35/100	N	HB : 125 - 140
4		12P20053	RE WPB 4 X 3 S80	8/40	N	HB : 125 - 140
5		13E00064	90 EL WPB 2 S160	450/500	A	HB : 120 - 150

Specification		Chemical Composition %											Tension Test *2			
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E
Min.		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.		%
Max.			10	29										240	415	30
Material Heat No.		30		106	50	58	40	40	40	15	89	20			655	
1	7-32435	19	20	85	17	1	1	2	3	1	<1	<1	34	374	505	47
2	J3L2833	19	19	84	16	8	2	2	4	1	0	0	34	318	492	52
3	J2K7067	19	17	86	15	8	1	2	5	1	0	0	35	323	472	41
4	775465	18	16	76	15	6	15	9	16	4	0	0	36	303	468	44
5	J3L2833	19	19	84	16	8	2	2	4	1	0	0	34	299	476	54

HARDNESS MAX
197 HB : GOOD

CANADIAN WELDING BUREAU
6725
David P. Butler
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

ORIGINAL

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

The fittings was manufactured,sampled,tested,and inspected in accordance with the specification,and was found to meet the requirements.

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15 MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

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

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.

Note for WPB:For each reduction of 0.10% below the specified carbon maximum, an increase of 0.06% manganese above the specified maximum will be permitted up to a maximum of 1.35%

Form TZ-6A/4

CONFORMANCE VERIFIED
TO ASME VIII - DIV 1
CODE: ED 2013 A
DATE: Mar 11/14
BY: MB

Rungsapa Kampikarn
Quality Assurance Manager
Thai Benkan Co., Ltd.

IRISNDT

RADIOGRAPHIC INSPECTION REPORT

NF2-RT-1341
Page 1 of 1

Exposure Device #: D8830 **Source #:** 12794C
Gamma Type: IR 192 **EFSS:** .148
Film Brand: AGFA **#Film/cassette:** 1/1
Code: ASME Section VIII Div. 1 - UW-52.c

Client : PENFABCO
IRISNDT #: EDM140223
Location: EDMONTON
Item Inspected: Circ Seam
24"X 1"THK 6" SPOT

Date: 27-Mar-14
Job #: PE13307
PO #:
Material: C/S

Film #	Size, Location, Thickness	Welder ID	Tech.	S.O.D. Inches	O.F.D. Inches	# of Exp.	Work Loc.	Film Type	Type and Location of Discontinuities (rejectable discontinuities in square brackets [ ])	(A)ccept (R)eject
CS1	0-6	L,T	RT 1	12	1.125	1	1	D7		A

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

Number of Radiation Barrier Warning Signs Erected: **Number of Radiation Barrier Warning Signs**

Work Location Legend: **[1] Inside Fab. Shop** **[2] Yard/Lay-down Area** **[3] Piping/Modular Fab. Area** **[4] N/A (Other)**

RT Techniques:

Exposure	Viewing	Technique
S.W.E	S.W.V	1,2,2A,6,7
D.W.E	S.W.V	3,3A
D.W.E	D.W.V	4,5,8

S.O.D. = Source-to-object distance (D)
O.F.D. = Distance from source side of object to film (d)
Screen Thickness – Front & Back 0.01" / .25mm

AB - Arc Burns
BT - Burn Through
CK - Crack
EP - Excessive Penetration
P - Porosity
EI - Elongated Indication
EUC - External Undercut
IUC - Internal Undercut
HB - Hollow Bead
IP - Incomplete Penetration
S - Slag
IC - Internal Concavity
LF - Lack of Fusion
LC - Low Cover
MA - Misalignment
TI - Tungsten Inclusion

Unit#: 645 Kilometers:
In: Out: Hrs:
In: Out: Hrs:
Personnel:
DC,JS

Film Quantity:

1	(3 ½ x 8 ½)	D7

Interpretation by:
DOUG COENE (Print)
SNT-TC-1A 3
C.G.S.B.: 2 (Level)
C.G.S.B. #: 4976
(Signature)
Client Representative: (Print) MARK CHARRETTE
I am in full agreement with report contents
(Sign)

5311 - 86 Street, Edmonton, Alberta T6E 5T8 Phone: (780) 437-2022 fax: (780) 436-4873

Calgary	(403) 279-6121	Cold Lake	(780) 826-6105	Engineering, Calgary	(403) 217-9684
Lloydminster	(780) 875-6455	Fort McMurray	(780) 743-1536	Engineering, Edmonton	(780) 437-2022
Barrhead	(780) 674-3018	Red Deer	(403) 347-1742	Rope Access Services	(780) 437-2022
Nisku	(780) 955-7616			Offices also located in USA and UK	

www.irisndt.com

CUSTOMER COPY

IRISNDT

RADIOGRAPHIC INSPECTION REPORT

654241

Page of

Exposure Device #: D6306 Source #: 10583C

Gamma Type: Ir 192 EFSS: 0.155

Film Brand: Agfa #Film/cassette: 1

Code: ASME Sec III Div 1 CWS

Job / P.O. #: PE-13307 IRISNDT #: 1401939 Date: Mar 10/14

Client: Pentaco

Location: E&M

Item: 1" TANK LS Material: P1

Film #	Size, Location, Thickness	Welder ID	IRISNDT Tech	SOD Inches	OFD Inches	# of Exp.	Work Location	Film Type	Type and Location of Discontinuities (circle rejectable discontinuities)	Accept	Reject
X-LS1	0-15	K	RT2	20	1.125	1	1	D7		✓	
	15-30									✓	
	30-45									✓	
	45-60									✓	
	60-75									✓	
	75-90									✓	
	90-105									✓	
	105-End									✓	

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

Number of Radiation Barrier Warning Signs Erected _____ **Number of Radiation Barrier Warning Signs Returned** _____

Work Location Legend (insert number): [1] Inside Fab. Shop [2] Yard/Lay-down Area [3] Piping/Modular Fab. Area [4] N/A (Other)

IRISNDT Technique:
Single Wall Exposure:
RT 1, 2, 2A, 6, 7
Double Wall Exposure:
RT 3, 3A, 4, 5, 8

S.O.D. = Source to object distance (D)

O.F. D. = Distance from source side of object to film (d)

AB - Arc Burns
BT - Burn Through
CK - Crack
EP - Excessive Penetration
P - Porosity
EI - Elongated Indication
EUC - External Undercut
IUC - Internal Undercut
HB - Hollow Bead
IP - Incomplete Penetration
S - Slag
IC - Internal Concavity
LF - Lack of Fusion
LC - Low Cover
MA - Misalignment
TI - Tungsten Inclusion

Unit #: 303 Kilometres: _____

In _____ Out _____ Hrs. _____

In _____ Out _____ Hrs. _____

Personnel: A
SC

Film Quantity: 8.3½X17 D7

Interpretation by: Colin Savage (Print) (Signature)

SNT-TC-1A - III

C.G.S.B. - II (Level)

C.G.S.B. # 178

Client Representative: MURRAY ANDERSON (Print)

I am in full agreement with report contents: (Signature)

5311 - 86 Street, Edmonton, Alberta T6E 5T8 Phone: (780) 437-2022 Fax: (780) 438-1436

Calgary (403) 279-6121
Barrhead (780) 674-3018
Cold Lake (780) 826-6105
Fort McMurray (780) 743-1536
Lloydminster (780) 875-6455
Nisku (780) 955-7616
Red Deer (403) 347-1742
Heat Treating & Bolting (780) 437-2022
Engineering (403) 217-9684
Systems & Software (403) 262-8750

Offices also located in the USA and UK

Technical
Safety Authority
of Saskatchewan

330 - 1855 Victoria Avenue
Regina, SK S4P 3T2
Canada

306-787-1443
info@tsask.ca
www.tsask.ca

REGISTRATION APPROVAL

15-Jun-12

Penfabco Ltd.
5715 - 56th Ave. NW
Edmonton, AB
T6B 3G3

Our File 45901 [0V]

ATTENTION : Marg Bazin

With reference to your submission respecting the registration of the item below, for legal use in the province, please note we have surveyed, approved and registered this design as noted.

MANUFACTURER :	**Penfabco Ltd.**	
ITEM :	**DRAWING NUMBER :**	**CRN:**
Generic Vessel	**PE-15002 SHTS 1,2 REV. 1/1**	**V7840.23**

We wish to point out that every vessel must be constructed strictly in accordance with the registered design.

In addition to stamping every vessel with the registration number given above and as required in CSA Code B51, a Manufacturer's Data Report must be forwarded to this office immediately at the time a vessel is shipped. Such forms may be obtained upon request.

Sincerely,

Steven Court
Codes and Standards Compliance

WELDING BUREAU 6725 David P. Butlin Level 2 CSA W178.2 CERTIFIED WELDING INSPECTOR

REMARKS: **CRN registered under reciprocal agreement.**

Safety Authority

Toll Free: 1-866-566-SAFE
Fax: (778) 396 - 2064
www.safetyauthority.ca

BLUE DIAMOND DESIGN LTD
220 HART ROAD
VICTORIA BC V9C 1A1

Date: February 3, 2014
Account #: 8747
Journal #: 58898
Our File #: 5484448

Attn: PHIL DADE

Re: Application for Design Registration

The design, as detailed in your, Ref: 4365, for a Pressure Vessel is accepted for registration as follows:

Registered To: PENFABCO LIMITED **CRN:** V7840.21

MDMT: -20 deg F **MAWT:** 130 deg F **MAWP:** 1440 psig

Drawing #: PE-15002 shts 1, 2 **Drawing Revision:** 3

Conditions Of Registration:

Registration revision of a 24" Generic Vessel.

This design was registered based on a technical review performed by the province of initial registration in accordance with the Association of Chief Inspectors policy on reciprocal recognition of design review.

Contact me if you have any questions. The invoice for registration will be forwarded under separate cover.

SHARON PETERS
(778) 396-2027
Sharon.Peters@safetyauthority.ca
Design Administration

cc:

CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR

the pressure equipment safety authority

9410 - 20 Ave N.W.
Edmonton, Alberta, Canada T6N 0A4
Tel: (780) 437-9100 / Fax: (780) 437-7787

January 21, 2014

Attention: Marg Bazin
PENFABCO LTD
5715 56 AVENUE NW
EDMONTON, AB T6B 3G3

The design submission, tracking number 2013-09617, originally received on December 24, 2013 was surveyed and accepted for registration as follows:

CRN : V7840.2 **Accepted on:** January 21, 2014

Reg Type: Revision To accepted Design

Drawing No. : PE-15002 SHTS 1,2 Rev 3

Design registered in the name of : PENFABCO LTD

Description	MAWP	Design Temperature	MDMT
Internal Pressure	9928kPa	54 °C	-29 °C

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

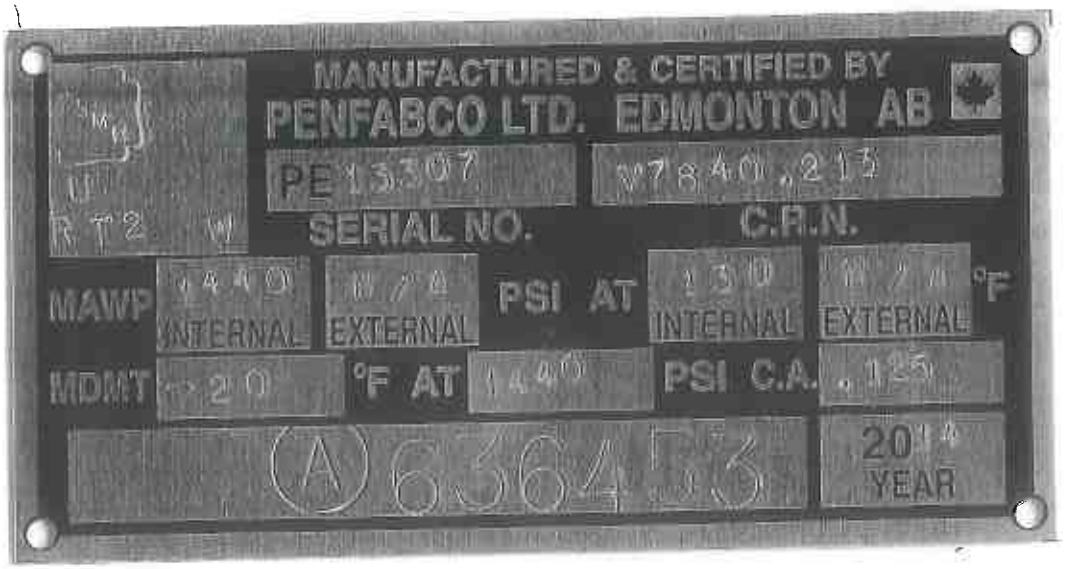
If you have any question don't hesitate to contact me by phone at (780) 433-0281 ext 3369 or fax (780) 437-7787 or e-mail Radisavljevic@absa.ca.

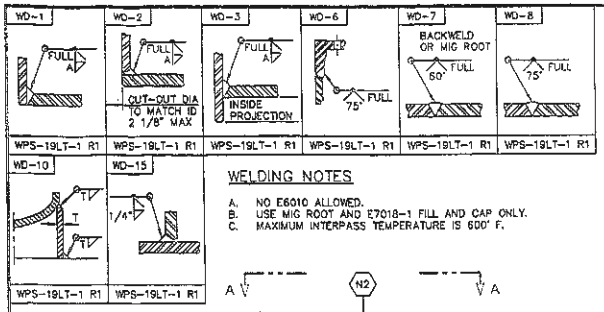
Sincerely,

Zana Radisavljevic

RADISAVLJEVIC, ZANA, R.E.T.

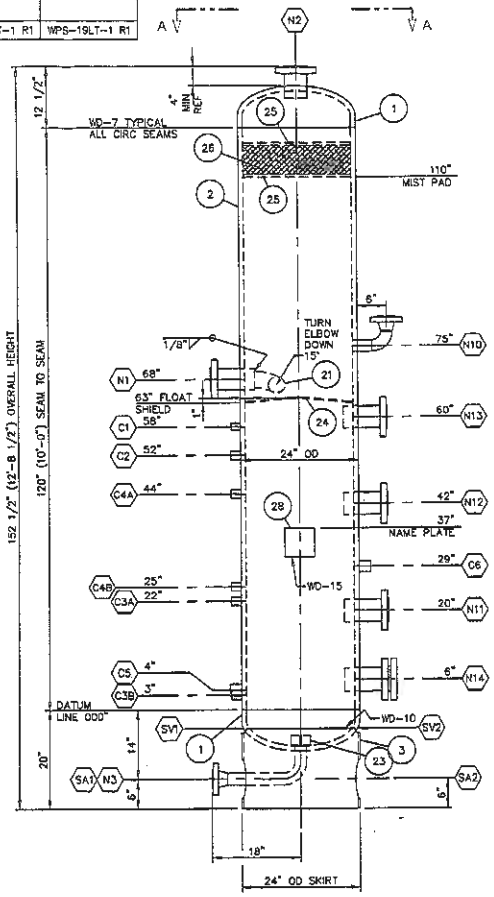
CANADIAN WELDING BUREAU
6725
David P. Butlin
Level 2
CSA W178.2
CERTIFIED WELDING INSPECTOR


MANUFACTURED & CERTIFIED BY
PENFABCO LTD. EDMONTON AB
PE 13307
V7840.213
SERIAL NO.
C.R.N.
R T2 W
MAWP
1440
INTERNAL
670
EXTERNAL
PSI AT
150
INTERNAL
EXTERNAL
°F
MDMT
-20
°F AT
PSI C.A.
(A)6364.6
20
YEAR

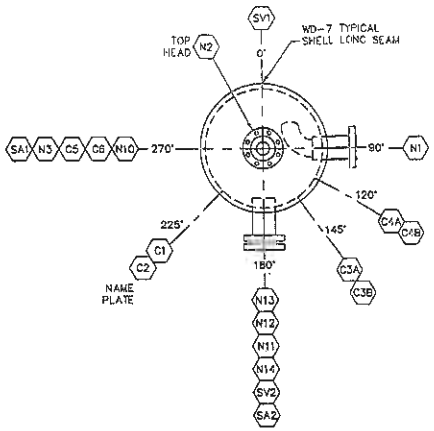


WELDING NOTES

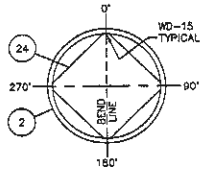
A. NO E6010 ALLOWED.
B. USE MIG ROOT AND E7018-1 FILL AND CAP ONLY.
C. MAXIMUM INTERPASS TEMPERATURE IS 600° F.



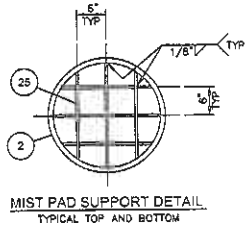
ELEVATION VIEW
SEE ORIENTATION VIEW A-A FOR TRUE ORIENTATION



ORIENTATION VIEW A-A



FLOAT SHIELD DETAIL



MIST PAD SUPPORT DETAIL
TYPICAL TOP AND BOTTOM

CONNECTION SCHEDULE

MARK	QTY	SIZE	SCH	CLASS & TYPE	SERVICE	PROJECTION INSIDE	PROJECTION OUTSIDE	WELD SIZE A	WELD SIZE B	WELD SIZE C	WELD DETAIL	BOM ITEM NO.
N1	1	3"	.81"	600 RF LWN	INLET	-	6"	3/8"	-	-	3	7
N2	1	24"	.81"	600 RF LWN	GAS OUTLET / INSPECTION	-	AS SHOWN	3/8"	-	-	3	7
N3	1	2"	XXH	600 RFWN	DRAIN	-	AS SHOWN	3/8"	-	-	1, 6	6, 18
N10	1	2"	160	600 RFWN	PSV	-	AS SHOWN	3/8"	-	-	1, 6, 8	5, 17, 20
N11	1	3"	.81"	600 RF LWN	WATER LC	-	6"	3/8"	-	-	3	7
N12	1	3"	.81"	600 RF LWN	HC LC	1"	6"	3/8"	-	-	3	7
N13	1	3"	.81"	600 RF LWN	HLSD	-	6"	3/8"	-	-	3	7
N14	1	3"	.81"	600 RF LWN	LLSD/INSPECT &/or BLIND	-	6"	3/8"	-	-	3	7, 8, 14, 15
C1	1	1/2"	NPT	6000 CPLG	PI	-	-	3/8"	-	-	2	10
C2	1	3/4"	NPT	6000 CPLG	TI	-	-	3/8"	-	-	2	11
C3A, C3B	2	3/4"	NPT	6000 CPLG	WATER LS	-	-	3/8"	-	-	2	11
C4A, C4B	2	3/4"	NPT	6000 CPLG	HC LS	-	-	3/8"	-	-	2	11
C5	1	1"	NPT	6000 CPLG	WATER OUTLET	-	-	3/8"	-	-	2	12
C6	1	1"	NPT	6000 CPLG	HC OUTLET	-	-	3/8"	-	-	2	12
SV1, SV2	2	1" RAD			SKIRT VENT							
SA1, SA2	2	8" DIA			SKIRT ACCESS							

BILL OF MATERIALS

ITEM	QTY	COMMENT	DESCRIPTION		MATERIAL
1	2	HEAD - HOT FORMED	PLATE - 2" OD x 1" THK (.9375" MIN) 2:1 SE, 2" SF		SA-516-70N
2	1	SHELL	✓ PLATE - 24" OD x 1" THK x 10'-0" LG		SA-516-70N
3	1	SKIRT	✓ PIPE - 24" SCH STD (.375") x 16 1/4" LG	SHOP CHECK	SA-106-B
4					
5	1	N10	FLANGE - 2" CLASS 600 RFWN - SCH 160 BORE		SA-105N
6	1	N3	FLANGE - 2" CLASS 600 RFWN - SCH XXH BORE		SA-105N
7	6	N1,2,11,12,13,14 ✓	FLANGE - 3" CLASS 600 RF LWN x 8" LG		SA-105N
8	1	N14	FLANGE - 3" CLASS 600 RF BLIND		SA-105N
9					
10	1	C1	COUPLING - 1/2" NPT CLASS 6000 FULL		SA-105N
11	5	C2, C3AB, C4AB	COUPLING - 3/4" NPT CLASS 6000 FULL		SA-105N
12	2	C5, C6	COUPLING - 1" NPT CLASS 6000 FULL		SA-105N
13					
14	1	N14	GASKET - 3" CLASS 600 SPIRAL WOUND x 1/8" THK		316 SS
15	8	N14	STUDS - 3/4" DIA x 5" LG c/w 2 NUTS EACH (SA-194-2H)		SA-193-B7
16					
17	1	N10	✓ PIPE - 2" SCH 160 (.343") x CUT TO SUIT		SA-106-B
18	1	N3	✓ PIPE - 2" SCH XXH (.436") x CTS BEND AT 90° TO 3 1/2" RADIUS		SA-106-B
19					
20	1	N10	ELBOW - 2" SCH 160 (.343") LR 90° WELD		SA-234-WPB
21	1	N1 DEFLECTOR	ELBOW - 3" SCH STD (.216") LR 90° WELD		SA-234-WPB
22					
23	2	N3 VORTEX BRKR	PLATE - 1/4" THK x 2" x 4" LG	FORM INTO CROSS	G40.21- 44W
24	1	FLOAT SHIELD ✓	PLATE - 1/4" THK x 16 1/2" SQUARE	SHOP BEND, TRIM	G40.21- 44W
25	1	MIST PAD SUPPORT	ROUND BAR - 1/2" DIA x CUT TO SUIT	TRIM PER DETAIL	G40.21- 44W
26	1	MIST PAD	6" THK x 22" OD x 9#/FT3		316L SS
27					
28	1	NAME PLATE	STANDARD NAME PLATE AND BRACKET		SS / SA-36

APPROVED FOR CONSTRUCTION
BY: MB DATE: Mar 10/14

(2) UNITS REQUIRED
JOB NOs:
PE-13306
PE-13307

GENERAL NOTES

1. QUALITY CONTROL PROGRAM NUMBER: AQP-1046(S)
2. WELDING PROCEDURE REGISTRATION NUMBER: WP-418.2
3. CAPACITY: 28.9 FT3 (0.82 m3)
4. SERVICE: SOUR HYDROCARBONS
5. EXPOSED INSIDE OR OUTSIDE EDGES OF NOZZLES OR OPENINGS SHALL HAVE AN 1/4" MINIMUM RADIUS.
6. BY RJV - SURFACE PREPARATION: SSPC-SP6 (COMMERCIAL)
7. BY RJV - PRIME: EPOXY 4 mil PAINT: URETHANE 3 mil
8. ALL BOLT HOLES TO STRADDLE CENTERLINES.
9. CLEAN AND COVER ALL OPENINGS FOR SHIPMENT.
10. USE WELDING PROCEDURE PEN-33 R0 FOR ALL TACK WELDS.
11. NON-LOW HYDROGEN ELECTRODES INCLUDING E010 ARE PROHIBITED.
12. CRN DRAWING: PE-15002-1 REV 3 CRN: V7840.213
    PE-15002-2 REV 3
    CALCULATIONS: PE-13306-R1

DESIGN NOTES

DESIGN & FABRICATE TO: ASME SECTION VIII, DIVISION 1, 2013 EDITION
MAXIMUM ALLOWABLE WORKING PRESSURE (MAWP): 1440 PSIG [9929 Kpag]
DESIGN TEMPERATURE: 130° F [54° C]
MINIMUM DESIGN METAL TEMPERATURE (MDMT):
-20° F [-18° C] AT 1440 PSIG [9929 Kpag]
IMPACT TESTS: EXEMPT PER UG-20f 1-5, FLANGES PER UCS-66c,
STUDS PER FIG UCS-66, NOTE C
RADIOGRAPHY - LONG SEAM: FULL PER UW-11a
- CIRC SEAMS: SPOT PER UW-11a5b (RT-2)
PWHT PER UCS-56: NOT REQUIRED
HYDROSTATIC TEST PRESSURE: 2160 PSIG [14,893 Kpag]
CORROSION ALLOWANCE: 1/8" [3.2]
WEIGHT EMPTY: 4,050 LBS [1840 kg]
WEIGHT FULL OF WATER: 5,850 LBS

REV	DATE	REVISION	BY	APP
1	14-03-10	ISSUED FOR APPROVAL	PJD...	MB
0	14-03-06	ISSUED FOR APPROVAL	PJD...	MB

PENFABCO LTD.
5715 - 56 AVENUE NW, EDMONTON, AB T6B 3G3
TELEPHONE: (780) 434-0222 FAX: (780) 436-1467

CLIENT:	HUSKY c/o RJV GAS FIELD SERVICES JOB 13-5244-1
DATE:	14-03-05
JOB NO:	4424
DRAWN BY:	PJD...
CHECKED BY:	MB
APP BY:	PJD...

3 PHASE SEPARATOR - SWEET
24" OD x 10'-0" S/S
1440 PSIG AT -20° F / 130° F

DWG NO: PE-13306 REV 1

BLUE DIAMOND DESIGN LTD. 220 HART ROAD, VICTORIA, BC V9C 1A1 TELEPHONE: (250) 391-4612 eMAIL: dave@bdd.ca

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS A 636453

(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by: PENFABCO LTD 5715 – 56 Avenue NW, Edmonton, AB T6B 3G3 Canada
(Name and address of Manufacturer)

2. Manufactured for: RJV Gas Field Services 4901 Bruce Road Vegreville, AB T9C 1C3
(Name and address of Purchaser)

3. Location of installation Stock
(Name and address)

4. Type:

Vertical	PE-13307	V7840.213	PE-15002 Rev 1 Shts 1 & 2	N/A	2014
(Horizontal or vertical tank)	(Manufacturer's serial number)	(CRN)	(Drawing number)	(National Board number)	(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 conform to the ASME rules, Section VIII, Division 1 2013 (Year)

to N/A (addenda(date)) N/A (Code Case numbers) N/A (Special Service per UG-120(d))

6. Shell: SA-516-70N (Material spec. number, grade) 1.00" (Nominal thickness) 1/8" (Corr. Allow.) 22" (Inner diameter) 8' 0" s/s (length overall)

7. Seams: Type 1 [Long. (welded, dbl., sngl., lap, butt)] Full [R.T. (spot or full)] 100% (Eff., %) N/A H.T. temp. N/A (Time, hr) Type 1 [Girth. (welded, dbl., sngl., lap, butt)] Spot [R.T. (spot or full)] 70% (Eff., %) 1 (No. of courses)

8. Heads: (a) Material SA-516-70N (Spec. no. grade) (b) Material SA-516-70N (Spec. no. grade)

	Location (Top, Bottom, Ends)	Thickness Min.	Thickness Corr.	Radius Crown	Radius Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Top	.9375"	1/8"	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	Bottom	.9375"	1/8"	N/A	N/A	2:1	N/A	N/A	N/A	Concave

If removable, bolts used (describe other fastening) N/A (Material spec. number grade, size, number)

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

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

Proof Test N/A

10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc)	No.	Diam. or Size	Type	Material Nozzle	Material Flange	Nozzle Thickness Nom.	Nozzle Thickness Corr.	Reinforcement Material	Attachment Details Nozzle	Attachment Details Flange	Location (Insp. Open.)
Inlet, Gas Out, LC's, HLSD, Insp	6	3" ID	CL 600 RFLWN	SA-105N	N/A	.81"	1/8"	Not Required	UW16.1(c)	N/A	Shell, Top Hd
Drain	1	NPS 2	CL 600 RFWN	SA-106B	SA-105N	.436"	1/8"	Not Required	UW16.1(c)	Type 1	Bottom Head
PSV, Vent/Insp	2	NPS 2	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell
HC, Water Outlets	2	NPS 1	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell
LG's,TI	5	NPS 3/4	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell
PI	1	NPS 1/2	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell

11. Supports: Skirt Yes (Yes or No) Lugs 0 (Number) Legs 0 (Number) Others None (Describe) Attached Welded to Btm Hd (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
(List the name of part, item number, Manufacturer's name and identifying stamp)

Impact Test exempt per UG -20(f) 1-5 & UCS-66(c)
Volume 28.9 cu.ft. (.82 m3)
Vertical Separator
RT per UW-11(a)5(b)
PSV Installed in Piping by Others per UG-125(g)
Manufactured to Dwg. PE-13304 Rev 1

David P. Bullin Level 2 CSA W178.2 WELDING INSPECTOR

CERTIFICATE OF SHOP/FIELD 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 Boiler and Pressure Vessel Code, Section VIII, Division 1. "U" Certificate of Authorization Number 14,383 expires 12/28, 2016

Date 03/27/14 Co. Name PENFABCO LTD (Manufacturer) Signed M Bazzi (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by PENFABCO LTD at 5715 – 56 Avenue NW Edmonton, AB T6B 3G3

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 March 27, 2014, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Boiler and Pressure vessel Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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 Mar 27, 2014 Signed (Authorized Inspector) Commissions AB 95 NB 12143 A,B [National Board (incl endorsements) State, Province and number]