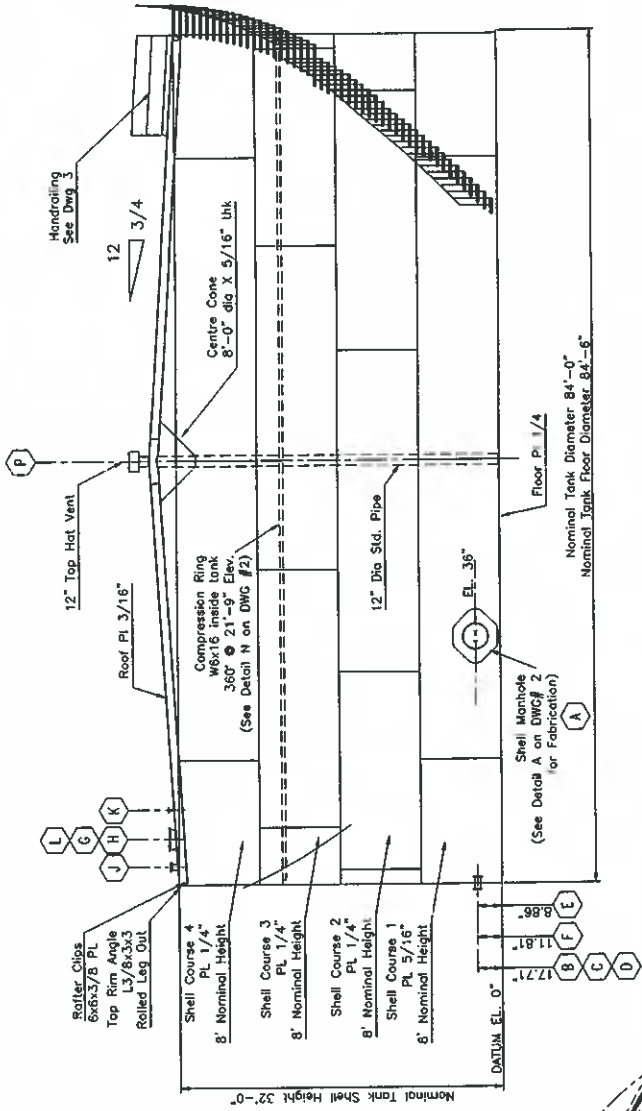
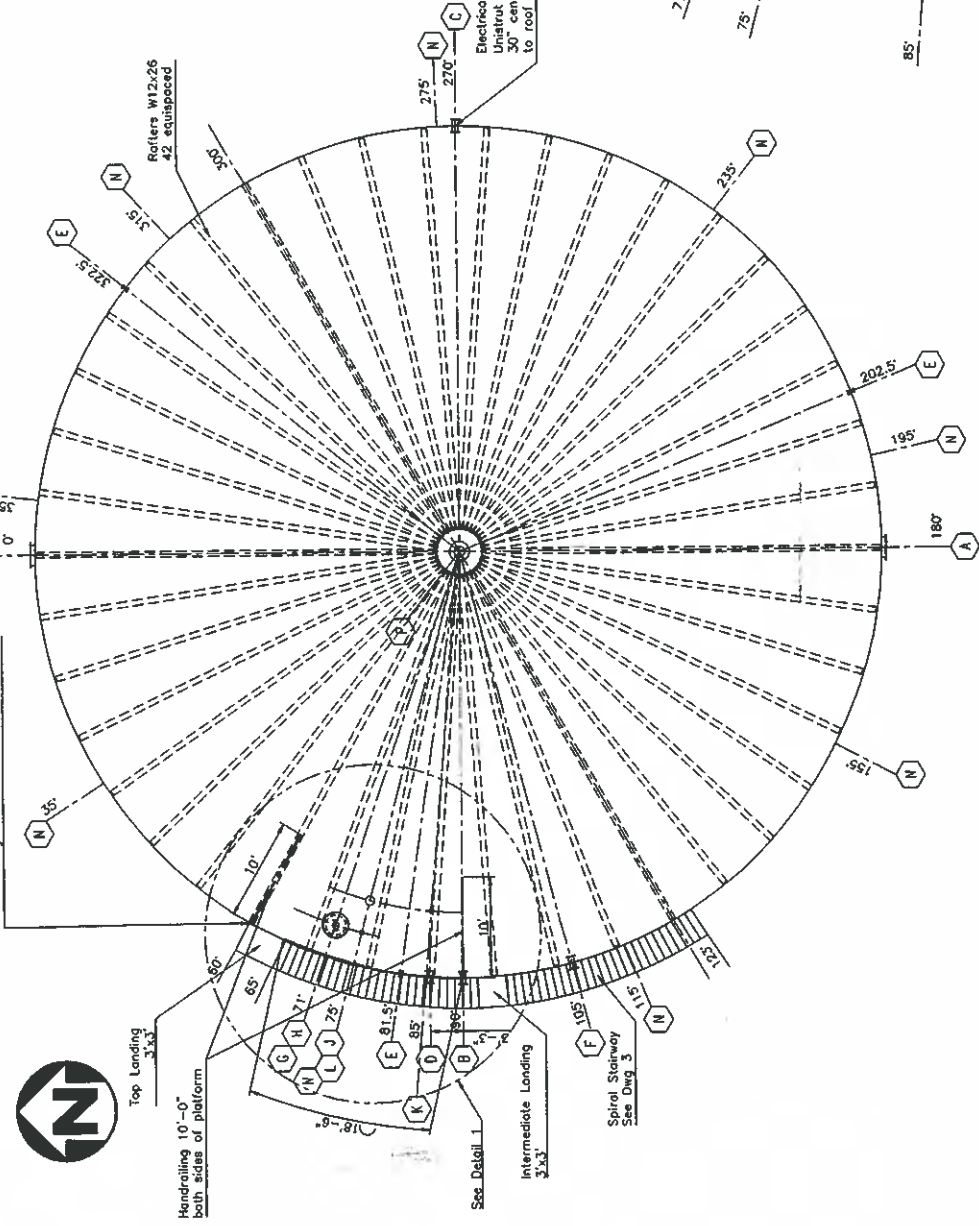


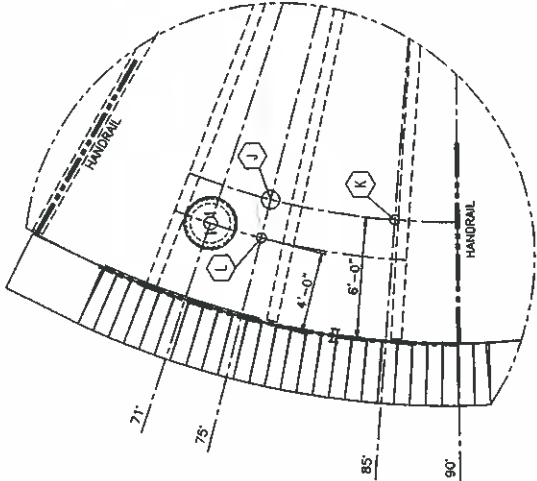
5. **Gem-Steel Edmonton Limited – Aboveground Tank Construction**

5.1 Tank As-Built Drawings

Electrical routing:
Unistrut clips mounted on 1"x 4" sq pods
30" center to center up entire shell
to roof edge 60' & 270'



ELEVATION VIEW
(SEE THIS DRAWING FOR TRUE ORIENTATION)



DETAIL 1
2X SCALE

GENERAL NOTES

- Code of Construction: API-650, Latest Edition
- All dimensions are in Imperial unless noted otherwise.
- Product Stored: Fuel
- Diameter: 84'-0"
- Height: 32'-0"
- Nominal Capacity: 5 M litres
- Operating Temperature Range: -46 / +20°C
- Product Specific Gravity: 0.84 @ 15°C

Inspection

- Vacuum Testing: Floor
- Liquid Penetrant Inspection: Shell to Floor Weld & all Shell Welds
- Radiography: Vertical Shell Welds - Spot as per API 650
- Radiography: Horizontal Shell Welds - Spot as per API 650
- Air Test: Repairs

Materials

- Structural Bolts: A-325 Cadmium Plated
- Structural Steel: G40.21, 300W
- Pipe Nozzles: A333 Gr.6 Impact Energy 18J @ -45°C
- Forged Flanges: 150# RF50 A350M Gr. LF2
- Steel Plate: G40.21M-260WT, Killed & Fine-Grain Practice
- Roof Support Column: 12" STD Structural Grade Pipe
- Manway Gasket: 1/8" NBR/Aramid Fibre
- Welding Electrodes: As per Welding Procedures
- Flange Bolting: B7 Studs c/w XH Nuts, all bare finish

AS BUILT

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OR PASSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF GEM
STEEL EDMONTON LTD.

	REVISION DESCRIPTION	DATE	BY
1	REVISED AS-BUILT	OCT. 2011	-
2	REVISED PER CUSTOMER COMMENTS	AUG. 2011	-
3	REVISED PER CUSTOMER COMMENTS	AUG. 2011	-
4	PRELIMINARY	MAY 2011	-
5	REVISION DESCRIPTION		

NOZZLE SCHEDULE

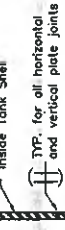
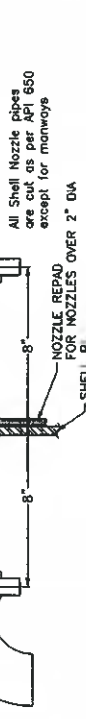
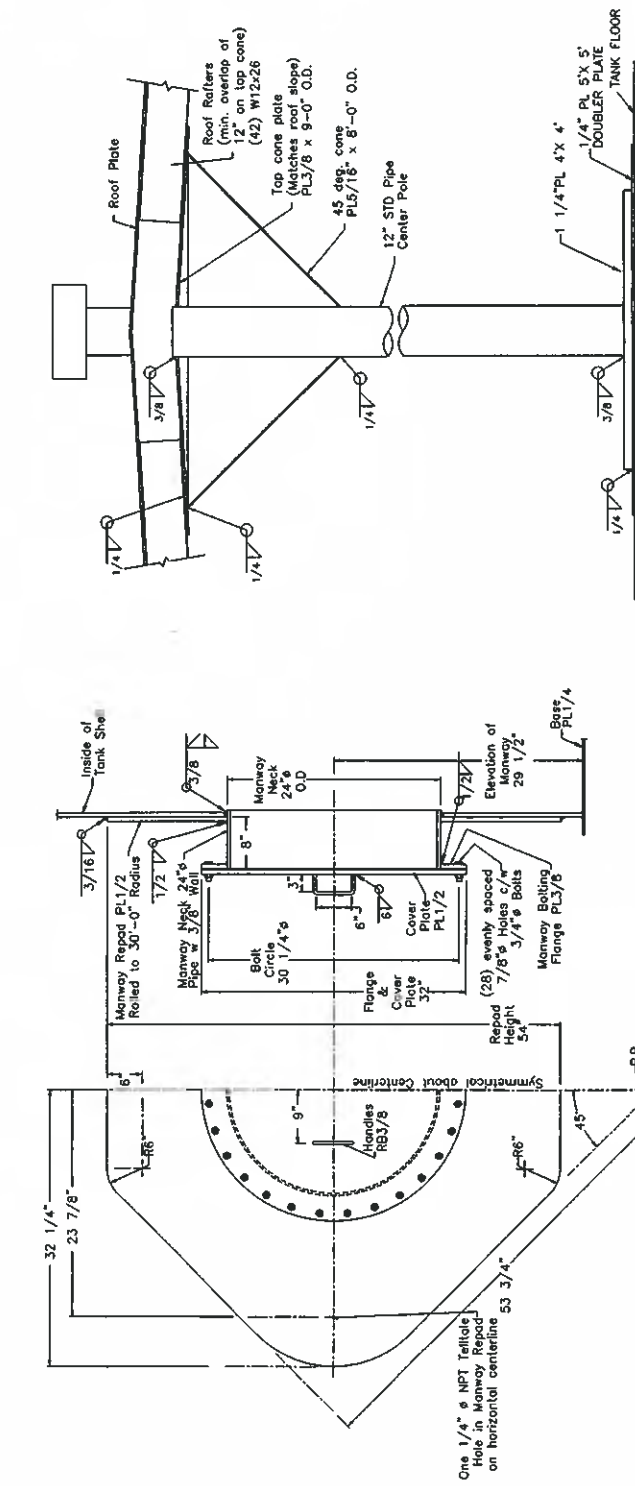
MARK	QTY	DESCRIPTION	SIZE	PROJ.	RATING	LOC.	ELV.
A	2	Shell Manhole	24"	8"	RF50	07/180	36"
B	1	Tank Filler	6"	8"	RF50	90	17.71'
C	1	Tank Filler	6"	8"	RF50	270	17.71'
D	1	Tank Filler	6"	8"	RF50	Del.	17.71'
E	1	Water Drain Nozzle	3"	8"	RF50	81.5/202.5/322.5	8.85'
F	1	Spare Shell Nozzle	6"	8"	RF50	105	11.81'
G	1	Gauge Hatch	6"	8"	RF50	71	N/A
H	1	Roof Manway	24"	8"	RF50	70	N/A
I	1	Gauge Hatch	6"	8"	RF50	75	N/A
J	1	Spare (G/w blind	2"	8"	RF50	85	N/A
K	1	Level Transmitters	1 1/2"	8"	TPG RPT	75	N/A
L	1	Grounding Lugs	12"		NOZZLE	150#	See Det.
P	1	Center Roof Vent	12"		NOZZLE	150#	See Det.

GEM STEEL

8880 - 24 Street
Edmonton, Alberta
Canada T6P 0X8
Ph: (780) 448-0880
Fax: (780) 448-0881

GENERAL TANK LAYOUT

TITLE:	PROJECT:
GENERAL TANK LAYOUT	Milne Inlet, Baffin Island, Nunavut Fuel System Upgrade 5M Lt. Diesel Fuel Storage Tank 84'Ø x 32' High
CLIENT:	DATE:
Hatch - Mary River Ore Project Baffin Island, Nunavut	May 2011
CHK'D BY:	DATE:
B.K.G.	May 2011
DRAWN BY:	SCALE:
J.O.C.	N.T.S.
DRAWING #	REVISION #
BA84322011-1	1



GENERAL TANK DETAILS

PROJECT:

**Midline Inlet, Baffin Island, Nunavut Fuel System
Upgrade 5M Lt. Diesel Fuel Storage Tank
84'Ø x 32' High**

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GEM STEEL

#	REVISION DESCRIPTION	DATE	BY
1	REVISED AS-BUILT	OCT. 2011	
C	REVISED PER CUSTOMER COMMENTS	AUG. 2011	
B	REVISED PER CUSTOMER COMMENTS	AUG. 2011	
A	PRELIMINARY	MAY 2011	

COMPRESSION RING DET.

REVIEWER DESCRIPTION

DATE	BY
------	----

DATE	BY
------	----



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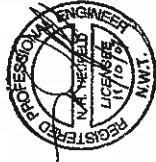
GEMSTEL  9490 - 34 Street
Edmonton, Alberta
T6C 2G5
Tel: (780) 446-0000
Fax: (780) 446-0000
Fax: (780) 446-0000

[illegible]

R 1 **SPIRAL STAIRS & INTERMEDIATE PLATFORM DET.**

RTM

ENGINEER:



TITLE: SPIRAL STAIRWAY & LANDING DETAILS

PROJECT:

**Milline Inlet, Baffin Island, Nunavut Fuel System
Upgrade 5M Lt. Diesel Fuel Storage Tank
84'Ø x 32' High**

CLIENT:

Hatch - Mary River Ore Project Baffin Island, Nunavut

CHK'D BY:

3. **May 2011**
BA84322011-3

DRAWN BY:

100

DRAWING #

BA84322011-3

1

5.2 Mill Test Reports (MTRs) and Certificates – Diesel Tank



9060 – 24 St. Edmonton, AB. T6P 1X8

Phone (780) 449-0000

Fax (780) 449-0001

MILL TEST REPORTS (MTR'S)

PROJECT: MARY RIVER - BAFFIN ISLAND,
NUNAVUT

PURCHASE ORDER# H377697-CM-010

1) 5 million liter Diesel Fuel Storage Tank



2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

Material Description	Heat Number
Cold Temp. Plate	
Plate 3/16" 260WT Cold Temp. Material	NW0790
	NW0854
	NW0863
	NW0858
	NW0860
Cold Temp. Plate	
Plate 1/4" 260WT Cold Temp. Material	NW0828
	NW0811
	NW0804
	NW0821
	NW0844
	NW0810
	NW0809
	NW0830
	NW0834
	NW0819
	NW0831
	NW0843
Cold Temp. Plate	
Plate 5/16" 260WT Cold Temp. Material	NW0828
	NW0831
	NW0819
	NW0833
	NT6686
All 44W Grade Plate	
Plate 1/4" 44W	NW0667
Plate 3/8" 44W	1658L-04
Plate 1/2" 44W	E1A252
Plate 1-1/4" 44W	V305026
Beam	
W 12 X 26 Beam	22586470
	22568530
	22568530
	D 098967
	2103045
	22586530
	D 097161
	22586460
	2107168
	1107162
	1107167

2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

	1107163
W 6 X 16 Beam	2004669
Channel	
Angle Iron	
L 3 x 3 x 3/8 Angle Iron	SE1110059101
	SE1110059201
L 3 x 3 x 1/4 Angle Iron	SE1110148401
L 2 x 2 x 1/4 Angle Iron	W904277
	W908728
	W907721
L 1-1/2 x 1-1/2 x 1/4 Angle Iron	SE1010067401
	N104483
Flat Bar	
Flat Bar 3/8 x 6	SE1010075701
	SE1110162702
Flatbar 1/4 x 6	R639946
Flat Bar 1/4 x 4	SE1010017601
	SE1010284601
Flat Bar 1/4 x 2	SE1010090401
	SE1010581801
	SE1110223201
Hot Rolled Bar Stock	
Round bar 3/4"	SE1010075201
Square bar 3/4"	N103588
ALL PIPE Grades / Schedules	
2" XS A333 Low Temp. Pipe	O75O6827
	10-A8715
	10603028
2"-Sch.80, A106B	556818
3" XS A333 Low Temp. Pipe	33330
	Y607-637
	930423
3" XS - A106B	1026650V
3" Sch.40 - A333 Low Temp. Pipe	36390
3" Sch.40 - A106	1105995

2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

	31C158
4" XS A333 Low Temp. Pipe	O822342V
	B52873
6" XS A333 Low Temp. Pipe	80893
	10324-49Y
6" Std. A333 Low Temp. Pipe	1034963V
6" Std. A53 Pipe	C926150
12" Sch.40 - ASME A252 Grade 3	R10200525
ALL Flanges, Blinds, Elbows etc...	
2"-150# -Raised Face Slip-On Flange - LF2 Low Temp.	48960
	931274
	28V0
	16V1
2"-150# -R.F. Blind Flange - LF2 Low Temp.	73669
	21382
3" - 150# - R.F.S.O. Flange - LF2 Low Temp.	31243
3" Std.-L.R.B.W. 90 Degree Elbow	751-0381
4" - 150# - R.F.S.O. Flange - LF2 Low Temp.	31240
4" - 150# - R.F.W.N. Flange - LF2 Low Temp.	74569
	31240
4"-150# -R.F. Blind Flange - LF2 Low Temp.	10/31378
4" Std.-L.R.B.W. 90 Degree Elbow	2-70387
6" - 150# - R.F.S.O. Flange - LF2 Low Temp.	31240
	802220
	4390797
6" - 150# - R.F. W.N. Flange - LF2 Low Temp.	362V9
	555299
6"-150# -R.F. Blind Flange	09/36040
	21303
COUPLINGS & MISC. FITTINGS	
1-1/2" - 3000# Coupling	4773
2" - 3000# Coupling	4183
	4421

2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

[illegible]



EVRAZ INC. NA
EVRaz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. DATE PAGE

1155521 May 06, 2011 1

MILL ORDER NO. DATE

242387

CUSTOMER ORDER NO.

M62006238

JOB/RED. NO.

SHIPPING NO.

1155521

CARRIER

UNION PACIFIC

CAR/TRUCK NO.

ORANGE

RUSSEL METALS INC (EDMONTON)

ATTN: TIM MAIER

PO BOX 4128

EDMONTON, AB T6E 4T2

CA

RUSSEL METALS INC-EDMONTON-BATES

P.O. BOX 4128

EDMONTON, AB T6E 4T2

CANADA

ISO 9001
REGISTERED
1478 PROOF

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.1880 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57491									
	3 PCS 8277 LBS	NW0790		480	655 26					
				LCVN @ -50	DES F 2.5mm	19	18	17	18	ft.lbf
	5 PCS 13795 LBS	NW1755		469	660 29					
				LCVN @ -50	DES F 2.5mm	15	40	31	28	ft.lbf
	8 PCS 22072 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE
NW0790	.14	.85	.009	.009	.20	.01	.04	.002	.005	.043	.01	.00					
NW1755	.13	.85	.012	.008	.24	.01	.05	.009	.005	.046	.02	.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (") WERE ROLLED IN THE USA.																	
..... END OF REPORT																	

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

QUALITY COORDINATOR



EVRAZ INC. NA

EVRAZ Oregon Steel - 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

61A035535

CERTIFICATE NO.	DATE
1148532	Apr-04, 2011
MILL ORDER NO.	DATE
242387	
CUSTOMER ORDER NO.	
M62006238	
JOB REQ. NO.	
SHIPPING NO.	DATE
1148532	04/04/2011
CARRIER	
UNION PACIFIC	
CAR/TRUCK NO.	
ORANGE	

ISO 9001 REGISTERED U.S. PLATE PROPERTY	SOLD TO	RUSSEL METALS INC [EDMONTON] ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA	RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA
---	----------------	---	--

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2'	% RA	HARDNESS BHN	HARDNESS BEND TEST	IMPACTS
1	0.1880 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57491									
	2 PCS 5518 LBS	NW0854		472	635 25					
				LCVN @ -50	DEB F 2.5mm	25 25 23 / 24				ft.lbf
	19 PCS 52421 LBS	NW0858		473	630 28					
				471	630 28					
				LCVN @ -50	DEB F 2.5mm	25 25 25 / 25				ft.lbf
				LCVN @ -50	DEB F 2.5mm	22 26 25 / 24				ft.lbf
	21 PCS 57939 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Al	Mo	Ti	B	N	Ca	CE
NW0854	.08	1.09	.011	.011	.27	.02	.05	.009	.037	.02	.00					
NW0858	.07	1.09	.011	.010	.26	.01	.05	.005	.035	.01	.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																
.....	END OF REPORT															

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ INC. NA

EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1149950	APR 11, 2011	1
MILL ORDER NO.	DATE	
242387		
CUSTOMER ORDER NO.		
M62006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1149950	04/11/2011	
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
BLUE		

RUSSEL METALS INC [EDMONTON]

ATTN: TIM MAIER

PO BOX 4128

EDMONTON, AB T6E 4P2

CA

RUSSEL METALS INC-EDMONTON-BATES

P.O. BOX 4128

EDMONTON, AB T6E 4T2

CANADA

1484 BA 40

ISO 9001

REGISTERED

U.S. PLATE PRODUCER

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
 CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
 AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.1880 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57491	NW0860		480 468	645 630	28 30				
	5 PCS 13795 LBS									
	5 PCS 13795 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE	Mc
NW0860	08	1.05	.010	.011	.29	.02	.05	.006	.038	.02	.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																
..... END OF REPORT																

QUALITY COORDINATOR

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EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1149953	Apr 11, 2011	1
MILL ORDER NO.	DATE	
242387		
CUSTOMER ORDER NO.		
M62006238		
JOB REQ. NO.		
SHIPPING NO.	DATE	
1149953	04/11/2011	
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
ORANGE		

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

ISO 9001
REGISTERED
U.S. PLATE PRODUCTIONS

1484 BA HO

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.1880 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57491									
	17 PCS 46903 LBS	NW0854		472 480	635 25 635 27					
				LCVN @ -50	DEG F 2.5mm	25 25	23 / 24			ft.lbf
				LCVN @ -50	DEG F 2.5mm	24 22	24 / 23			ft.lbf
	5 PCS 13795 LBS	NW0860		480 468	645 28 630 30					
				LCVN @ -50	DEG F 2.5mm	22 20	20 / 20			ft.lbf
				LCVN @ -50	DEG F 2.5mm	25 24	22 / 23			ft.lbf
	22 PCS 60698 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	REMARKS
NW0854	.08	1.09	.011	.011	.27	.02	.05	.009	.005	.037	.02	.00						
NW0860	.08	1.05	.010	.011	.29	.02	.05	.006	.005	.038	.02	.00						
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (*) WERE ROLLED IN THE USA.																	
.....	END OF REPORT																	

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

QUALITY COORDINATOR



EVRAZ INC. NA
Evraz Oregon Steel - 14400 N. Rivergate Blvd., Portland, Oregon 97203

61A035534

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE
1148531	Apr 04, 2011
MILL ORDER NO.	DATE
242387	
CUSTOMER ORDER NO.	
M62006238	
JOB/REQ. NO.	
SHIPPING NO.	DATE
1148531	04/04/2011
CARRIER	
UNION PACIFIC	
CAR/TRUCK NO.	
BLUE	

RUSSEL METALS INC (EDMONTON) ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA	RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA
--	---

ISO 9001 REGISTERED U.S. PLATE PRODUCER	THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAN4. LCVN 20 FT. LBF AVG @ -50 F (H) 20 FT. LBF MIN.
---	--

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.1880 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57491	NW0858		473 471	630 28 630 28					
	21 PCS 57939 LBS									
	21 PCS 57939 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	W	As	Sn	Grain Size
NW0858	.07	1.09	.011	.010	.26	.01	.05	.005	.005	.035	.01	.00									
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																				
.....	END OF REPORT																				

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA BY _____



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

61A035853

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	1154187	DATE	Apr 30, 2011	PAGE	1
WILL ORDER NO.	242387				
CUSTOMER ORDER NO.	M62006238				
JOB/REQ. NO.					
SHIPPING NO.	1154187	DATE	04/30/2011		
CARRIER	UNION PACIFIC				
CAR/TRUCK NO.	ORANGE				

RUSSEL METALS INC - EDMONTON - BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
US PLATE PRODUCED

3 16
P

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BEND BHN TEST	IMPACTS
1	0.1880 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57491								
3 PCS 8277 LBS		NW0854		472 480	635 25 635 27				
				LCVN @ -50 LCVN @ -50	DEG F 2.5mm DEG F 2.5mm	25 25 23 / 24 24 22 24 / 23			ft.lbf ft.lbf
5 PCS 13795 LBS		NW0858		473 471	630 28 630 28				
				LCVN @ -50 LCVN @ -50	DEG F 2.5mm DEG F 2.5mm	25 26 25 / 25 22 26 25 / 24			ft.lbf ft.lbf
8 PCS 22072 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0854	.08	1.09	.011	.011	.27	.02	.05	.009	.037	.02	.00				
NW0858	.07	1.09	.011	.010	.26	.01	.05	.005	.035	.01	.00				
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (*) WERE ROLLED IN THE USA.															
END OF REPORT															

I certify the above to be correct as contained in the records of EVRAZ INC. NA BY Christina Technical Support Coordinator



EVRAZ

Evraz Oregon Steel: 14400 N. Rivergate Blvd., Portland, Oregon 97203

ISO 9001
REGISTERED

S O L D T O

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

REPRODUCTION
OF PLATE PROHIBITED

R3/16

1484

BATH

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 50WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.1880 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57491									
	2 PCS 5518 LBS	NW0863		473 468	635 30 635 28					
				LCVN @ -50	DEG F 2.5mm	24 24 24 / 24				ft.lbf
				LCVN @ -50	DEG F 2.5mm	25 25 23 / 24				ft.lbf
	2 PCS 5518 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	Mc
NW0863	.09	1.06	.008	.009	.29	.02	.05	.003	.005	.035	.03	.00						
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (*) WERE ROLLED IN THE USA.																	
.....	END OF REPORT																	

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

QUALITY COORDINATOR

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE
1149054	Apr 06, 2011
MILL ORDER NO.	DATE
242387	
CUSTOMER ORDER NO.	
M62006238	
JOB REQ. NO.	
SHIPPING NO.	DATE
1149054	04/06/2011
CARRIER	
UNION PACIFIC	
CAR/TRUCK NO.	
ORANGE	

61Au35531



EVRAZ INC. NA
EvrAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

ISO 9001
REGISTERED
U.S. PLATE PRODUCTION

RUSSEL METALS INC (EDMONTON)
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 250WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1154179	Apr 30, 2011	1
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M620005238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1154179	04/30/2011	
CARRIER		
UNION PACIFIC		
CARTRUCK NO.		
WHITE		

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57493									
	2 PCS 7338 LBS	NTW0811		605	785	24				
				610	795	26				
				LCVN @ -50	DEG F 5.0mm	30	22	24	25	ft.lbf
				LCVN @ -50	DEG F 5.0mm	30	24	23	25	ft.lbf
	2 PCS 7338 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0811	.15	1.19	.015	.005	.27	.01	.04	.023	.02	.00					
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.														
.....	END OF REPORT														

I certify the above to be correct as contained in the records of EVRAZ INC. NA By Chitra White Technical Support Coordinator

62A005039

61A035518



EVRAZ INC. NA
EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1146798
DATE Mar 24, 2011
MILL ORDER NO. 242388
DATE

RUSSEL METALS INC - EDMONTON - BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
PLATE TEST

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

1484 BA HO

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000MB X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
	2 PCS 7338 LBS	NW0804		565 605	765 800	22 21				
				LCVN @ -50	DEG F 5.0mm	39 25 29 / 31				ft.lbf
				LCVN @ -50	DEG F 5.0mm	30 13 46 / 29				ft.lbf
	3 PCS 11007 LBS	NW0821		575 565	770 760	24 27				
				LCVN @ -50	DEG F 5.0mm	39 24 31 / 31				ft.lbf
				LCVN @ -50	DEG F 5.0mm	34 29 26 / 29				ft.lbf
	10 PCS 36690 LBS	NW0844		595 595	780 775	22 27				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0804	0.14	1.23	0.013	0.005	0.22	0.01	0.04	0.017	0.03	0.00					
NW0821	0.15	1.21	0.010	0.003	0.22	0.01	0.05	0.013	0.03	0.00					
NW0844	0.14	1.20	0.011	0.004	0.25	0.01	0.05	0.016	0.03	0.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (+) WERE ROLLED IN THE USA.															

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ INC. NA
EVRAZ Oregon Steel 14406 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1146798
DATE Mar 24, 2011
PAGE 2

MILL ORDER NO. 242388
CUSTOMER ORDER NO. M62006238
JOB REQ. NO.
SHIPPING NO. 1146798
DATE 03/24/2011
CARRIER UNION PACIFIC
CAR/TRUCK NO. WHITE

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CANADA
1484 BA H0

ISO 9001
REGISTERED
U.S. PATENT
SOLD TO
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4 LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000	NW0844								
	10 PCS 36690 LBS									
	15 PCS 55035 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Cr	Al	Mo	Ti	B	N	Ca	CE	Max. Brn Grain Size
NW0844	0.14	1.20	0.011	0.004	0.25	0.01	0.05	0.016	0.016	0.03	0.036	0.00						
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																	
	END OF REPORT																	

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

EVRAZ INC. NA

REPORT OF CHEMICAL/PHYSICAL TESTS

61A035519

ISO 9001 REGISTERED U.S. PATENT PENDING		S O L D T O		RUSSEL METALS INC (EDMONTON) ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA		RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA		CERTIFICATE NO. 1146799 MILL ORDER NO. 242388 CUSTOMER ORDER NO. M62006238 JOB REQ. NO.		DATE Mar 24, 2011	
				1484 PA 40				SHIPPING NO. 1146799 DATE 03/24/2011			
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF AVG @ -50 F (H) 20 FT.LBF MIN.											
CARRIER UNION PACIFIC CAR/TRUCK NO. BLUZE											

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	HARDNESS BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
7 PCS	25683 LBS	NW0804		565 605	765 800	22 21				
				LCVN @ -50	DEG F 5.0mm	39 25	29 / 31			ft.lbf
				LCVN @ -50	DEG F 5.0mm	30 13	46 / 29			ft.lbf
8 PCS	29352 LBS	NW0810		575 615	765 810	24 21				
				LCVN @ -50	DEG F 5.0mm	38 28	28 / 31			ft.lbf
				LCVN @ -50	DEG F 5.0mm	10 25	26 / 20			ft.lbf
15 PCS	55035 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	CU	NI	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	McQuaid Bn
NW0804	.14	1.23	.013	.005	.22	.01	.04	.017	.013	.042	.03	.00						
NW0810	.15	1.24	.014	.004	.25	.01	.04	.017	.014	.041	.03	.00						
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																		
END OF REPORT																		

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By _____

EVRAZEVRAZ INC. NA
EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203**REPORT OF CHEMICAL/PHYSICAL TESTS**

CERTIFICATE NO.	DATE	PAGE
1146680	Mar 24, 2011	1
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOB REQ. NO.		
SHIPPING NO.	DATE	
1146680	03/24/2011	
CARRIER		
UNION PACIFIC		
CAVTRUCK NO.		
WHITE		

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6B 4T2
CANADA

RUSSEL METALS INC (EDMONTON)
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6B 4T2
CA

ISO 9001
REGISTERED
US PLATE PROD

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 250WT CAT4 LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
4 PCS	14676 LBS	NW0809		625	810	20				
				625	810	25				
				LCVN @ -50	DEG F 5.0mm	25	36	28 / 29	ft.lbf	
				LCVN @ -50	DEG F 5.0mm	22	40	26 / 29	ft.lbf	
1 PC	3669 LBS	NW0828		595	775	24				
				LCVN @ -50	DEG F 5.0mm	30	24	30 / 28	ft.lbf	
6 PCS	22014 LBS	NW0830		625	800	24				
				620	795	23				
				LCVN @ -50	DEG F 5.0mm	26	40	30 / 32	ft.lbf	
				LCVN @ -50	DEG F 5.0mm	45	32	25 / 34	ft.lbf	

CHEMICAL ANALYSIS

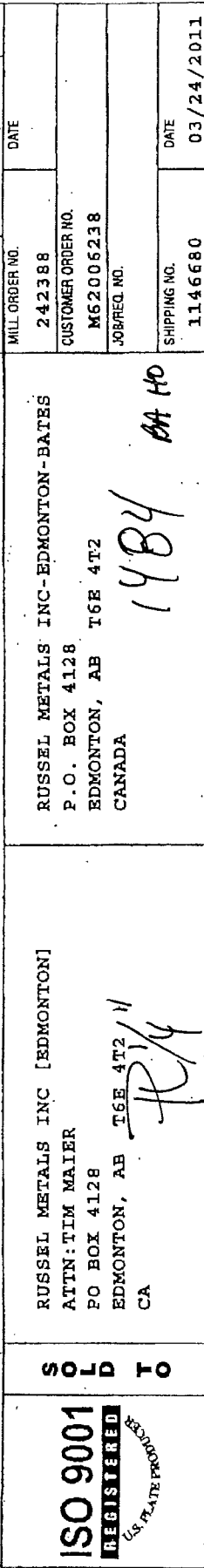
HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0809	.14	1.20	.016	.003	.20	.01	.04	.021	.039	.03	.00				
NW0828	.14	1.21	.008	.004	.25	.01	.05	.018	.043	.01	.00				
NW0830	.14	1.25	.013	.005	.26	.01	.05	.030	.038	.02	.00				
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA.															
HEATS INDICATED WITH (+) WERE ROLLED IN THE USA.															

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By _____

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1146680	Mar 24, 2011	2
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1146680	03/24/2011	
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
WHITE		

ISO 9001 REGISTERED 	RUSSEL METALS INC [EDMONTON] ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA	RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA 1484 BA HO
--	--	---

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT. LBF
AVG @ -50 F (H) 20 FT. LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSIX 100	TENSILE PSIX 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000									
4 PCS	14676 LBS	NW0834		610	785	25				
				600	790	22				
				LCVN @ -50	DEG F 5.0mm	28	26	20	/	24 ft.lbf
				LCVN @ -50	DEG F 5.0mm	31	34	35	/	33 ft.lbf
15 PCS	55035 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE	REMARKS
NW0834	.14	1.20	.012	.005	.26	.01	.05	.019	.014	.048	.04	.00				
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																
END OF REPORT																

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

61A035523



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1146681
DATE Mar 24, 2011
MILL ORDER NO. 242388
DATE

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN:TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
U.S. PLATE PROCESS

1484 BA 40

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4 LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

SHIPPING NO. 1146681
DATE 03/24/2011
CARRIER UNION PACIFIC
CARTRUCK NO. BLUE

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000MB X 528.000 SCHEDULE B:7208.52.00.00 PT# 57493									
3 PCS	11007 LBS	NW0809		625	810	20				
				625	810	25				
				LCVN @	-50	DEG F	5.0mm	25	36	28 / 29 ft.lbf
				LCVN @	-50	DEG F	5.0mm	22	40	26 / 29 ft.lbf
7 PCS	25683 LBS	NW0811		605	785	24				
				610	795	26				
				LCVN @	-50	DEG F	5.0mm	30	22	24 / 25 ft.lbf
				LCVN @	-50	DEG F	5.0mm	30	24	23 / 25 ft.lbf
5 PCS	18345 LBS	NW0821		575	770	24				
				565	760	27				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cr	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE
NW0809	14	1.20	.016	.003	.20	.01	.04	.021	.014	.039	.03	.00					
NW0811	15	1.19	.015	.005	.27	.01	.04	.023	.014	.046	.02	.00					
NW0821	15	1.21	.010	.003	.22	.01	.05	.013	.012	.033	.03	.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																	

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ INC. NA
EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1146682	Mar 24, 2011	2
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
MC2006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1146682	03/24/2011	
CARRIER		
UNION PACIFIC		
CANTRUCK NO.		
ORANGE		

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN:TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
U.S. PATENT PENDING

1484 BA H0

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	HARDNESS BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000									
	1 PC 3669 LBS	NW0821								
	7 PCS 25683 LBS	NW0844								
	16 PCS 58704 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	Mc
NW0821	15	1.21	.010	.003	.22	.01	.05	.013	.012	.033	.03	.00						
NW0844	14	1.20	.011	.004	.25	.01	.05	.016	.016	.036	.03	.00						
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																		
END OF REPORT																		

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

61A035525



EVRAZ INC. NA
EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	1148255	DATE	Mar 31, 2011
WILL ORDER NO.	242388	DATE	
CUSTOMER ORDER NO.	M62006238		
JOB/REQ NO.			
SHIPPING NO.	1148255	DATE	03/31/2011
CARRIER	UNION PACIFIC		
CAR/TRUCK NO.	ORANGE		

ISO 9001 REGISTERED QUALITY MANAGEMENT SYSTEM	RUSSEL METALS INC (EDMONTON) ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA	RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA
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1484 BA 40

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
 CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT. LBF
 AVG @ -50 F (H) 20 FT. LBF MIN.

PHYSICAL PROPERTIES

ITEM	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
	2 PCS 7338 LBS	NW0804		565 605	765 800	22 21				
				LCVN @ -50	DEG F 5.0mm	39	25	29	31	ft. lbf
				LCVN @ -50	DEG F 5.0mm	30	13	46	29	ft. lbf
	7 PCS 25683 LBS	NW0810		575 615	765 810	24 21				
				LCVN @ -50	DEG F 5.0mm	38	28	28	31	ft. lbf
				LCVN @ -50	DEG F 5.0mm	10	25	26	20	ft. lbf
	4 PCS 14676 LBS	NW0819		605 610	780 780	22 21				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Al	Fe	N	Ca	CE
NW0804	14	1.23	.013	.005	.22	.01	.04	.017	.013	.042	.03	.00			
NW0810	15	1.24	.014	.004	.25	.01	.04	.017	.014	.041	.03	.00			
NW0819	14	1.20	.010	.005	.25	.01	.05	.016	.017	.045	.05	.00			
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE SOLIDIFIED IN THE USA.															

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

EVRAZ

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1148255	Mar 31, 2011	2
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
MC2006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1148255	03/31/2011	
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
ORANGE		

RUSSEL METALS INC [EDMONTON]

ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB
CA

RUSSEL METALS INC-EDMONTON-BATES

P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

ISO 9001

REGISTERED

FOR PLATE PRODUCER

SOLD TO

7/4"

1484

BA H0

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4 LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000									
	4 PCS 14676 LBS	NW0819		LCVN @ -50 DEG F 5.0mm	28 30 29 / 29	ft.lbf				
		NW0821		LCVN @ -50 DEG F 5.0mm	30 33 28 / 30	ft.lbf				
	1 PC 3669 LBS			575 770 24						
				565 760 27						
		NW0831		LCVN @ -50 DEG F 5.0mm	39 24 31 / 31	ft.lbf				
				LCVN @ -50 DEG F 5.0mm	34 29 26 / 29	ft.lbf				
	1 PC 3669 LBS			590 775 23						
				615 790 24						
				LCVN @ -50 DEG F 5.0mm	44 28 24 / 32	ft.lbf				
				LCVN @ -50 DEG F 5.0mm	19 20 23 / 20	ft.lbf				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE
NW0819	14	1.20	.010	.005	.25	.01	.05	.016	.017	.045	.05	.00					
NW0821	15	1.21	.010	.003	.22	.01	.05	.013	.012	.033	.03	.00					
NW0831	15	1.20	.018	.005	.21	.01	.05	.021	.016	.046	.02	.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA.																	
HEATS INDICATED WITH (+) WERE ROLLED IN THE USA.																	

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

QUALITY COORDINATOR

61A035527



EVRAZ INC. NA

EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	1148254	DATE	Mar 31, 2011
MILL ORDER NO.	242388	DATE	
CUSTOMER ORDER NO.	M62006238		
JOB/REQ. NO.			
SHIPPING NO.	1148254	DATE	03/31/2011
CARRIER	UNION PACIFIC		
CARTRUCK NO.	BLUE		

RUSSEL METALS INC [EDMONTON]

ATTN: TIM MAIER

PO BOX 4128

EDMONTON, AB T6E 4T2

CA

RUSSEL METALS INC-EDMONTON-BATES

P.O. BOX 4128

EDMONTON, AB T6E 4T2

CANADA

ISO 9001

REGISTERED

147178

P. 1/1

1484

Bt 40

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
 CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4 LCVN 20 FT.LBF
 AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
1 PC	3669 LBS	NW0810		575 615	765 810	24 21				
				LCVN @ -50	DEG F 5.0mm	38	28	28	31	ft.lbf
				LCVN @ -50	DEG F 5.0mm	10	25	26	20	ft.lbf
3 PCS	11007 LBS	NW0819		605 610	780 780	22 21				
				LCVN @ -50	DEG F 5.0mm	28	30	29	29	ft.lbf
				LCVN @ -50	DEG F 5.0mm	30	33	28	30	ft.lbf
11 PCS	40359 LBS	NW0831		590 615	775 790	23 24				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0810	15	1.24	.014	.004	.25	.01	.04	.017	.014	.041	.03				
NW0819	14	1.20	.010	.005	.25	.01	.05	.016	.017	.045	.05				
NW0831	15	1.20	.018	.005	.21	.01	.05	.021	.016	.046	.02				
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (H) WERE ROLLED IN THE USA.															

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA BY



EVRAZ INC. NA

Evraz Oregon Steel - 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1148254	Mar 31, 2011	2
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1148254	03/31/2011	
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
BLUE		

ISO 9001
REGISTERED
PLATE PRODUCTION

RUSSEL METALS INC (EDMONTON)
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

1484 BA HD

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE-ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000MX X 528.000									
	11 PCS 40359 LBS	NW0831								
	15 PCS 55035 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0831	.15	1.20	.018	.005	.21	.01	.05	.021	.016	.046	.02	.00			
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.														
.....	END OF REPORT														

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

QUALITY COORDINATOR



EVRAZ INC. NA
Evraz Oregon Steel 1400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1146885	Mar 25, 2011	1
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1146885	03/25/2011	
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
WHITE		

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
UK PLATE 178

1484 BA 40

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0-2500 X 98.000MB X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
	10 PCS 36690 LBS	NW0830		525 800 24 620 795 23	LCVN @ -50 DEG F 5.0mm 26 40 30 / 32 ft.lbf LCVN @ -50 DEG F 5.0mm 46 32 25 / 34 ft.lbf					
	10 PCS 36690 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0830	14	1.25	.013	.005	.26	.01	.05	.030	.02	.00					
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.														
.....	END OF REPORT														

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By _____



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1146887
DATE Mar 25, 2011
PAGE 1

ISO 9001 REGISTERED US PLATE PROD.		SOLD TO RUSSEL METALS INC [EDMONTON] ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA		RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA	
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 50WT C44. LCVN 20 FT.LBF AVG @ -50 F (H) 20 FT.LBF MIN.		1484 BA H0		WILL ORDER NO. 242388 CUSTOMER ORDER NO. M62006238 JOBREQ. NO. SHIPPING NO. 1146887 DATE 03/25/2011 CARRIER UNION PACIFIC CARTRUCK NO. BLUE	

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
	6 PCS 22014 LBS	NW0809		625	810 20					
				625	810 25					
				LCVN @ -50	DEG F 5.0mm	25 35 28 / 29				ft. lbf
				LCVN @ -50	DEG F 5.0mm	22 40 26 / 29				ft. lbf
	9 PCS 33021 LBS	NW0834		610	785 25					
				600	790 22					
				LCVN @ -50	DEG F 5.0mm	28 26 20 / 24				ft. lbf
				LCVN @ -50	DEG F 5.0mm	31 34 35 / 33				ft. lbf
	15 PCS 55035 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE	McQuaid Grain Size
NW0809	.14	1.20	.016	.003	.20	.01	.04	.021	.014	.039	.03					
NW0834	.14	1.20	.012	.005	.26	.01	.05	.019	.014	.048	.04					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (V) WERE ROLLED IN THE USA.																
.....	END OF REPORT	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1146888
DATE Mar 25, 2011
PAGE 1

MILL ORDER NO. 242388
CUSTOMER ORDER NO. M62006238
JOB/REQ. NO.
SHIPPING NO. 1146888
DATE 03/25/2011
CARRIER UNION PACIFIC
CAR/TRUCK NO. ORANGE

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN:TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
US PLATE PRODUCTION

1484 BA H0

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57493									
3 PCS	11007 LBS	NW0809		625	810	20				
				625	810	25				
				LCVN @ -50	DEG F 5.0mm	25	36	28	/ 29	ft.lbf
				LCVN @ -50	DEG F 5.0mm	22	40	26	/ 29	ft.lbf
6 PCS	22014 LBS	NW0811		605	785	24				
				610	795	26				
				LCVN @ -50	DEG F 5.0mm	30	22	24	/ 25	ft.lbf
				LCVN @ -50	DEG F 5.0mm	30	24	23	/ 25	ft.lbf
6 PCS	22014 LBS	NW0821		575	770	24				
				565	760	27				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	MOVED BY DATE
NW0809	.14	1.20	.016	.003	.20	.01	.04	.021	.014	.039	.03	.00						
NW0811	.15	1.19	.015	.005	.27	.01	.04	.023	.014	.046	.02	.00						
NW0821	.15	1.21	.010	.003	.22	.01	.05	.013	.012	.033	.03	.00						
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA.																		
HEATS INDICATED WITH (+) WERE ROLLED IN THE USA.																		

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By _____



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1146888	Mar 25, 2011	2
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOB REF. NO.		
SHIPPING NO.	DATE	
1146888	03/25/2011	
CARRIER		
UNION PACIFIC		
CARTRUCK NO.		
ORANGE		

RUSSEL METALS INC - EDMONTON - BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
PLATE PRODUCER

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000									
	6 PCS 22014 LBS	NW0821								
	15 PCS 55035 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Ch	Al	Cr	Mo	Ti	B	N	Ca	CE
NW0821	0.15	1.21	0.010	0.003	0.22	0.01	0.05	0.013	0.012	0.033	0.03	0.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																	
.....	END OF REPORT																

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

61A035367



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1149951

DATE Apr 11, 2011

MILL ORDER NO. 242388

DATE

CUSTOMER ORDER NO. M62006238

JOB/REQ. NO.

SHIPPING NO. 1149951

DATE 04/11/2011

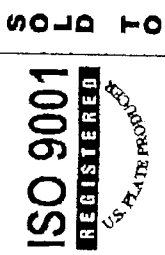
CARRIER UNION PACIFIC

CART/TRUCK NO. BLDE

RUSSEL METALS INC - EDMONTON - BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

1484 BA H0

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA



THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
	2 PCS 7338 LBS	NW0809		625 625	810 810	20 25				
				LCVN @ -50	DEG F 5.0mm	25	36	28	/ 29	ft.lbf
	3 PCS 11007 LBS	NW0811		605 610	785 795	24 26				
				LCVN @ -50	DEG F 5.0mm	30	22	24	/ 25	ft.lbf
				LCVN @ -50	DEG F 5.0mm	30	24	23	/ 25	ft.lbf
	1 PC 3669 LBS	NW0821		575 565	770 760	24 27				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0809	14	1.20	.016	.003	.20	.91	.04	.021	.039	.03	.00				
NW0811	15	1.19	.015	.005	.27	.01	.04	.023	.046	.02	.00				
NW0821	15	1.21	.010	.003	.22	.01	.05	.013	.033	.03	.00				
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (H) WERE ROLLED IN THE USA.															

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

QUALITY COORDINATOR



EVRAZ INC. NA
EVRAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1149951	APR 11, 2011	2
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1149951	04/11/2011	
CARRIER		
UNION PACIFIC		
CART/TRUCK NO.		
BLUE		

ISO 9001 REGISTERED QUALITY MANAGEMENT SYSTEM	RUSSEL METALS INC [EDMONTON] ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA	RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA
---	--	---

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000MB X 528.000									
	1 PC 3669 LBS	NW0821		LCVN @ -50	DEB F 5.0mm	39 24	31 / 31	ft.lbf		
	2 PCS 7338 LBS	NW0830		LCVN @ -50	DEB F 5.0mm	34 29	26 / 29	ft.lbf		
	4 PCS 14676 LBS	NW0843		LCVN @ -50	DEB F 5.0mm	26 40	30 / 32	ft.lbf		
	1 PC 3669 LBS	NW0844		LCVN @ -50	DEB F 5.0mm	46 32	25 / 34	ft.lbf		

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE	McQand Bn Grain Size
NW0821	15	1.21	.010	.003	.22	.01	.05	.013	.033	.03	.00					
NW0830	14	1.25	.013	.005	.26	.01	.05	.030	.038	.02	.00					
NW0843	16	1.16	.014	.004	.25	.01	.05	.015	.034	.02	.00					
NW0844	14	1.20	.011	.004	.25	.01	.05	.016	.036	.03	.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

QUALITY COORDINATOR

61AU35524



EVRAZ INC. NA
EVRaz Oregon Steel 1400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1146682
DATE Mar 24, 2011
MILL ORDER NO. 242388
CUSTOMER ORDER NO. M52006238
JOB REQ. NO.
SHIPPING NO. 1146682
DATE 03/24/2011
CARRIER UNION PACIFIC
CAR/TRUCK NO.
ORANGE

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

ISO 9001
REGISTERED
US PLATE MARK

R 1/4"

484 BA H0

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT. LBF
AVG @ -50 F (H) 20 FT. LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57493									
	7 PCS 25683 LBS	NW0804		565 605	765 800	22 21				
				LCVN @ -50	DEG F 5.0mm	39 25	29 / 31	ft. lbf		
				LCVN @ -50	DEG F 5.0mm	30 13	46 / 29	ft. lbf		
	1 PC 3669 LBS	NW0810		575 615	765 810	24 21				
				LCVN @ -50	DEG F 5.0mm	38 28	28 / 31	ft. lbf		
				LCVN @ -50	DEG F 5.0mm	10 25	26 / 20	ft. lbf		
	1 PC 3669 LBS	NW0821		575 565	770 760	24 27				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	W	Other
NW0804	14	1.23	.013	.005	.22	.01	.04	.017	.013	.042	.03	.00							
NW0810	15	1.24	.014	.004	.25	.01	.04	.017	.014	.041	.03	.00							
NW0821	15	1.21	.010	.003	.22	.01	.05	.013	.012	.033	.03	.00							
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																			

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ INC. NA
Evraz Oregon Steel 1440 N. Riverside Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1149951	Apr 11, 2011	3
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
1149951	04/11/2011	
CARRIER		
UNION PACIFIC		
CART/UCK NO.		
BLDB		

RUSSEL METALS INC - EDMONTON - BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
U.S. PATENTED

1484
HO

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000									
	1 PC 3669 LBS	NW0844								
	13 PCS 47697 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE	Moand Br Chemicals
NW0844	.14	1.20	.011	.004	.25	.01	.05	.016	.036	.03	.00					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																
END OF REPORT																

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA BY

61AU35524



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE
1146682	Mar 24, 2011
MILL ORDER NO.	DATE
242388	

CUSTOMER ORDER NO.
M62006238
JOB/REQ. NO.
SHIPPING NO.
1146682
DATE
03/24/2011

RUSSEL METALS INC [EDMONTON] ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA	RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA
--	---

ISO 9001 REGISTERED EDMONTON PLATE	SOLD TO R 1/4"
---	-------------------

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT. LBF
AVG @ -50 F (H) 20 FT. LBF MIN.

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57493									
	7 PCS 25683 LBS	NW0804		565 605	765 800	22 21				
				LCVN @ -50	DEG F 5.0mm	39	25	29 / 31		ft. lbf
				LCVN @ -50	DEG F 5.0mm	30	13	46 / 29		ft. lbf
	1 PC 3669 LBS	NW0810		575 615	765 810	24 21				
				LCVN @ -50	DEG F 5.0mm	38	28	28 / 31		ft. lbf
				LCVN @ -50	DEG F 5.0mm	10	25	26 / 20		ft. lbf
	1 PC 3669 LBS	NW0821		575 565	770 760	24 27				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	OE
NW0804	.14	1.23	.013	.005	.22	.01	.04	.017	.013	.042	.03	.00			
NW0810	.15	1.24	.014	.004	.25	.01	.04	.017	.014	.041	.03	.00			
NW0821	.15	1.21	.010	.003	.22	.01	.05	.013	.012	.033	.03	.00			
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.															

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA BY



EVRAZ INC. NA
EVRaz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1146681	Mar 24, 2011	2
MILL ORDER NO.	DATE	
242388		
CUSTOMER ORDER NO.		
M62006238		
JOBREQ. NO.		
SHIPPING NO.	DATE	
1146681	03/24/2011	
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
BLUE		

RUSSEL METALS INC (EDMONTON) ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA	RUSSEL METALS INC-EDMONTON-BATES P.O. BOX 4128 EDMONTON, AB T6E 4T2 CANADA
--	---

ISO 9001 REGISTERED US PLATE PROD	S O L D T O	1484 BA 40
---	----------------	------------

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CXT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	HARDNESS BHN	BEND TEST	IMPACTS
1	0.2500 X 98.000ME X 528.000	NW0821							
	5 PCS 18345 LBS								
	15 PCS 55035 LBS TOTALS								

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	MO. & B. SIZE
NW0821	1.15	1.21	.010	.003	.22	.01	.05	.013	.012	.033	.03	.00						
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (") WERE ROLLED IN THE USA.																	
.....	END OF REPORT																	

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1154180
DATE Apr 30, 2011
PAGE 1

ISO 9001
REGISTERED
US PLATE PRODUCTION

S O L D T O
RUSSEL METALS INC (EDMONTON)
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA
1984 BATHO

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4, LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

MILL ORDER NO. 242389
CUSTOMER ORDER NO. M62006238
JOB REQ. NO.
SHIPPING NO. 1154180
DATE 04/30/2011
CARRIER UNION PACIFIC
CARTRUCK NO. WHITE

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.3130 X 98.000MB X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57495	NW0828								
	1 PC 4593 LBS			575	760	23				
	1 PC 4593 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0828	0.14	1.21	0.008	0.004	0.25	0.01	0.05	0.018	0.012	0.043	0.01	0.00			
	HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.														
.....	END OF REPORT														

I certify the above to be correct as contained in the records of EVRAZ INC. NA By Chitika Technical Support Coordinator

CERTIFICATE NO.	DATE	PAGE
1148253	Mar 31, 2011	1

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

BAHO

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT. LBF
AVG @ -50 F (H) 20 FT. LBF MIN.

SHIPPING NO.

DATE _____

03/31/2011

CARRIER
UNION PACIFIC

CAR/TRUCK NO.:

WILLIAM

PHYSICAL PROPERTIES

[illegible]

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	MAKING DATE
NW0828	14	1.21	.008	.004	.25	.01	.05	.018	.012	.043	.01	.00						
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.																		
..... END OF REPORT																		

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA BY



EVRAZ INC. NA
EvrAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

61A035526

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE
1148253	Mar 31, 2011
MILL ORDER NO.	DATE
242389	
CUSTOMER ORDER NO.	
M62006238	
JOB REQ. NO.	
SHIPPING NO.	DATE
1148253	03/31/2011
CARRIER	
UNION PACIFIC	
CARTRUCK NO.	
WHITE	

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN: TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
PLATE FACTORY

1484 BA H0

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.3130 X 98.000ME X 528.000 SCHEDULE B: 7208.52.00.00 PT# 57495									
	13 PCS 59709 LBS	NW0828		585 765 23 575 760 23	LCVN @ -50 DEG F 5.0mm 28 30 28 / 28 ft.lbf LCVN @ -50 DEG F 5.0mm 49 48 43 / 45 ft.lbf					
	13 PCS 59709 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	Mc	Other Elements
NW0828	.14	1.21	.008	.004	.25	.01	.05	.018	.012	.043	.01	.00							
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.																			
.....	END OF REPORT																		

I certify the above to be correct as contained in the records of EVRAZ INC. NA

BY

QUALITY COORDINATOR

Evrz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO.	DATE	PAGE
1146886	Mar 25, 2011	1
MAIL ORDER NO.		DATE
242389		
CUSTOMER ORDER NO.		
M62006238		
JOB/REQ. NO.		
SHIPPING NO.		DATE
1146886		03/25/2011
CARRIER		
UNION PACIFIC		
CAR/TRUCK NO.		
WHITE		

RUSSEL METALS INC [EDMONTON]

ATTN: TIM MAIER

PO BOX 4128

EDMONTON. AB T6E 4T2

CA

ISO 9001

REGISTERED

U.S.

U.S. ALATP PRODUCTS

32

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 50WT CAT4. LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

PHYSICAL PROPERTIES

[illegible]

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	N	Ca	CE	McQuay-Norris Chem. Co.
NW0831	.15	1.20	.018	.005	.21	.01	.05	.021	.016	.046	.02	.00						
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA. END OF REPORT																		

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By



EVRAZ INC. NA
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203

REPORT OF CHEMICAL/PHYSICAL TESTS

CERTIFICATE NO. 1149948
DATE APR 11, 2011
MILL ORDER NO. 242389
DATE

RUSSEL METALS INC-EDMONTON-BATES
P.O. BOX 4128
EDMONTON, AB T6E 4T2
CANADA

RUSSEL METALS INC [EDMONTON]
ATTN:TIM MAIER
PO BOX 4128
EDMONTON, AB T6E 4T2
CA

ISO 9001
REGISTERED
2017-2020

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4 LCVN 20 FT.LBF
AVG @ -50 F (H) 20 FT.LBF MIN.

1484 BA #0

SHIPPING NO. 1149948
DATE 04/11/2011

CARRIER UNION PACIFIC
CAR/TRUCK NO. WHITE

PHYSICAL PROPERTIES

ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	0.3130 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57495									
	2 PCS 9186 LBS	NW0819		580	775	20				
				LCVN @ -50	DEG F	5.0mm	32	29	30	ft.lbf
	5 PCS 22965 LBS	NW0833		585	775	25				
				LCVN @ -50	DEG F	5.0mm	25	23	22	ft.lbf
	7 PCS 32151 LBS TOTALS									

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cr	Mo	Ti	B	N	Ca	CE
NW0819	.14	1.20	.010	.005	.25	.01	.05	.016	.045	.05	.00				
NW0833	.14	1.23	.013	.005	.26	.01	.05	.017	.050	.03	.00				
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (-) WERE ROLLED IN THE USA.															
.....	END OF REPORT														

QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

EVRAZ

EVRAZ INC. NA

8250 130th Street, Surrey, BC, VAW 8J9

Test Certificate

Form TC1: Revision 1: Date 31 Oct 2000

Customer: C.W. CARRY LTD. 5815 - 75TH STREET EDMONTON AB T6E0T3	Customer P.O. No.: 26520	Mill Order No.: 41-240145-01	Shipping Manifest: ST046526
Product Description: CSA G40.21(2004)44W/300W / ASTM A36(05) A709(01A)36/ASME SA36(01B)		Ship Date: 18 May 11	Cert No: 011125240 (Page 1 of 1)
Size: 0.250 X 96.00 X 240.0 (IN)		Cert Date: 18 May 11	

Tensiles				Charpy Impact Tests			
Heat Id	Piece Id	Piece Dimensions	Tst Loc	YS (PSI)	UTS (PSI)	%RA	Elong %
NW0667	A24	0.250 X 96.00 (CUT)	L 52000	72000	26	26	26
NW1370	A20	0.250 X 96.00 (CUT)	C 50000	71000	28	28	28
			C 50000	69000	30	30	30

Chemical Analysis											
Heat Id	C	Mn	P	S	Si	Tot Al	Cu	Ni	Cr	Mo	Ch
NW0667	.14	.86	.005	.008	.30	.051	.01	.05	.01	.00	.005
NW1370	.13	.87	.012	.007	.23	.045	.01	.05	.02	.00	.005

MATERIAL MARKED WITH AN ASTERISK IS PRODUCED FROM COIL

* NW1370

A20

PCES: 6, WGT: 9801

* NW0667

A24

PCES: 24, WGT: 39204

69

Cust Part #:

WE HEREBY CERTIFY THAT THIS MATERIAL
WAS TESTED IN ACCORDANCE WITH THE
APPROPRIATE SPECIFICATION

Greg Baldon

CHECKED BY

P38

CON

1601 JOL

10F2

ESSAR Steel Algonia Inc.

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

CUSTOMER PURCHASE ORDER NUMBER PO-0025800-1	ENTRY DATE 2011/02/03	CREATE DATE 2011/02/03	TALLY NUMBER 212374	SHIPPER'S NO. -	CARRIER BCOL	MILL ORDER 73422
--	--------------------------	---------------------------	------------------------	--------------------	-----------------	---------------------

CHARGE TO CUSTOMER NAME AND ADDRESS

C W CARRY LTD STEEL SERVICE CENTRE
5815 - 75TH STREET
EDMONTON ALBERTA
T6H 0T3

SHIP TO CUSTOMER NAME AND ADDRESS

CW CARRY LTD
STEEL SERVICES CENTRE
CLOVER BAR ALBERTA

CUSTOMER SPECIFICATION

HR MULTIPLE CERTIFIED PLATE - HSLA - CSA G40.21 38W/44W/ASTM A36/ASME SA36
(04) (04) (08) (10) - FLATNESS 1/2 A-6

MILL TEST REPORTS

ESSAR STEEL ALGONIA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES.

M. MCLEAN

MANAGING METALLURGIST

SUPPLEMENTARY INSTRUCTIONS

TEST CERT 1: RMILES@CWCARRY.COM TEST CERT 2: PLATE TEST COUPO
N:

INSPECTION TEST REPORTS REQUIRED

2000173573 PF

CUSTOMER USE

2011/02/07 07:26

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

MEETS EN 10204 3.1

ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGONIA.COM

ALL HEATS FULLY KILLED

HEATS INDICATED WITH (*) FINE GRAINED

HEATS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS

CUSTOMER ITEM 00002 OUR ITEM 002 DIMENSIONS .375 X 120 X 480 "

PLATE NUMBER	HEAT-MS	PIECES	NO.	WEIGHT
01361	1660L-01	1	1	6125
02839	1658L-03	2	2	12251
02841	1658L-04	2	2	12251
02843	1658L-04	2	2	12251
02850	1658L-55	1	1	6125

HEAT-MS	PIECES	NO.	WEIGHT
1658L-02	1	1	6125
1658L-04	2	2	12251
1658L-04	2	2	12251
1658L-54	2	2	12251

TENSILE TESTS: * SAMPLE * * * * * MECHANICAL PROPERTIES * * * * *

HEAT	SRCE	GAGE	COND.	METH	DIR	YIELD	TENSILE	% ELONG
1660L	166"	.3750	AR	.2	T	53.0	71.1	25{8"
1658L	166"	.3750	AR	.2	T	54.0	74.0	24{8"

LAB
ALG
ALG
ALG

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

1601 04.2012

ESSAR Steel Algoma Inc.

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

CUSTOMER PURCHASE ORDER NUMBER	ENTRY DATE	CREATE DATE	TALLY NUMBER	SHIPPER'S NO.	CARRIER	MILL ORDER
PO-0025800-1	2011/02/03	2011/02/03	212374	-	BCOL	-864047 73422

CHARGE TO CUSTOMER NAME AND ADDRESS

C W CARRY LTD STEEL SERVICE CENTRE
5815 - 75TH STREET
EDMONTON ALBERTA
T6E 0T3

SHIP TO CUSTOMER NAME AND ADDRESS

CW CARRY LTD
STEEL SERVICES CENTRE
CLOVER BAR ALBERTA

CUSTOMER SPECIFICATION

HR MULTIPLE CERTIFIED PLATE - HSLA - CSA G40.21 38W/44W/ASTM A36/ASME SA36
(04) (04) (08) (10) - FLATNESS 1/2 A-6

MILL TEST REPORTS

ESSAR STEEL ALGOMA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES.

M. MCLEAN

MANAGING METALLURGIST

SUPPLEMENTARY INSTRUCTIONS

TEST CERT 1: RMILES@CWCARRY.COM TEST CERT 2: PLATE TEST COUPO

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

TEST REPORTS REQUIRED

2000173573 PF

RESALE

2011/02/07 07:26

HEAT	(WT %)	C	TI	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B	DO
1658L*+		.15	1.13	.010	.010	.004	.20	.02	.01	.02	.01	.045	.000	.039		.35
1660L*+		.004	.16	1.16	.010	.006	.21	.02	.01	.03	.01	.028	.000	.040		.37

WARNING

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

SSAB

12400 Highway 43 North, Axis, Alabama 36505

Test Certificate

Form TC1: Revision 1: Date 31 Oct 2000

62A004783

Customer: RUSSEL METALS INC - EDMONTON P.O. BOX 4128 EDMONTON AB T6E4T2		Customer P.O. No.: 62006139 & 41-290251		Mill Order No.: 41-290252-02		Shipping Manifest : ARI10820A									
Product Description: CSA G40.21(2004)44W/300W /ASTM A36(08) A709(01A)36/ASME SA36(01ED)		Ship Date: 14 Feb 11 Cert Date: 14 Feb 11		Cert No: 081264318 (Page 1 of 1)											
Size: 0.500 X 120.0 X 240.0 (IN)															
Tensiles		Charpy Impact Tests													
Heat Id	Piece Id	Piece Dimensions	Tst Loc	YS (PSI)	UTS (PSI)	%RA	Elong % 2in 8in	Tst Dir	Average Hardness	Abs. Energy(FTLB)	% Shear	Tst Temp	Tst Dir	Tst Siz (mm)	BDWTT Temp %Shr
E1A252	A87	0.497 X 120.0 (DISCRT)	L53000	74000			23	T							

Chemical Analysis

C	Mn	P	S	Si	Tot Al	Cu	Ni	Cr	Mo	Cb	V	Ti	B	N	ORGN
.18	.90	.013	.003	.24	.028	.25	.10	.14	.03	.002	.005	.020	.0001	.0088	USA

MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT
MTR DIN EN10204:2004 TYPE 3.1 COMPLIANT
PRODUCTS SHIPPED:
E1A252 A87 PCES: 10, WGT: 40983

(r)

Cust Part # : 42583

WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION

Jason Thomas
SENIOR METALLURGIST

HT.# V 305026 *FL*

1 1/4" PLATE
1598
off

PT. GUNAWAN DIANJAYA STEEL Tbk.
Surabaya - Indonesia

Page : 51 of 58



Certified Quality Management System

ISO 9001:2008
Cert. No. 81 0945177

Head Office :
Jl. Mangrove No. 29 A
Gresik - Asemrowo - Surabaya 60183
Phone : (62-31) 7490588 (Hunting)
Fax : (62-31) 7490581
E-mail : quality@gunawansteel.com
http://www.gunawansteel.com

MILL TEST CERTIFICATE
ACC. TO EN10204 : 2004 3.1

Customer : WIRTH STEEL
Order No. : E-044-2011 ORDER NO. 0038-V
S. Contract no. : 018/0309/2011 LOT 1
Material : NEWLY PRODUCED, PRIME QUALITY, HOT ROLLED STEEL PLATES
Specification : CSA G40.21 GRADE 44W
Tolerances : ASTM A8

Certificate No. : GDS/002/11/044
Date : March 30, 2011
SHIPPING MARKS : PT. GOS TSK/SIZE/HEAT NO./PLATE NO./SPEC/
MADE IN INDONESIA/VANCOUVER, AND BE38-V
COLOUR MARKING : BRIGHT GREEN

Heat Number	Plate Number	Quantity	Dimensions (mm)			Weight (MT)	Ladle Analysis (%)														Tensile Test				Impact Value				Reference		
			T INCH	W INCH	L INCH		C	Si	Mn	P	S	Nb	Cu	Cr	Ni	Mo	V	Al	Ti	N	Test No.	Y.S KSI 4mm ²	T.S KSI 10mm ²	El % 200mm 5mm ²	Bend Test	in Joule					
																										(°C)	I	II		III	Av
V 306026	O 1	1	1-1/4	96	384	5.928	17	26	106	8	3	3	5	2	3	11	4	40	3	7	R2	48	75	34							
	R 1	1				5.928																									
Sub total		8				47.424																									
V 205689	F 1	1	1-1/2	96	240	4.446	19	24	106	8	6	4	5	3	3	8	4	40	3	5	O2	48	73	32							
	G 1	1				4.446																									
	G 2	1				4.446																									
	G 3	1				4.446																									
	G 4	1				4.446																									
V 306026	H 2	1				4.446	17	26	106	8	3	3	5	2	3	11	4	40	3	7	R2	48	75	34							
	H 3	1				4.446																									
	H 4	1				4.446																									
	O 2	1				4.446																									
	R 2	1				4.446																									
	T 2	1				4.446																									
J 1002534	T 2	1				4.446	20	19	110	16	7	<10	3	3	2	<10	<5	37	<5	5	P3	47	73	30							
Sub total		11				48.906																									
V 106102	R 1	1	1-1/2	96	288	5.335	18	24	111	14	4	3	6	4	3	2	3	30	3	7	S1	61	73	28							
V 205689	R 3	1				5.335	19	24	106	8	5	4	5	3	3	8	4	40	3	5	O2	48	73	32							
V 205682	T 3	1				5.335																									
	H 1	1				5.335	18	19	106	7	3	3	4	2	2	3	30	3	5		U3	44	68	31							
	H 2	1				5.335																									
	K 3	1				5.335																									

WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENT CALLED FOR BY THE ABOVE ORDER



PT. GUNAWAN DIANJAYA STEEL
PT. GUNAWAN DIANJAYA STEEL Tbk.
Director Manager

W/2x26 1603pk 10A/SPR BAF

Bill To: C.W. CARRY LTD. ACCIS PAYABLE 5815 75 ST NW EDMONTON T6E 0T3

Ship To: 1 C.W. CARRY LTD. CN SIDING 2062 EDMONTON T6E-0T3

Order Date: 03/22/2011 PO No: 26508 Mill Order No: 3871261 Load No: 136893 Manifest No: 2065361

AB CA AB CA

GERDAU AMERISTEEL Midlothian Mill 300 Ward Road Midlothian, TX 76065 (972) 775-8241

SIZE W 12 X 26# / W310 X 38.7

GRADE 992/572-50

LENGTH 40 FT / 12.192 M

PRODUCT WF BEAMS

HEAT NO: 22586470

C Mn P S Si Cu Ni Cr Mo Sn V Al Nb CE

.08 .89 .015 .033 .22 .34 .10 .15 .029 .011 .002 .003 .018 .29

Yield Strength		Tensile Strength		Elongation		Bend Test		ROA
KSI	MPa	KSI	MPa	%	Gage Length	Dia. Result	%	
56.2	387.5	75.0	517.1	24.4	8 In 200 mm			
56.3	388.2	74.8	515.7	24.3	8 In 200 mm			

TENSILE TEST RATIOS

YLD/TENS TENS/YLD YLD/TENS TENS/YLD

.75 1.33 .75 1.33

All manufacturing processes of this product, including electric arc MELTING and continuous CASTING, occurred in the U.S.A.

CMTR complies with EN 10204 3.1

"I hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."

Signed: Tom L. Harrington Date: Apr. 12, 2011 Signed: _____ Date: _____

Tom L. Harrington: Quality Assurance Manager Notary Public (if applicable)

Page: 1 of 1

W12x26 1583 BA

BILL TO:
VARSTEEL LTD
ACCTS PAYABLE
220 4TH ST. S.
LETHBRIDGE
T1J 4J7

STE-330
AB
CA

SHIP TO: 12
VARSTEEL-DELTA
9500 RIVER ROAD
DELTA
V4G 1B5

BC
CA

Order Date: 12/13/2010
PC No: DE-913916
Mill Order No: 3823759
Load No: 1354008
Manifest No: 2053014

CERTIFIED MATERIAL TEST REPORT
GERDAU AMERISTEEL
Midlothian Mill
300 Ward Road
Midlothian, TX 76065
(972) 775-8241

GRADE
992/572-50

SIZE
W 12 X 26 1/2 / W310 X 38.7

LENGTH
40 FT / 12.192 M

PRODUCT
WF BEAMS

HEAT NO: 22568530 HT.# 22568530

CE

C

Mn

P

S

Si

Cu

Ni

Cr

Mo

Sn

V

Al

Nb

CE

Yield Strength

ksi

MPa

58.5

403.3

56.6

404.0

Tensile Strength

ksi

MPa

76.2

525.4

76.1

524.7

TENSILE TEST RATIOS

YLD/TENS

TENS/YLD

TENS/TENS

YLD

1.77

1.3

Yield Strength

ksi

MPa

58.5

403.3

56.6

404.0

Tensile Strength

ksi

MPa

76.2

525.4

76.1

524.7

TENSILE TEST RATIOS

YLD/TENS

TENS/YLD

TENS/TENS

YLD

1.77

1.3

Yield Strength

ksi

MPa

58.5

403.3

56.6

404.0

Tensile Strength

ksi

MPa

76.2

525.4

76.1

524.7

TENSILE TEST RATIOS

YLD/TENS

TENS/YLD

TENS/TENS

YLD

1.77

1.3

ROA

%

Bend Test

Dia. Result

8 in

200 mm

8 in

200 mm

8 in

200 mm

All manufacturing processes of this product, including electric arc melting and continuous casting, occurred in the U.S.A.
ENFS complies with EN 10204 3.1

We hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material.

Signed: Tom L. Harrington Quality Assurance Manager Date: Feb. 04, 2011

Signed: _____ Date: _____
Notary Public (if applicable)

Page: 1 of 1

HMS 1102(A)-3a

K. S. Shim

General Manager of Q.A Team

WE HEREBY CERTIFY THAT THE MATERIAL HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ABOVE ORDER

2009014

A4(210)

INSPECTION CERTIFICATE

W12x26 BA

1583

ORIGINAL

Contract No.	
Customer	HYUNDAI CORPORATION
L/C No.	
P/O No.	462011018006
Commodity	H-BEAM
Specification	ASTM A36/A572G50/A992/CS A360W

H HYUNDAI STEEL COMPANY	
Head Office	1, Songhyeon-dong, Dong-gu, Inc 401-712, S. Korea
Certificate No.	
Class Cert. No.	IH20110104416 - 4
Date of Issue	

Dimensions & Length	Heat No.	Pieces	Chemical Composition (%)													Tensile Test			Bend Test	Impact Test (V-notch)			Remarks		
																Tensile Strength	Yield point	Elongation (2)		AVG	1	2		3	
			C	Si	Mn	P	S	Cu	Ni	Mo	Al	Nb	V	%	N/mm ²			%							
																									x100	x1000	x100	x1000
10X8X39 50.00 FT	0 098608	5	17	16	65	31	20	25	2	6				519.8	379.5	25.5									
10X8X45 40.00 FT	0 098531	9	16	17	75	32	32	27	2	4				524.7	382.5	25.0									
10X10X49 40.00 FT	E 147604	12	19	15	61	28	16	30	2	3				492.3	372.7	27.5									
10X10X49 40.00 FT	E 149463	15	19	17	62	30	19	25	2	4				496.2	376.5	27.0									
10X10X49 60.00 FT	E 149463	12	19	17	62	30	19	25	2	4				538.4	399.1	25.5									
12X6-1/2X26 40.00 FT	0 098967	24	15	16	62	31	20	32	1	4				549.2	431.5	25.5									
12X6-1/2X26 50.00 FT	0 098964	16	17	17	66	33	23	28	2	3				545.2	426.6	25.0									
12X6-1/2X26 50.00 FT	0 098966	8	17	15	64	26	20	27	10	2				549.2	431.5	25.5									
12X6-1/2X26 55.00 FT	0 098968	16	17	15	63	23	20	21	1	3				549.2	431.5	25.5									
SUB TOTAL		117												534.5	394.2	26.0									
(Note) (1) Coq:		88,520												534.5	395.2	26.5									

(2) Gauge length : 200 mm

(2) Gauge length : 200 mm

Heat Number
D098967

Heat Number
22586530

Bill To:
VARETEEL LTD
ACCOUNT PAYABLE
C/O 4TH ST. S.
LETHBRIDGE
T1S 4J7

PO# 438
AB
CA

Ship To: 26
Vareteel Regina
2191 Albert Street N.
REGINA
S4S 3E1

SIZE
W 12 X 26# / W319 X 28.7

WEIGHT
438.00

DATE
04-07

REAR NO: 22586530

ff

CHEMICAL ANALYSIS

	C	Mn	P	S	SI	CU	NI	CR	MO	SN	V	AL	NO	CE
	.02	.24	.011	.038	.26	.30	.12	.13	.033	.010	.002	.003	.018	.3

PHYSICAL PROPERTIES

Tensile Strength	
ksi	MPa
74.8	515.7
73.1	504.0

Spermet Area	
Sq In	Sq cm
0.521	3.36
0.533	3.44

Gage Length	
8 In	200 mm
24.2	24.3
24.3	24.3

Pend Test	
Dia. Result	ROA
	5

TENSILE TEST RATIOS

YLD/TENS TENS/YLD YLD/TENS TENS/YLD	
1.33	1.32

All manufacturing processes of this product, including electric arc melting and continuous casting, occurred in the U.S.A.
This complies with EN 10204 3.1

"I hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."

Signed: *John C. Harrington* Date: Apr. 27, 2011
John C. Harrington: Quality Assurance Manager

Signed: *Notary Public* Date: _____
Notary Public (if applicable)

Date: _____
Page: 1 of 1

CERTIFIED MATERIAL TEST REPORT
GERDAU AMERISTEEL
Midlothian Mill
300 Ward Road
Midlothian, TX 76065
(972) 775-8241

CE GERDAU AMERISTEEL

PRODUCT
WF BEAMS

LENGTH
40 FT / 12.192 M

GRADE
992/572-00

W12x26

12/16/2010

Order Date: 12/16/2010
PO No: ES-934193
Mill Order No: 23226081
Load No: 1367004
Manifest No: 2064151

Heat Number
D097161

[Handwritten signature]

Contract No.	
Customer	WIRTH STEEL
IC No.	
IC No.	3201010B004
Lot Number	11000001
Lot Number	ASTM A572M 50 WELDABLE

INSPECTION CERTIFICATE

MILL TEST CERTIFICATE

HYUNDAI STEEL COMPANY	
Head Office	500, Kyung-dong, Dong-gu, Incheon 401-712, S. Korea
Certificate No.	HTC/IC1004196 - 1
Class Cert. No.	
Date of Issue	2010-11-22

W12x26 1583

Tensile Test	Chemical Composition (%)				Impact Test (V-notch)			Remarks
	C	Mn	P	S	Si	Al	Fe	
1	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
2	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
3	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
4	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
5	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
6	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
7	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
8	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
9	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
10	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
11	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
12	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
13	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
14	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
15	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
16	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
17	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
18	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
19	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
20	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
21	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
22	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
23	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
24	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
25	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
26	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
27	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
28	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
29	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
30	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
31	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
32	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
33	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
34	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
35	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
36	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
37	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
38	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
39	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
40	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
41	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
42	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
43	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
44	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
45	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
46	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
47	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
48	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
49	0.25	0.35	0.010	0.010	0.030	0.010	0.010	
50	0.25	0.35	0.010	0.010	0.030	0.010	0.010	

2010-11-22

WIRTH STEEL

1583

WIRTH STEEL

Heat Number
22566460

Bill To:
VAPORTECH LTD
AMCTS PAYABLE
220 4TH ST. S.
LETHBRIDGE
T1J 4J7

STE-130
AB
CA

DESCRIPTION
K 12 X 10 / W10 X 10.7
ASIN 86-0, 8982-00, 8971-07

HEAT NO: 22566460

Q

TENSILE
KSI
95.8
56.2

TENSILE TEST RATIOS
YLD/TENS
1.35

YLD/TENS TENS/YLD
1.74

TENSILE STRENGTH
KSI
75.5
75.0

SI
82
82

CF
15

MS
0.29

SN
0.11

V
0.02

AL
0.04

ND
0.18

CE
0.3

GRADE
992/572-40

LENGTH
40 FT / 12.192 M

PRODUCT
WF BEAMS

Order Date: 01/10/2011
PO No: RD-934667
Order No: 3834544
Lead No: 1573035
Manifest No: 2069300

AB
CA

GRADE
992/572-40

LENGTH
40 FT / 12.192 M

PRODUCT
WF BEAMS

CERTIFIED MATERIAL TEST REPORT
GERDAU AMERISTEEL
Midlothian Mill
300 Waco Road
Midlothian, TX 76065
(972) 775-8241

All manufacturing processes of this product, including electric arc melting and continuous casting, occurred in the U.S.A.
EXTRA compliance with EN 10204 3.1

"I, hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."

Signed: *Tom L. Harrington* Date: May 03, 2011
Tom L. Harrington: Quality Assurance Manager

Signed: _____ Date: _____
Notary Public (if applicable)

Page: 1 of 1

NUCOR STEEL - BARRILEY
P.O. Box 2254
M.: Pleasant, S.C. 294
Phone: (843) 336-6000

SOLD TO: VARSTEE LTD
330. 220-4TH STREET SOUTH
LETHBRIDGE, AB T1J 4J7

U.S. GOVERNMENT PRINTING OFFICE: 1968 O-370-000

SPECIFICATIONS: Torsion in accordance with ASTM specification D6 1196
 FINISH: W270-50-05
 WEIGHT: 10.50/9739 10.50/9704-345M
 COLOR: 02.020

CERTIFIED MILL TEST REPORT

6/07/11 4:50:25

100% MELTED AND MANUFACTURED IN THE USA
All beams produced by Nucor Berkeley are cast and rolled to a fully killed and fine grain practice. Rolled in the direct manufacturing of this material.

Mercury has not been used in the direct manufacturing of this molecule.

VARSTIEL INC
602-13 AVE
Customer #: 2715 - 4
A.P.L. #: 39488

WISHL, AB THE 796

TRANZIT

[illegible]

I hereby certify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with material specifications, and those determined by the Purchaser, meet applicable specifications.

Bruce A. Worl
MetallurgistHeat Number
1107163

Vendor
VUCOR STEEL (BERKELEY) (US)

LAND 15
NUCOR STEEL - BERKELEY
P.O. BOX 2259
Mt. Pleasant, S.C. 29464
Phone: (843) 336-6000

CERTIFIED MILL TEST REPORT

Sold To: PRICE STEEL LTD.
13500 - 156 STREET

EDMONTON, AB T5V 1L3

Ship To: PRICE STEEL LTD.
13500 - 156 STREET

EDMONTON, AB T5V 1L3

SPECIFICATIONS: Tested in accordance with ASTM specification A6/A6M and A370.

AASHTO : M270-50-05

ASTM : A992-06a; A36-08/A529-05-50/A572-07-50/A709-345W/A70909a0S

Description	Heat# Grade(s) Test	Yield/ Tensile Ratio	Yield Tensile		Elong %
			(PSI)	(MPa)	
W6X16	2004669	.83	56400	67600	28.38
040' 00.00"	A992-06a		389	466	
W150X24.0		.83	56400	68100	24.53
012.1920m			389	470	
W6X16	2004664	.83	58400	70000	25.51
040' 00.00"	A992-06a		403	483	
W150X24.0		.83	57400	69100	24.19
012.1920m			396	476	

2 Heat(s) for this MTR.

RECEIVED MAY 27 2010

100% MELTED AND MANUFACTURED IN THE USA
All beams produced by Nucor-Berkeley are cast and
rolled to a fully killed and fine grain practice.
Mercury has not been used in the direct manufacturing of this material.

Customer #: 827 - 1
Customer PO: 29131F
B.O.L. #: 815915
Invoice #: 1189232

CE1 = $C + (Mn/5) + ((Cr+Mo+V)/5) + ((Ni+Cu)/15)$
CE2 = $C + ((Mn+Si)/6) + ((Cr+Mo+V+Cb)/5) + ((Ni+Cu)/15)$

I hereby certify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with material specifications, and when designated by the Purchaser, meet applicable specifications.

END

Bruce A. Work
Metallurgist

SOLD C W CARRY(1967) LTD
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

Page: 3

CERTIFIED MILL TEST REPORT

SHIP C W CARRY
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

13x3x3/8

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

Date: 2-Mar-2011
B.L. Number: 408836
Load Number: 247833

BA/HO

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

NBMG-08 March 24, 2009

HEAT NUM. *	DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS														
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.
PO# ==> SE1110059101	26198																			
	Nucor Steel Seattle, Inc.	50,052	72,403	32.0%					.16	.71	.013	.013	.042	.25	.36	.33				
	3x3x3/8 Angle	345MPa	499MPa						.11	.07	.020	.020	.006	.003						
	40' A36/44W	49,171	72,109	31.3%																
	CSA G40.21-04 44W/ASTM A36/A36M-08	339MPa	497MPa																	
PO# ==> SE1110059501	26198																			
	Nucor Steel Seattle, Inc.	51,501	73,745	30.5%		***		.17	.69	.011	.011	.035	.24	.31	.33					
	3x3x3/16 Angle	355MPa	508MPa					.10	.07	.030	.030	.007	.002							
	40' A36/44W	52,490	74,434	28.9%																
	CSA G40.21-04 44W/ASTM A36/A36M-08	362MPa	513MPa																	
ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad																				
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.																				

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY
ASSURANCE: Winky Lai

Winky Lai

CERTIFIED MILL TEST REPORT

NUCOR
NUCOR STEEL SEATTLE, INC.

SOLD TO: C W CARRY(1967) LTD
5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

SHIP TO: C W CARRY
5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

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

Date: 17-Mar-2011
B.L. Number: 410083
Load Number: 248452

NBMG-08 March 24, 2009

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

Material Safety Data Sheets are available at www.nucorbar.com or by contacting 360-272-2262										PHYSICAL TESTS										CHEMICAL TESTS												
HEAT NUM.*	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C		Ni		Mn		Cr		P		Mo		S		V		Si		Cb		Cu		Sn		C.E.
PO# => SE1110080302	26198 Nucor Steel Seattle, Inc. 3/8x5" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	52,267 360MPa 52,556 362MPa	77,119 532MPa 76,904 530MPa	27.3% 34.4%		***		.19 .11	.71 .10			.015 .020	.036 .007			.19 .003			.36	.37												
PO# => SE1110148401	26198 Nucor Steel Seattle, Inc. 3x3x1/4 Angle 40' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	52,566 362MPa 52,461 362MPa	74,493 514MPa 74,792 516MPa	34.4% 34.4%		***		.16 .11	.68 .13			.017 .030	.041 .008			.21 .003			.36	.34												

ASTM A709/A709M-08 GR 36 [250]
ASME SA36-2007 EDITION-2009 ADDE
NDA
ASTM A36/A36M-08, A709/A709M-08a
GR36, ASME SA36-07 Ed 09 Ad

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE: Winky Lai

Winky Lai

W-114962



WHITBY STEEL MILL
HOPKINS STREET SOUTH
WHITBY ON L1N 5T1 CAN
(905) 668-8811

Chemical and Physical Test Report
MADE IN CANADA

1612 M.R.

SHIP TO C.W. CARRY 1976 LTD 5815 75TH ST. - SIDING CN Z062 780-465-0381 EDMONTON, AB T6E 0T3	INVOICE TO C.W. CARRY 1976 LTD ACCTS PAYABLE 5815 75 ST NW EDMONTON, AB T6E 0T3	SHIP DATE 04/11/11	CUST. ACCOUNT NO 60122230
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PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 3/16	44W	C.S.A. G40.21-04 (R2009) 44W	1025269-02	26677-02
HEAT I.D.				
W908728	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eqv	.11 .80 .013 .032 .18 .34 .10 .13 .030 .000 .0008 .0000 .009 .000 .000000 .000 .000000 .326		
Mechanical Test:	Yield 50487 PSI, 348.1 MPA	Tensile: 68447 PSI, 471.93 MPA	%El: 28.8/8in, 28.8/200MM	Def HT: 0, 0MM %/h 0
Mechanical Test:	Yield 50846 PSI, 350.67 MPA	Tensile: 68307 PSI, 470.96 MPA	%El: 30.0/8in, 30.0/200MM	Def HT: 0, 0MM %/h 0

PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 3/16	44W	C.S.A. G40.21-04 (R2009) 44W	1025269-01	26677-01
HEAT I.D.				
W908760	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eqv	.16 .70 .010 .037 .18 .37 .08 .07 .020 .000 .0008 .0000 .011 .000 .000000 .000 .000000 .373		
Mechanical Test:	Yield 55249 PSI, 380.93 MPA	Tensile: 75082 PSI, 517.67 MPA	%El: 26.2/8in, 26.2/200MM	Def HT: 0, 0MM %/h 0
Mechanical Test:	Yield 55878 PSI, 385.27 MPA	Tensile: 74788 PSI, 515.65 MPA	%El: 26.2/8in, 26.2/200MM	Def HT: 0, 0MM %/h 0

PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 3/16	44W	C.S.A. G40.21-04 (R2009) 44W	1025269-01	26677-01
HEAT I.D.				
W908762	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eqv	.16 .66 .010 .031 .18 .33 .08 .06 .021 .000 .0008 .0000 .010 .000 .000000 .000 .000000 .342		
Mechanical Test:	Yield 52639 PSI, 362.93 MPA	Tensile: 71193 PSI, 490.86 MPA	%El: 28.9/8in, 28.9/200MM	Def HT: 0, 0MM %/h 0
Mechanical Test:	Yield 53086 PSI, 366.02 MPA	Tensile: 71892 PSI, 495.61 MPA	%El: 28.1/8in, 28.1/200MM	Def HT: 0, 0MM %/h 0

Customer Notes

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchilli

Quality Director

Gerdau Ameristeel

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

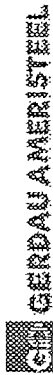
Metallurgical Services Manager

WHITBY STEEL MILL

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller.

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller. Immediately after delivery of same. In order to allow the opportunity to inspect the material in question.

K 2x2x1/4 W907721



WHITBY STEEL MILL
HOPKINS STREET SOUTH
WHITBY ON L1N 5T1 CAN
(905) 668-8811

Chemical and Physical Test Report
MADE IN CANADA

W-112932

L2x2x1/4

1590

HOPE & MARY

SHIP TO C.W. CARRY 1976 LTD 5815 75TH ST. - SIDING CN Z062 780-465-0381 EDMONTON, AB T6E 0T3	INVOICE TO C.W. CARRY 1976 LTD ACCTS PAYABLE 5815 75 ST NW EDMONTON, AB T6E 0T3	SHIP DATE 01/27/11	CUST. ACCOUNT NO 60122230
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PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 1/4	44W	C.S.A. G40.21-04 (R2009) 44W	1005227-03	25713-03
HEAT I.D.	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eq			
W907721	.13 .76 .013 .031 .20 .37 .13 .10 .027 .000 .0004 .0184 .012 .000 .00000 .354			
Mechanical Test:	Yield 55963 PSI, 385.85 MPA	Tensile: 74581 PSI, 514.22 MPA	%El: 26.2/8in, 26.2/200MM	Def HT: 0, 0MM %/h 0
Mechanical Test:	Yield 56096 PSI, 386.77 MPA	Tensile: 75122 PSI, 517.95 MPA	%El: 27.5/8in, 27.5/200MM	Def HT: 0, 0MM %/h 0

PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 1/4	44W	C.S.A. G40.21-04 (R2009) 44W	1005227-03	25713-03
HEAT I.D.	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eq			
W907723	.13 .76 .013 .031 .20 .37 .13 .10 .027 .000 .0004 .0184 .012 .000 .00000 .344			
Mechanical Test:	Yield 54530 PSI, 375.97 MPA	Tensile: 72706 PSI, 501.28 MPA	%El: 28.8/8in, 28.8/200MM	Def HT: 0, 0MM %/h 0
Mechanical Test:	Yield 54637 PSI, 376.71 MPA	Tensile: 73213 PSI, 504.79 MPA	%El: 25.0/8in, 25.0/200MM	Def HT: 0, 0MM %/h 0

PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 3/16	44W	C.S.A. G40.21-04 (R2009) 44W	1005227-02	25713-02
HEAT I.D.	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eq			
W907779	.15 .70 .013 .036 .21 .35 .10 .08 .035 .000 .0004 .0182 .010 .000 .00000 .354			
Mechanical Test:	Yield 58245 PSI, 387.8 MPA	Tensile: 73959 PSI, 509.93 MPA	%El: 28.8/8in, 28.8/200MM	Def HT: 0, 0MM %/h 0
Mechanical Test:	Yield 59045 PSI, 386.42 MPA	Tensile: 73604 PSI, 507.48 MPA	%El: 27.5/8in, 27.5/200MM	Def HT: 0, 0MM %/h 0

Customer Notes

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.
This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchili
Quality Director
Gerdau Ameristeel

Shankar

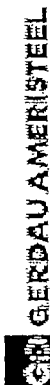
Ran

Metallurgical Services Manager
WHITBY STEEL MILL

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

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller.
Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in question.



WHITBY STEEL MILL
HOPKINS STREET SOUTH
WHITBY ON L1N 5T1 CAN
(905) 668-8611

Chemical and Physical Test Report
MADE IN CANADA

W-105595

1392

L2x2x1/4

SHIP TO C.W. CARRY 1976 LTD 5815 75TH ST. - SIDING CN Z062 780-465-0381 EDMONTON, AB T6E 0T3		INVOICE TO C.W. CARRY 1976 LTD ACCTS PAYABLE 5815 75 ST NW EDMONTON, AB T6E 0T3		SHIP DATE 04/28/10		CUST. ACCOUNT NO 60122230	
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PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 1/4	44W	C.S.A. G40.21-04 (R2009) 44W	0071134-01	21857-01
HEAT I.D.				
W804277	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eqw	.12 .80 .009 .037 .18 .40 .13 .12 .037 .000 .000 .0010 .0000 .011 .000 .00000 .000 .00000 .363		
Mechanical Test:	Yield 60867 PSI, 348.27 MPA	Tensile: 69925 PSI, 480.05 MPA	Def HT: 0, 0MM	%/h 0
Mechanical Test:	Yield 61861 PSI, 366.19 MPA	Tensile: 70408 PSI, 485.43 MPA	Def HT: 0, 0MM	%/h 0

PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A2 X 2 X 1/4	44W	C.S.A. G40.21-04 (R2009) 44W	0071134-01	21857-01
HEAT I.D.				
W804280	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eqw	.12 .79 .007 .030 .17 .34 .14 .09 .043 .000 .000 .0010 .0000 .010 .000 .00000 .000 .00000 .338		
Mechanical Test:	Yield 69885 PSI, 411.38 MPA	Tensile: 73808 PSI, 508.98 MPA	Def HT: 0, 0MM	%/h 0
Mechanical Test:	Yield 80107 PSI, 414.42 MPA	Tensile: 76023 PSI, 517.27 MPA	Def HT: 0, 0MM	%/h 0

PRODUCED IN: WHITBY

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A4 X 4 X 1/4	44W	A36/44W/60W/A628GR60/ASTM-A36-08/A628GR60 M-08/CSA-G40.21-04(R2009) 44	0071134-04	21857-04
HEAT I.D.				
W804318	C Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca C Eqw	.17 .92 .009 .041 .17 .32 .13 .09 .020 .000 .000 .0008 .0147 .010 .000 .00000 .000 .00000 .398		
Mechanical Test:	Yield 53414 PSI, 368.28 MPA	Tensile: 73239 PSI, 504.97 MPA	Def HT: 0, 0MM	%/h 0
Mechanical Test:	Yield 54495 PSI, 376.73 MPA	Tensile: 73790 PSI, 508.78 MPA	Def HT: 0, 0MM	%/h 0

Customer Notes

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This material, including the billette, was melted and manufactured in Canada

Bhaaker Yalamanchilli

Quality Director

Gerdau Ameristeel

Metallurgical Services Manager

WHITBY STEEL MILL

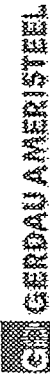
THE ABOVE FIGURES ARE CERTIFIED EXTRACTS FROM THE ORIGINAL CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

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N-080652



CAMBRIDGE STEEL MILL
160 ORION PLACE
CAMBRIDGE ON N1R 1R9 CAN
(519) 740-2488

Chemical and Physical Test Report
MADE IN CANADA

16/2 M.R.

SHIP TO C.W. CARRY 1976 LTD 5815 75TH ST. - SIDING CN Z062 780-465-0381 EDMONTON, AB T6E 0T3	INVOICE TO C.W. CARRY 1976 LTD ACCTS PAYABLE 5815 75 ST NW EDMONTON, AB T6E 0T3	SHIP DATE 03/02/11	CUST. ACCOUNT NO 60122230
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PRODUCED IN: CAMBRIDGE

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A1 1/2 X 1 1/2 X 1/4	44W	CSA-G40.21-300W-04(44W); ASTM A36/A36M-08	1013545-13	26158-13
HEAT I.D.	C	Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca Zn C Eq		
N104477	.17	.50 .010 .029 .21 .35 .13 .11 .040 .004 .002 .0002 .0198 .011 .002 .00100 .002 .00000 .00400 .33		

Mechanical Test: Yield 49120 PSI, 338.67 MPA Tensile: 72297 PSI, 498.47 MPA %El: 28.08in, 28.0200MM Red R 36.3 : 1

Customer Requirements CASTING: STRAND CAST

Mechanical Test: Yield 48759 PSI, 336.18 MPA Tensile: 71930 PSI, 495.94 MPA %El: 28.08in, 28.0200MM Red R 36.3 : 1

Customer Requirements CASTING: STRAND CAST

PRODUCED IN: CAMBRIDGE

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
A1 1/2 X 1 1/2 X 1/4	44W	CSA-G40.21-44W-04	1013545-13	26158-13
HEAT I.D.	C	Mn P S Si Cu Ni Cr Mo V Nb B N Sn Al Ti Zr Ca Zn C Eq		
N104483	.16	.59 .014 .036 .16 .37 .12 .16 .030 .003 .002 .0001 .0707 .011 .001 .00100 .002 .00030 .00200 .33		

Mechanical Test: Yield 51848 PSI, 357.48 MPA Tensile: 72007 PSI, 496.47 MPA %El: 28.56in, 28.5200MM Red R 36.3 : 1

Customer Requirements CASTING: STRAND CAST

Mechanical Test: Yield 51198 PSI, 352.58 MPA Tensile: 72243 PSI, 498.1 MPA %El: 29.08in, 29.0200MM Red R 36.3 : 1

Customer Requirements CASTING: STRAND CAST

Customer Notes

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchili

Quality Director

Gerdau Ameristeel

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Metallurgical Services Manager

CAMBRIDGE STEEL MILL

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

NUCOR
NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

61A030305

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

L1 1/2 x 1 1/2 x 1/4 1302

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

Date: 14-Apr-2010
B.L. Number: 390781
Load Number: 234236

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

NBMC-08 March 24, 2009

HEAT NUM. *		DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS														
			YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Sf	Cb	Cu	Sn	C.E.
PO# => SE1010067401	M61085624	Nucor Steel Seattle, Inc.	51,528	77,458	25.8%		***			.17	.74	.017	.030	.030	.006	.004		.17	.37		.36
	1-1/2x1-1/2x1/4 Angle		355MPa	534MPa						.15	.12	.030									
	20' A36/44W		51,414	77,291	27.3%																
	CSA G40.21-04 44W/ASTM A36/A36M-08		354MPa	533MPa																	
	ASTM A709/A709M-08 GR 36 [250]																				
PO# => SE1010067801	M81035624	Nucor Steel Seattle, Inc.	52,860	73,829	26.6%		***			.15	.71	.017	.034	.034	.006	.005		.21	.33		.33
	1-1/2x1-1/2x3/16 Angle		364MPa	509MPa						.11	.12	.020									
	20' A36/44W		52,896	74,041	27.3%																
	CSA G40.21-04 44W/ASTM A36/A36M-08		365MPa	510MPa																	
	ASTM A709/A709M-08 GR 36 [250]																				
PO# => SE1010074202	M61035474	Nucor Steel Seattle, Inc.	49,689	74,004	30.5%		***			.16	.76	.014	.032	.032	.005	.004		.22	.32		.34
	1/2x3" Flat		343MPa	510MPa						.12	.11	.020									
	20' A36/44W		49,902	74,163	29.7%																
	CSA G40.21-04 44W/ASTM A36/A36M-08		344MPa	511MPa																	
	ASTM A709/A709M-08 GR 36 [250]																				
PO# => SE1010074202		ASTM A36/A36M-08, A709/A709M-07																			
		GR36, ASME SA36-07																			

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.
ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING
HEATING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE,
MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY
ASSURANCE: Winky Lai

Winky Lai

SOLD C W CARRY(1967) LTD
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

SHIP C W CARRY
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

16/2 M.R.

Ship from:

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

Date: 6-May-2011
B.L. Number: 412316
Load Number: 250220

CERTIFIED MILL TEST REPORT

Page: 1

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

NBMG-08 March 9, 2011

HEAT NUM. *		DESCRIPTION	PHYSICAL TESTS					CHEMICAL TESTS													
PO# =>	SE1110223201		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.
		26737 Nucor Steel - Seattle Inc 1/4x2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	54,015 372MPa 53,309 368MPa	73,513 507MPa 74,215 512MPa	30.5% 27.3%				.15 .14	.67 .18	.016 .040	.040 .008	.19 .001								
		ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad																			
		26737 Nucor Steel - Seattle Inc 3/8x2-1/2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	53,461 369MPa 54,104 373MPa	76,634 528MPa 76,994 531MPa	26.6% 30.5%				.15 .17	.76 .22	.017 .050	.029 .010	.17 .003								
		ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad																			

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.) Heat and Manufactured in the United States.
- 2.) Mercury, Radium, or Alpha source materials in any form have not been used in the production of this material.

QUALITY
ASSURANCE: Winky Lai

SOLD C W CARRY(1967) LTD
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

SHIP C W CARRY
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 2

RB 3/8 x 6

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

Date: 26-Apr-2011
B.L. Number: 411892
Load Number: 249376

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

NBMG-08 March 9, 2011

HEAT NUM. *	DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS														
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.
PO# => 26737 SE1110162702 Nucor Steel - Seattle Inc 3/8x6" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08 ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad		48,177 332MPa 47,751 329MPa	72,029 497MPa 71,347 492MPa	34.4% 34.4%				.18 .11	.69 .15		.016 .030	.049 .006		.003	.19 .003		.36 .003		.36 .003	.36 .35
PO# => 26737 SE1110162801 Nucor Steel - Seattle Inc 1/2x6" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08 ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad		50,510 348MPa 50,836 351MPa	74,376 513MPa 73,903 510MPa	31.3% 32.0%				.16 .12	.73 .14		.016 .030	.044 .006		.003	.21 .003		.33 .003		.33 .003	.35 .35

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.) Manufactured in the United States of America.
2.) Melting and Manufacturing Process Controlled.
3.) Mercury, Radium, or Alpha source materials in any form have not been used in the production of this material.

QUALITY ASSURANCE: Winky Lai

Winky Lai

SOLD C W CARRY (1967) LTD
5815 75TH ST
TO: EDMONTON AB T6E 0T3
CANADA

SHIP C W CARRY
5815 75TH ST
TO: EDMONTON AB T6E 0T3
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 3

Ship from:

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

Date: 8-Mar-2010
B.L. Number: 389014
Load Number: 232608

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

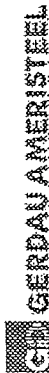
NBSMG-08 March 24, 2009

HEAT NUM. *	DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS														
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.
PO# ==> SE1010075701	20724	51,453	73,938	32.8%				.15	.74	.017	.043	.20	.36	.34						
	Nucor Steel - Seattle Inc	355MPa	510MPa					.11	.13	.030	.005	.005								
	3/8x6" Flat	51,796	73,338	34.4%																
	20' A36/44W																			
	CSA G40.21-04 44W/ASTM A36/A36M-08	357MPa	506MPa																	
	ASTM A709/A709M-08 GR 36 [250]																			
	ASME SA36-2007 EDITION																			
	ASTM A36/A36M-08, A709/A709M-07																			
	GR36, ASME SA36-07																			

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE MELT FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE: Winky Lai



GERDAU AMERISTEEL MANITOBA
27 MAIN ST.
SELKIRK MB R1A 1P6 CAN
(204)482-3241

Chemical and Physical Test Report
MADE IN CANADA

R-024271

FB 1/4 x 6 *1493*

SHIP TO C.W. CARRY LTD. 5815 75TH ST EDMONTON, AB		INVOICE TO C.W. CARRY LTD ACCTS PAYABLE 5815 75 ST NW EDMONTON, AB T6E 0T3	SHIP DATE 01/28/11	CUST. ACCOUNT NO 60122230
---	--	---	------------------------------	-------------------------------------

PRODUCED IN: MANITOBA

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
F1/4 X 6	44W/50W	CSA G40.21-04	1005186-02	25719-02
HEAT I.D.	C	Mn P S Si Cu Cr Nb V		
R639935	.18	1.04 .012 .024 .22 .32 .12 .015 .000 .000		
Mechanical Test:	Yield 54400 PSI, 375.07 MPA	Tensile: 80900 PSI, 557.79 MPA	%El: 31.6/2in, 31.6/50.8mm	
Mechanical Test:	Yield 55200 PSI, 380.59 MPA	Tensile: 81400 PSI, 561.23 MPA	%El: 31.5/2in, 31.5/50.8mm	

PRODUCED IN: MANITOBA

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
F1/4 X 6	44W/50W	CSA G40.21-04	1005186-01	25719-01
HEAT I.D.	C	Mn P S Si Cu Cr Nb V		
R639946	.17	1.04 .008 .023 .20 .27 .12 .023 .000 .000		
Mechanical Test:	Yield 54600 PSI, 376.45 MPA	Tensile: 79200 PSI, 546.06 MPA	%El: 32.1/2in, 32.1/50.8mm	
Mechanical Test:	Yield 54000 PSI, 372.32 MPA	Tensile: 79200 PSI, 546.06 MPA	%El: 32.2/2in, 32.2/50.8mm	

PRODUCED IN: MANITOBA

SHAPE + SIZE	GRADE	SPECIFICATION	SALES ORDER	CUST P.O. NUMBER
F3/8 X 6	44W/50W	CSA G40.21-04	1005186-03	25719-03
HEAT I.D.	C	Mn P S Si Cu Cr Nb V		
R639956	.19	.95 .012 .026 .22 .29 .13 .021 .000 .017		
Mechanical Test:	Yield 57600 PSI, 397.14 MPA	Tensile: 79800 PSI, 550.2 MPA	%El: 32.2/2in, 32.2/50.8mm	
Mechanical Test:	Yield 57600 PSI, 397.14 MPA	Tensile: 79800 PSI, 550.2 MPA	%El: 32.2/2in, 32.2/50.8mm	

Customer Notes

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.
This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchilli
Quality Director
Gerdau Ameristeel

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

Metallurgical Services Manager
GERDAU AMERISTEEL MANITOBA

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller.
Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in question.

SOLD C W CARRY(1967) LTD
5815 75TH ST
TO: EDMONTON AB T6E 0T3
CANADA

SHIP C W CARRY
5815 75TH ST
TO: EDMONTON AB T6E 0T3
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

FB 1/4 x 4

1247

CERTIFIED MILL TEST REPORT

Page: 1

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

Date: 9-Feb-2010
B.L. Number: 388199
Load Number: 231573

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

HEAT NUM. *	DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS													
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.
PO# => SE1010013601	20724 Nucor Steel Seattle, Inc. 1/4x2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	53,064 366MPa	71,121 490MPa	22.7%				.14 .15	.69 .10			.014 .040	.049 .005			.21 .004		.40	.32
ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07 GR36, ASME SA36-07																			
PO# => SE1010017601	20724 Nucor Steel Seattle, Inc. 1/4x4" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	52,450 362MPa	73,944 510MPa	30.5%		***		.17 .12	.74 .15			.021 .030	.047 .006			.19 .005		.35	.36
ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07 GR36, ASME SA36-07																			

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED AND FIELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE: Winky Lai

Winky Lai

SOLD C W CARRY(1967) LTD
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

SHIP C W CARRY
TO: 5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 3

Ship from:

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

Date: 29-Jun-2010
B.L. Number: 394800
Load Number: 236979

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

NBMG-08 March 24, 2009

HEAT NUM.*	DESCRIPTION	PHYSICAL TESTS				WT%	DEF	CHEMICAL TESTS									
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND			C	Ni	Mn	Cr	P	Mo	S	V	Si	Cu
PO# => SE1010284001	22791 Nucor Steel Seattle, Inc. 2x2x1/8 Angle 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	53,230 367MPa 52,572 362MPa	72,681 501MPa 72,481 500MPa	26.6% 28.1%		***		.15 .10	.71 .12	.015 .020	.042 .006	.21 .003	.30	.32			
PO# => SE1010284601	22791 Nucor Steel - Seattle Inc 1/4x4" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08	52,337 361MPa 52,067 359MPa	74,565 514MPa 73,968 510MPa	28.1% 28.1%				.18 .11	.81 .11	.015 .030	.041 .007	.15 .003	.32	.37			
	ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07 GR36, ASME SA36-07																
	ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07 GR36, ASME SA36-07																

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THIS STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE MELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY
ASSURANCE: Winky Lai

61A030307

CERTIFIED MILL TEST REPORT

NUCOR
NUCOR STEEL SEATTLE, INC.

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

Ship from:

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

Date: 15-Apr-2010
 B.L. Number: 390843
 Load Number: 234235

SHIP TO: EDMONTON AB T6E 4T2
 CANADA
 7016 99TH STREET
 RUSSEL METALS INC
 FB1/4x2 1302

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

Maternal Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative.																		NBWG 08 March 24, 2009																	
HEAT NUM. *	DESCRIPTION	PHYSICAL TESTS						CHEMICAL TESTS																											
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	C	Ni	Mn	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.																	
PO# --> SE1010074801	M61035474 Nucor Steel Seattle, Inc. 1/4x4" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-06, A709/A709M-07 GR36-ASME SA36-07	49,850 344MPa 50,460 348MPa	72,659 501MPa 70,397 485MPa	27.3% 32.0%		***	.16 .11	.63 .13	.015 .030	.042 .005	.25 .003	.31 .003	.33																						
PO# --> SE1010090401	M61035474 Nucor Steel Seattle, Inc. 1/4x2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-06, A709/A709M-07 GR36, ASME SA36-07	52,901 365MPa 52,812 354MPa	74,377 513MPa 73,874 508MPa	27.3% 26.6%		***	.17 .11	.76 .09	.014 .020	.036 .006	.16 .003	.34 .003	.35																						

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY
ASSURANCE:

Winky Lai

Winky Lai

SOLD C W CARRY(1967) LTD
5815 75TH ST
TO: EDMONTON AB T6E 0T3
CANADA

SHIP C W CARRY
5815 75TH ST
TO: EDMONTON AB T6E 0T3
CANADA

NUCOR
NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 1

1612 M.R.

Ship from:

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

Date: 6-May-2011
B.L. Number: 412316
Load Number: 250220

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

NBMG-08 March 9, 2011

HEAT NUM. *	DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS														
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.
PO# => SE1110223201	26737 Nucor Steel - Seattle Inc 1/4x2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08 ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA GR36, ASME SA36-07 Ed 09 Ad	54,015 372MPa 53,309 368MPa	73,513 507MPa 74,215 512MPa	30.5% 27.3%				.15 .14		.67 .18		.016 .040		.040 .008			.19 .001		.32 .34	
PO# => SE1110223302	26737 Nucor Steel - Seattle Inc 3/8x2-1/2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08 ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA GR36, ASME SA36-07 Ed 09 Ad	53,461 369MPa 54,104 373MPa	76,634 528MPa 76,994 531MPa	26.6% 30.5%				.15 .17		.76 .22		.017 .050		.029 .010			.17 .003		.37 .37	

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. Material was manufactured in the United States in any form.
3. Nucor's Radiography Department has examined this material.
We have not been used in the production of this material.

QUALITY
ASSURANCE: Winky Lai

Winky Lai

CERTIFIED MILL TEST REPORT

Page: 3

NUCOR

NUCOR STEEL SEATTLE, INC.

SOLD TO:
C W CARRY (1967) LTD
5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

SHIP TO:
C W CARRY
5815 75TH ST
EDMONTON AB T6E 0T3
CANADA

Ship from:

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

Date: 20-Dec-2010
B.L. Number: 404619
Load Number: 244787

NBMG-08 March 24, 2009

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

HEAT NUM. *		DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS														
			YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	NI	Mn	Cr	P	Mo	S	V	SI	Cb	Cu	Sn	C.E.
PO# => SE1010581701	24846 Nucor Steel Seattle, Inc. 1/2x2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08		52,100 359MPa 53,109 366MPa	77,782 536MPa 78,010 538MPa	25.0% 31.3%		***		.19 .09		.77 .14		.032 .020		.032 .007		.23 .003		.30		.38
ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA																					
ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad																					
PO# => SE1010581801	24846 Nucor Steel Seattle, Inc. 1/4x2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-08		55,455 382MPa 56,353 389MPa	79,069 545MPa 79,295 547MPa	25.8% 26.6%		***		.18 .10		.70 .13		.021 .020		.029 .006		.21 .003		.37		.36
ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA																					
ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad																					

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING ALL PRODUCTS PRODUCED AND FIELD PREP. HEATING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED AND FIELD PREP. HEATING, HAVE OCCURRED WITHIN THE PRODUCTION OR TESTING OF THIS MATERIAL. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE: Winky Lai

Winky Lai

SOLD C W CARRY(1967) LTD
 TO: 5815 75TH ST
 EDMONTON AB T6E 0T3
 CANADA

SHIP C W CARRY
 TO: 5815 75TH ST
 EDMONTON AB T6E 0T3
 CANADA

NUCOR
 NUCOR STEEL SEATTLE, INC.

3/4" BAR
 1247 JH

CERTIFIED MILL TEST REPORT

Page: 2

Ship from:

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

Date: 5-Mar-2010
 B.L. Number: 388954
 Load Number: 232569

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

NBSM-08 March 24, 2009

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

NEWG-08 March 24, 2009

PO# => 2N08

HEAT NUM. *	DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS														C.E.
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	
SE1010075201	Nucor Steel - Seattle Inc	54,391	78,189	21.9%																
	3/4" Rd 20'	375MPa	539MPa																	
	A36/44W	54,704	77,603	23.4%																
	CSA G40.21-04 44W/ASTM A36/A36M-08	377MPa	535MPa																	
	ASTM A709/A709M-08 GR 36 [250]																			
	ASME SA36-2007 EDITION																			
	ASTM A36/A36M-08, A709/A709M-07																			
	GR36, ASME SA36-07																			

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, BUT NOT LIMITED TO THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY
 ASSURANCE:

Winky Lai

Winky Lai



CAMBRIDGE STEEL MILL
150 ORION PLACE
CAMBRIDGE ON N1T 1R9 CAN
(519) 740-2488

3" / 4" stock.

Chemical and Physical Test Report
MADE IN CANADA

61A034732

N-080525

1595

SHIP TO RUSSEL METALS - EDMONTON C/O CN OIL & GAS DIST CTR CN TRACK VS38 SCOTFORD, AB T8L 4A4	INVOICE TO RUSSEL METALS INC ACTS PAYABLE PO BOX 4128 EDMONTON, AB T6E 4T2	SHIP DATE 02/22/11	CUST. ACCOUNT NO 60072055
---	--	-----------------------	------------------------------

PRODUCED IN: CAMBRIDGE														SALES ORDER		CUST P.O. NUMBER	
SHAPE + SIZE		GRADE		SPECIFICATION										0130562-13		61037695-13	
F1/2 X 4		44W		CSA-G40.21-300W-04(44W); ASTM A36/A36M-08													
HEAT I.D.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb	B	Sn	Al	Zr	C Eqv	
N103039	.18	.63	.017	.039	.18	.37	.13	.19	.050	.003	.001	.0001	.015	.001	.001	.37	

Mechanical Test: Yield 46584 PSI, 321.19 MPA Tensile: 72121 PSI, 497.26 MPA %El: 27.5/8in, 27.5/200MM Red R 12.5 : 1 Idl Diam: .6

Customer Requirements CASTING: STRAND CAST

Mechanical Test: Yield 46272 PSI, 332.82 MPA Tensile: 72088 PSI, 497.02 MPA %El: 27.5/8in, 27.5/200MM Red R 12.5 : 1 Idl Diam: .6

Customer Requirements CASTING: STRAND CAST

CUST ITEM NUMBER: 37816

PRODUCED IN: CAMBRIDGE														SALES ORDER		CUST P.O. NUMBER	
SHAPE + SIZE		GRADE		SPECIFICATION										0130562-19		61037695-19	
S3/4		44W		CSA-G40.21-300W-04(44W); ASTM A36/A36M-08													
HEAT I.D.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb	B	Sn	Al	Ti	Zr	C Eqv
N103588	.18	.65	.016	.041	.17	.40	.10	.13	.040	.003	.001	.0001	.0039	.012	.001	.00100	.36

Mechanical Test: Yield 48330 PSI, 333.22 MPA Tensile: 71915 PSI, 495.84 MPA %El: 27.0/8in, 27.0/200MM Red R 44.4 : 1

Customer Requirements CASTING: STRAND CAST

Mechanical Test: Yield 47825 PSI, 329.74 MPA Tensile: 72287 PSI, 498.4 MPA %El: 25.0/8in, 25.0/200MM Red R 44.4 : 1

Customer Requirements CASTING: STRAND CAST

CUST ITEM NUMBER: 37870

Customer Notes

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This material, including the billets, was melted and manufactured in Canada

Max May
Bhaskar Yalamanchili
Quality Director
Gerdau Ameristeel

Metallurgical Services Manager
CAMBRIDGE STEEL MILL

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

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller.

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in question.

Trans Am Pipe & Equipment / Seq # : 0506827
Shipments / Seq # : 0506827
Rev'd By : SB
1558

2" XH A333 HT# 07506827

1345
10F1
S

Contract No.: CI-09-418
PO NO.: CI-09-418
Name of Customer: TRANS AM PIPING PRODUCTS LTD.,
L/C NO.: DPCHCV929006
Description: PIPE
TOTAL: 91 PCS, 2 BUNDLES, 4.013MT
HENG YANG VALIN STEEL TUBE CO., LTD
Add: 10 Dalkincun, Hengyang City, Hunan, China
Tel and Fax: 186 734 8873739 8872942
Cable: 6993
P.C. 421001

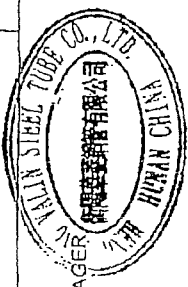
MILL INSPECTION CERTIFICATE

Date: NOV 05, 2009

Page: 1/1

SPEC:ASTM A333 GR 6-2005/ASME SA333 GR 6-2007 ,NACE MR0175-2003/ISO 15156																	CERTIFICATE NO:09-1-11-13				
NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE	BUNDLES	PIECES	FEETS	QUANTITY	(MT)	ACTUAL WEIGHT(MT)											
1	09-A10493	07506827	B	60.3 2 X 5.54 A333 GR 6 BE XS																	

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacture.
2. We hereby certify that the properties described herein meet the requirement of the above spec.
3. We hereby certify that this certificate is issued accordance with EN 10204 3.1B
4. SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2")
A. For pipes ≤ 1" full length specimen were used;
B. For pipes > 1" longitudinal strip specimen were used; the width of the gauge length portion is 3/4"



5. HEAT TREATMENT CONDITION FOR PIPE NORMALIZED: 900°C X 10MIN
6. Impact Test: 5X10X55MM AT -45°C
7. DIMENSION STANDARD: ASME B36.10
8. MANUFACTURE METHOD: COLD DRAWN

Contract No.:	CI-09-418
PQ.NO.:	CI-09-418
Name of Customer:	TRANSAM
L/C NO.:	DPCHCV9
Description:	PIPE
QTY:	91 PCS

PO.NO.: CI-09-418
Name of Customer: TRANS AM PIPING PRODUCTS LTD.,
L/C NO.: DPCHCV929006

TOTAL: 91 PCS ~~3 BUNDLES~~, 4.013MT

SPEC:ASTM A333 GR 6-2005/ASME SA333 GR6-2007 ,NACE MR0175-2003/ISO 15156

CERTIFICATE NO:09-1-11-13																		
NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE	BUNDLES	PIECES	FEETS	QUANTITY (MT)	ACTUAL WEIGHT(MT)									
1	09-A10493	07506827	B	60.3 2" X 5.54 A333 GR 6 B.E. XS														

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacture.

2. We hereby certify that the properties described herein meet the requirement of the above spec.

3. We hereby certify that this certificate is issued in accordance with EN 10204 3.1B

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

A. For pipes $\leq 1''$ full length specimen were used;

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

5 HEAT TREATMENT CONDITION FOR PIPE NORMALIZED: 900°C X 10MIN

5. Impact Test : 5X10X55MM AT -45°C

7. DIMENSION STANDARD: ASME B36.10

3. MANUFACTURE METHOD: COLD DRAWN



QUALITY MANAGING

上海自來水有限公司



HUMAN CHINA

2" XH A333 GR 6 STEEL PIPE
A333 GR 6 STEEL PIPE
A333 GR 6 STEEL PIPE

P.O. # 11724 Item# 4
Heat Number: 10603028
Shipping / Seq # : 10603028
Trans. / Seq # : 10603028
P.O. # 11724 Item# 4
Heat Number: 10603028
Shipping / Seq # : 10603028
Trans. / Seq # : 10603028
P.O. # 11724 Item# 4
Heat Number: 10603028
Shipping / Seq # : 10603028
Trans. / Seq # : 10603028

Contract No.: CH-10-181
PO. NO.: CH-10-181
Name of Customer: TRANS AM PIPING PRODUCTS LTD.,
L/C NO.: DPCHCV012667
Description: PIPE
TOTAL: 1

HENGYANG VALIN STEEL TUBE CO., LTD
MILL INSPECTION CERTIFICATE
Date: JUN 03, 2010
Page: 1/1

Add: 10 Dalixincun, Hengyang City, Hunan, China
Tel and Fax: +86 734 8873739 8872942
Cable: 6993
P.C. 421001

BAF

TOTAL: SPEC:ASTM A333 GR 6-2005/ASME SA333 GR6-2007, NACE MR0175-2003/ISO 15156															CERTIFICATE NO:10-1-06-11									
Page: 1/1																								
NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE	BUNDLES	PIECES	FEETS	QUANTITY (MT)	ACTUAL WEIGHT(MT)															
1	10-A5331	10603028	B	60.3 2" X 5.54 A333 GR 6 B.E. XS																				
																								
NONDESTRUCTIVE TEST										CHEMICAL COMPOSITION %														
NO	DELIVERY CONDITION(≥650°C)		ET	UT	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Ti	B	Nb	CE						
1	NORMALIZED		OK		0.18	0.41	1.32	0.023	0.014	0.01	0.01	0.02	0	0.01	0	0	0.001	0.41						

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacture.

2. We hereby certify that the properties described herein meet the requirement of the above spec.

3. We hereby certify that this certificate is issued accordance with EN 10204 3.1B

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

A. For pipes ≤ 6" full length specimen were used;

B. For pipes > 6" longitudinal strip specimen were used; the width of the gauge length portion is 3/4"

5. HEAT TREATMENT CONDITION FOR PIPE NORMALIZED 900°C X 10MIN

6. Impact Test: 5X10X55MM AT -45°C

7. DIMENSION STANDARD: ASME B36.10

8. MANUFACTURE METHOD: COLD DRAWN



Benteler Stahl/Rohr GmbH
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Tel.: +49.5254.81-0 Fax: +49.5254.13666

Seite 2
A06B

1494
1 of 5

BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

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

Benteler Stahl/Rohr GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

Emco Westlund
4103 - 84 th Avenue
EDMONTON, AB T6B 2Z3
KANADA

Dokument-Nr.: 41-568248/002/P

Document No.:
No. du document:

Kunden-Bestell-Nr.:

Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.:

Benteler Order No.:

No. de commande Benteler:

Versandanzeigen-Nr.:

Dispatch Note No.:

No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE

Product: SEAMLESS STEEL TUBES

Produit: TUBES D'ACIER SANS SOUDURE

BST 09-5133 / E.W. 9115282-00

1546851

4113429

Prüf-Nr.:

Inspection No.:
No. du certificat:

Hersteller:

Manufacturer:

Producteur:

Herstellerzeichen:

Manufacturer's brand:

Marque du producteur:

Stempel des Abnahmebeauftragten:

Stamp of the inspection representative:

Poinçon du contrôleur:

Stahlschmelzungsverfahren:

Steelmaking process:

Procédé d'élaboration de l'acier:

WA

ELEKTROSTAHL
ELECTRIC FURNACE
FOUR ELECTRIQUE

Warmrohrwerk/Zieherei
ISO/TS 16949 (ISO 9001) TÜV CERT 44111090381-002
PED 91723/EC TÜV CERT 07-202-5635 WZ-0606/07



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Lieferbedingungen:

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen:

Dimensions-tolerances:

Dimensions-tolérances:

Stahlsorte:

Steel grade:

Nuance d'acier:

Lieferzustand:

Delivery condition:

État de livraison:

Produktkennzeichnung:

Product marking:

Marquage du produit:

API Specification 5L Forty-Fourth Edition, October 2007, ISO 3183:2007, PSL 1, ASME SA-106, ASME

Section II Part A Edition 2007 Addenda 2009b, S5, ASTM-A 106-2008, S6, CSA Standard Z245.1-07

Category I, Sour Service, NACE MR0175/ISO 15156-1:2001, NACE MR0175/ISO 15156-2:2003

ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2007 Addenda 2009b, ASTM-A 530-2004a

GRADE 290, GRADE B, GRADE X 42

Hot rolled

FS: BENTELER Z.245.1-07 - ISO 3183 - A 106-S6 - SA-106-S5 5L-0151.1 API SIGN 0110 PSL1

B/X42/290 SS HEAT-NO. TEST PRESSURE NDE DIMENSIONS WA GERMANY P.O. 9115282-00

AEZ = Ätztennenbeschriftung, Etching ink marking, Gravure à l'encre | FK = Farbkennzeichnung, colour marking, marquage par couleur | FS = Farbschablonenzeichnung, paint stencilling, marquage par poignonage | TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d' | LK = Laserkennzeichnung, Laser marking, Marquage laser | PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette | PS = Prägestempel, die/stamp, marquage par poinçonage

Pos.	Stück	Maße	Länge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlä
Item	Number	Dimensions	Length	Weight	Heat No.	Test pressure	Tube number group	Multiple len
Poste	Nombre	Dimensions	Longueur	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs r
		feet	feet	lbs		PSI		
0001	200	1/2" NPS * Sched. 80	4199,48	4630	556818	3000	5	
		20 FT - 22 FT						

252-0354

1494 2075

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

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

Dokument-Nr.: 41-568248/002/P
Document No.:
No. du document:

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

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Pos.	Stück	Maße	Länge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlä
Item	Number	Dimensions	Length	Weight	Heat No.	Test pressure	Tube number group	Multiple len
Poste	Nombre	Dimensions	Longueur	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs r
			feet	lbs		PSI		
0002	80	1/2" NPS * Sched. 160 20 FT - 22 FT	1661,42	2172	556757	3000	5	252-0508
0003	146	3/4" NPS * Sched. 80 20 FT - 22 FT	3142,26	4762	556818	3000	5	252-0362
0004	97	1" NPS * Sched. 160 20 FT - 22 FT	2099,74	5964	557121	3000	5	252-0524

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

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0001	556818	0,130	0,220	0,79	0,009	0,004	0,10	0,03	0,08	0,12	0,002	0,001	0,002	0,01
0002	556757	0,140	0,210	0,80	0,018	0,005	0,12	0,02	0,08	0,19	0,002	0,001	0,002	0,01
0003	556818	0,130	0,220	0,79	0,009	0,004	0,10	0,03	0,08	0,12	0,002	0,001	0,002	0,01
0004	557121	0,130	0,190	0,81	0,009	0,002	0,16	0,06	0,11	0,11	0,003	0,001	0,002	0,01

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr + Mo + V + Nb)/5) + (5 * B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr + Cu + Mo + Ni + V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0001	556818	0,301	0,274	6,077	0,332
0002	556757	0,320	0,300	5,714	0,412
0003	556818	0,301	0,274	6,077	0,332
0004	557121	0,324	0,291	6,231	0,443

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

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BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

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

Dokument-Nr.: 41-568248/002/P

Document No.:
No. du document:

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

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

Pos. Schmelzen-Nr.

Item	Heat No.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0001	556818	0,140	0,220	0,81	0,008	0,002	0,10	0,04	0,08	0,12	0,002	0,005	0,003	0,0
0001	556818	0,140	0,230	0,81	0,008	0,002	0,11	0,04	0,08	0,12	0,002	0,005	0,003	0,0
0002	556757	0,140	0,220	0,80	0,016	0,003	0,12	0,03	0,08	0,19	0,002	0,005	0,002	0,0
0002	556757	0,140	0,220	0,80	0,015	0,003	0,13	0,03	0,08	0,19	0,002	0,005	0,002	0,0
0003	556818	0,140	0,220	0,81	0,008	0,002	0,10	0,04	0,08	0,12	0,002	0,005	0,003	0,0
0003	556818	0,140	0,230	0,81	0,008	0,002	0,11	0,04	0,08	0,12	0,002	0,005	0,003	0,0
0004	557121	0,120	0,180	0,78	0,008	0,001	0,17	0,06	0,10	0,11	0,002	0,003	0,002	0,0
0004	557121	0,130	0,180	0,80	0,007	0,001	0,17	0,06	0,10	0,12	0,002	0,003	0,002	0,0

1. Formel: $CE\ IIW = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) \leq 0,40\ %$

2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr + Mo + V + Nb)/5) + (5 * B)) \leq 0,40$

3. Formel: $Mn/C \geq 3/1$

4. Formel: $Cr + Cu + Mo + Ni + V \leq 1,00\ %$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0001	556818	0,316	0,299	5,785	0,342
0001	556818	0,318	0,301	5,785	0,352
0002	556757	0,321	0,303	5,714	0,422
0002	556757	0,323	0,305	5,714	0,432
0003	556818	0,316	0,299	5,785	0,342
0003	556818	0,318	0,301	5,785	0,352
0004	557121	0,310	0,269	6,500	0,442
0004	557121	0,324	0,292	6,153	0,452

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

BENTELER
Stahl/Rohr

1494 4055

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

41-568248/002/P

Dokument-Nr.:
Document No.:
No. du document:

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

Prüfsergebnisse / 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:

Die Rohre wurden zerstörungsfrei geprüft:
The tubes are non destructive tested:
Les tubes ont passé un essai non destructif:

Augensichtkontrolle:

Visual inspection:

Examen visuel:

PASSED

Biegeversuch:

Bending test:

Essai de cintrage:

PASSED

Maßkontrolle:

Dimensions examination:

Vérification des dimensions:

PASSED

PASSED

PASSED

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'échantillonnage était réalisé aux longueurs multiples.

Zugversuch Vollprobe / Tensile test Full section test specimen / Essai de traction Eprouvette a section complete

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/R Re/R Re/R
Anforderungen Requirements Exigences			mm	ReH N/mm ² MIN 290	Rm N/mm ² 415-625	A2" % MIN 30	1. Formel 1. Formula 1. Formule	
0001	000001	556818	21,40 X 3,90	371	492	42		
0002	000001	556757	21,34 X 4,71	323	477	42		
0003	000001	556818	26,70 X 3,90	373	503	52		
0004	000001	557121	33,38 X 6,22	312	464	52		

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49:5254.81-0 Fax: +49:5254.13666

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BENTELER
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Härteprüfung / Hardness test / Essai de dureté

Dokument-Nr.: 41-568248/002/P
Document No.:
No. du document:
Prüf-Nr.:
Inspection No.:
No. du certificat:
Blatt: 5 /
Page:
Page:

Pos.	Proben-Nr.	Schmelzen-Nr.	Härte				
Item	Specimen No.	Heat No.	Hardness				
Poste	No. de l'éprouv.	No. de coulée	Dureté				
Anforderungen			HRC	HB	HV	HRB	HBW
Requirements							
Exigences				MAX 200			
0001	000001	556818		149			
0002	000001	556757		139			
0003	000001	556818		155			
0004	000001	557121		138			

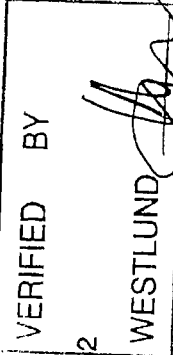
Restmagnetismus / Demagnetize / Démagnétiser

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

NACE Standard: Hardness acc. to NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103;
Certificate remarks: Sour Service, The Material is Aluminium deoxyzidized and inclusion shape controlled with Calcium-Silicon treatment, 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 °

Verkäufer(in) / Salesman/woman in charge : Mr Buerger, Tel.: 05254/81-4266, Fax: 4299



Paderborn Schloß Neuhaus, 15.02.2010, TEL.: 05254.81-1765 FAX: 05254.81-1762

Abnahmebeauftragter
Inspection representative
Contrôleur

THOMAS GOLLAN / GUT
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.

3" XH A333

HT-# 333

tenaris

1575

21800

INSPECTION CERTIFICATE

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

Siderca S.A.I.C.
Dr. Jorge A. Simini 250
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VAN LEE, INC. CANADA		H/B 011		Expedientel Manufacturing Order 577887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 1 / 13	
Jucio / Product Seamless steel line pipe		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Grado / Grade 186+290H		Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80						Cantidades / Quantities 602 Pcs 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133596 Lb			

ENSAYOS DE TRACCION / TENSILE TEST

Colada	Nº de Ensayo	Condición de la probeta		Temp de Ens	Dimensiones		Sección		Fluencia / Yield Strength				Rotura/UTS				Relación P/R				Alargamiento Elongation				Dureza / Hardness Tipo / Type; BHN					
Heat	Test Nº	Specimen condition		Test Temp	Temp	Size	Area	Inches ²	Offset Method		EUL		EUL Method		Req. Min		V. obt		Req. Min		V. obt		Req. Min		V. obt		Req. Min		V. obt	
		Zone	Estado	Ext.	Nº	P/T	Type	Ort																						
	32824	441323	C/B	PRO																										
	32824	441340	C/B	PRO																										
	33330	441287	C/B	PRO																										
	33330	441288	C/B	PRO																										
	33330	441290	C/B	PRO																										
	33330	441292	C/B	PRO																										
	33330	441294	C/B	PRO																										
	33330	441296	C/B	PRO																										
	33330	441297	C/B	PRO																										
	33330	441299	C/B	PRO																										
	33330	441301	C/B	PRO																										

NOTA / NOTE:

TEST TECNOLÓGICO / TECHNOLOGICAL TEST					NOTA / NOTE:	
Aplastamiento Flattening Test		Curvado Band test	Abocardado Flaring Test	Pestariado Flange Test	Ens. De anillo expandido Ring expanding Test	Ens. De Tracción de anillo Ring tensile Test
Satisfact.		N/A	N/A	N/A	N/A	N/A
Pro = Process/ Process N = Normalizada/ Normalized DIST = Distensionada / Stress Relief Q & T = Templado y Revenido/ Quenched & Tempered TA/RT = Temp. Ambiente/ Room Temperature						
			RE = Rectangular CI = Cilindrical/ Cylindrical ST = Segmento Tubular / Tubular segman		C/B = Cuerpo / Body R/U = Rectalque / Upset P/A = Promedio / Average Min = Mínimo / minimum Max = Máximo / Maximum	L = Longitudinal T = Transversal P/T = Tubo/ Pipe EXT = Extremo/ End M = Medio/ Middle
			TU = Transversal		V.Obt. = Valor Obtenido / Obtained value E = Comienzo de marcación/ Stenciling starting O = Extremo opuesto al E/ Opposite extreme to E	
CAU 116004						



Tenaris

INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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Cliente / Customer VAN LEEUWEN CANADA		Expediental Manufacturing Order 57887.01		Número / Number 216076	Fecha / Date 03/08/2004	Pág./Page 2 / 13
Producto / Product Seamless steel line pipe		Orden de Compra / Purchase Order PO 45029439		Item 00001	Referencia del Cliente / Customer Reference	
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 186+290/II		Extremos / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Capacidades / Quantities 602 Pz 3990.87 m 602 Pcs 13093.41 Ft 60598 Kg 133596 Lb
Schedule 80		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT				

ENSAYOS DE TRACCION / TENSILE TEST

Colada	Nº de Ensayo	Condición de la probeta		Temp de Ens	Dimensiones		Sección		Fluencia / Yield Strength				Relación F/R		Alargamiento Elongation		Red. de área		Dureza / Hardness Tipo / type: BHN					
Heat	Test Nº	Specimen condition		Temp	Size		Area		EUL Method		EUL		V. obt		Req. Min		V. obt		Req. Min		V. Obl		Req. Max	
		Zona	Estado	Ext	Nº P/T	Tip	Orl	Temp	Offet Method	Req. Min	0.2%	Ks	Req. Min	0.2%	Ks	Req. Min	0.2%	Ks	Req. Min	0.2%	Ks	Req. Min	0.2%	Ks
33330	441331	CB	PRO			ST	L	TA/RT	0.5	42	71.3	60	82.5	60	82.5	60	82.5	60	82.5	60	82.5	60	82.5	237
33330	441332	CB	PRO			ST	L	TA/RT	0.5	42	69.8	60	79.1	60	79.1	60	79.1	60	79.1	60	79.1	60	79.1	237
33330	441333	CB	PRO			ST	L	TA/RT	0.5	42	68.9	60	79.7	60	79.7	60	79.7	60	79.7	60	79.7	60	79.7	237
33330	441334	CB	PRO			ST	L	TA/RT	0.5	42	70.8	60	81.4	60	81.4	60	81.4	60	81.4	60	81.4	60	81.4	237
33330	441335	CB	PRO			ST	L	TA/RT	0.5	42	68.8	60	76.1	60	76.1	60	76.1	60	76.1	60	76.1	60	76.1	237
33330	441336	CB	PRO			ST	L	TA/RT	0.5	42	70.6	60	80.3	60	80.3	60	80.3	60	80.3	60	80.3	60	80.3	237
33330	441337	CB	PRO			ST	L	TA/RT	0.5	42	71.2	60	80.9	60	80.9	60	80.9	60	80.9	60	80.9	60	80.9	237
33330	441338	CB	PRO			ST	L	TA/RT	0.5	42	67.8	60	78.3	60	78.3	60	78.3	60	78.3	60	78.3	60	78.3	237
33330	441339	CB	PRO			ST	L	TA/RT	0.5	42	70.3	60	80.8	60	80.8	60	80.8	60	80.8	60	80.8	60	80.8	237
33330	441341	CB	PRO			ST	L	TA/RT	0.5	42	71.2	60	81.4	60	81.4	60	81.4	60	81.4	60	81.4	60	81.4	237
33330	441351	CB	PRO			ST	L	TA/RT	0.5	42	70.0	60	80.5	60	80.5	60	80.5	60	80.5	60	80.5	60	80.5	237
33330	441352	CB	PRO			ST	L	TA/RT	0.5	42	71.9	60	80.9	60	80.9	60	80.9	60	80.9	60	80.9	60	80.9	237

TEST TECNOLÓGICO / TECHNOLOGICAL TEST

Aplastamiento		Abocardado		Pestañado		Ens. De anillo expandido		Ens. De Tracción de anillo	
Flattening Test		Flaring Test		Flange Test		Ring expanding Test		Ring tensile Test	
Satisfact.		N/A		N/A		N/A		N/A	
Pro = Procesos / Process		RE = Rectangular		C/B = Cuerpo / Body		L = Longitudinal		V.Obl = Valor Obtenido / Obtained value	
N = Normalizada / Normalized		CI = Cilíndrica / Cylindrical		R/U = Recalque / Upset		T = Transversal		E = Comienzo de marcado / Stenciling starting	
DIST = Distorsionada / Stress Relief		ST = Segmento Tubular / Tubular segment		P/A = Promedio / Average		P/T = Tubo / Pipe		O = Extremo opuesto al E / Opposite extreme to E	
Q & T = Templado y Revenido / Quenched & Tempered		Min = Mínimo / minimum		Max = Máximo / Maximum		EXT = Extremo / End		M = Medio / Middle	
TA/RT = Temp. Ambiente / Room Temperature									

CAU 17604



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INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente / Customer VAN LEEUWEN CANADA		Expediental / Manufacturing Order 517887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 3 / 13	
Producto / Product Seamless steel line pipe		Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 186+290/II		Extremos / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm		Peso Nominal / Nominal Weight 15.27 KG/MT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED			
3 1/2 x 0.300 inches		10.25 LB/FT				Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133596 Lb			

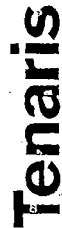
ENSAYOS DE TRACCION / TENSILE TEST

Colada / Ensayo	Nº de Ensayo	Condición de la probeta			Temp de Ens	Dimensiones		Sección	Fluencia / Yield Strength				Rotura / U.T.S		Relación F/R	Alargamiento / Elongation		Red. de área		Dureza / Hardness		
Heat	Test Nº	Specimen condition			Temp	Test Temp	Size	Area	Offset Method		EUL Method		Req. Min	V. obt	Req. Max	Lo 2"	Req. Min	V. obt	Req. Min	Area Red.	Req. Min	V. Obt
		Zona	Estado	Ext.	Nº	P/T	Type	Ort	°C	Req. Min	V. obt	0.2%	Req. Min	V. obt	Req. Max	Req. Min	V. obt	Req. Min	Area Red.	Req. Min	V. Obt	
33330	441353	C/B	PRO				ST	L	TA/RT	0.754	X 0.296	0.226	0.5	42	70.2	80	81.7	35.0	33.6	35.0	181	237
33330	441354	C/B	PRO				ST	L	TA/RT	0.757	X 0.302	0.231	0.5	42	69.5	60	81.1	34.8	33.6	34.8	190	237
33330	441355	C/B	PRO				ST	L	TA/RT	0.763	X 0.291	0.224	0.5	42	68.4	60	79.7	36.0	33.6	36.0	180	237
33330	441356	C/B	PRO				ST	L	TA/RT	0.755	X 0.300	0.228	0.5	42	69.5	60	80.7	34.1	33.6	34.1	182	237
33330	441357	C/B	PRO				ST	L	TA/RT	0.758	X 0.313	0.240	0.5	42	67.8	60	76.6	35.8	33.6	35.8	195	237
33330	441358	C/B	PRO				ST	L	TA/RT	0.759	X 0.289	0.222	0.5	42	68.2	60	80.7	35.4	33.6	35.4	178	237
33330	441359	C/B	PRO				ST	L	TA/RT	0.760	X 0.292	0.224	0.5	42	72.6	60	83.1	35.6	33.6	35.6	177	237
33330	441366	C/B	PRO				ST	L	TA/RT	0.759	X 0.298	0.222	0.5	42	70.6	60	81.4	35.2	33.6	35.2	176	237
33330	441372	C/B	PRO				ST	L	TA/RT	0.752	X 0.298	0.226	0.5	42	71.0	60	82.1	35.3	33.6	35.3	180	237
33330	441373	C/B	PRO				ST	L	TA/RT	0.748	X 0.291	0.220	0.5	42	70.1	60	80.9	35.7	33.6	35.7	176	237

TEST TECNOLÓGICO / TECHNOLOGICAL TEST

Aplastamiento / Flattening Test		Abocardado / Flaring Test		Pestañado / Flange Test		Ens. De anillo expandido / Ring expanding Test		Ens. De Tracción de anillo / Ring tensile Test	
Curvado / Bend test	NA	NA	NA	NA	NA	NA	NA	NA	NA
Satisfact.	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pro = Procesado / Process N = Normalizado / Normalized DIST = Distorsionada / Stress Relief Q & T = Templado y Revenido / Quenched & Tempered T/ART = Temp. Ambiental / Room Temperature									
RE = Rectangular CI = Cilíndrica / Cylindrical ST = Segmento Tubular / Tubular segmen					C/B = Cuerpo / Body R/U = Rosca / Upset P/A = Promedio / Average Min = Mínimo / minimum Max = Máximo / Maximum				
L = Longitudinal T = Transversal P/T = Tubo / Pipe EXT = Extremo / End M = Medio / Middle					V.Obt = Valor Obtenido / Obtained value E = Comienzo de marcado / Stenciling starting O = Extremo opuesto al E / Opposite extreme to E				

CAI 17504



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INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente / Customer VAN LEEUWEN CANADA				Expediente / Manufacturing Order 57887.01	Número / Number 216076	Fecha / Date 03/08/2004	Pág. / Page 4 / 13
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45029439	Item 00001	Referencia del Cliente / Customer Reference	
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1				Grado / Grade 186+290/II	Extremos / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT	Longitud / Length S.R. (SP)	Superficie Externa / External Surface VARNISHED	Cantidades / Quantities 602 Pz 3990.87 m 602 Pcs 13093.41 Ft	60598 Kg 133596 Lb

ENSAYOS QUÍMICOS / CHEMICAL ANALYSES

[illegible]

NOTAS / NOTES: H = Análisis de colada / Heat Analysis.

P = Análisis de producto / Product Analysis

C.B. = Carbono Equivalente/Equivalent Carbon

$$K = \text{ratio}$$
$$CEO1 = C + (MN/6) + CB + MO + V/5 + (NI + CL)/15$$

3. $\text{CO}_2 + \text{H}_2\text{O} \rightleftharpoons \text{H}^+ + \text{HCO}_3^-$

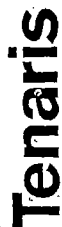
Sum 1	CR+CA
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R 3 =

R 3 3

R 3 =

CALL 1755



(EN 10204 3.1B - ISO 10474 3.1B)

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ENSAYOS QUÍMICOS / CHEMICAL ANALYSES

* = ppm / Part per million[illegible]

NOTAS / NOTES: H = Análisis de coleda / Heat Analysis.

CEQ 1 = $C + (MN/8) + (CR + MO + V)/5 + (NI + CU)/15$

$$\text{Sum } 1 = \text{CR} + \text{CU} + \text{MO} + \text{NI} + \text{V}$$

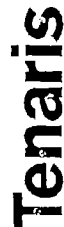
R 13 MN/C

CALL 175004

PCM =

SUM 3 =

R3



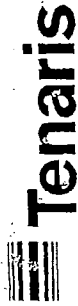
(EN 10204 3.1B - ISO 10474 3.1B)

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ENSAYOS QUÍMICOS / CHEMICAL ANALYSES

[illegible]

CALL 1478554



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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Cliente / Customer VAN LEEUWEN CANADA		Expeditel Manufacturing Order 57987.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 7 / 13	
Producto / Product Seamless steel line pipe		Orden de Compra / Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 1&6+290H		Extremos / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Paso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Caridades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133596 Lb	

ENSAYOS DE IMPACTO / IMPACT TEST

ENSAYOS DE IMPACTO / IMPACT TESTS																					
Condición de la probeta / Specimen condition				Energía Absorbida / Absorbed Energy				Área dúctil / Shear Area (%)				Expansión Lateral/Lateral Exp. (Mils)									
Colada Heat	Ensayo Test	Zona Zone	Método Method	Entalla Notch	Dimensiones Size		Orient.	Temper. °C	Unidad Unit	Req.			V. Obt./Obtained Values			Req.			V. Obt./Obtained Values		
					Inches					Min	P/A	1	2	3	Min	P/A	1	2	3	Min	P/A	1	2	3
32824	441323	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	122.0	120.0	120.7							
32824	441323	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	128.0	128.0	134.0							
32824	441340	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	120.0	120.0	121.3							
32824	441340	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	115.0	132.0	121.3							
33330	441287	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	119.0	124.0	126.3							
33330	441287	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	128.0	118.0	125.0							
33330	441288	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	114.0	112.0	112.7							
33330	441288	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	106.0	107.0	108.7							
33330	441290	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	114.0	120.0	117.3							
33330	441290	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	113.0	108.0	111.0							
33330	441292	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	130.0	118.0	121.3							
33330	441292	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	114.0	128.0	118.7							
33330	441293	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	128.0	114.0	108.0							
33330	441293	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	121.0	115.0	116.7							
33330	441294	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	121.0	114.0	116.3							
33330	441294	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	114.0	117.0	115.3							
33330	441296	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	112.0	117.0	116.7							
33330	441296	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	115.0	122.0	118.3							
33330	441297	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	112.0	113.0	111.3							
33330	441297	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	110.0	128.0	121.7							
33330	441298	C/B	CHARPY	V	0.394 x 0.197		L	-45	Joules	0.0	20.0	109.0	113.0	111.7							
33330	441298	C/B	CHARPY	V	0.394 x 0.197		L	-52	Joules	7.0	9.0	117.0	130.0	125.7							

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body R/U = Recaque / Upset Orient = Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Minimum T/E = Temp. Ens. / Test Temp.

CAJ17504



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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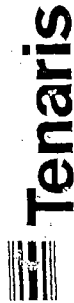
Cliente / Customer VAN LEEUWEN CANADA		Expedientel Manufacturing Order 57887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 8 / 13	
Producto / Product Seamless steel line pipe		Orden de Compral Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 186+290/II		Extremos / Ends BEVELLED AT 30 DEG. ASTM					
Diménsiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 Inches		Schedule 80		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED	
						Cantidades / Quantities 602 Pz 3990.87 m 602 Pcs 13093.41 Ft		60598 Kg 133596 Lb	

ENSAYOS DE IMPACTO / IMPACT TEST

Colada Heat	Ensayo Test	Condición de la probeta / Specimen condition					Energía Absorbida / Absorbed Energy					Area ductil / Shear Area (%)					Expansión Lateral/Lateral Exp. (Mils)						
		Zona Zone	Método Method	Entalla Notch	Dimensiones Size Inches	Orient.	Temper. °C	Unidad Unit	Req. Min	P/A	V.Obt./Obtained Values			Req. Min	P/A	V.Obt./Obtained Values			Req. Min	P/A	V.Obt./Obtained Values		
											1	2	3			1	2	3			1	2	3
33330	441301	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	121.0	121.0	138.0	121.0	126.7								
33330	441301	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	119.0	116.0	123.0	116.0	119.3	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441331	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	124.0	114.0	114.0	114.0	117.3								
33330	441331	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	126.0	118.0	119.0	118.0	121.0	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441332	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	118.0	114.0	118.0	114.0	116.7								
33330	441332	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	133.0	132.0	126.0	126.0	130.3	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441333	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	124.0	119.0	122.0	118.0	121.7								
33330	441333	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	119.0	127.0	122.0	119.0	122.7	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441334	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	110.0	110.0	114.0	110.0	111.3								
33330	441334	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	114.0	117.0	111.0	111.0	114.0	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441335	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	118.0	112.0	114.0	112.0	114.0	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441335	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	110.0	114.0	114.0	110.0	112.7								
33330	441335	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	108.0	116.0	123.0	108.0	115.0	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441336	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	7.0	9.0	112.0	115.0	106.0	106.0	111.0								
33330	441336	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	0.0	20.0	128.0	114.0	117.0	114.0	120.0	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441337	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	115.0	118.0	131.0	115.0	121.3								
33330	441337	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	111.0	109.0	120.0	109.0	113.3	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441337	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	111.0	113.0	123.0	113.0	118.0								
33330	441338	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	122.0	113.0	123.0	113.0	118.0								
33330	441338	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	122.0	113.0	118.0	113.0	117.7	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441339	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	117.0	132.0	131.0	117.0	126.7								
33330	441341	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	118.0	118.0	119.0	116.0	117.7	85.0	100.0	100.0	100.0	100.0	100.0		
33330	441341	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	127.0	118.0	114.0	114.0	119.7								

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body RU = Roscaque / Upsal Orient = Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Minimum / Minimum T/E = Temp. Ens. / Test Temp.

CAU.17364



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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Cliente / Customer VAN LEEUWEN CANADA		Expediente/ Manufacturing Order 57887.01		Número / Number 216076		Fecha / Date 03/08/2004		Pág./Page 9 / 13	
Producto / Product Seamless steel line pipe		Orden de Compra/ Purchase Order PO 45029439		Item 00001		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 186+290H				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 Inches		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 602 Pz 3990.87 m 602 Pcs 13093.41 Ft	
Schedule 80								60598 Kg 133596 Lb	

ENSAYOS DE IMPACTO / IMPACT TEST

ENSAYOS DE IMPACTO / IMPACT TESTS																								
Colada Heat	Ensayo Test	Condición de la probeta / Specimen condition				Energía Absorbida / Absorbed Energy				Area ductil / Shear Area (%)						Expansión Lateral/Lateral Exp. (Mis)								
		Zona Zone	Método Method	Entalla Notch	Dimensiones Size Inches	Orient.	Temper. °C	Unidad Unit	Req.	V. Obt./Obtained Values			Req.	P/A	Min	P/A	V. Obt./Obtained Values			Req.	P/A	Min	P/A	
										Sample N°	1	2					3	Sample N°	1					2
33330	441351	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	117,0	118,0	113,0	113,0	116,0	85,0	100,0	100,0	100,0	100,0				
33330	441351	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	118,0	111,0	120,0	111,0	116,3									
33330	441352	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	113,0	113,0	116,0	114,0		85,0	100,0	100,0	100,0	100,0				
33330	441352	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	112,0	119,0	116,0	112,0	115,7									
33330	441353	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	119,0	124,0	122,0	119,0	121,7	85,0	100,0	100,0	100,0	100,0				
33330	441353	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	113,0	110,0	113,0	110,0	112,0									
33330	441354	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	120,0	116,0	122,0	118,0	119,3	85,0	100,0	100,0	100,0	100,0				
33330	441354	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	118,0	118,0	112,0	112,0	115,3									
33330	441355	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	109,0	118,0	113,0	109,0	113,3	85,0	100,0	100,0	100,0	100,0				
33330	441355	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	112,0	113,0	118,0	112,0	114,3									
33330	441356	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	116,0	112,0	115,0	110,0	112,3	85,0	100,0	100,0	100,0	100,0				
33330	441356	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	112,0	120,0	118,0	112,0	114,7									
33330	441357	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	118,0	129,0	132,0	118,0	126,3	85,0	100,0	100,0	100,0	100,0				
33330	441357	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	0,0	20,0	120,0	111,0	114,0	111,0	112,7	85,0	100,0	100,0	100,0	100,0				
33330	441364	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	117,0	118,0	109,0	109,0	114,7	85,0	100,0	100,0	100,0	100,0				
33330	441364	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	111,0	114,0	112,0	111,0	112,3									
33330	441365	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	113,0	122,0	115,0	113,0	116,7	85,0	100,0	100,0	100,0	100,0				
33330	441366	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	120,0	126,0	119,0	119,0	121,7									
33330	441366	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules	0,0	20,0	127,0	119,0	120,0	119,0	122,0	85,0	100,0	100,0	100,0	100,0				
33330	441372	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules	7,0	9,0	107,0	110,0	115,0	107,0	110,7									
33330	441372	C/B	CHARPY	V	0,394 x 0,197	L	-45	Joules																
33330	441372	C/B	CHARPY	V	0,394 x 0,197	L	-52	Joules																

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body RUU = Readique / Upset Orient = Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Mínimo / Minimum TJE = Temp. Ens. / Test Temp.

CAU 1750

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body RIU = Resaca / Upset Orient = Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Minimum / Minimum T/E = Temp. Ens. / Test Temp.

CAU 17304



Tenaris

INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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Cliente / Customer VAN LEEUWEN CANADA	Expedientel Manufacturing Order 57887.01	Número / Number 216076	Fecha / Date 03/08/2004	Pág./Page 10 / 13
Producto / Product Seamless steel line pipe	Orden de Compra / Purchase Order PO 45029439	Item 00001	Referencia del Cliente / Customer Reference	
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1	Grado / Grade 186+290II	Extremos / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 Inches	Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT	Longitud / Length S.R. (SP)	Superficie Externa / External Surface VARNISHED	
Schedule 80	Cantidades / Quantities 602 Pz 3990.87 m 60598 Kg 602 Pcs 13093.41 Ft 133596 Lb			

ENSAYOS DE IMPACTO / IMPACT TEST

Colada Heat	Ensayo Test	Condición de la probeta / Specimen condition				Energía Absorbida / Absorbed Energy				Area ductil / Shear Area (%)				Expansión Lateral/Lateral Exp. (Mils)					
		Zona Zone	Método Method	Entalla Notch	Dimensiones Size Inches	Orient. Orient.	Temper. °C Req. T/E	Unidad Unit	Req.		V.Obt./Obtained Values		Req.		V.Obt./Obtained Values				
									Min	P/A	Min	P/A	Min	P/A	Min	P/A			
33330	441373	C/B	CHARPY	V	0.394 x 0.197	L	-45	Joules	0.0	20.0	119.0	116.0	114.0	116.3	85.0	100.0	100.0	100.0	100.0
33330	441373	C/B	CHARPY	V	0.394 x 0.197	L	-52	Joules	7.0	9.0	118.0	132.0	122.0	118.0	124.0	100.0	100.0	100.0	100.0

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body RU = Recalque / Upsest Orient = Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Mínimo / Minimum T/E = Temp. Ens. / Test Temp.

CAU17504



Tenaris

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INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente / Customer VAN LEEUWEN CANADA		Expedientel/ Manufacturing Order 57887.01		Número / Number 216076	Fecha / Date 03/08/2004	Pág./Page 11 / 13
Producto / Product Seamless steel line pipe		Orden de Compra/ Purchase Order PO 45029439		Item 00001	Referencia del Cliente / Customer Reference	
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 1&6+290/II		Extremo / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 88.90 x 7.62 mm	Schedule 80	Peso Nominal / Nominal Weight 15.27 KG/MT	Longitud / Length S.R. (SP)	Superficie Externa / External Surface VARNISHED	Cantidades / Quantities 602 Pz 3990.87 m	60598 Kg
3 1/2 x 0.300 inches		10.25 LB/FT			602 Pcs 13093.41 Ft	133596 Lb
Marcas / Marking LLL = Longitud / length HNXXXX = Colada / Heat PPP = Peso / Weight @ = Monograma / Monogram API						
& = Monograma / Monogram SIDERCA MM.YY = Mes / Año Month / Year NNNN = Número de tubo / Nbr of pipe YT = Año / Trimestre Year / Quarter						
Estando (Tubo) / Stencilling (Pipe) NNNNN LLLL PPPPP TENARIS SD MM.YY A333/SA333 CSA Z245.1-98 3 X 0.3 10.25 1/8 QT/290CAT II HQ M45C SCH80 XS 3000PSI SEAMLESS PO45029439 V.L. CODE 21800 5/7887.01 MADE IN ARGENTINA HNXXXX						
Tarjeta / Card : SIDERCA MADE IN ARGENTINA P.O.: PO 45029439 OF: 57887-01 PIECES: LENGTH: WEIGHT(KG): LIFT: SIZE: 88.90 X 7.62 GDO:1&6+290/II SPEC: ASTM A333 HEAT: GL.V.L. CANADA						
FABRICADO POR SIDERCA						
PROCESO DE ACERACIÓN -FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELÉCTRICO Y COLADO CONTINUO - ACERO CALMADO AL ALUMINIO. -LA PRÁCTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE UNA INYECCIÓN FINAL DE UNA VARILLA DE SILICIO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROINCLUSIONES. -MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO.						
MANUFACTURED BY SIDERCA *ACIERAGE PROCESS* -STEEL MAKING PROCESS: E.A.F./L.F. AND CONTINUOUS CASTING - FULL ALUMINIUM KILLED AND FINE GRAIN PRACTICE. -THE LF PRACTICE INCLUDES A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL. -MATERIAL FREE FROM MERCURY CONTAMINATION.						
PROCESO DE LAMINACIÓN -FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.						
ROLLING PROCESS -MANUFACTURING PROCESS: SEAMLESS HOT ROLLED.						
CONTROLES -CONTROL VISUAL Y DIMENSIONAL: SATISFACTORIO. -CONTROL NO DESTRUCTIVO TUBO (C.N.D.): SATISFACTORIO.						
CONTROLS -VISUAL AND DIMENSIONAL INSPECTION: SATISFACTORY. -PIPE NON DESTRUCTIVE TEST (N.D.T.): SATISFACTORY.						



Tenaris

INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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Cliente / Customer VAN LEEUWEN CANADA		Expedientel Manufacturing Order 57887.01		Número / Number 216076	Fecha / Date 03/08/2004	Pág./Page 12 / 13
Producto / Product Seamless steel line pipe		Orden de Compra Purchase Order PO 45029439		Item 00001	Referencia del Cliente / Customer Reference	
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 186+290/II		Extremo / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 88.90 x 7.62 mm 3 1/2 x 0.300 inches		Peso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT		Superficie Externa / External Surface VARNISHED		
Schedule 80		Longitud / Length S.R. (SP)		Cantidad / Quantities 602 Pz 3990.87 m 602 Pcs 13093.41 Ft		
Schedule 80		Longitud / Length S.R. (SP)		Cantidad / Quantities 602 Pz 3990.87 m 602 Pcs 13093.41 Ft		
*CONDICIONES DEL MATERIAL * -NO REPARADO POR SOLDADURA.						
*PROPIEDADES DEL MATERIAL * -LA DUREZA CUMPLE CON LA NORMA NACE MR 01-75 ULTIMA EDICION. -EL MATERIAL CUMPLE CON LOS REQUISITOS DE ASTM A530/A530M EDICION 98.						
*NORMAS * -CERTIFICADO DE ACUERDO CON: EN 10204 3.1.B/95 - ISO 10474 3.1.B/92. -EDICION DE LA NORMA : ASME SA 333/01. -EDICION DE LA NORMA : NACE MR-01-75 ULTIMA EDICION -EDICION DE LA NORMA: CSA Z245.1/98. -EDICION DE LA NORMA : ASTM A333/99.						
Observaciones / Remarks HYDROSTATIC TEST PRESSURE: 211 Kg/Cm2 = 3000 PSI (5 sec.). HEAT TREATMENT: QUENCHED & TEMPERED. QUENCH MEDIA OF HEAT TREATING PROCESS: WATER INSPECTION METHODS: E.M.I. LONG.(EXT.) NOTCH 5% E.M.I. LONG.(INT.) NOTCH 10% E.M.I. TRANSV. (EXT./INT.) NOTCH 10%. IMPACT TEST ACCORDING ASTM A370. HARDNESS ACCORDING TO NACE MR-01-75 LATEST EDITION.						



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INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente / Customer VAN LEEUWEN CANADA		Expediente / Manufacturing Order 517887.01		Número / Number 216076	Fecha / Date 03/08/2004	Pág. / Page 13 / 13
Producto / Product Seamless steel line pipe		Orden de Compra / Purchase Order PO 45029439		Item 00001	Referencia del Cliente / Customer Reference	
Norma / Standard ASTM A333/ASME SA333 + CSA Z245.1		Grado / Grade 18.6+290/III		Extremo / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 88.90 x 7.62 mm		Superficie Externa / External Surface VARNISHED		Cantidad / Quantities 602 Pz 3990.87 m		
Schedule 80		Longitud / Length S.R. (SP)		602 Pcs 13093.41 Ft 133596 Lb		
Peso Nominal / Nominal Weight 15.27 KG/MT						
3 1/2 x 0.300 Inches 10.25 LB/FT						

ONE YELLOW LONGITUDINAL STRIPE FULL LENGTH.

ONE ORANGE BAND.

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

QUALITY CERTIFICATION DEPT.
DTO CERTIFICACION DE CALIDAD
EDUARDO A. AYERBE

CAU 17604

32MND33 H1 0043076

BH

Contract No.: CI-10-117
P.O. NO.: CI-10-117
Name of Customer: TRANSAM PIPING PRODUCTS LTD.,
L/C NO.: DPCHCVO11501
Description: PIPE
TOTAL: 33 XH 9 SEAMLESS STEEL PIPE

ADD: 10 DALIKINCUN, HENGYANG CITY, HUNAN, CHINA
Tel and Fax: +86 734 8873739 8872942
Cable: 6993
P.C. 421301

MILL INSPECTION CERTIFICATE
Date: MAR 12, 2010
Page: 1/1

CERTIFICATE NO. 10-103-36

NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE	BUNDLES	PIECES	FEETS	QUANTITY (MT)	ACTUAL WEIGHT (MT)							
1	10-A1191	00930423	B	88.9 X 7.62 A333 GR 60 E XS												
SPEC: ASTM A333 GR 6-2005/ASME SA333 GR 6-2007, NACE MR0175-2003/ISO 15156																
NO.	DELIVERY CONDITION (≥ 650°C)	ET	UT	C	Si	Mn	P	S	Cr	Ni	Mo	V	Ti	B	Nb	CE
1	NORMALIZED	OK		0.17	0.35	1.31	0.014	0.015	0.09	0.05	0.03	0.01	0	0	0	0.41
NONDESTRUCTIVE TEST										CHEMICAL COMPOSITION %						
NO.	T.S. (MPA)	Y.S. (MPA)	E.L. (%)	AK (J) IMPACT	1	2	3	AVG.	HARDNESS BRINNEL (HB)	HYDROSTATIC TEST (MPa)	FLATTEN TEST	BEND TEST				
1	530/545	Full L, Lo=50mm 385/400	33.0/34.0	61/65 58/64	55/62 50/64				163/165	17.0	OK	OK				

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacturer.

2. We hereby certify that the properties described herein meet the requirement of the above spec

3. We hereby certify that this certificate is issued accordance with EN 10204 3.1B

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

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

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

5. HEAT TREATMENT CONDITION FOR PIPE NORMALIZED: 900°C X 10MIN

6. Impact Test: 5X10X55MM AT -45°C

7. DIMENSION STANDARD: ASME B36.10

8. MANUFACTURE METHOD: COLD DRAWN



Contract No: 2110001760

HENGYANG VALIN STEEL TUBE CO., LTD

Name of Customer: IMEX CANADA INC

MILL TEST CERTIFICATE

Add: 10 Dalixincun, Hengyang City, Hunan, China

Tel and Fax: +86 734 8873739 8872942

Cable: 6993

P.C. 421001

DESCRIPTION: | Seamless Steel Line Pipe

TOTAL: 1637PIECES, 123BUNDLES, 171.153MT

DATE: JAN 14 2011

page 5/6

1559

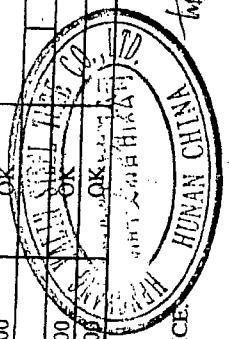
311 SCH 80

A106B

SPEC: ASTM A53/A106 B/ASME SA53/SA106 B/API 5L/CSA Z245.1 GR 290 CAT 1 NACE MR-0175/ISO 15156-2(REGION 3)/MR-0103 SOUR SERVICE

CERTIFICATE NO: 2011-03-0118-5																							
NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE	BUNDLES	PIECES	FEET	THEORETICAL WEIGHT (MT)	part code														
28	902101310	1026650V	B/290	3" * 0.300" * 40FT	3	27	1080	5.03	2860031														
29	80200670	1026690V	B/290	3" * 0.438" * 20FT	1	22	440	2.865	2860049														
30	802300541	1026532V	B/290	3" * 0.600" * 20FT	2	17	340	2.87	2860096														
31.1	902103113	1015642V	B/290	4" * 0.237" * 20FT	6	108	2160	10.59	2860016														
31.2	902103114	1027278V	B/290	4" * 0.237" * 20FT	3	56	1120	5.491	2860016														
Total					15	230	5140	26.846	2860016														
NO.	DELIVERY CONDITION	NONDESTRUCTIVE TEST										CHEMICAL COMPOSITION (%)											
	EMI	UT	TYPE	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Ti	B	Nb	Mn:C	CE(LIW)					
28	HOT-ROLLED	OK	OK	P	0.12	0.23	1.08	0.008	0.002	0.05	0.02	0.03	0.01	0.0019	0.026	0.0001	0.028	9.00	0.28				
29	HOT-ROLLED	OK	OK	P	0.13	0.24	1.07	0.008	0.002	0.05	0.02	0.03	0.01	0.0019	0.026	0.0001	0.028	8.23	0.3C				
				L	0.13	0.24	1.08	0.008	0.002	0.04	0.02	0.03	0.01	0.0019	0.026	0.0001	0.028	8.31	0.3C				
				P	0.14	0.24	1.05	0.009	0.002	0.06	0.03	0.05	0.02	0.0013	0.027	0.0001	0.035	7.50	0.32				
30	HOT-ROLLED	OK	OK	P	0.14	0.25	1.06	0.009	0.002	0.06	0.03	0.05	0.02	0.0013	0.027	0.0001	0.035	7.57	0.32				
				L	0.13	0.27	1.04	0.009	0.002	0.06	0.03	0.03	0.01	0.0029	0.028	0.0003	0.028	8.00	0.29				
				P	0.13	0.22	1.01	0.010	0.004	0.04	0.02	0.03	0.01	0.0031	0.031	0.0003	0.028	7.77	0.29				
31.1	HOT-ROLLED	OK	OK	P	0.13	0.21	1.00	0.010	0.004	0.04	0.02	0.03	0.01	0.0031	0.031	0.0003	0.028	7.69	0.29				
				L	0.13	0.20	1.01	0.010	0.004	0.04	0.02	0.04	0.01	0.0031	0.028	0.0002	0.032	8.08	0.3C				
				P	0.13	0.23	1.05	0.012	0.002	0.06	0.02	0.04	0.01	0.0022	0.028	0.0002	0.032	7.43	0.32				
31.2	HOT-ROLLED	OK	OK	P	0.14	0.24	1.04	0.012	0.002	0.06	0.02	0.04	0.01	0.0022	0.028	0.0002	0.032	7.50	0.32				
				L	0.14	0.23	1.05	0.013	0.002	0.06	0.02	0.04	0.01	0.0022	0.028	0.0002	0.032	7.50	0.32				
				P	0.12	0.26	1.02	0.010	0.002	0.04	0.02	0.04	0.01	0.0045	0.031	0.0002	0.032	8.50	0.27				
				P	0.13	0.27	1.03	0.010	0.002	0.04	0.02	0.04	0.01	0.0045	0.031	0.0002	0.032	7.92	0.25				
				L	0.12	0.27	1.02	0.010	0.002	0.03	0.02	0.05	0.01	0.0045	0.031	0.0002	0.032	8.50	0.27				
NO	TENSILE STRENGTH σ _b (PSI)	YIELD STRENGTH σ _s (PSI)	ELONGATION δ (%)	IMPACT				HARDNESS				HYDROSTATIC TEST (Psi/s)				FLATTEN TEST				BEND TEST			
strip L ₀ =19mm, L _o =50mm				SIZE	AK (J)	Or/Ten																	
28	67425	51475	43.5	N/A	N/A	N/A																	
29	71050	60175	39	N/A	N/A	N/A																	
30	62350	48575	43.5	N/A	N/A	N/A																	
31.1	71050	52200	41	N/A	N/A	N/A																	
31.2	69600	52200	41	N/A	N/A	N/A																	

REMARKS: 1. We hereby certify that this certificate of quality was prepared and signed by the manufacturer.
2. We hereby certify that the properties described herein meet the requirement of the above specification.
3. We hereby certify that this certificate is issued in accordance with EN10204 3.1.1 OR 3.1.2.
4. Type: P-Product analysis, L-Ladle analysis;



WESTLUND

QUALITY MANAGER:

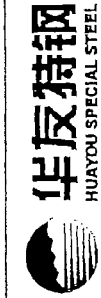
ISO 15156-2 (REGION 3)/MR-0103 SOURSERVICE

4 x H A333

B52873

无锡市华友特钢有限公司

Wuxi Huayou Special Steel Co., Ltd.



产品质量证明书

Page 1 / 1

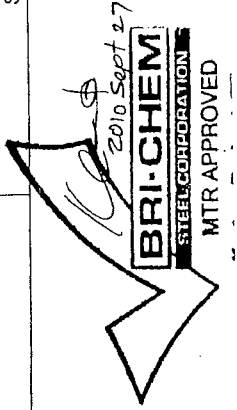
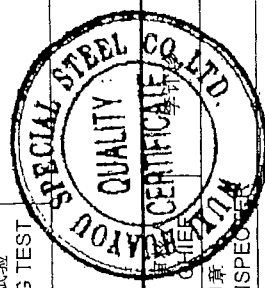
无锡市江海西路 888 号

Tel: (0510)83073086 Fax: (0510)83073086

MILL TEST CERTIFICATE

(EN10204 3.1)

订货单位 CUSTOMER	BRI-CHEM STEEL CORPORATION				证书号 CERTIFICATE NO.	100726024				制造方法 MAKING METHOD	冷拔 COLD DRAWN																
收货单位 PURCHASER	BRI-CHEM STEEL CORPORATION				信用证号 L/C NO.					交货状态 DELIVERY	正火态 NORMALIZED																
产品名称 PRODUCT	无缝钢管 SEAMLESS STEEL PIPES				合同号 CONTRACT NO.	100222				热处理工艺 HEAT TREATMENT																	
标准 SPECIFICATION	ASTM/A533-05 NACE MR0175-2003				钢级 GRADE	GR.6				出货日期 DATE OF ISSUE	2010-7-26																
外径 O.D.	114.3mm NPS4	壁厚 W.T.	8.56mm XH	长度 LENGT	11.8m above	总支数 TOTAL PIECES (PCS)	62	总重量 TOTAL WEIGHT	758.13	总重量 (吨) TOTAL WEIGHT	17.147																
化学成分 %																											
序号 NO.	生产批号 WORK NO.	炉号 HEAT NO.	支数 PCS	CHEMICAL COMPOSITION																							
				C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Nb	Ti	As	A	B	C	D						
1	HY10060856	B52873	62	Max Min	0.30 0.10	1.35 0.29	0.025 -	0.005 0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
拉伸试验 TENSILE TEST				冲击试验 IMPACT TEST				硬度试验 HARDNESS TEST				水压试验 HYDROSTATIC TEST				无损探伤检验 N.D.E.				金相试验 METALLOGRAPHIC							
标距 GAUGE LENGTH (50.8mm)				试验温度 TEMPERATURE OF TEST				HRC522 (HB234)				E.T.				U.T.				显微组织 MICROSTRUCTURE				晶粒度 (级) GRAIN SIZE			
*2 抗拉强度 T.S. MPa				*3 屈服强度 Y.S. MPa				*4 伸长率 E.L. A %				10x7.5x55 (-45°C)				合格				合格				合格			
Max Min				415 240				30				51 52				55 53				合格				合格			
1 L				510/520				335/340				34/35				合格				合格				合格			
外观和尺寸 VISUAL & DIMENSION				合格				压扁试验 FLATTENING TEST				合格				弯曲试验 BENDING TEST				合格				合格			
1				合格				合格				合格				合格				合格				合格			
注释 NOTES				*1. H: HEAT (LADLE) ANALYSIS; P: PRODUCT ANALYSIS. *2. 试样尺寸 SIZE: 弧形试样 STRIP T x 19.05 mm. *3. 试验方向 ORIENTATION: L=纵向 LONGITUDINAL. *4. SY=0.2% OFFSET. WE HEREBY CONFIRM THAT OUR PRODUCTS ARE MADE WITH MATERIALS WHICH ARE FREE FROM RADIATION CONTAMINATION																							
会签者 SURVEYOR				兹证明本表所列产品, 均依标准规定制造、取样、试验和检验, 并符合标准及合同要求。 WE HEREBY CERTIFY THAT THE MATERIALS DESCRIBED HEREIN HAVE BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE CUSTOMER'S SPECIFICATION(S) AND THAT THEY SATISFY THE REQUIREMENTS.																							
				检验员 INSPECTOR				王金峰				工/ 检验印章				STAMP OF MILL INSPECTOR											



Call 1-800-333-3333



INSPECTION CERTIFICATE

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

SIDERCA S.A.I.C.
Dr Jorge A. Simini 250
(8280th/HA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel.
(54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CANADA		Expediente / Manufacturing Order 5/0823.06		Número / Number 335076	Fecha / Date 06/08/2006	Pág. / Page 3 / 6
Producto / Product CARBON STEEL FOR SERVICES AT LOW TEMPERA		Orden de Compra / Purchase Order 45000372		Item 00010	Referencia del Cliente / Customer Reference 45000372	
Norma / Standard ASTM A333/ASME SA333 CSA Z245.1-02/CANADA TENARIS P4.18-01/00 OCT 24,2003		Grado / Grade 1/6/290 2SS		Extremos / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 168.30 x 10.97 mm 6 5/8 x 0.432 Inches		Schedule 80		Peso Nominal / Nominal Weight 42.56 KG/MT 28.57 LB/FT		Longitud / Length S.R. (SP)
				Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 267 Pz 1758.12 m 267 Pcs 5768.11 Ft
						74707 Kg 164701 Lb

(54) 3489 433405 fax



INSPECTION CERTIFICATE

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

SIDERCA S.A.I.C.
Dr. Jorge A. Simini 250
(82804VHA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel.
(54) 3489 433405 fax

Ciente / Customer VAN LEEUWEN CANADA		Expediente/ Manufacturing Order 5/0823.06		Número / Number 335076	Fecha / Date 06/08/2008	Pág./Page 4 / 6
Producto / Product CARBON STEEL FOR SERVICES AT LOW TEMPERA		Orden de Compra/ Purchase Order 45000372		Item 00010	Referencia del Cliente / Customer Reference 45000372	
Norma / Standard ASTM A333/ASME SA333 CSA Z245.1-02*CANADA TENARIS P4.18-01/00 OCT 24.2003		Grado / Grade 1/6290 2SS		Extremo / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 168.30 x 10.97 mm 6 5/8 x 0.432 Inches		Peso Nominal / Nominal Weight 42.56 KGMT 28.57 LB/FT		Superficie Externa / External Surface VARNISHED		
Schedule 80		Longitud / Length S.R. (SP)		Cantidad / Quantities 267 Pz 1758.12 m 267 Pcs 5768.11 Ft		
S = Monograma / Monogram SIDERCA MM.YY = Mes / Año Month / Year		NNNN = Número de tubo / Nbr of pipe YYT = Año / Trimestre Year / Quarter		Marcas / Marking LLL = Longitud / length HNXXXX = Colada / Heat		
PPP = Peso / Weight HNXXXX = Colada / Heat						
Prueba Hidráulica / Hydrostatic Test						
Presión / Pressure Valor / Value 3000		Tiempo / Time Segundos / Seconds 5,00		Resultado / Results Satisfactorio / Satisfactory		
Estarado (Tubo) / Stencilling (Pipe) NNNN LLLL PPPPP TENARIS SD MM.YY ASTM A333/ASME SA333 CSA Z245.1 6 X 10.97 28.57 1/6 QT/290 CAT II SS HQ M45C SCH80 XS 3000PSI SEAMLESS PO 45000372 5/0823.06 MADE IN ARGENTINA HNXXXX						
FABRICADO POR SIDERCA		*MANUFACTURED BY SIDERCA*				
PROCESO DE ACERACIÓN		*ACIERAGE PROCESS*				
FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELÉCTRICO Y COLADO CONTINUO - ACERO CALMADO AL ALUMINIO.		STEEL MAKING PROCESS: E.A.F/L.F. AND CONTINUOUS CASTING - FULL ALUMINUM KILLED AND FINE GRAIN PRACTICE				
LA PRÁCTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE UNA INYECCIÓN FINAL DE UNA VARILLA DE SILICIO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROINCLUSIONES.		THE L.F. PRACTICE INCLUDES A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL				
- MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO.		- MATERIAL FREE FROM MERCURY CONTAMINATION.				
PROCESO DE LAMINACIÓN		*ROLLING PROCESS*				
- FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.		- MANUFACTURING PROCESS: SEAMLESS HOT-ROLLED.				
CONTROLES		*CONTROLS*				
- CONTROL VISUAL Y DIMENSIONAL SATISFACTORIO		VISUAL AND DIMENSIONAL INSPECTION - SATISFACTORY.				
CONDICIONES DEL MATERIAL		*MATERIAL CONDITIONS*				
- NO REPARADO POR SOLDADURA.		NOT REPAIRED BY WELDING.				
PROPIEDADES DEL MATERIAL		*MATERIAL PROPERTIES*				
- LA DUREZA CUMPLE CON LA NORMA NACE MR 01-75 ÚLTIMA EDICIÓN.		- HARDNESS ACCORDING TO NACE MR 01-75 LATEST EDITION				



INSPECTION CERTIFICATE

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

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

Cliente / Customer VAN LEEUWEN CANADA		Expediente / Manufacturing Order 5/0823.06		Número / Number 335076	Fecha / Date 06/08/2006	Pág. / Page 5 / 6
Producto / Product CARBON STEEL FOR SERVICES AT LOW TEMPERA		Orden de Compra / Purchase Order 45000372		Item 00010	Referencia del Cliente / Customer Reference 45000372	
Norma / Standard ASTM A333/ASME SA333 CSA Z245.1-02/CANADA TENARIS P4.18-01/00 OCT 24, 2003		Grado / Grade 1/6/290 2SS		Extremo / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 168.30 x 10.97 mm		Peso Nominal / Nominal Weight 42.56 KG/MT		Cantidades / Quantities 267 Pz 1758.12 m		
6 5/8 x 0.432 inches		28.57 LB/FT		267 Pcs 5788.11 Ft		
Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		74707 Kg 164701 Lb		
- EL MATERIAL CUMPLE CON LOS REQUERIMIENTOS CSA Z245.1 GR 241/290 CAT I						
NORMAS						
-EDICION DE LA NORMA : NACE MR-01-75 ULTIMA EDICION						
-EDICION DE LA NORMA: ASME SA 333 SEC. II PARTE A/01 Addendum 2003.						
-EDICION DE LA NORMA : ASTM A333/04a.						
-EDICION DE LA NORMA: CSA Z245.1/02.						

Observaciones / Remarks

NON DESTRUCTIVE TEST: SATISFACTORY.

INSPECTION METHODS: E.M.I. LONG. (EXT.) NOTCH 5%

+ E.M.I. LONG. (INT.) NOTCH 10%

+ E.M.I. TRANS. (EXT/INT) NOTCH 10%

ONE YELLOW LONGITUDINAL BAND

END MARKING - ONE ORANGE BAND

Tratamiento térmico (Tubos) Heat treatment (Pipe)

Método de tratamiento térmico (Tubos) / Quench media of heat treatment process (Pipes)

Protectores / Ends Protectors:

NON LISTABLE CLOSED PLASTIC PROTECTOR FOR BEVEL PIPE SUPPLIER METAL CENTRO.

WATER



INSPECTION CERTIFICATE

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

SIDERCA S.A.I.C.
Dr. Jorge A. Simioli 250
(B2804VHA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel.
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Cliente / Customer VAN LEEUWEN CANADA		Expediente / Manufacturing Order 5/0823.06		Número / Number 335076	Fecha / Date 06/08/2006	Pág. / Page 6 / 6
Producto / Product CARBON STEEL FOR SERVICES AT LOW TEMPERA		Orden de Compra / Purchase Order 45000372		Item 00010	Referencia del Cliente / Customer Reference 45000372	
Norma / Standard ASTM A333/ASME SA333 CSA Z245.1-02 CANADA TENARIS P4.18-01/00 OCT 24, 2003		Grado / Grade 1/6/290 2SS		Extremo / Ends BEVELLED AT 30 DEG. ASTM		
Dimensiones / Dimensions 168.30 x 10.97 mm 6 5/8 x 0.432 Inches		Peso Nominal / Nominal Weight 42.56 KGMT 28.57 LBIFT		Longitud / Length S.R. (SP)		
Schedule 80		Superficie Externa / External Surface VARNISHED				
		Cantidades / Quantities 267 Pz 1758.12 m 74707 Kg 267 Pcs 5768.11 Ft 164701 Lb				

Por la presente certificamos que el material aquí descrito ha sido fabricado de acuerdo con las normas y especificaciones solicitadas en vuestra orden y satisfacen los correspondientes requerimientos.

Este certificado es emitido mediante un sistema computarizado y es válido con firma electrónica. El certificado original presenta el logo Tenaris (verde claro) impreso en la parte inferior de la hoja. En caso que el proveedor del certificado entregue una copia del mismo, deberá garantizar la conformidad con el original, haciéndose responsable por cualquier uso ilegal o indebido.

Cualquier alteración o falsificación estará sujeta a la ley. Si necesita asegurar la autenticidad de este certificado, comuníquese con Siderca S.A.I.C. e-mail: sys@siderca.com

We hereby certify that material herein described has been manufactured in accordance with the standards and specifications required in your order and satisfies the corresponding requirements.

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark Tenaris light-green coloured at the bottom of the page is stamped. In case the owner of the certificate would release a copy of it, he must ensure its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use.

Any alteration and/or falsification will be subject to the law. If you need to assure the authenticity of this certificate, please do not hesitate to contact Siderca SAIC through this e-address: sys@siderca.com

QUALITY CERTIFICATION DEPT.
D.T.O. CERTIFICACION DE CALIDAD
EDUARDO A. AYERBE

6" STD A333 HT 103496 V

BAT

HENGYANG VALIN STEEL TUBE CO., LTD
MILL TEST REPORT

Add: 10 Daixincun, Hengyang City, Hunan, China
Tel and Fax: +86 734 8873739 8872942
Cable: 6993
P.C. 421001

Contract No: 2210001881
L/C NO.:11074606T02126
Customer: CCTF CORPORATION
P.O NO.:4888062-00

Date: NOV 17, 2010

DESCRIPTION: SEAMLESS STEEL PIPE
TOTAL: 218PIECES, 49BUNDLES, 76959MT

2860077

SPEC: ASTM A333-6 / SAME SA333-6 / CSAZ245.1 Gr.290 Cat 2 SOUR SERVICE

CERTIFICATE NO: 2010-03-1115-1

SPEC: ASTM A333-6 / SAME SA333-6 / CSAZ245.1 Gr.290 Cat 2 SOUR SERVICE																				
NO		BATCH NO.	HEAT NO.	STEEL GRADE	SIZE	BUNDLES	PIECES	FEET	THEORETICAL WEIGHT(MT)	ACTUAL WEIGHT(MT)										
9		K91103231	1034963V	A333-6	6" *0.280" *21FT	7	49	1029	8.862	N/A										
Total						7	49	1029	8.862	N/A										
NONDESTRUCTIVE TEST				CHEMICAL COMPOSITION (%)								CE								
NO.	DELIVERY CONDITION	EMT	UT	TYPE	C	SI	Mn	P	S	Cu	Ni	Cr	Mo	V	Ti	B	Nb	Pen	ITW	
9	NORMALIZED	OK	OK	P	0.12	0.22	1.05	0.0080	0.0021	0.07	0.03	0.04	0.01	0.0010	0.0010	0.022	0.0001	0.030	0.19	N/A
				P	0.11	0.21	1.04	0.0080	0.0021	0.07	0.03	0.04	0.01	0.0010	0.0010	0.022	0.0001	0.030	0.17	N/A
				L	0.12	0.22	1.05	0.0090	0.0024	0.08	0.04	0.05	0.01	0.0100	0.0100	0.023	0.0001	0.029	0.19	N/A
TENSILE STRENGTH σ_b (Psi)		YIELD STRENGTH σ_s (Psi)		ELONGATION δ (%)		IMPACT			HARDNESS			HYDROSTATIC TEST (PSI/ 6s)		FLATTE N TEST		HEAT TREATMENT		HIC TEST		SSC TEST
		strip L, bo=12.5, Lo=50mm				SIZE		AK (J)		Average		O ₁ /T _{ten}		% shear area		HRC≤22		Normalized: 920°C±10°C 15Min		
9		71050	71050	55100	55100	40.0/39.5	10*5*55	V8/82/82/84		83		T1-45°C		90/90/90		OK		2670		

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacturer.

2. We hereby certify that the properties described herein meet the requirement of the above specification

3. We hereby certify that this certificate is issued accordance with EN10204 3.1B/NACE MR0175/ISO15156-2/NACE MR0103.

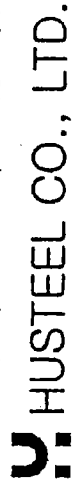
4. Type: P-Product analysis, L-Ladle analysis;

QUALITY MANAGER:

正本
ORIGINAL

124588 6'-58'-453

INSPECTION CERTIFICATE



HUSTEEL CO., LTD.
 HEAD OFFICE : Shinan B/D 15F, 943-19, Daechi-dong, Kangnam-ku, Seoul 135-845, KOREA
 DANGJIN PLANT : 569-1, BUGOK-RI, SONGAK-MYEON, DANGJIN-GUN, CHUNGCHONGNAM-DO, KOREA
 DAEBUL PLANT : 11 BLOCK, DAEBUL NATIONAL INDUSTRIAL COMPLEX, NABUL-RI, SAMHO-EUP, YOUNGAM-KUN, CHULLANAM-DO, KOREA

P/O No. 4886837-00
 L/C No. : SH980317JK
 ISSUED DATE : 2009.12.30
 COMMODITY : E.R.W. STEEL PIPE
 SPECIFICATION : API 5L B/ASTM A53B
 : ASME SA 53B

CERTIFICATE No. : 091230-A452-1
 MANUFACTURED No. : 09-12-006
 SUPPLIER : HUSTEEL CO., LTD.
 CUSTOMER : HUSTEEL USA INC.

ITEM NO.	HEAT NO.	TYPE	QUANTITY (PIECES)	NOMINAL SIZE	ORDER SIZE			WEIGHT (kg/ft)	TENSILE TEST			CHEMICAL COMPOSITION(%)																									
					O.D. (inch)	W.T. (inch)	LENGTH (ft)		TENSILE STRENGTH (PSI)	YIELD STRENGTH (PSI)	ELONGATION (%)	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Ti															
																							②		③		④										
01	C915712	BPEB	1,035	2-3/8	2.375	0.154	21	1.66	79000	66000	35	14	14	76	11	1	15	10	14	2	1	1															
02	C915710	BPEB	280	3-1/2	3.500	0.216	21	3.44	76900	63800	35	14	14	79	11	2	13	9	14	2	2	1	1														
03	C926150	BPEB	105	6-5/8	6.625	0.280	21	8.61	76100	62400	35	13	15	77	11	1	16	8	15	2	1	1	1														
04	C926389	BPEB	50	8-5/8	8.625	0.322	21	12.95	78300	61600	35	15	14	77	12	1	15	13	8	3	2	1	1														
05	C915711	BPEB	40	8-5/8	8.625	0.322	21	12.95	78300	62400	31	14	14	76	13	5	11	8	15	3	3	1	1														
	SQ85321	BPEB	40	10-3/4	10.750	0.365	21	18.36	69300	46700	37	18	1	80	11	4	16	12	16	2	1	1	1														
ITEM NO.	TP (PSI)	RE-SULT	HEAT TREATMENT (°C)	NDT (U.T, E.T)	HARDNESS TEST (HV)	THREADS			TENSILE STRENGTH OF WELDS (PSI)	ZINC COATING TEST			FLATTENING (BEND) TEST	W D T	R G T	F L T	C R T	R F T	S.T (%)	IMPACT TEST		Res. Mag.	RE-MARKS														
						TPI	ETL (mm)	WZC (g/m²)		CST (TIMES)	ENE-SHEAR RGY AREA (J)	ENE-SHEAR RGY AREA (%)																									
																				⑦				⑧		⑨											
01	2500	GOOD	900	GOOD									GOOD						0.1			8															
02	2500	GOOD	900	GOOD									GOOD						0.1			7															
03	1780	GOOD	900	GOOD									GOOD						0.1			10															
04	1570	GOOD	900	GOOD					82000				GOOD						0.1			9															
05	1570	GOOD	900	GOOD					82400				GOOD						0.1			10															
	1430	GOOD	900	GOOD					73500				GOOD						0.1			12															
N O T E																																					
① TYPE:BPE-BLACK PLAIN ENDS, BPEB-BPE BEVELLED, BTE-BLACK THREADED ENDS, BTC-BLACK THREADED & COUPLED, GPE-GALVANIZED PLAIN ENDS, GTE-GALVANIZED THREADED ENDS, GTC-GALVANIZED THREAD & COUPLED ② O.D.:OUTSIDE DIAMETER ③ W.T.:WALL THICKNESS ④ CHEMICAL COMPOSITION, 2*100, 3*1000 ⑤ T.P.:TESTING PRESSURE ⑥ NDT:NONDESTRUCTIVE TEST, ET:EDDY CURRENT TEST, U.T:ULTRASONIC TEST ⑦ TP:THREADS PER INCH, ETL:EFFECTIVE LENGTH OF THREADS ⑧ WZC:WEIGHT OF ZINC COATING ⑨ RES.MAG.:RESIDUAL MAGNETISM, CST-COPPER SULPHATE TEST ⑩ WDT:WELD DUCTILITY TEST, RGT:RING GAGE TEST, FLT:FLANGE TEST, CRT:CRUSH TEST, RFT:REVERSE FLATTENING TEST S.T-STRAIGHTNESS G-GOOD TB-TRACE																																					

HYDROSTATIC TEST
 TP (PSI) ⑤
 RE-SULT
 01 2500 GOOD
 02 2500 GOOD
 03 1780 GOOD
 04 1570 GOOD
 05 1570 GOOD
 05 1430 GOOD

HEAT TREATMENT
 NDT (U.T, E.T) ⑥
 01 GOOD
 02 GOOD
 03 GOOD
 04 GOOD
 05 GOOD
 05 GOOD

HARDNESS TEST
 (HV)
 01
 02
 03
 04
 05

THREADS
 TPI ETL (mm) ⑦
 01
 02
 03
 04
 05

TENSILE STRENGTH OF WELDS
 (PSI)
 82000
 82400
 73500

ZINC COATING TEST
 WZC (g/m²) CST (TIMES) ⑧
 01
 02
 03
 04
 05

VISUAL & DIMENSION
 (mm)
 01
 02
 03
 04
 05

FLATTENING (BEND) TEST
 01
 02
 03
 04
 05

WELD DUCTILITY TEST
 RGT: RING GAGE TEST, FLT: FLANGE TEST, CRT: CRUSH TEST, RFT: REVERSE FLATTENING TEST, S.T: STRAIGHTNESS, G: GOOD, TR: TRACE

IMPACT TEST
 ENE-SHEAR RGY AREA (J) (%)
 01 0.1
 02 0.1
 03 0.1
 04 0.1
 05 0.1

RE-MARKS
 01 8
 02 7
 03 10
 04 9
 05 10
 05 12

SIGNATURE

SIGNATURE

WE HEREBY CERTIFY THAT THE PRODUCTS HEREIN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SURVEYOR TO:

HMC C-30-05-(21)

HUSTEEL

本溪北方钢管有限公司
BENXI NORTHERN STEEL PIPES CO., LTD.

产品质量证明书



本溪北方钢管有限公司
BENXI NORTHERN STEEL PIPES CO., LTD.
AP LICENSE NO.

北 台 MILL TEST CERTIFICATE 1295
CENTER COLUMN

兹为贵单位所订之该批ERW埋弧焊钢管，技术条件，合同规格合格，特此证明。

This is to certify that in accordance with the relevant specifications and contracts.

The ERW steel pipes manufactured were tested and qualified by our Quality Control Department.

兹为贵单位所订之该批ERW埋弧焊钢管，技术条件，合同规格合格，特此证明。

ASTM A252 GRADE 3
3775 支 55930.80 米
ASTM A252 GRADE 3

The ERW steel pipes are tested according to
3775 pcs 55930.80 M

and counted nominally amount.

Destination: VANCOUVER B.C., CANADA

The ERW steel pipes are tested according to and counted nominally amount.																				3384.700 MT.			
ASTM A252 GRADE B																				3775 pcs		55930.80 M	
Description		ERW STEEL PIPES		货物名称 热镀锌埋弧焊		规格		产品规格 (Size)		数量		外观尺寸		化学成分 (%)		物理性能		焊接性能		水压试验		无损检验	
序号	炉号	钢级	规格 (Size)			数量		Dimensional	Chemical properties. $\times 10^2$					Physical properties				Welding properties	P = Mpa	Test	UT		
			O.D.	W.T.	Length	根 (Pcs)	米 (M)		吨 (MT)	C	Si	Mn	P	S	Yield strength (Mpa)	Tensile strength (Mpa)	Elongation (%)					σb	
8521	L9410987	Steel	mm	mm	M	300	3657.600	OK	12	25	146	2.7	0.7	370	515	32.0	OK	—	OK	—	OK	OK	
8521	L9410988	Grade	mm	mm	M	300	3657.600	OK	10	27	155	3.1	1.2	385	510	30.5	OK	—	OK	—	OK	OK	
8521	L9410985	3	219.1	8.18	12.192	300	3657.600	OK	12	25	154	3.0	1.0	375	515	31.0	OK	—	OK	—	OK	OK	
8521	L9410983	3	219.1	8.18	15.240	200	3048.000	OK	11	26	158	3.3	1.1	390	510	30.5	OK	—	OK	—	OK	OK	
8521	L9410984	3	219.1	8.18	18.288	150	2743.200	OK	12	28	152	3.1	1.0	395	520	30.0	OK	—	OK	—	OK	OK	
8521	08107318	3	219.1	9.525	12.192	100	1219.200	OK	18	27	118	1.6	0.2	395	515	30.5	OK	—	OK	—	OK	OK	
8521	08107327	3	219.1	9.525	18.288	100	1828.800	OK	19	25	126	1.7	0.4	390	510	32.0	OK	—	OK	—	OK	OK	
8521	2-000006	3	273.1	9.27	12.192	200	2438.400	OK	11	27	129	2.4	0.5	400	525	32.0	OK	—	OK	—	OK	OK	
8521	2-000007	3	273.1	9.27	12.192	200	2438.400	OK	17	25	127	2.3	0.7	390	515	31.0	OK	—	OK	—	OK	OK	
8521	1-000006	3	273.1	9.27	18.240	200	3048.000	OK	11	27	125	2.3	0.5	405	520	32.5	OK	—	OK	—	OK	OK	
8521	08107318	3	273.1	9.27	18.288	200	3657.600	OK	18	24	118	1.6	0.2	395	515	30.5	OK	—	OK	—	OK	OK	
8521	08107317	3	273.1	9.27	18.288	250	4572.000	OK	19	26	126	1.7	0.4	390	510	32.0	OK	—	OK	—	OK	OK	
8521	R10200525	3	323.9	9.525	12.192	107	1304.544	OK	16	13	128	1.8	2.8	350	470	27.0	OK	—	OK	—	OK	OK	





SAN ENG STEEL FORGING CO. LTD
311, Jen Hsin Road, Jen Wu Hsiang
Kaohsiung Hsien, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: saneng@ksts.seed.net.tw

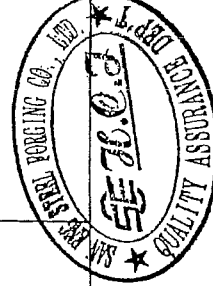
(MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)
Customer: SEYBOLD INTERNATIONAL CORP.
Order No.: 7001945-CCIF

Certificate No.: SE-1945B
Date: 02/10/2010
Page: 1 OF 3

PO# 4887136

PRODUCT			MATERIAL SPECIFICATIONS			DIMENSIONAL SPECIFICATIONS											
FORGED CARBON STEEL FLANGES			ASTM A350 LF2-07 CL.1/ ASME SA350 LF2-07			ASME B16.5-09 CSA Z245.12											
Item No.	CODE NO	DESCRIPTION	QUANTITY	CHEMICAL COMPOSITION (%)													
				C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	CE(*)	
				Min	Max												
1	7580034	150 WNRFS160 2" LF2	10 PCE	0.222	0.240	1.010	0.015	0.014	0.022	0.063	0.122	0.009	0.015	0.005	0.003	0.414	
2	7580040	150 WNRFS160 3" LF2	9 PCE	0.200	0.220	1.160	0.019	0.013	0.100	0.080	0.070	0.005	0.003	0.005	0.010	0.422	
3	7580040	150 WNRFS160 3" LF2	1 PCE	0.210	0.200	1.170	0.009	0.010	0.060	0.070	0.040	0.005	0.003	0.005	0.010	0.427	
4	7580038	150 WNRFS160 4" LF2	10 PCE	0.210	0.200	1.110	0.007	0.010	0.060	0.060	0.050	0.005	0.003	0.005	0.008	0.415	
5	7580201	150 WNRFS160 1 1/2" LF2	25 PCE	0.209	0.220	1.020	0.014	0.008	0.008	0.012	0.054	0.002	0.005	0.005	0.006	0.386	
6	7580223	150 BLRF 1 1/2" LF2	6 PCE	0.210	0.190	0.990	0.013	0.006	0.050	0.080	0.040	0.030	0.002	0.005	0.008	0.403	
7	7580223	150 BLRF 1 1/2" LF2	4 PCE	0.230	0.270	1.010	0.012	0.009	0.080	0.110	0.070	0.020	0.002	0.001	-	0.434	
8	7586504	150 SORF 2" LF2	40 PCE	0.209	0.250	1.010	0.013	0.014	0.010	0.014	0.055	0.002	0.005	0.005	0.004	0.385	
9	7580226	150 THRF 1 1/2" LF2	25 PCE	0.212	0.240	1.010	0.015	0.017	0.005	0.019	0.050	0.002	0.004	0.001	0.004	0.388	
10	7586501	150 THRF 4" LF2	15 PCE	0.209	0.250	1.010	0.013	0.014	0.010	0.014	0.055	0.002	0.005	0.005	0.004	0.385	
Item No.	Heat No.	T.S.(*) (MPa)	Y.S.(*) (MPa)	E.L.(*) (%)	Hardness (HB)	R.A.(*) (%)	Impact Test Temp: -46°C Minimum: 20.0 Joule		Material Supplier	HEAT TREATMENT(*)		REMARKS					
							1	2		3	HEAT TREATMENT(*)		HEAT TREATMENT(*)				
1	931232	517.8	339.3	32.2	157	64.0	35.0	38.0	NTMK	NTMK	880°CX3HRS	CONFORMS WITH NACE MR0103-07 AND NACE MR0175/ISO15156.2 CONFORMS WITH Z245.12 CAT II GR.248 SOUR SERVICE-05 TEST SPECIMEN SIZE: 10X10 TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP.: -46°C					
2	48960	508.0	311.9	35.4	155	69.5	35.0	33.0	OEMK	OEMK							
3	41369	539.4	379.5	34.0	153	65.9	22.0	22.0	RED OCTOBER								
4	13176	523.7	354.0	35.0	157	65.9	21.0	23.0	OEMK	OEMK							
5	921027	511.9	343.2	32.6	155	66.0	32.0	57.0	NTMK	NTMK							
6	34245	491.0	303.8	38.0	147	68.6	19.0	28.0	OEMK	OEMK							
7	43448	537.6	330.8	35.0	179	60.0	28.3	40.1	OEMK	OEMK							
8	931274	509.9	325.6	34.8	154	65.0	27.0	26.0	NTMK	NTMK							
9	920952	513.9	349.1	32.6	158	66.0	35.0	34.0	NTMK	NTMK							
10	931274	509.9	325.6	34.8	154	65.0	27.0	26.0	NTMK	NTMK							
*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.																	
*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled.																	
*3: C.E. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15																	
We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.																	
Manager of Quality Assurance Dept																	



*1: T.S. = Tensile Strength, Y.S. = Yield Strength, E.L. = Elongation, R.A. = Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled.

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

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Dept

2"-150#-RFSO-LF2 FLG.

#48960

Page 2 of 3

1576



SAN ENG STEEL FORGING CO. LTD.
311, Jen Hsin Road, Jen Wu Hsiang
Kaohsiung Hsien, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: seneng@ksts.seed.net.tw

(MILL TEST CERTIFICATE)

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

Customer: W.F. FITTINGS & FLANGES (CANADA)

LTD.

Order No.: E05179KDW5

RA 9114888888

Certificate No.: SE080263

Date: 04/29/2009

Page: 1 OF 2

DIMENSIONAL SPECIFICATIONS

PRODUCT		MATERIAL SPECIFICATIONS		DIMENSIONAL SPECIFICATIONS	
FORGED CARBON STEEL FLANGES		ASTM A350 LF2-07 CL.1/ ASME SA350 LF2-07		ASME B16.5-03 CSA Z245.12	

Item No.	CUSTOMER P/N	DESCRIPTION	QUANTITY	CHEMICAL COMPOSITION (%)														CE(%)
				C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N			
			Min Max	- 0.300	0.300 0.300	1.350 1.600	- 0.035	- 0.040	- 0.100	- 0.100	- 0.300	- 0.400	- 0.120	- 0.080	- 0.080	- 0.080	- 0.080	
1		150 SORF 2" LF2 ~	40 PCE	0.200	0.220	1.160	0.019	0.013	0.100	0.080	0.070	0.005	0.003	0.005	0.003	0.005	0.010	
2		150 THRF 2" LF2 ~	40 PCE	0.190	0.140	1.120	0.010	0.016	0.100	0.110	0.050	0.005	0.003	0.005	0.009	0.009	0.410	
3		150 WNRF XS 2" LF2	240 PCE	0.190	0.140	1.120	0.010	0.016	0.100	0.110	0.050	0.005	0.003	0.005	0.009	0.009	0.410	
4		150 WNRF XS 3" LF2	120 PCE	0.210	0.220	1.070	0.010	0.011	0.060	0.070	0.040	0.005	0.003	0.005	0.010	0.010	0.409	
5		300 BLRF 8" LF2 ~	2 PCE	0.190	0.250	0.900	0.015	0.011	0.180	0.270	0.220	0.020	-	0.001	0.008	0.001	0.425	
6		300 WNRF STD 8" LF2 ~	25 PCE	0.181	0.260	0.880	0.011	0.025	0.013	0.014	0.081	0.002	0.004	0.005	0.006	0.006	0.337	
7		150 BLRF 4" LF2 ~	50 PCE	0.200	0.180	1.060	0.013	0.010	0.070	0.080	0.040	0.005	0.003	0.005	0.007	0.007	0.401	
8		300 BLRF 4" LF2.	15 PCE	0.200	0.170	1.080	0.011	0.013	0.080	0.050	0.050	0.005	0.003	0.005	0.006	0.006	0.400	
9		300 WNRF STD 6" LF2 ~	20 PCE	0.190	0.210	1.180	0.012	0.015	0.120	0.040	0.060	0.005	0.003	0.005	0.009	0.009	0.408	
10		300 WNRF XS 2" LF2	100 PCE	0.200	0.220	1.160	0.019	0.013	0.100	0.080	0.070	0.005	0.003	0.005	0.010	0.010	0.422	

Item No.	Heat No.	T.S. (MPa)		Y.S. (MPa)	EL. (%)	Hardness (HB)	R.A. (%)	Impact Test Temp: -46°C		Material Supplier	HEAT TREATMENT (°C)		REMARKS
		Min	Max					1	2		1	2	
1	48960	508.0	508.0	311.9	35.4	155	69.5	35.0	33.0	OEMK	910°C X5HRS	310°C X5HRS	CONFORMS WITH NACE MR0175-03 AND MR0103-07/ISO15156.2
2	29572	505.0	505.0	300.1	36.0	150	67.7	45.0	32.0	OEMK			CONFORMS WITH Z245.12 CAT II GR. 280 SOUR SERVICE-05
3	29572	505.0	505.0	300.1	36.0	150	67.7	45.0	32.0	OEMK			TEST SPECIMEN SIZE: 10X10
4	31045	517.8	517.8	348.1	35.4	153	67.7	29.0	25.0	OEMK			TEST SPECIMEN ORIENTATION: TRANSVERSE
5	50724	527.6	527.6	334.4	34.0	152	70.0	60.0	56.0	RED OCTOBER			IMPACT TEST TEMP.: -46°C
6	726759	507.0	507.0	311.9	37.0	149	67.0	49.0	47.0	NTMK			
7	34185	521.4	521.4	315.6	34.6	147	68.6	33.0	23.0	OEMK			
8	21784	507.7	507.7	339.1	37.4	157	68.6	24.0	25.0	OEMK			
9	38673	505.0	505.0	311.9	35.0	153	68.8	25.0	24.0	OEMK			
10	48960	508.0	508.0	311.9	35.4	155	69.5	35.0	33.0	OEMK			

*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled.

*3: C.E. Value = C + (Mn/5) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15

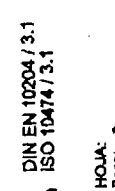
We hereby certify that the material has been tested in accordance with the above specification and all the requirements called for by the above order.



Manager of Quality Assurance Dept

2150-LF RFSD

1624 BAF



CERTIFICADO DE INSPECCION
Inspection Certificate - Certificat de Réception
DIN EN 10204 / 3.1
ISO 10474 / 3.1

CLIENTE / Customer / Client
ALLEN FITTING CANADA
172 TURBO DRIVE
SHERWOOD PARK, ALBERTA
T8H 2J6 - CANADA

ULMA FORUM S.COOP.

Bº Zúñiga, 3 - Ayto. 1º
20560 ONATI (Gipuzkoa) SPAIN
Tel.: 34 - 943 780505
Fax: 34 - 943 781808
E-mail: ulma@ulmapiping.com

Certified acc. PED 97/23/EC
by TDV Rheinland
Nº 01 202 EQ 02 7445

DE
of. de 12032010

HOJA:
Page: 2

131099

Nº

3004/2010

FECHA:
Date:

SU PEDIDO N.º
Your Order No.

021210AES - EDMONTON

FLANGES

ASME B16.5-09

PRODUCTO
Article - Product

NORMAS APLICABLES
Requirements - Normes Applicables

MATERIAL CORRESPONDIENTE
ASTM/A350LF2

NACE MR-01-7580/16168-2-05 & MR-01-03003
CAN/CSA-Z245.12
Gr.248 CAT II



MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant

DEPARTAMENTO QUALITY ASSURANCE
Section

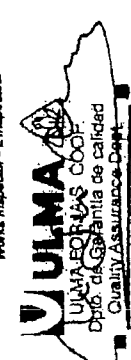
28V0

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	LOTE	OBSERVACIONES Remarks Observations	COLADA N.º Heat No. N.º Coule	T. Strength Tensile Résistance	Y. Strength Yield Élasticité	ALARGAMIENTO Elongation Allongement	ESTRUCION Prod. Area Structure	RESISTENCIA Impact Test Résilience	DUREZA Hardness Dureté
78	78	SO 2 150LB RF A350LF2	1050	NE	28V0	623	331	30.80	58.80	64	182 155
83	83	BLIND 3 150LB RF A350LF2	1050	NE	159V0	603	311	35.40	63.40	40	145 155
83	47	BLIND 3 150LB RF A350LF2	830	NE	362V9	508	311	34.50	60.40	38	146 155
92	36	WN 8 800LB XS/80 RF A350LF2	1030	NE	104V0	507	306	35.00	62.30	40	148 155

Las dimensiones y la condición superficial se hallaron satisfactorias
Dimension and surface condition were found acceptable
Les dimensions et l'état de surface sont satisfaisants

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

EL INSPECTOR
Works Inspector - L'Inspecteur



COMPOSICION QUIMICA - STEEL MARKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE									
C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %
0.200	0.270	0.840	0.010	0.001	0.080	0.100	0.040	0.005	0.004
0.200	0.220	0.840	0.013	0.001	0.090	0.090	0.040	0.006	0.001
0.210	0.250	0.870	0.007	0.007	0.030	0.060	0.010	0.001	0.001
0.190	0.210	0.860	0.004	0.008	0.070	0.140	0.040	0.001	0.002
Ceq %	N %	Al %	71 %	N %	Ceq %				
0.390	0.000	0.028	0.000	0.000	0.390				
0.388	0.000	0.030	0.000	0.000	0.388				
0.390	0.000	0.035	0.000	0.000	0.390				
0.391	0.000	0.021	0.000	0.000	0.391				

(7) OBSERVACIONES:
Remarks
Observations

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

FLANGE COMPLIES TO

CSA Z245.12 GR.248 CAT.II

SOUR SERVICE ISO15156.2

VERIFIED BY
WESTLUND

1788-6504

CLIENTE / Customer / Client

CCTF CORPORATION (EDMONTON)
5407 - 53 AVENUE NW
EDMONTON, AB T6B 3G2
CANADA

CERTIFICADO DE INSPECCION

Inspection Certificate - Certificat de Réception

DIN EN 10204 / 3.1
ISO 10474 / 3.1

FECHA: 07/06/2011
Date:

N.º No.

HOJA: 1
Page:

139014

PRODUCTO
Article - Produit

FLANGES

SU PEDIDO N.º
Your Order No.
Votre Cde. N.º

DE
of - de 01/10/2010

NORMAS APLICABLES
Requirements - Normes Applicables:

ASME B16.5-09

MATERIAL CORRESPONDIENTE
Material Correspondent - Qualit

AISA350LF2CL1-07
ASTM/AASME

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

NACEMR0175/ISO15156-2 Region 3-2003
NACE MR0103 : 2007
CSA-Z245.12-09 GR248 CAT II - SS

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	LOTE	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No. N.º Coulee	RESISTENCIA T. Strength Resist Rupt N/mm2	LÍMITE ELAST. Y. Strength 0.2 % N/mm2	ALARGAM. Elongation Lo: 4 d %	ESTRICCIÓN Red. Area Striction %	RESILIENCIA Impact test Résilience Joules		CHARPY V MEDIA Average Moyenne °C	DUREZA Hardness Dureté HB		
										60	59				
121 7586504	40	SO 2 150LB RF A350LF2	1401	NE	16V1	517	321	32,00	59,40	60	59	55	58	-50	150 157

COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

COLADA N.º Heat No. N.º Coulee	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	Al %	Ti %	N %	CEq %
16V1	0,210	0,230	0,850	0,015	0,001	0,110	0,120	0,050	0,001	0,002	0,290	0,034	0,000	0,000	0,411

(*) OBSERVACIONES:
Remarks
Observations

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



SGI 6005967 ULMA FORJA, S.COOP.

SGI 6000235

SGI 1932164

Rº Zubillaga, 3 - Apdo. 1º
28560 ONATI (Gipuzkoa) SPAIN
by TÜV Rheinland
Tel: 34 - 943 780552
Fax: 34 - 943 781808
E-mail: ulma@ulmapiping.com



MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant

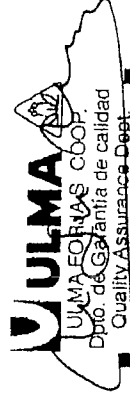
DEPARTAMENTO QUALITY ASSURANCE

Section
Département

- Las dimensiones y la condición superficial se hallaron satisfactoria
- Dimension and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants

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

EL INSPECTOR
Works Inspector - L'Inspecteur





METALFAR

PRODOTTI INDUSTRIALI S.P.A.

SEDE AMMINISTRATIVA E STABILIMENTO:
23861 CESANA BRIANZA (LC) - Italy
Via G. Perini, 28
Tel. +39 031.655441
Fax +39 031.655149
QUALITY.INFO@ITALIAS.COM

STAMPANDO A CARICO DI ACQUEDOTTI, LEGATI E MOSSABILI
SALA PROVE ANALISI MATERIALI / MATERIAL TEST DEPARTMENT

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

FORGED FLANGES & FITTINGS LTD		Certif. N. 2997	Del/Dated 21.07.2010
CASTLE HOUSE - STATION ROAD		Fattura / Invoice N. 2121	Del/Dated 20.07.2010
EN5 1PE NEW BARNET/HERTFORD...		DDT / Del Note N. 3997	Del/Dated 20.07.2010
GB		No. Ord. / Our ref. N.	

Page 4 - 15

Q.D. COL. COLATA HEAT CODE HEAT	POS. ITEM 73869 018	VS. ORDINE YOUR REFERENCE 3626	Q.TA. DESCRIZIONE Q.TY DESCRIPTION 200,00 BLIND 150 RF 2"	LF2CL1	7585566	DIM. IN ACC. A DIN. ACCORDANCE TO ASME/ANSI B16.5	VISIVO E DIMENS. VIS. & DIMENS. SATISFACTORY
MATERIALE / MATERIAL ASTM A350 LF2 CL1/2							
PROVETTA / TEST SPECIMEN SEZ. TRANS. LONG. mm TEST mm	FORMA SHAPE 1-O 2-O 1						
426,50 50,80							
MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO ASTM/ASME A 350/SA 350 M - 07							
TRATTAMENTO TERMICO / HEAT TREATMENT NORMALIZED AT 930 C - COOLED IN STILL AIR							
FORSO / FURNACE ELECTRIC FURNACE							
ORIGINE / ORIGIN EUROPE							

VERIFIED TRUE COPY
OF ORIGINAL
FORGED FLANGES &
FITTINGS LIMITED

NOTE LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm NOTES MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 ISO 15156		UFFICIO CONTROLLO QUALITA' QUALITY CONTROL DEPARTMENT	ENTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY	MARCHIO PRODUZIONE MANUFACTURER'S SYMBOL
2010		S. Conti L. S. Conti		MFF



SAFANG-STEEL FORGING CO. LTD.
311, Jen Hsin Road, Jen Wu Dist
Kaohsiung, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.safang.com.tw
e-mail: safang@kts.seed.net.tw

MILL TEST CERTIFICATE

EN10204-3.1 B(DIN50493.1 B)
W.F.F. FITTINGS & FLANGES (CANADA)
Customer: LTD.

Order No.: D000168(2)

Certificate No.: SE100734
Date: 03/28/2011
Page: 1 OF 2

1636

DIMENSIONAL SPECIFICATIONS

ASTM A350 LF2-07/ASME SA350 LF2-07

ASME B16.5-09
CSA Z245.12

PRODUCT

FORGED CARBON STEEL FLANGES

Item No.	CODE NO	DESCRIPTION	QUANTITY		CHEMICAL COMPOSITION (%)													OE(%)	
			Min	Max	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb				
1	7586824	150 WNRF STD 4" LF2	37 PCE	0.210	0.300	0.150	0.600	0.035	-	0.040	0.400	0.300	0.400	0.120	0.080	0.005	-	0.008	0.415
2	7586824	150 WNRF STD 4" LF2	13 PCE	0.200	0.210	0.300	1.350	0.007	0.010	0.060	0.060	0.060	0.050	0.005	0.003	0.001	-	0.008	0.407
3	7585321	150 WNRF STD 10" LF2	6 PCE	0.206	0.240	0.210	1.100	0.011	0.003	0.100	0.060	0.040	0.053	0.002	0.033	0.005	0.004	-	0.400
4	7585321	150 WNRF XS 4" LF2	122 PCE	0.200	0.210	0.210	1.060	0.015	0.010	0.023	0.045	0.002	0.002	0.002	0.003	0.001	-	0.008	0.407
5	7585267	150 WNRF XS 4" LF2	28 PCE	0.210	0.200	0.210	1.100	0.007	0.003	0.100	0.060	0.060	0.050	0.005	0.003	0.005	0.008	-	0.415
6	7585267	150 WNRF XS 4" LF2	10 PCE	0.198	0.270	0.270	1.060	0.010	0.014	0.013	0.019	0.045	0.005	0.007	0.005	0.006	0.004	-	0.384
7	7585566	150 BLRF 2" LF2	50 PCE	0.209	0.240	0.240	1.060	0.009	0.009	0.009	0.011	0.045	0.005	0.037	0.005	0.004	0.004	-	0.405
8	7585571	150 BLRF 4" LF2	50 PCE	0.209	0.270	0.270	1.060	0.009	0.009	0.009	0.009	0.039	0.045	0.005	0.029	0.005	0.004	-	0.396
9	7585585	150 BLRF 6" LF2	10 PCE	0.211	0.280	0.280	1.060	0.013	0.014	0.012	0.023	0.047	0.005	0.008	0.005	0.006	0.006	-	0.402
10	7581210	300 WNRF XS 6" LF2	10 PCE	0.208	0.280	0.280	0.990	0.014	0.012	0.007	0.015	0.053	0.002	0.002	0.005	0.003	-	0.380	

HEAT TREATMENT(°F)												

Impact Test												

HEAT TREATMENT(2)

REMARKS
850°C X 3 HRS
CONFORMS WITH NACE MR0103-07 AND NACE MR0175/ISO 15155-2
CONFORMS WITH Z245.12 CAT II GR 248 SOUR SERVICE-05
TEST SPECIMEN SIZE: 10X10
TEST SPECIMEN ORIENTATION: TRANSVERSE
IMPACT TEST TEMP: -46°C

Material Supplier

Impact Test

Temp: -46°C

Minimum: 20.0 Joule

RA(%)

Hardness (HB)

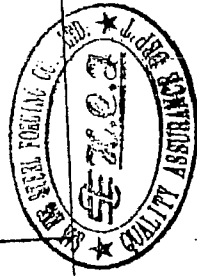
E.L.(%)

Y.S.(MPa)

T.S.(MPa)

Heat No.

Item No.	Heat No.	Y.S.(MPa)	T.S.(MPa)	E.L.(%)	Hardness (HB)	RA(%)	Impact Test	Temp: -46°C	Minimum: 20.0 Joule	RA(%)	Hardness (HB)	E.L.(%)	Y.S.(MPa)	T.S.(MPa)
1	13176	523.7	523.7	35.0	157	65.9	21.0	23.0	24.0	61.0	157	35.0	354.0	523.7
2	80399	539.4	539.4	36.8	155	71.3	30.0	61.0	101.0	61.0	155	36.8	379.5	539.4
3	920973	511.9	511.9	35.8	157	71.0	57.0	70.0	55.0	70.0	157	35.8	331.5	511.9
4	80398	539.4	539.4	36.6	155	71.3	30.0	61.0	101.0	61.0	155	36.6	379.5	539.4
5	13176	523.7	523.7	35.0	157	65.9	21.0	23.0	24.0	61.0	157	35.0	354.0	523.7
6	31240	511.9	511.9	31.8	152	68.6	74.0	70.0	76.0	70.0	152	31.8	371.7	511.9
7	21362	525.6	525.6	36.0	156	69.5	64.0	73.0	57.0	73.0	156	36.0	375.6	525.6
8	21380	509.9	509.9	32.4	153	68.5	50.0	43.0	66.0	43.0	153	32.4	354.0	509.9
9	21303	523.7	523.7	35.6	154	68.5	52.0	56.0	49.0	56.0	154	35.6	359.9	523.7
10	931228	505.0	505.0	37.4	156	67.0	40.0	46.0	57.0	46.0	156	37.4	333.4	505.0



*1: T.S. = Tensile Strength, Y.S. = Yield Strength, E.L. = Elongation, RA = Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T.=Solution Treated, S.R.=Stress Relieved, A.C.=Air Cooled, F.C.=Furnace Cooled, W.C.=Water Cooled, O.C.=Oil Cooled.

*3: C.E. Value = C + (Mn/16) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

CERTIFIED BY

Manager of Quality Assurance Dept

WESTLUND Dayshun

36-150-LF RFSO

PO# 9115604



SAN ENG STEEL FORGING CO. LTD.
311, Jen Hsin Road, Jen Wu Hsiang
Kaohsiung Hsien, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: saneng@kts.lead.net.tw

MILL TEST CERTIFICATE

EN10204-3.13(DIN50049/3.1.B)
Customer: SEYBOLD INTERNATIONAL CORP.
Order No.: 7002986(3)-ALLIED

Certificate No.: SE2986C2
Date: 12/29/2010
Page: 1 OF 2

PRODUCT		MATERIAL SPECIFICATIONS		DIMENSIONAL SPECIFICATIONS													
FORGED CARBON STEEL FLANGES		ASTM A350 LF2-07 ASME SA350 LF2-07		ASME B16.5-09 CSA Z245.12													
Item No.	CUSTOMER P/N	DESCRIPTION	QUANTITY	CHEMICAL COMPOSITION (%)										CE(*)			
			Min Max	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N		
1		150 WNRFS XS 8" LF2	10 PCE	0.300	0.150	1.350	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.080	-	-	0.390
2		150 SORF 3" LF2	20 PCE	0.210	0.250	1.030	0.018	0.020	0.009	0.017	0.051	0.004	0.012	0.005	0.007	-	0.407
3		150 SORF 4" LF2	10 PCE	0.214	0.300	1.080	0.009	0.008	0.013	0.019	0.048	0.005	0.007	0.005	0.006	-	0.384
4		150 SORF 6" LF2	10 PCE	0.198	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.006	-	0.409
5		300 WNRFS STD 2" LF2	49 PCE	0.210	0.220	1.070	0.010	0.011	0.050	0.070	0.040	0.005	0.003	0.005	0.010	-	0.386
6		300 WNRFS STD 2" LF2	26 PCE	0.209	0.220	1.020	0.014	0.008	0.008	0.012	0.054	0.002	0.005	0.005	0.006	-	0.414
7		300 WNRFS STD 3" LF2	75 PCE	0.222	0.240	1.010	0.015	0.014	0.022	0.063	0.122	0.009	0.015	0.005	0.003	-	0.420
8		600 WNRFS XS 8" LF2	25 PCE	0.190	0.250	1.120	0.017	0.004	0.130	0.110	0.130	0.020	0.005	0.001	0.008	-	0.402
9		600 BLRF 2" LF2	25 PCE	0.211	0.260	1.090	0.013	0.014	0.012	0.023	0.047	0.005	0.008	0.005	0.006	-	0.384
10		600 BLRF 3" LF2	10 PCE	0.198	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.006	-	
Item No.	Heat No.	T.S.(*) (MPa)	Y.S.(*) (MPa)	E.L.(*) (%)	Hardness (HBS)	RA.(*) (%)	Impact Test Temp: -46°C Minimum: 20.0 Joule		Material Supplier	HEAT TREATMENT(*)		REMARKS					
		Min Max	Min Max	Min Max			1	2	3								
1	915541	508.0	333.4	35.4	150	66.8	51.0	49.0	54.0	NTMK			CONFORMS WITH NACE MR0103-07 AND NAB900CE MR0175/ISO15156.2 CONFORMS WITH Z245.12 CAT II GR.248 SOUR SERVICE-05 TEST SPECIMEN SIZE: 10X10 TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP.: -46°C				
2	31243	533.5	363.8	35.8	155	69.5	70.0	64.0	74.0	NTMK							
3	31240	511.9	371.7	31.8	152	68.6	74.0	70.0	76.0	NTMK							
4	31240	511.9	371.7	31.8	152	68.6	74.0	70.0	76.0	NTMK							
5	31045	517.8	348.1	35.4	153	67.7	29.0	25.0	49.0	OEMK							
6	921027	511.9	343.2	32.6	155	66.0	32.0	57.0	28.0	NTMK							
7	931232	517.8	339.3	32.2	157	64.0	35.0	38.0	27.0	NTMK							
8	951412	531.5	383.4	33.2	153	69.5	123.0	42.0	110.0	GODD STEEL							
9	21303	523.7	359.9	35.6	154	68.6	52.0	56.0	49.0	NTMK							
10	31240	511.9	371.7	31.8	152	68.6	74.0	70.0	76.0	NTMK							



*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled.

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

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Dept

VERIFIED BY

WESTLUND *Payne*

311 LR. 90° ELB.



INSPECTION CERTIFICATE

915602-00

PURCHASER: SEYBOLD

ASTM A234 WPB-07

ASME SA234 WPB-04

INDUSTRIES CO., LTD.

DATE: 2010 - 12 - 14

ORDER NO: 7002939/911560200

8. MEI-CHUNG RD. NIAO-SONG

KAHSIUNG HSIEN 83301 TAIWAN

TEL: 886-77310527-8

FAX: 886-77315887

CSA Z245.11-05 Gr.241 Cat I Sour Service

MATERIALS: ASTM A106 Gr. B (SEAMLESS PIPE)

INSP. SPEC.: ASME B16.9 - 03

P.I. NO: 0605-1

CERTIFI. NO: 545

ACCORDING TO EN10204/DIN50049/3.1

ITEM NO.	PRODUCT & SIZE		QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX. 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
19	ELL 90 LR 1"	STD	600	011563 (01)	GOOD	111 - 116	A - 151-0276		
20	ELL 90 LR 1.1/4"	STD	400	9K3685 (9K)	GOOD	124 - 127	A - 151-0292		
21	ELL 90 LR 1.1/2"	STD	400	0F6283 (0F)	GOOD	128 - 136	A - 151-0314		
22	ELL 90 LR 2"	160	30	9L3556	GOOD	143 - 144	A - 151-0346		
23	ELL 90 LR 2"	STD	300	0H6200	GOOD	133 - 134	A - 151-0346		
24	ELL 90 LR 2.1/2"	STD	200	0G3177	GOOD	132 - 139	A - 151-0365		
25	ELL 90 LR 3"	STD	600	0H2701	GOOD	131 - 134	A - 151-0381		
26	ELL 90 LR 6"	STD	300	0E6109	GOOD	144 - 149	A - 151-0462		
27	ELL 90 LR 6"	XH	30	0C4960	GOOD	149 - 153	A - 151-0535		
28	ELL 90 LR 10"	STD	60	0E3915	GOOD	153 - 160	A - 151-0573		

#151-03381
#151-03381

CHEMICAL COMPOSITION %

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %												PHYSICAL TEST			
		C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x1000	Y S	T S	E	C.E.	
													KSI	KSI	%	x100	
																	STANDARD	MIN.	MAX.
			10	29									35.0	60.0			
				135	50	58	40	40	40	15	8	20		95.0		50	
19	110963	20	21	50	14	4	4	2	3	1	1	<1	45.1	68.0	35.6	29	
20	210785	21	23	53	14	10	2	1	1	1	1	<1	48.6	68.2	33.0	30	
21	210783	21	27	53	19	5	1	1	1	1	1	<1	46.4	66.7	38.0	30	
22	305156	13	19	76	8	3	7	4	2	1	<1	<1	44.7	66.2	40.0	27	
23	908300	19	26	47	20	9	2	1	2	1	1	<1	66.2	77.0	36.2	27	
24	308577	13	19	76	10	2	6	4	4	2	<1	<1	46.2	66.0	35.0	27	
25	309301	18	24	55	4	2	6	3	3	1	<1	<1	41.1	61.7	35.9	28	
26	501309	17	24	96	9	2	7	2	7	3	<1	<1	42.8	64.4	35.1	35	
27	191260	17	24	99	13	4	9	3	4	2	<1	<1	44.2	67.4	36.5	35	
28	000615	17	21	95	15	7	10	3	5	1	<1	2	38.4	62.8	36.0	34	

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C; AIR COOLING; VERIFIED BY
N: NORMALIZING AT TEMPERATURE 880°C X 0.5 HR; AIR COOLING.

NACE MR-01-75-03/ISO15156.2 & NACE MR 0103-03: SATISFACTORY

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

Ou L Lan

MANAGER OF Q.A. DEPT.

44L150-LF2 R750

PO#915604

SAN ENG STEEL FORGING CO. LTD
311, Jen Hsin Road, Jen Wu Hsiang
Kaohsiung Hsien, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: saneng@ksts.lead.net.tw

MILL TEST CERTIFICATE

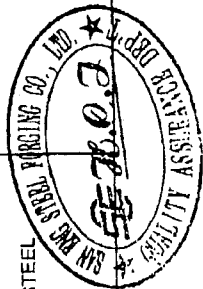
EN10204-3.1 (PDIN50049/3.1.B)
Customer: SEYBOLD INTERNATIONAL CORP.
Order No.: 7002986(3)-ALLIED

Certificate No.: SE2986C2
Date: 12/29/2010
Page: 1 OF 2



PRODUCT				MATERIAL SPECIFICATIONS				DIMENSIONAL SPECIFICATIONS											
FORGED CARBON STEEL FLANGES				ASTM A350 LF2-07 ASME SA350 LF2-07				ASME B16.5-09 CSA Z245.12											
Item No.	CUSTOMER P/N	DESCRIPTION	QUANTITY	CHEMICAL COMPOSITION (%)										CE(*)					
				C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N				
1		150 WNRF XS 8" LF2	10 PCE	0.300	0.150	0.600	0.035	0.040	0.400	0.120	0.080	0.080	0.007	0.390					
2		150 SORF 3" LF2	20 PCE	0.214	0.250	1.030	0.018	0.020	0.051	0.004	0.012	0.005	0.007	0.407					
3		150 SORF 4" LF2	10 PCE	0.198	0.270	1.060	0.010	0.014	0.019	0.005	0.007	0.005	0.006	0.384					
4		150 SORF 6" LF2	10 PCE	0.198	0.270	1.060	0.010	0.014	0.019	0.005	0.007	0.005	0.006	0.384					
5		300 WNRF STD 2" LF2	49 PCE	0.210	0.220	1.070	0.010	0.011	0.040	0.005	0.003	0.005	0.010	0.409					
6		300 WNRF STD 2" LF2	26 PCE	0.209	0.220	1.020	0.014	0.008	0.012	0.054	0.002	0.005	0.006	0.386					
7		300 WNRF STD 3" LF2	75 PCE	0.222	0.240	1.010	0.015	0.014	0.063	0.122	0.009	0.015	0.005	0.414					
8		600 WNRF XS 8" LF2	25 PCE	0.190	0.250	1.120	0.017	0.004	0.130	0.020	0.005	0.001	0.008	0.420					
9		600 BLRF 2" LF2	25 PCE	0.211	0.260	1.090	0.013	0.014	0.072	0.023	0.008	0.005	0.006	0.402					
10		600 BLRF 3" LF2	10 PCE	0.198	0.270	1.060	0.010	0.014	0.013	0.019	0.005	0.007	0.005	0.384					

Item No.	Heat No.	T.S. (MPa)		Y.S. (MPa)	E.L. (%)	Hardness (HRC)	R.A. (%)	Impact Test Temp: -46°C Minimum: 20.0 Joule	Material Supplier	HEAT TREATMENT (T2)	REMARKS
		Min	Max								
1	915541	508.0	333.4	250.0	22.0	197	66.8	61.0	NTMK	890°C X3HRS	CONFORMS WITH NACE MR0103-07 AND NAB900CE MR0175/ISO15156.2
2	31243	533.5	363.8	250.0	31.8	155	69.5	70.0	NTMK	CONFORMS WITH Z245.12 CAT II GR.248 SOUR SERVICE-05	
3	31240	511.9	371.7	250.0	31.8	152	68.6	74.0	NTMK	TEST SPECIMEN SIZE: 10X10	
4	31240	511.9	371.7	250.0	31.8	153	67.7	70.0	NTMK	TEST SPECIMEN ORIENTATION: TRANSVERSE	
5	31045	517.8	348.1	250.0	32.6	155	66.0	74.0	NTMK	IMPACT TEST TEMP: -46°C	
6	921027	511.9	343.2	250.0	32.2	157	64.0	74.0	NTMK		
7	931232	517.8	339.3	250.0	33.2	153	69.5	74.0	NTMK		
8	951412	531.5	383.4	250.0	35.6	154	68.6	74.0	NTMK		
9	21303	523.7	359.9	250.0	31.8	152	68.6	74.0	NTMK		
10	31240	511.9	371.7	250.0	31.8	152	68.6	74.0	NTMK		



*1: T.S. = Tensile Strength, Y.S. = Yield Strength, E.L. = Elongation, R.A. = Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled.

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

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Dept

VERIFIED BY

WESTLUND *Westlund*



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
23881 CESANA BRIANZA (LC) ITALY
Tel. 031.855411 - Fax 031.855149
E-mail: info@prodottiindustriali.it

MATERIAL TEST REPORT
SALA PROVE ED ANALISI MATERIALI

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

FORGED FLANGES & FITTINGS LTD
CASTLE HOUSE - STATION ROAD
NEW BARRY/HEATH, GB

INSPECTION CERTIFICATE EN 10204/3.1

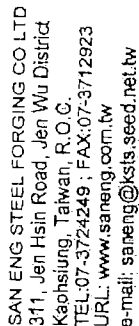
CERTIFICATO DI COLLAUDO

N. 3928 / 04/10/2008
INVOICE / FATURA: 2332 / 03/10/2008
S. 55894
DEL. NOTE / BOLL: 5081 / 03/10/2008

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	YOUR P.O. VS. ORDINE	OUR REFERENCE NS. ORDINE	QUANTITY QUANTITA'	DESCRIPTION DESCRIZIONE	DIM. ACCORDANCE TO DIM. IN ACCORDO A	VISUAL & DIMENSIONAL VISO E DIMENSIONALE										
74569		0011	3452	08002727 0030	224	W/A 150 27 4" STD A105	ASME/ANSI B16.5	SATISFACTORY										
753-4027																		
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL	C %	SI %	Mn %	P %	Cr %	Ni %	Mo %	TI %	Cu %	V %	ND %	N %	Al %	C.E. %	ORIGIN ORIGINE
74569		0011	ASTM A 105	0.185	0.220	0.940	0.014	0.020	0.110	0.050	0.010	0.170	0.001	0.000	0.000	0.024	0.380	EUROPE
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	TEST SPECIMEN SECCION Larghezza mm	YIELD POINT Spremiamento Mm ² 42 %	TENSILE RESIST Resistenza Mm ² 2	ELEVATION Altezza % 2	REDUCTION Riduzione % 2	HAZARD Durezza Hb	IMPACT TEST Fragile	IMPACT TEST Resistenza Joule / cm ²	SHAPE FORMA 1-8 8-1	YIELD POINT Spremiamento Mm ² 42 %	YIELD POINT Spremiamento Mm ² 42 %	YIELD POINT Spremiamento Mm ² 42 %	YIELD POINT Spremiamento Mm ² 42 %	YIELD POINT Spremiamento Mm ² 42 %	YIELD POINT Spremiamento Mm ² 42 %	YIELD POINT Spremiamento Mm ² 42 %
74569		0011	126.60	50.80	331.0	522	32.0	58.0	159-163	0.0	KV	20	86	86	88	1		0.0
HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A															
74569		0011	ASTM/ASME A 105/SA 105 M - 05															
			VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED															
			NORMALIZED AT 920 C - COOLED IN STILL AIR VERIFIED BY WESTLUND															
			ELECTRIC FURNACE															
			QUALITY CONTROL DEPARTMENT UFFICIO CONTROLLO QUALITA'															
			BRACCHI FLAVIO															
			MANUFACTURER'S SYMBOL MARCHIO PRODUZIONE															
			MFF															

NOTE

LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm
MATERIAL IN ACCORDANCE WITH NACE MR-0175/2005
2008



MILL TEST CERTIFICATE

EN10204-3.1.B(DIN50049/3.1.B)
Customer: SEYBOLD INTERNATIONAL CORP.
Order No.: 7003036(6)-ALLIED

Certificate No.: SE-3036F
Date: 05/02/2011
Page: 1 Of 1

PRODUCT			MATERIAL SPECIFICATIONS			DIMENSIONAL SPECIFICATIONS												
FORGED CARBON STEEL FLANGES			ASTM A350 LF2-10/ASME SA350 LF2-10			ASME B16.5-09 CSA Z245.12												
Item No.	CODE NO	DESCRIPTION	QUANTITY		CHEMICAL COMPOSITION (%)													
			Min	Max	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	CE(*)	
1		150 WNRF STD 2" LF2	10 PCE		0.300	0.150	0.600	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.080	-	0.414	
2		150 SORF 6" LF2	50 PCE		0.220	0.240	1.140	0.014	0.002	0.007	0.030	0.122	0.009	0.015	0.005	0.003	0.419	
3		600 WNRF XS 3" LF2	100 PCE		0.214	0.300	1.080	0.009	0.008	0.026	0.033	0.051	0.005	0.007	0.005	0.007	0.407	
4		600 WNRF XS 4" LF2	8 PCE		0.198	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.006	0.384	
Item No.	Heat No.	T.S.(*) (MPa)	Y.S.(*) (MPa)	E.L.(**) (%)	Hardness (HB)	R.A.(*) (%)	Impact Test			Material Supplier	HEAT TREATMENT(*)		REMARKS					
							Temp: -46°C	Minimum: 20.0 Joule										
1	931232	517.8	339.3	32.2	157	64.0	35.0	38.0	27.0	NTMK	890°C X3HRS		CONFORMS WITH NACE MR0103-07 AND NACE MR0175/ISO15156.2					
2	4390797	513.9	345.2	35.4	149	69.5	90.0	61.0	86.0	ACOMINAS			CONFORMS WITH Z245.12 CAT II GR.248 SOUR SERVICE-05					
3	31243	533.5	363.8	35.8	155	69.5	70.0	64.0	74.0	NTMK			TEST SPECIMEN SIZE: 10X10					
4	31240	511.9	371.7	31.8	152	68.6	74.0	70.0	76.0	NTMK			TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP.: -46°C					
*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area. *2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T.=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled. *3: C.E. Value = $C + (Mn / 6) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15$																		
We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.																		
Manager of Quality Assurance Dept																		



METALFAR

PRODOTTI INDUSTRIALI S.P.A.

STAMPAGGIO A CALDO DI ACCIAI COMUNI - LEGATI E INOSSIDABILI
SALA PROVE E ANALISI MATERIALI / MATERIAL TEST DEPARTMENT

SEDE AMMINISTRATIVA E STABILIMENTO
23861 CESANA BRIANZA (LC) - Italy
Via G. Pardi, 28
Tel. +39 031.655441
Fax +39 031.655149
quality.metalgarries.com

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

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

FORGED FLANGES & FITTINGS LTD

CASTLE HOUSE - STATION ROAD
ENS 1PE NEW BARNET/HERTFORD...

GB

Certif. N. 4911

Fattura / Invoice N. 3455

DDT / Del Note N. 5485

Ns. Ord. / Our ref. N.

Del/Dated 03.12.2010

Del/Dated 03.12.2010

Del/Dated 03.12.2010

Del/Dated

PO # 9115766

Pag. 6 - 15

COD. COL. COLATA
HEAT CODE HEAT
10731378 038

MATERIALE / MATERIAL

ASTM A350 LF2 CL1/2

PROVETTA / TEST SPECIMEN
SEZ. mm2 126,60 50,80
LUNG. mm 150 2-1

MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO
ASTM/ASME A 350/SA 350 M - 07

Q.TA' DESCRIPTION
147,00 BLIND 150 RF 4"

Q.TY DESCRIPTION

147,00 BLIND 150 RF 4"

C% 0,180
SIP% 0,230
TENILE STRENGTH
N/mm2 >= 420

ALLUNGAMENTO
ELONGATION
% 30,0

CONTRAZIONE
REDUCTION OF AREA
% 58,0

TRATTAMENTO TERMICO / HEAT TREATMENT
NORMALIZED AT 930 C - COOLED IN STILL AIR

RESILLENZA / IMPACT TEST - JOULE/cm2

TIPO / TYPE 10x10mm

KV -50

1 64 66 62

2 64 66 62

3 64 66 62

SNERVAMENTO
YIELD POINT
N/mm2 >= 355

SNERVAMENTO
YIELD POINT
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N/mm2 >= 355

VERIFIED TRUE COPY
OF ORIGINAL
FORGED FLANGES &
FITTINGS LIMITED

VERIFIED BY

WESTLUND Bayshore

NOTE LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm
NOTES MATERIAL IN ACCORDANCE WITH NACE MR-01752003 ISO 15156
2009 2010

UFFICIO CONTROLLO QUALITA'
QUALITY CONTROL DEPARTMENT

ENTE UFFICIALE DI COLLAUDO
INSPECTION AUTHORITY

MARCHIO PRODUZIONE
MANUFACTURER'S SYMBOL

L.S. Porti

MFF

41-90 ELB

HSU 812-0920



Thai Benkan Co., Ltd.
58 Soi Watnuai, Bangkok, Prapachong,
Samutprakan, 10130 Thailand.

Purchaser: WESTLUND INDUSTRIAL SUPPLY

INSPECTION CERTIFICATE

E-No. MC-339 Purchase Order No. D000221 Job No. TO EN10204 3.1
 1206/2011 T- 2011140328
 D M Y Certificate No. 9PC003158, PO. 91819-00

No.	MFG. No.	Specification for Material Made from Seamless Pipe ASTA A234-10/ASME SA234-07 Gr. WPB CSA Z34.11-08 Gr. 241 CAT 1 SS NACE MR0175/ISO 15156-2 2003/AMF0103-07	Product & Size (T=1)	Quantity	Heat Treatment (Note 1)	Visual Examination	Dimensional Inspection
1	7510462	11C00087	80 EL WPB 6 S40	160/200	A	Good	Good
2	7510462	11D00001	90 EL WPB 6 S40	40/200	A	HB : 115 - 145	41060022
3	7510489	11B00016	90 EL WPB 8 S40	30	A	HB : 115 - 145	41060022
4	7510420	11D00012	90 EL WPB 4 S40	89/300	A	HB : 115 - 145	41048022
5	7510420	11D00086	80 EL WPB 4 S40	161/300	A	HB : 115 - 145	41040022

Chemical Composition %

Specification Min. Max.	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	Tension Test #2			E
													YS	TS	%	
Material Heat No.																
1 08428	18	20	79	11	3	3	3	6	1	0	0	33	287	477	38	
2 08428	18	20	79	11	3	3	3	6	1	0	0	33	287	477	38	
3 JOL2773	19	22	88	15	7	1	2	4	7	0	0	36	311	482	40	
4 JOL8102	20	25	87	11	5	2	2	5	10	0	0	38	359	523	36	
5 2-70387	20	23	83	7	4	1	1	2	<1	<1	<1	34	289	443	68	

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

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

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

* 1: T₁ symbolized wall thickness in mm. * 2: YS Yield strength TS = Tensile strength E = Elongation

WESTLUND
Quality Assurance Manager
Thai Benkan Co., Ltd.

611-150-42-RFSO



SAN ENG STEEL FORGING CO. LTD
311, Jen Hsin Road, Jen Wu Hsiang
Kaohsiung Hsien, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: saneng@ktsi.saneng.net.tw

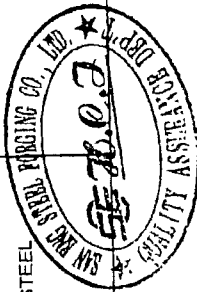
MILL TEST CERTIFICATE

EN10204-3.1 (DIN50049/3.1.B)
Customer: SEYBOLD INTERNATIONAL CORP.
Order No.: 7002886(3) ALLIED

PO# 9115604

Certificate No.: SE2986C2
Date: 12/29/2010
Page: 1 OF 2

PRODUCT		MATERIAL SPECIFICATIONS		DIMENSIONAL SPECIFICATIONS													
FORGED CARBON STEEL FLANGES		ASTM A350 LF2-07 ASME SA350 LF2-07		ASME B16.5-09 CSA Z245.12													
Item No.	CUSTOMER P/N	DESCRIPTION	QUANTITY	CHEMICAL COMPOSITION (%)													
			Min Max	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	CE(*)	
1		150 WNRFS XS 8" LF2	10 PCE	0.210	0.150	0.600	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.080	-	-	0.390
2		150 SORF 3" LF2	20 PCE	0.214	0.250	1.030	0.018	0.020	0.009	0.017	0.051	0.004	0.012	0.005	0.007	-	0.407
3		150 SORF 4" LF2	10 PCE	0.198	0.300	1.080	0.009	0.008	0.026	0.033	0.051	0.005	0.007	0.005	0.007	-	0.384
4		150 SORF 6" LF2	10 PCE	0.198	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.006	-	0.384
5		300 WNRFS STD 2" LF2	49 PCE	0.210	0.220	1.070	0.010	0.011	0.050	0.070	0.040	0.005	0.003	0.005	0.010	-	0.409
6		300 WNRFS STD 2" LF2	26 PCE	0.209	0.220	1.020	0.014	0.008	0.008	0.012	0.054	0.002	0.005	0.005	0.006	-	0.386
7		300 WNRFS STD 3" LF2	75 PCE	0.222	0.240	1.010	0.015	0.014	0.022	0.063	0.122	0.009	0.015	0.005	0.003	-	0.414
8		600 WNRFS XS 8" LF2	25 PCE	0.190	0.250	1.120	0.017	0.004	0.130	0.110	0.130	0.020	0.005	0.001	0.068	-	0.420
9		600 BLRF 2" LF2	25 PCE	0.211	0.260	1.090	0.013	0.014	0.012	0.023	0.047	0.005	0.008	0.005	0.006	-	0.402
10		600 BLRF 3" LF2	10 PCE	0.198	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.006	-	0.384
Item No.	Heat No.	T.S.(*) (MPa)	Y.S.(*) (MPa)	E.L.(*) (%)	Hardness (HB)	R.A.(*) (%)	Impact Test Temp: -46°C Minimum: 20.0 Joule		Material Supplier	HEAT TREATMENT(°C)		REMARKS					
		Min Max	Min Max				1	2	3		890°C X3HRS.						
1	915641	508.0	333.4	35.4	150	68.8	61.0	49.0	54.0	NTMK	CONFORMS WITH NACE MR0103-07 AND NAB90CE MR0175/ISO15156.2 CONFORMS WITH Z245.12 CAT II GR.248 SOUR SERVICE-05 TEST SPECIMEN SIZE: 10X10 TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP.: -46°C						
2	31243	533.5	363.8	35.8	155	69.5	70.0	64.0	74.0	NTMK							
3	31240	511.9	371.7	31.8	152	68.6	74.0	70.0	76.0	NTMK							
4	31240	511.9	371.7	31.8	152	68.6	74.0	70.0	76.0	NTMK							
5	31045	517.8	348.1	35.4	153	67.7	29.0	25.0	49.0	OEMK							
6	921027	511.9	343.2	32.6	155	66.0	32.0	57.0	28.0	NTMK							
7	931232	517.8	339.3	32.2	157	64.0	35.0	38.0	27.0	NTMK							
8	951412	531.5	383.4	33.2	153	69.5	123.0	42.0	110.0	GODD STEEL							
9	21303	523.7	359.9	35.6	154	68.6	52.0	56.0	49.0	NTMK							
10	31240	511.9	371.7	31.8	152	68.6	74.0	70.0	76.0	NTMK							



*1: T.S. = Tensile Strength, Y.S. = Yield Strength, E.L. = Elongation, R.A. = Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled.

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

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Dept

VERIFIED BY

WESTLUND *Signature*

61L150-LF2-RFSO

Page 5076



SAN ENG STEEL FORGING CO. LTD.
311, Jen Hsin Road, Jen Wu Hsiang
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TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: saneng@kts.seed.net.tw

MILL TEST CERTIFICATE

EN10204-3.1(BDIN50049/3.1.B)
W.F.FITTINGS & FLANGES (CANADA)
Customer: LTD.
Order No.: EO5138KDMIS

Certificate No.: SE090102
Date: 02/16/2009
Page: 1 OF 2

109114725-00

DIMENSIONAL SPECIFICATIONS

MATERIAL SPECIFICATIONS

ASME B16.5-03
CSA Z245.12

PRODUCT

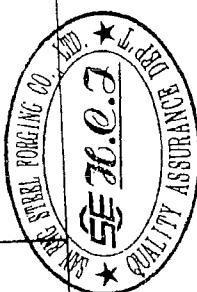
ASTM A350 LF2-07 CL. 1/ ASME SA350 LF2-07

FORGED CARBON STEEL FLANGES

Item No.	CUSTOMER P/N	DESCRIPTION	QUANTITY		CHEMICAL COMPOSITION (%)											CE(*)	
			Min	Max	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	
1	758-5208	150 WNRF XS 2" LF2			0.190	0.140	1.120	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.080	-	0.410
2	758-5232	150 WNRF XS 3" LF2			0.200	0.220	1.160	0.010	0.016	0.100	0.110	0.050	0.005	0.003	0.005	0.009	0.409
3	758-5236	150 BLRF 2" LF2			0.200	0.220	1.160	0.010	0.011	0.050	0.070	0.040	0.005	0.003	0.005	0.010	0.422
4	758-5230	150 BLRF 3" LF2			0.210	0.200	1.110	0.007	0.013	0.100	0.080	0.070	0.005	0.003	0.005	0.010	0.415
5	758-5277	150 BLRF 4" LF2			0.200	0.180	1.060	0.013	0.010	0.060	0.060	0.050	0.005	0.003	0.005	0.008	0.401
6	758-5277	150 BLRF 4" LF2			0.210	0.210	1.070	0.010	0.011	0.050	0.070	0.040	0.005	0.003	0.005	0.007	0.409
7	758-6504	150 BLRF 6" LF2			0.210	0.210	1.070	0.014	0.008	0.090	0.080	0.030	0.010	0.004	0.001	0.001	0.413
8	758-1490	600 WNRF XS 8" LF2			0.180	0.230	0.930	0.014	0.010	0.160	0.090	0.120	0.010	0.001	0.001	0.008	0.374
9	758-0233	1500 THRTJ 2" LF2			0.210	0.200	1.110	0.007	0.010	0.060	0.060	0.050	0.005	0.003	0.005	0.008	0.415
10	758-0233	1500 THRTJ 2" LF2			0.210	0.200	1.170	0.009	0.010	0.060	0.070	0.040	0.005	0.003	0.005	0.010	0.427

HEAT TREATMENT(*)

Item No.	Heat No.	T.S.(*)		Y.S.(*)	E.L.(*)	Hardness (HB)	R.A.(*)	Impact Test		Material Supplier	REMARKS
		Min	Max					Temp: -46°C	Temp: 20.0 Joule		
1	29572	505.0	517.8	300.1	35.0	150	67.7	45.0	32.0	OEMK	910°C X5HRS
2	31045	517.8	517.8	348.1	35.4	153	67.7	29.0	25.0	OEMK	CONFORMS WITH NACE MR0175-03 AND MR0103-07/ISO15156.2
3	48960	508.0	523.7	311.9	35.4	155	69.5	35.0	33.0	OEMK	CONFORMS WITH Z245.12 CAT II GR.290 SOUR SERVICE-05
4	13176	523.7	521.4	315.6	35.0	157	68.6	21.0	23.0	OEMK	TEST SPECIMEN SIZE: 10X10
5	34185	521.4	517.8	348.1	34.6	147	67.7	33.0	25.0	OEMK	TEST SPECIMEN ORIENTATION: TRANSVERSE
6	31045	517.8	508.0	360.9	35.4	153	70.0	53.0	79.0	KOTOBUKI	IMPACT TEST TEMP.: -46°C
7	802220	508.0	511.9	315.8	35.0	155	67.7	26.0	29.0	RED OCTOBER	
8	58091	511.9	523.7	315.8	31.4	148	65.9	21.0	23.0	OEMK	
9	13176	523.7	539.4	379.5	35.0	157	65.9	22.0	22.0	RED OCTOBER	
10	41369	539.4			34.0	153	65.9				



VERIFIED BY

WESTLUND

Manager of Quality Assurance Dept

*1: T.S. = Tensile Strength, Y.S. = Yield Strength, E.L. = Elongation, R.A. = Reduction of Area.
*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved.
*3: C.E. Value = C + (Mn / 6) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.



SAN ENG STEEL FORGING CO. LTD
311, Jen Hsin Road, Jen Wu District
Kaohsiung, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: saneng@ksts.seed.net.tw

61-150#LF7 SORF50

MILL TEST CERTIFICATE

EN10204-3.1 B(DIN50049/3.1.3)
Customer: SEYBOLD INTERNATIONAL CORP.
Order No.: 7003036(8)-ALLIED

BAFF 1624

Certificate No.: SE-3036F
Date: 05/02/2011
Page: 1 OF 1

PRODUCT				MATERIAL SPECIFICATIONS				DIMENSIONAL SPECIFICATIONS											
FORGED CARBON STEEL FLANGES				ASTM A350 LF2-10/ASME SA350 LF2-10				ASME B16.5-09 CSA Z245.12											
Item No.	CODE NO	DESCRIPTION	QUANTITY	CHEMICAL COMPOSITION (%)												HEAT TREATMENT(°2)			
				C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	CE(%)			
				Min	Max														
1		150 WNRF STD 2" LF2	10 PCE	0.222	0.150	0.600	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.080	0.080	-	0.414		
2		150 SORF 6" LF2	50 PCE	0.220	0.240	1.010	0.015	0.014	0.022	0.063	0.122	0.009	0.015	0.005	0.005	0.003	0.419		
3		600 WNRF XS 3" LF2	100 PCE	0.214	0.210	1.140	0.014	0.008	0.007	0.030	0.010	0.007	0.003	0.001	0.006	0.007	0.407		
4		600 WNRF XS 4" LF2	8 PCE	0.198	0.300	1.080	0.009	0.014	0.026	0.033	0.051	0.005	0.007	0.005	0.005	0.006	0.384		
				0.270	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.005	0.006			
Item No.	Heat No.	T.S.(¹) (MPa)	Y.S.(¹) (MPa)	E.L.(%)	Hardness (HB)	RA.(¹) (%)	Impact Test Temp: -46°C Minimum: 20.0 Joule		Material Supplier		REMARKS								
1	931232	517.8	339.3	32.2	157	64.0	1	35.0	NTMK	27.0	890°C X 3 HRS								
2	4390797	513.9	345.2	35.4	149	69.5	2	90.0	ACOMINAS	88.0	CONFORMS WITH NACE MR0103-07 AND NACE MR0175/ISO15156.2								
3	31293	533.5	363.8	35.8	155	69.5	3	70.0	NTMK	74.0	CONFORMS WITH Z245.12 CAT II GR.248 SOUR SERVICE-05								
4	31240	511.9	371.7	31.8	152	68.6		74.0	NTMK	76.0	TEST SPECIMEN SIZE: 10X10 TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP.: -46°C								

*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furnace Cooled, W.C=Water Cooled, O.C=Oil Cooled.

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

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Dept

SAN ENG STEEL FORGING CO. LTD

CLIENTE / Customer / Client

ALLIED FITTING CANADA
172 TURBO DRIVE
SHERWOOD PARK, ALBERTA
T8H 2L8 - CANADA

CERTIFICADO DE INSPECCION

Inspection Certificate - Certificat de Réception

DIN EN 10204 / 3.1
ISO 10474 / 3.1

FECHA:
Date:

30/04/2010

N°

131089

HOJA:
Page:

2

PRODUCTO
Article - Produit:

FLANGES

SU PEDIDO N°
Your Order No.
Votre Cde N°:

021210AES - EDMONTON

DE
of - de

Certified acc. PED 97/23/EC
by TÜV Rheinland
N° 01 202 EQ 02 7445

NORMAS APLICABLES
Requirements - Normes Applicables:

ASME B16.5-09

MATERIAL CORRESPONDIENTE
Material Correspondent - Quin:

AISA350LF2CL1-07

ASTM/A5ME

MODO DE FUSION (*)
Steel Making - Elaboration de l'acier

NACE MR-01-76ISO16156-2-05 & MR-01-03/03
CAN/CSA-Z245.12
Gr.2A8 CAT II

LOTE

Observations

RESISTENCIA

ESTRUCION

RESILIENCIA

DUREZA

Partida Item Poste	Cantidad Quantity Quantité	Descripción Description Description	LOTE	Observations Observations Observations	COLADA N° Heat No. N° Coudée	RESISTENCIA T. Strength Résist. Rupt.	ESTRUCION Red. Area Striction	RESILIENCIA Impact test Résilience	DUREZA Hardness Dureté
78	75	SO 2 150LB RF A350LF2	1050	NE	28V0	523	30.60	64	162 158
83	53	BLIND 3 150LB RF A350LF2	1050	NE	158V0	503	35.40	40	145 155
83	47	BLIND 3 150LB RF A350LF2	630	NE	382V8	508	34.30	53	148 158
92	35	WN 6 600LB XS/80 RF A350LF2	1030	NE	104V0	507	35.00	40	148 158

COMPOSICION QUIMICA - STEEL MARKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

COLADA N° Heat No. N° Coudée	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	Al %	Ti %	N %	CEq %
104V0	0.200	0.270	0.840	0.010	0.001	0.080	0.100	0.040	0.005	0.004	0.260	0.028	0.000	0.000	0.390
158V0	0.200	0.220	0.840	0.013	0.001	0.090	0.090	0.040	0.008	0.001	0.240	0.030	0.000	0.000	0.388
28V0	0.250	0.250	0.870	0.007	0.001	0.030	0.080	0.010	0.001	0.001	0.190	0.035	0.000	0.000	0.380
382V8	0.190	0.210	0.960	0.004	0.008	0.070	0.140	0.040	0.001	0.002	0.140	0.021	0.000	0.000	0.391

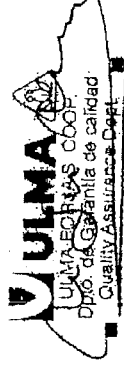
(*) OBSERVACIONES:
Remarks
Observations

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

- Les dimensions y la condition superficial se hallaron satisfactoria
- Dimension and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants

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

EL INSPECTOR
Works Inspector - L'inspecteur



ULMA FORJA S.COOP.

Bº Zubileaga, 3 - Apdo. 1º
20580 OKATI (Gipuzkoa) SPAIN
Tel: 34 - 943 780553
Fax: 34 - 943 781806
E-mail: ulma@ulmapipeing.com

76777



MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant

DEPARTAMENTO QUALITY ASSURANCE
Section

611-150-RF JN-LFZ



PRODOTTI INDUSTRIALI S.P.A.
SALA PROVE E ANALISI MATERIALI / MATERIAL TEST DEPARTMENT

SEDE AMMINISTRATIVA E STABILIMENTO:
23861 CESANA BRIANZA (LC) - Italy
Via G. Pirelli, 28
Tel. +39 031.655411
Fax +39 031.655149
quality.mff@armas.com

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

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

FORGED FLANGES & FITTINGS LTD
CASTLE HOUSE - STATION ROAD
ENS 1PE NEW BARNET/HERTFORD...

Fattura / Invoice N. 21
DDT / Del Note N. 34
Na Ord. / Our ref. N.
GB

PO# 9115766

Pag. 8 - 11

COD. COL. COLATA HEAT CODE HEAT	POS. ITEM 026	VS. ORDINE YOUR REFERENCE	Q.TA' Q.TY 150,00	DESCRIZIONE WIN 150 RF 6" STD	LF2CL1	7586832	DIM. IN ACC. A DIM. ACCORDANCE TO	ASME/ANSI B16.5	VISIVO E DIMENS. VIS. & DIMENS. SATISFACTORY	
MATERIALE / MATERIAL ASTM A350 LF2 CL1/2	PROVETTA / TEST SPECIMEN FORMA / SHAPE LUNG. mm / INCH 126,60 50,80	C% 0,180 SI% 0,240 Mn% 1,030 P% 0,009 S% 0,005 Cr% 0,090 Ni% 0,070 Mo% 0,020 Cu% 0,100 Nb% 0,002 V% 0,010 Ti% 0,022	ALLUNGAMENTO ELONGATION % 30,0	CONTRAZIONE REDUCTION % 56,0	DUREZZA HARDNESS HB 159,0 - 163,0	RESILIENZA / IMPACT TEST - JOULE/cm2 KV -50	1 2 3 69 70 65	N% 0,000 Al% 0,032 C.E.% 0,387	SNERVAMENTO YIELD POINT N/mm2 >= 150 N/mm2 >= 150	ORIGINE / ORIGIN EUROPE
MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO ASTM/ASME A 350/SA 350 M - 07	TRATTAMENTO TERMICO / HEAT TREATMENT NORMALIZED AT 930 C - COOLED IN STILL AIR	FORMO / FURNACE ELECTRIC FURNACE								

1616

VERIFIED BY
WESTLUND *Westlund*

VERIFIED TRUE COPY
OF ORIGINAL
FORGED FLANGES &
FITTINGS LIMITED

NOTE LF2: CHARTY TEST SPECIMEN RESULT AS 10X10mm NOTES MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 ISO 15156 2010	UFFICIO CONTROLLO QUALITA' QUALITY CONTROL DEPARTMENT <i>L. S. Corti</i>	ENTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY	MARCHIO PRODUZIONE MANUFACTURER'S SYMBOL
---	--	--	---

61150-LF2 BUND
 CO2218, PO. 9115704-00 Page 4 of 5



SANYANG-STEEL FORGING CO. LTD.
 311, Jen Hsin Road, Jen Wu District
 Keelung, Taiwan, R.O.C.
 TEL: 07-3724249; FAX: 07-3712923
 URL: www.sanyang.com.tw
 e-mail: sanyang@kts.seed.net.tw

MILL TEST CERTIFICATE

EN10204-3.1(B) DIN50049/3.1(B)
 Customer: W.F.F. FITTINGS & FLANGES (CANADA)
 Order No.: D00016812

Certificate No.: SE100734
 Date: 03/28/2011
 Page: 1 OF 2

PRODUCT			MATERIAL SPECIFICATIONS			DIMENSIONAL SPECIFICATIONS												
FORGED CARBON STEEL FLANGES			ASTM A350 LF2-07/ASME SA350 LF2-07			ASME B16.5-09 CSA Z245.12												
Item No.	CODE NO.	DESCRIPTION	QUANTITY		CHEMICAL COMPOSITION (%)												CE (%)	
			Min	Max	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N		
1	7586824	150 WNR STD 4" LF2	37 PCE	0.210	0.300	0.150	0.200	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.080	-	0.415	
2	7586824	150 WNR STD 4" LF2	13 PCE	0.200	0.300	0.150	0.210	0.035	0.010	0.060	0.060	0.060	0.005	0.003	0.005	-	0.407	
3	7585321	150 WNR STD 10" LF2	6 PCE	0.206	0.300	0.240	0.210	0.035	0.010	0.100	0.060	0.040	0.010	0.009	0.001	0.008	0.400	
4	7586267	150 WNR XS 4" LF2	122 PCE	0.200	0.300	0.240	0.210	0.035	0.010	0.100	0.060	0.040	0.010	0.009	0.001	0.008	0.407	
5	7585267	150 WNR XS 4" LF2	28 PCE	0.210	0.300	0.240	0.210	0.035	0.010	0.100	0.060	0.040	0.010	0.009	0.001	0.008	0.415	
6	7586508	150 WNR 4" LF2	10 PCE	0.198	0.270	0.270	0.270	0.035	0.010	0.100	0.060	0.040	0.010	0.009	0.001	0.008	0.384	
7	7585556	150 BLRF 2" LF2	50 PCE	0.209	0.240	0.240	0.270	0.035	0.009	0.009	0.011	0.046	0.045	0.005	0.037	0.005	0.405	
8	7585571	150 BLRF 4" LF2	50 PCE	0.209	0.270	0.270	0.270	0.035	0.009	0.009	0.011	0.046	0.045	0.005	0.037	0.005	0.396	
9	7585585	150 BLRF 6" LF2	10 PCE	0.211	0.260	0.260	0.260	0.035	0.013	0.014	0.012	0.023	0.047	0.005	0.008	0.005	0.402	
10	7581210	300 WNR XS 6" LF2	10 PCE	0.208	0.280	0.280	0.280	0.035	0.014	0.007	0.015	0.053	0.002	0.002	0.005	0.003	0.380	
					Impact Test		Temp: 48°C		Material Supplier		REMARKS		HEAT TREATMENT (*)					
					Minimum: 20.0 Joule		2											
1	13176	354.0	523.7	523.7	35.0	157	157	21.0	24.0	OEMK								
2	80398	379.5	539.4	539.4	36.6	155	155	30.0	101.0	WEI CHIH STEEL								
3	920973	331.5	511.9	511.9	35.8	157	157	57.0	59.0	NTMK								
4	80398	379.5	539.4	539.4	36.6	155	155	30.0	101.0	WEI CHIH STEEL								
5	13176	354.0	523.7	523.7	35.0	157	157	21.0	24.0	OEMK								
6	31240	375.6	511.9	511.9	31.8	152	152	73.0	76.0	NTMK								
7	21382	354.0	525.6	525.6	36.0	156	156	43.0	57.0	NTMK								
8	21380	354.0	509.9	509.9	32.4	153	153	56.0	66.0	NTMK								
9	21303	359.9	523.7	523.7	35.5	154	154	52.0	49.0	NTMK								
10	931228	333.4	505.0	505.0	37.4	156	156	40.0	57.0	NTMK								



*1: T.S. = Tensile Strength, Y.S. = Yield Strength, E.L. = Elongation, R.A. = Reduction of Area.
 *2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T.=Solution Treated, S.R.=Stress Relieved.
 A.C.=Air Cooled, F.C.=Furnace Cooled, W.C.=Water Cooled, O.C.=Oil Cooled.

*3: C.E. Value = C + (Mn/16) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

VERIFIED BY

Manager of Quality Assurance Dept

WESTLUND

CERTIFIED MILL TEST REPORT

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LOG NO. F00000000014300

Page 13 of 27

BONNEY FORGE CORPORATION

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

DATE 05/10/2011

CUSTOMER

ORDER NO.: 9115923-00

BONNEY ORDER NO. B000096865

SHIP TO: WESTLUND INDUSTRIAL SUPPLY
4103-84 AVENUE
EDMONTON AB T6B2Z3
CANADA

1 1/2" CPLG. 1576

LOT # 4773

(10F2)

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
53 7523661	48	4773	11/2 3M A105N COUP T SA/A105N	Al 0.024 C 0.190 Cb 0.000 Co 0.004 Cr 0.040 Cu 0.090 Mn 1.020 Mo 0.010 N 0.004 Nb 0.016 Ni 0.030 P 0.007 S 0.021 Si 0.250 V 0.004 CE(Long Formula) = 0.38 T/S(PSI) 74,375 Y/S(PSI) 48,125 EL(%) 28.55 RA(%) 63.75 Brinell 135 BHN 132 BHN
54 7523726	250	4785	1/2 3000 A105N HCP T SA/A105N	Al 0.023 C 0.220 Co 0.004 Cr 0.040 Cu 0.070 Mn 1.030 Mo 0.000 N 0.004 Nb 0.012 Ni 0.020 P 0.008 S 0.019 Si 0.260 V 0.004 CE(Long Formula) = 0.41 T/S(PSI) 75,000 Y/S(PSI) 48,750 EL(%) 32.90 RA(%) 66.30 Brinell 137 BHN 139 BHN
57 7523971	25	4811 MALE	3/8 3M A105N UNAR T SA/A105N	Al 0.025 C 0.200 Co 0.004 Cr 0.090 Cu 0.170 Mn 0.990 Mo 0.010 N 0.004 Nb 0.013 Ni 0.040 P 0.014 S 0.017 Si 0.200 V 0.004 CE(Long Formula) = 0.40 T/S(PSI) 74,375 Y/S(PSI) 51,875 EL(%) 33.05 RA(%) 65.40 Brinell 137 BHN 139 BHN
7523971		4811 FEMALE	3/8 3M A105N UNAR T SA/A105N	Al 0.025 C 0.200 Co 0.004 Cr 0.090 Cu 0.170 Mn 0.990 Mo 0.010 N 0.004 Nb 0.013 Ni 0.040 P 0.014 S 0.017 Si 0.200 V 0.004 CE(Long Formula) = 0.40 T/S(PSI) 74,375 Y/S(PSI) 51,875 EL(%) 33.05 RA(%) 65.40 Brinell 137 BHN 139 BHN

VERIFIED BY

WESTLUND *[Signature]*

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

by

Kylee Ruiz

Kylee Ruiz

QUALITY PROCESS MANAGER

CMTR: REV2

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LOG NO. F00000000014300

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(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

DATE 05/10/2011

CUSTOMER

ORDER NO.: 9115923-00

BONNEY ORDER NO. B000096865

SHIP TO: WESTLUND INDUSTRIAL SUPPLY
4103-84 AVENUE
EDMONTON AB T6B2Z3
CANADA

1 1/2" CPLG. 1576
JK

20F2

ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO.

CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. CERTIFYING TO ASTM A350 LF2 07 REVISION.
3. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
4. THE MATERIAL SUPPLIED AS A105N MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156-2.
5. CERTIFYING ASTM A105-09 / ASME SA105-07 EDITION.
6. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
7. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
8. THE MATERIAL SUPPLIED AS A350 LF2 CL1 MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156-2.
9. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
10. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
11. THE UNIT OF MEASURE FOR TENSILE AND YIELD (0.2%) STRENGTH ARE IN REPORTED IN PSI.
12. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN. 2 INCH OR 50 MM GAGE LENGTH.

VERIFIED BY
WESTLUND *[Signature]*

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

by *Kylee Ruiz*

Kylee Ruiz
QUALITY PROCESS MANAGER

CMTR: REV2

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 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
 www.bonneyforge.com

CUSTOMER WESTLUND INDUSTRIAL SUPPLY

Date 08/27/08

CUSTOMER'S Order No. 114712-00

Bonney Order No. _____

SHIPPED TO WESTLUND INDUSTRIAL SUPPLY
4103 - 84 AVENUE

2 1/2 - 3000#
CPG B000040088

EDMONTON, ABT6B2Z3 Canada

1 OF 2

ITEM QUANTITY LOT NO.

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

SA/A350-LF2 CL 1

113 1 4072 7680022 1 1/2 3000 LF2 COUP T
 C .210 MN 1.080 P .005 S .022 SI .250
 NI .030 CU .090 CO .003 CR .040 MO .010
 V .000 AL .025 NB .016
 CE(LONG FORMULA) = 0.41
 T/S 75375 Y/S 51125 EL 32.70 RA 62.05
 BRINELL HARDNESS1: 135 HARDNESS2: 132
 CHARPY: -50F 17.0, 31.0, 24.0 (FT/LBS)
 AVERAGE 24.0

4183

114 32 4183 7680023 2 3000 LF2 COUP T
 C .210 MN 1.020 P .008 S .020 SI .200
 NI .050 CU .140 CO .004 CR .060 MO .020
 V .000 AL .025 NB .014
 CE(LONG FORMULA) = 0.41
 T/S 72895 Y/S 48254 EL 33.70 RA 66.90
 BRINELL HARDNESS1: 139 HARDNESS2: 139
 CHARPY: -50F 47.0, 81.0, 33.0 (FT/LBS)
 AVERAGE 53.6

115 25 56008 7680031 3/4 3000 LF2 90EL S
 C .220 MN 1.150 P .010 S .021 SI .250
 NI .020 CU .070 CR .040 MO .005 V .016
 AL .001 NB .001
 CE(LONG FORMULA) = 0.43
 T/S 83000 Y/S 49800 EL 31.00 RA 60.00
 BRINELL HARDNESS1: 159 HARDNESS2: 159
 CHARPY: -50F 23.0, 16.0, 15.0 (FT/LBS)
 AVERAGE 18.0

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

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

VERIFIED BY

by

Cris Booze

WESTLUND

QUALITY PROCESS MANAGER



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LOG NO. 325092 PAGE 27

BONNEY FORGE
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www.bonneyforge.com

CUSTOMER WESTLUND INDUSTRIAL SUPPLY

Date 08/27/08

CUSTOMER'S Order No. 114712-00

Bonney Order No.

SHIPPED TO WESTLUND INDUSTRIAL SUPPLY
4103 - 84 AVENUE

B000040088

EDMONTON, ABT6B2Z3 Canada

2 of 2

ITEM QUANTITY LOT NO.

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

THE MATERIAL SUPPLIED IDENTIFIED AS A105QT WAS QUENCHED AND TEMPERED
IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.

THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER
SPECIFICATIONS.

THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED
IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.

CERTIFYING ASTM A105-05 / ASME SA105-04 EDITION.

THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2
BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.

THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES
FAHRENHEIT IN ACCORDANCE WITH A350-LF2.

CERTIFYING TO ASTM A350 LF2 04A REVISION.

THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350
HEAT TREATING REQUIREMENTS.

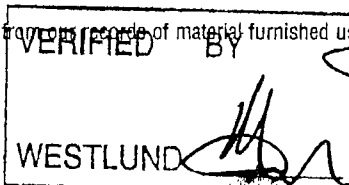
THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004
EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)

THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-
2003 AND NACE MR0175-2002.

ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN,
2 INCH OR 50 MM GAGE LENGTH.

***** 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



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CERTIFIED MILL TEST REPORT

LOG NO. F00000000000705

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BONNEY FORGE CORPORATION

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(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4908

www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

DATE 03/31/2010

CUSTOMER

ORDER NO.: 4887821-00

BONNEY ORDER NO. B000072045

SHIP TO: CCTF CORPORATION (EDMONTON)
5407 - 53RD AVE.
EDMONTON AB T6B 3G2
Canada

2" CPLG. 1/2 3

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO	
			CHEMICAL ANALYSIS	PHYSICAL PROPERTIES, REMARKS
6	250	4272	1/2 3000 LF2 COUP T	SA/A350 LF2 CL1
7680018			Al 0.020 B 0.000 C 0.200 Co 0.003 Cr 0.040 Cu 0.130 Mn 1.010 Mo 0.010 Nb 0.017 Ni 0.030 P 0.009 S 0.019 Si 0.210 V 0.000 CE(Long Formula) = 0.39 T/S 72,500 Y/S 51,250 EL 32.90 RA 65.85 Brinell 130 BHN 130 BHN Charpy -50 F 30/86/53 (Ft/Lbs) Average 56.30	
7	240	4421	2 3000 LF2 COUP T	SA/A350 LF2 CL1
7680023			Al 0.022 C 0.200 Co 0.003 Cr 0.030 Cu 0.070 Mn 1.000 Mo 0.005 Nb 0.018 Ni 0.020 P 0.010 S 0.022 Si 0.180 V 0.004 CE(Long Formula) = 0.38 T/S 73,744 Y/S 49,633 EL 32.80 RA 58.84 Brinell 132 BHN 132 BHN Charpy -50 F 24/12/36 (Ft/Lbs) Average 24.00	
8	250	57546	3/4 3000 LF2 90EL S	SA/A350 LF2 CL1
7680031			Al 0.027 C 0.190 Co 0.004 Cr 0.060 Cu 0.150 Mn 1.020 Mo 0.010 Nb 0.018 Ni 0.060 P 0.008 S 0.022 Si 0.220 V 0.000 CE(Long Formula) = 0.39 T/S 72,428 Y/S 47,295 EL 35.00 RA 67.50 Brinell 139 BHN 139 BHN Charpy -50 F 46/47/70 (Ft/Lbs) Average 54.30	

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 Brenda Garlock

BRENDA GARLOCK
QUALITY PROCESS MANAGER

CMTR: REV2

CERTIFIED MILL TEST REPORT



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LOG NO. F00000000000705

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BONNEY FORGE CORPORATION

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(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

DATE 03/31/2010

CUSTOMER

BONNEY ORDER NO. B000072045

ORDER NO.: 4887821-00

SHIP TO: CCTF CORPORATION (EDMONTON)
5407 - 53RD AVE.
EDMONTON AB T6B 3G2
Canada

2/2

ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO.

CHEMICAL ANALYSIS PHYSICAL PROPERTIES REMARKS

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. CERTIFYING TO ASTM A350 LF2 07 REVISION.
3. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156.
4. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
5. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
6. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
7. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
8. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

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.

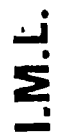
by Brenda Garlock

BRENDA GARLOCK

QUALITY PROCESS MANAGER

CMTR: REV2

34



INDUSTRIA MECCANICA LIGURE SPA

Lietuvos Nr. 1274
 Del. Note Nr. 1866

100

VERIFIED	INSPECTION AUTHORITY	QUALITY CONTROL DEPARTMENT	MANUFACTURER'S SYMBOL
MEETS	 WESTLUND	BORIS FIZZOTTI	FITTINGS IML
NOTES ASME B16.11/01 - BS.3799 - ANSI B31.1/B31.3 - IML STD - ANSI B1.1-B18.2.2 - NACE MR0175 ISO 15156/1 - SUPPLIED MATERIAL SPECIFICATIONS AND P.O. REQUIREMENTS				MANUFACTURER'S SYMBOL

NOTES ASME B16.11/01 - BS.3799 - ANSI B31.1/B31.3 - IML STD - ANSI B1.1-B18.2.2 - NACE MR0175 ISO 15156/1 - SUPPLIED MATERIALS SPECIFICATIONS AND P.O. REQUIREMENTS

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BONNEY FORGE
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 (814) 542-2545 • (800) 345-7548 • FAX (814) 542-4908
 www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 09/22/09

CUSTOMER'S Order No.: 9115164-00

Bonney Order No. 000061033

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY
 4103 - 84 AVENUE

11
1 SOCK-O-LET.

EDMONTON, ABT6B2Z3 Canada

ITEM QUANTITY LOT NO.			GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:	
			SA/A350-LF2 CL 1	
046	25	56348 7690117	10 -6 X 1 3000 LF2 SOCK S	
			C .220 MN 1.150 P .009 S .024 SI .190	
			NI .020 CU .002 CO .002 CR .040 MO .008	
			V .015 AL .018 NB .000	
			CE(LONG FORMULA) = 0.43	
			T/S 78518 Y/S 54271 EL 33.31 RA 68.19	
			BRINELL HARDNESS1: 141 HARDNESS2: 139	
			CHARPY: -50F 42.0, 78.0, 87.0 (FT/LBS)	
			AVERAGE 69.0	
	56729	7690117	10 -6 X 1 3000 LF2 SOCK S	
			C .200 MN 1.100 P .007 S .015 SI .200	
			NI .010 CU .020 CO .002 CR .030 MO .010	
			V .000 AL .023 NB .013	
			CE(LONG FORMULA) = 0.39	
			T/S 73875 Y/S 51375 EL 33.10 RA 67.70	
			BRINELL HARDNESS1: 127 HARDNESS2: 130	
			CHARPY: -50F 48.0, 41.0, 31.0 (FT/LBS)	
			AVERAGE 40.0	

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

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

VERIFIED BY
 WESTLUND
 Cris Boozel
 QUALITY PROCESS MANAGER

CERTIFIED MILL TEST REPORT



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LOG NO. 336425 PAGE 18

BONNEY FORGE
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(814) 542-2545 • (800) 345-7548 • FAX (814) 542-4906
www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 09/22/09

CUSTOMER'S Order No.: 9115164-00

Bonney Order #000061033

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY
4103 - 84 AVENUE

EDMONTON, ABT6B2Z3 Canada

ITEM QUANTITY LOT NO.

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

1. THE MATERIAL SUPPLIED IDENTIFIED AS A105QT WAS QUENCHED AND TEMPERED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
2. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
3. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
4. CERTIFYING ASTM A105-05 / ASME SA105-07 EDITION.
5. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
6. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
7. CERTIFYING TO ASTM A350 LF2 07 REVISION.
8. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
9. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
10. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2007 AND NACE MR0175/ISO 15156.
11. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

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

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

VERIFIED BY
WESTLUND

by
Cris Boozel

QUALITY PROCESS MANAGER

CMTR: REV 1

CERTIFIED MILL TEST REPORT



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LOG NO. 335892 PAGE 35
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 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
 www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 09/04/09

CUSTOMER'S Order No.: 7823030

Bonney Order No. 000059951

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY
 4103 - 84 AVENUE

11
1-3000 SOCK-O-LET

EDMONTON, ABT6B2Z3 Canada

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

SA/A350-LF2 CL 1

088	19	57441	7690128	12 -6 X 3/4 3000 LF2 SOCK S	
				C .200 MN 1.030 P .011 S .023 SI .200	
				NI .040 CU .160 CO .004 CR .100 MO .010	
				V .000 AL .026 NB .018	
				CE(LONG FORMULA) = 0.41	
				T/S 76875 Y/S 54375 EL 30.45 RA 61.55	
				BRINELL HARDNESS1: 141 HARDNESS2: 139	
				CHARPY: -50F 56.0, 64.0, 41.0 (FT/LBS)	
				AVERAGE 53.6	

4
57433

089	4	57433	7690117	10 -6 X 1 3000 LF2 SOCK S	
				C .200 MN 1.030 P .011 S .023 SI .200	
				NI .040 CU .160 CO .004 CR .100 MO .010	
				V .000 AL .026 NB .018	
				CE(LONG FORMULA) = 0.41	
				T/S 76875 Y/S 54375 EL 30.45 RA 61.55	
				BRINELL HARDNESS1: 141 HARDNESS2: 139	
				CHARPY: -50F 56.0, 64.0, 41.0 (FT/LBS)	
				AVERAGE 53.6	

090	5	57441	7690128	12 -6 X 3/4 3000 LF2 SOCK S	
				C .200 MN 1.030 P .011 S .023 SI .200	
				NI .040 CU .160 CO .004 CR .100 MO .010	
				V .000 AL .026 NB .018	
				CE(LONG FORMULA) = 0.41	
				T/S 76875 Y/S 54375 EL 30.45 RA 61.55	
				BRINELL HARDNESS1: 141 HARDNESS2: 139	
				CHARPY: -50F 56.0, 64.0, 41.0 (FT/LBS)	
				AVERAGE 53.6	

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

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

VERIFIED BY

 WESTLUND
 Cris Boozel
 QUALITY PROCESS MANAGER

CERTIFIED MILL TEST REPORT

1012



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

LOG NO. F00000000005497

Page 13 of 14

BONNEY FORGE CORPORATION

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

DATE 08/24/2010

CUSTOMER

ORDER NO.: 9115620-00

BONNEY ORDER NO. B000080442

SHIP TO: WESTLUND INDUSTRIAL SUPPLY
4103-84 AVENUE
EDMONTON AB T6B2Z3
CANADA

1st - LF2 SOCK-O-LET.
3000#

GRADE OR SPECIFICATION NO.

CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.
44	25	57990	31/2-3 X 1 3000 LF2 THRD T
7692070			SA/A350 LF2 CL1
Al 0.022 C 0.220 Cb 0.000 Co 0.030 Cr 0.030 Cu 0.070 Mn 1.020 Mo 0.010 Nb 0.014 Ni 0.020 P 0.008 S 0.023 Si 0.290 Sn 0.010 V 0.004 CE(Long Formula) = 0.40 T/S 75,000 Y/S 53,750 EL 27.15 RA 56.75 Brinell 130 BHN 132 BHN Charpy -50 F 40/31/67 (Ft-Lbs) Average 46.00			

46 25 58038

10 -6 X 1 3000 LF2 SOCK S

SA/A350 LF2 CL1

Al 0.021 C 0.210 Cb 0.000 Co 0.004 Cr 0.040 Cu 0.140 Mn 1.000 Mo 0.010
 N 0.005 Nb 0.013 Ni 0.040 P 0.008 S 0.018 Si 0.210 Sn 0.010 V 0.004
 CE(Long Formula) = 0.40
 T/S 72,500 Y/S 49,375 EL 33.65 RA 65.85
 Brinell 137 BHN 135 BHN
 Charpy -50 F 45/19/36 (Ft-Lbs)
 Average 33.30

VERIFIED BY

WESTLUND

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

Trudy Smith

TRUDY SMITH

QUALITY PROCESS MANAGER

CERTIFIED MILL TEST REPORT

B® The Best Value -
Price, Quality, Service
All The Time.

LOG NO. F00000000005497

2 of 2
Page 14 of 14

BONNEY FORGE CORPORATION

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

DATE 08/24/2010

CUSTOMER

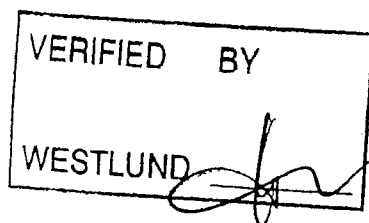
BONNEY ORDER NO. B000080442

ORDER NO.: 9115620-00

SHIP TO: WESTLUND INDUSTRIAL SUPPLY
4103-84 AVENUE
EDMONTON AB T6B2Z3
CANADA

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

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. CERTIFYING TO ASTM A350 LF2 07 REVISION.
3. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
4. THE MATERIAL SUPPLIED AS A105N MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156-2.
5. CERTIFYING ASTM A105-09 / ASME SA105-07 EDITION.
6. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
7. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
8. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
9. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
10. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.
11. ITEM - 22, 23 -THE MATERIAL SUPPLIED IDENTIFIED AS A105QT WAS QUENCHED AND TEMPERED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.



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

Trudy Smith

TRUDY SMITH
QUALITY PROCESS MANAGER

CMTR: REV2

5.3 CWB Letter of Validation



LETTER OF VALIDATION

SEP 22 2010

The CWB acknowledges that

Gem Steel Edmonton Ltd.

9060 24 Street , Edmonton, AB T6P1X8

is certified to CSA Standard W47.1

"Certification of Companies for Fusion Welding of Steel"

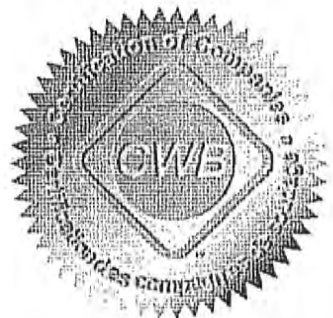
in **DIVISION 3**

for the period **September 13, 2010 to October 18, 2011**

Company Code: GEMST1

Scope: Fabrication of above ground steel storage tanks.

Registrar



Accredited
CB-P/S
(Certification Body - Product Services)

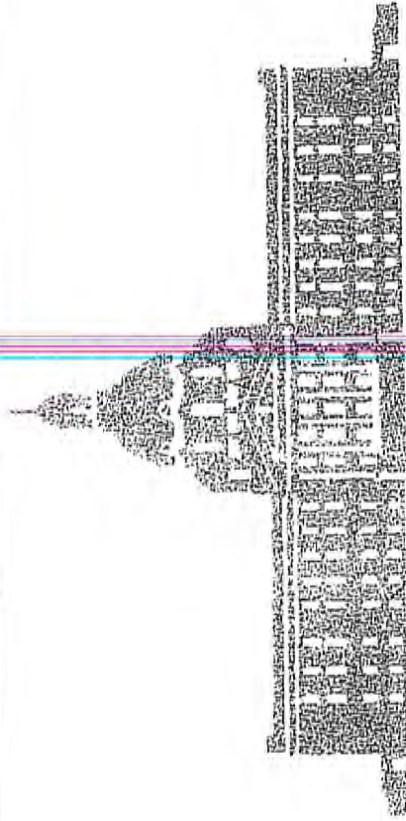
8260 Parkhill Drive, Milton, Ontario L9T 5V7
1-800-844-6790 | Int: 905-542-1312 | Fax: 905-542-1318
Email: info@cwbgroup.org | Web: www.cwbgroup.org



5.4 Welder Certification

012/840246

86558A



JOURNEYMAN CERTIFICATE

THIS IS TO CERTIFY THAT

ALLAN COLIN GARSIDE

HAS COMPLETED AN ALBERTA APPRENTICESHIP PROGRAM AND HAVING ACHIEVED THE STANDARDS
ESTABLISHED UNDER THE ALBERTA APPRENTICESHIP AND INDUSTRY TRAINING ACT, IS HEREBY AUTHORIZED TO
WORK IN THE TRADE AS A JOURNEYMAN AND TO USE THE TITLE CERTIFIED JOURNEYMAN

WELDER



EFFECTIVE DATE
October 4th, 2007

ISSUE DATE
October 17th, 2007

Alberta
Government


Honourable Doug Horner, Minister of
Advanced Education and Technology


Shirley Dul, Executive Director of
Apprenticeship & Industry Training



Welder Qualification

This card is valid only while employed by a CWB certified company.
Transferable Welder

Name: ALLAN C. GARSIDE Exp. Date: Feb 25, 2013
Employer: Gam Steel Edmonton Ltd., Edmonton, AB
Thickness Range: 3mm & above Material: Carbon Steel
Process: SMAW Standard: CSA W47.1
Mode: MANUAL Classification: S
Electrode: E70
Class: FLAT/HORIZONTAL/VERTICAL-UP/OVERHEAD

See Reverse for Conditions

APPLY HARD HAT STICKER AT ROOM TEMPERATURE. ALLOW 4 HOURS TO SET.

Petroleum Safety Training Program



Brian Nielsen PST

Expires: Sep 16, 2007

Petroleum Industry Training Service

Re: Certification for Class Number 109758

Attached is a certificate for Brian Nielsen for the Petroleum Safety Training (PSF) taken on September 23, 2004.

The Certificate number is PSF-109758-671580



PETROLEUM INDUSTRY
TRAINING SERVICE

Calgary Training Centre
1538 - 25th Avenue N.E., Calgary, Alberta T2E 6Y3

CERTIFICATE NUMBER

PSF-109758-671580

THIS IS TO CERTIFY THAT

Brian Nielsen
HAS SATISFACTORILY COMPLETED
Petroleum Safety Training (PST) Program
Options: H-CSTS
WHMIS Fundamentals
STUDENT ID: 109758-671580
SIGNATURE: [Signature]

PETROLEUM INDUSTRY
TRAINING SERVICE

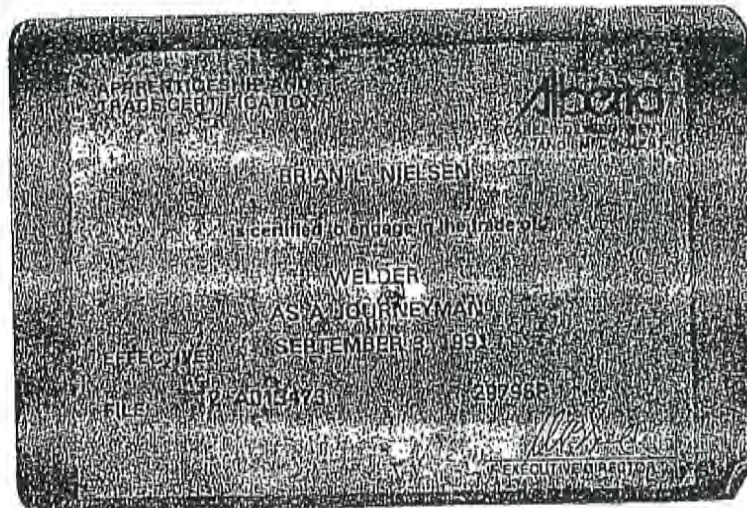
EXPIRY DATE

Sep-16-2007

IMPORTANT: TERMS OF CERTIFICATE ON REVERSE • PLEASE SIGN CERTIFICATE



QUALIFIED
WELDER



This certificate confirms training and familiarization on 80 foot Aerial Work Platforms and the operator must have a current Basic Certificate.

THIS CERTIFICATE MUST NOT BE USED TO OPERATE ANY AERIAL WORK PLATFORM OVER 85 FEET

Registration # 10506

Candidate Name: Brian Lee Nielsen
First, Middle, Last (Print)

Issue Date: Nov. 16/09 Expiry Date: 3 years from issue date or for the duration of the Banira/Shell project, whichever comes first.

E. Malayko E. Telle
TRAINER AUTHORIZATION (Print) TRAINER AUTHORIZATION (Signature)

TOUCHBACK SAFETY INC.

☒ Initial
☐ Renewal

Program Name: Basic AWP (up to 79')
STS#: AWP2005-17
OSSA#: AWP06431
TP#: T-14974

Candidate Name: Brian Lee Nielsen
First, Middle, Last (Print)

Issue Date: Nov. 16/09 Expiry Date: Nov. 16/09

E. Malayko E. Telle
AUTHORIZATION (Print) AUTHORIZATION (Signature)

TOUCHBACK SAFETY INC.

Alberta Construction Safety Association

This is to certify that

BRIAN L. NIELSEN
has met the requirements and has successfully completed the
Construction Safety Training System
CSIS includes General Safety
Res. 7
Issue Date: Dec 4, 2008
2062085
Brent Schneider, Program Coordinator, ACSA

☒ Initial
☐ Renewal

Program Name: Basic AWP (up to 79')
STS#: AWP2005-17
OSSA#: AWP06431
TP#: T-19794

Candidate Name: Brian Lee Nielsen
First, Middle, Last (Print)

Issue Date: March 29/11 Expiry Date: March 29/14

Gary Leblanc Steve LeBlanc
AUTHORIZATION (Print) AUTHORIZATION (Signature)

TOUCHBACK SAFETY INC.



Welder Qualification

This card is valid only when accompanied by a properly signed company Test Certificate.

Test Center: Welding Test Centre
Transferable: Yes

Name: BRIAN L. NIELSEN Exp. Date: Nov. 10, 2017
Testing Facility: Red Deer College - Red Deer
Thickness Range: 3mm & above Valena: Carbon Steel
Mode of Transfer: N/A Process: SMAW
Mode: Manual Standard: CSA W47.1
Class: F4

See Appendix for Conditions

Att
Angie

FILE TIME JUL-22-2010 (THU) 10:14
JUL-2010 17:51 FROM: A&J MINI MART 7096622322

Newfoundland
Laborator

Government of Newfoundland and Labrador
Department of Education
and Higher Learning
and Training Center

This is to CERTIFY that Bruce W. McCarthy
is the holder of a
CERTIFICATE OF QUALIFICATION
in the Welder
(Trade Occupation)

Card No. 42-33439

IR No. A-22-31006

Expiring 12/31/2011

Original
Issued 06/23/2010

[Signature]
Director

Alberta
LABOUR

**Grade "B" Pressure Welder's
Certificate of Competency**

This is to Certify that: Carlos Espinosa
having complied with provisions of the Safety Code Act, is authorized to engage in
pressure welding in accordance with the prescribed Regulations.

Dated at Edmonton, this 1996
December

 W- 6580
File No: _____

Chief Inspector: _____

Form No. AB-117/Rev (95/00)

Nº 10277

Carlos Espinosa
CB 6870
Journeyman ticket#



RJV GAS FIELD SERVICES	
This Certifies That Gaudet, Christopher	
Has Successfully completed WHMIS Training	
April 26, 2010	
Certification Date	Employee Signature <i>[Signature]</i>
April 26, 2013	
Next Training Date	Employer Signature <i>[Signature]</i>



Welder Qualification

This card is valid only while employed by a CWB certified company

Transferable Welder

Name:	LEO M. PARADIS	Exp. Date:	Feb 12, 2013
Employer:	Gem Steel Edmonton Ltd., Edmonton, AB		
Thickness Range:	3mm & above	Material:	Carbon Steel
		Process:	FCAW/MCAW
Mode:	SEMI-AUTO	Standard:	CSA W47.1
	Single Electrode Mechanized	Classification:	S
	Single Electrode Automatic		
Class:	FLAT/HORIZONTAL/VERTICAL UP		

See Reverse for Conditions



Welder Qualification

This card is valid only while employed by a CWB certified company

Transferable Welder

Name:	LEO M. PARADIS	Exp. Date:	Feb 12, 2013
Employer:	Gem Steel Edmonton Ltd., Edmonton, AB		
Thickness Range:	3mm & above	Material:	Carbon Steel
		Process:	SMAW
Mode:	MANUAL	Standard:	CSA W47.1
		Classification:	S
		Electrode:	F4
Class:	FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD		

See Reverse for Conditions

CONDITION(S) OF ISSUE

ON COMPLETION OF APPRENTICESHIP

AA6567, ALBERTA

VALID FOR ARC AND GAS WELDING

REPLACEMENT OF CERTIFICATE # CA8314,
ISSUED JANUARY 23rd, 1979

INTERPROVINCIAL STANDARDS

SEAL No.

799

147A

80/11/20

APPRENTICESHIP AND
TRADE CERTIFICATION
BRANCH

Alberici

ADVANCED EDUCATION
(AND) ANTI-SWEEP

THIS IS TO CERTIFY THAT

Mr. Maurice PARADIS

HOLDS A CERTIFICATE OF PROFICIENCY

AS A Welder - NEWS CLASS

DATE May 14, 1980 N. 066772

FILE 12704107

(OVER)

DIRECTOR

012/0/932807

112712A



JOURNEYMAN CERTIFICATE

THIS CERTIFICATE THAT
I, MARKUS KINZEL,

HAVE COMPLETED AN ALBERTA APPRENTICESHIP PROGRAM AND HAVING ACHIEVED
THE MARKUS KINZEL APPRENTICESHIP ALBERTA APPRENTICESHIP AND
INDUSTRY TRAINING ACT REQUIREMENTS OF THE TRADE AS A
JOURNEYMAN AND TO BE IT IS CERTIFIED TO JOURNEYMAN

WELDER

EFFECTIVE DATE
May 10th, 2010

ISSUE DATE
June 25th, 2010

MARKUS KINZEL
JOURNEYMAN
WELDER
INDUSTRY TRAINING

Alberta

DARRELL BOWEN
EXECUTIVE DIRECTOR
OF APPRENTICESHIP
& INDUSTRY TRAINING



Welder Qualification

This card is valid only while employed by a CWB certified company

Transferable Welder

Name: MARK L. KINZEL

Exp. Date: Feb 12, 2013

Employer: Gem Steel Edmonton Ltd., Edmonton, AB

Thickness Range: 3mm & above

Material: Carbon Steel

Mode: SEMI-AUTO

Process: FCAW/MCAW

Single Electrode Mechanized

Standard: CSA W47.1

Single Electrode Automatic

Classification: S

Class: FLAT/HORIZONTAL/VERTICAL UP

See Reverse for Conditions



Welder Qualification

This card is valid only while employed by a CWB certified company

Transferable Welder

Name: MARK L. KINZEL

Exp. Date: Dec 29, 2012

Employer: Gem Steel Edmonton Ltd., Edmonton, AB

Thickness Range: 3mm & above

Material: Carbon Steel

Mode: MANUAL

Process: SMAW

Standard: CSA W47.1

Classification: S

Electrode: F4

Class: FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD

See Reverse for Conditions



Welder Qualification

This card is valid only while employed by a CWB certified company

Transferable Welder

Name: MARK L. KINZEL

Exp. Date: Feb 25, 2013

Employer: Gem Steel Edmonton Ltd., Edmonton, AB

Thickness Range: 3mm & above

Material: Carbon Steel

Mode: SEMI-AUTO

Process: FCAW/MCAW

Single Electrode Mechanized

Standard: CSA W47.1

Single Electrode Automatic

Classification: S

Class: FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD

See Reverse for Conditions

**Liftruck Training Institute
of Canada Inc.**



SHAUN SMATHERS

has completed the

Operator Safety Awareness Course for Forklift Equipment

Date 05-29-07 Instructor JUSTIN OLYNYK

CERTIFICATION EXPIRES 3 YEARS FROM ABOVE DATE

**Workplace Hazardous Materials Information System
(WHMIS)**

Shaun Smathers

Name

Has successfully completed the Alberta Construction Safety Association's generic WHMIS training program for workers.

Black Cat Blades

Employer

5604-99st Edmonton, AB

Address

City/Province

May 30/7

Date Trained

J. Smathers

Trainer Signature

012900552



70394A

JOURNEYMAN CERTIFICATE

THIS IS TO CERTIFY THAT
SHAUN ARTHUR SMATHERS

HAS COMPLETED AN ALBERTA APPRENTICESHIP PROGRAM AND HAVING ACHIEVED
THE STANDARDS ESTABLISHED UNDER THE ALBERTA APPRENTICESHIP AND
INDUSTRY TRAINING ACT, IS HEREBY AUTHORIZED TO WORK IN THE TRADE AS A
JOURNEYMAN AND TO USE THE TITLE CERTIFIED JOURNEYMAN

WELDER

EFFECTIVE DATE
August 16th, 2005

ISSUE DATE
September 14th, 2005

Alberta

MINISTER OF ADVANCED EDUCATION
DIRECTOR OF APPRENTICESHIP
& INDUSTRY TRAINING

Shaun Smathers

Name

Has met the requirements and demonstrated the level of
competence required to successfully complete the

Manufacturers' Health & Safety Association

"Making your Move" Overhead Crane Operators
Course.

[Signature]

Instructor

May 31/07

Date



WELDING SUPERVISOR CERTIFICATE

Presented to

STEVE F DAVIES

For successfully completing the Welding Supervisor Examinations
as required by CSA Standard W47.1

Valid while employed with

Gem Steel Edmonton Ltd.

Authorized Signature



Northwest
Territories Canada

Certificate of Qualification

This is to certify that

Steven Fred Davies

having complied with the Apprenticeship, Trade and
Occupations Certification Act and regulations, has
qualified at the Journeyman Level in the Trade of

Welder

Transfer from Alberta
Certificate of Qualification #CA5655
Issued July 4, 1978

Date: **November 14, 2000**

Certificate No: **1364-12**



Apprenticeship, Trade and Occupations Certification Board

Jake Oate
Minister

APPROVED FOR SIGNATURE
DATE



STEVE F. DAVIES

is certified to engage in the trade of
CRANE AND HOISTING EQUIPMENT
OPERATOR (MOBILE CRANE OPERATOR)
AS A JOURNEYMAN

EFFECTIVE: JULY 13, 1987

FILE 34-1J000336C 22185P

Steve Davies

APPROVED FOR SIGNATURE
DATE



STEVE F. DAVIES

is certified to engage in the trade of

HEAVY EQUIPMENT OPERATOR
AS A JOURNEYMAN
JULY 13, 1987

EFFECTIVE

FILE 34-1J000336C

54730

Steve Davies



APRENTICESHIP AND
TRADE CERTIFICATION
BRANCH

THIS IS TO CERTIFY THAT

Steven Fredrick DAVIES

HOLDS A CERTIFICATE OF PROFICIENCY
AS A Welder - First Class
DATE July 4th, 1978
FILE 3543/12 CA5655

APPROVED FOR SIGNATURE
DATE



STEVE F. DAVIES

is certified to engage in the trade of
CRANE AND HOISTING EQUIPMENT
OPERATOR (TOWER CRANE OPERATOR)
AS A JOURNEYMAN

EFFECTIVE: JULY 13, 1987

FILE 34-2J000336C

22186P

Steve Davies

7654128

50741

THIS IS TO CERTIFY THAT

STEVE F. DAVIES

HAVING ACHIEVED THE STANDARDS SET FORTH UNDER THE ALBERTA
APPRENTICESHIP AND INDUSTRY TRAINING ACT, IS HEREBY AUTHORIZED
TO ENGAGE IN THE TRADE AS A CERTIFIED JOURNEYMAN

STEEL FABRICATOR

EFFECTIVE DATE: ISSUE DATE
AUGUST 18TH, 1983 SEPTEMBER 16TH, 1983

Steve Davies

Steve Davies

HOLD A CERTIFICATE OF PROFICIENCY
IN THE TRADE OF
WELDER

HOLD A CERTIFICATE OF PROFICIENCY
IN THE TRADE OF
WELDER

10/1/10

Steve Davies

FILE NO 3543/12

SENT NO AA4301

FOR THE TRADE OF Welder DATE July 4, 1978

HOLDS A CERTIFICATE OF

COMPLETION OF APPRENTICESHIP

Steven Fredrick DAVIES

BRANCH

Steve
Davies

CONDITIONS OF ISSUE

ON COMPLETION OF APPRENTICESHIP
AWARD # ALBERTA
VALID FOR ARC AND GAS WELDING

INTERPROVINCIAL STANDARDS
SEAL NO. NOT AVAILABLE

AWARDED CERTIFICATE OF
PROFICIENCY # CA5655

ADIAN INTERPROVINCIAL
STANDARDS RED SEAL NO. NOT AVAILABLE

Alberta
ADVANCED EDUCATION
AND MANPOWER

APPRENTICESHIP AND
TRADE CERTIFICATION
BRANCH

THIS IS TO CERTIFY THAT

Steven Fredrick DAVIES

HOLDS A CERTIFICATE OF PROFICIENCY

AS A/Welder - First Class

DATE July 4th, 1978 No. CA5655

FILE # 3543/12

(OVER)

J. H. Peers
DIRECTOR

APPRENTICESHIP AND
TRADE CERTIFICATION
BRANCH

Alberta
ADVANCED EDUCATION
AND MANPOWER

THIS IS TO CERTIFY THAT

Steven Fredrick DAVIES

HOLDS A CERTIFICATE OF

COMPLETION OF APPRENTICESHIP

FOR THE TRADE OF Welder

CERT. NO. AA4301 DATE July 4, 1978

FILE NO. 3543/12

(OVER)

J. H. Peers
DIRECTOR

5.5 Tank Traveller

TANK TRAVELLER

SECTION 20

TRAVELLER STARTED BY:		DATE STARTED:		SHOP ORDER NUMBER:	
STANDARD: API 650 latest Edition		SERIAL No.: GEM-2011-4			
SIZE: 84' diameter x 32' high		TANK IDENTIFICATION No.: 7000-Tk001			
CUSTOMER: Baffinland Iron Mines		DRWG No.: 1 THRU 3		REV.: B	CRN:
CUSTOMER'S P.O. No.: H337697-CM010		REF. No.:			
COMPONENT PART/ITEM	MATERIAL & SPECIFIED THICKNESS	COMPANY INSPECTOR	DATE	CUSTOMER INSPECTOR	DATE
FLOOR	1/4" - 260 WT	Keith Hopkins	Sept 17	Hatch	Sept 17
FIRST COURSE	5/16" - 260 WT	Keith Hopkins	Sept 12	Hatch	Sept 12
SECOND COURSE	1/4" - 260 WT	Keith Hopkins	Sept 13	Hatch	Sept 13
THIRD COURSE	1/4" - 260 WT	Keith Hopkins	Sept 16		
FOURTH COURSE	1/4" - 260 WT	Keith Hopkins	Sept 16		
ROOF	3/16" - 260 WT	Keith Hopkins	Sept 21		

OP No.	INSPECTION OR TEST POINTS	DATE	COMPANY QC INSP.	INITIAL	CUSTOMER INSPECTOR	INITIAL	COMMENTS
1	REVIEW DOCUMENTATION	Sept 8	Keith Hopkins	KH			
2	EXAMINE DWGS - CALCS	Sept 8	Keith Hopkins	KH			
3	REVIEW FLOOR INSPECTION REPORT	Sept 12	Keith Hopkins	KH			
4	FLOOR TO SHELL FIT	Sept 13	Keith Hopkins	KH	Hatch	Hatch	
5	FLOOR TO SHELL WELD - OIL PENETRENT TEST	Sept 14	Keith Hopkins	KH	Hatch	Hatch	M.C.
6	FIRST TO SECOND COURSE ASSEMBLY	Sept 14	Keith Hopkins	KH			
7	SECOND TO THIRD COURSE ASSEMBLY	Sept 16	Keith Hopkins	KH			
8	THIRD TO FOURTH COURSE ASSEMBLY	Sept 19	Keith Hopkins	KH			
9	Shell Oil Penetrant Test	Sept 23	Keith Hopkins	KH			M.C.
12	NDT FIRST COURSE	Sept 15	Steve	ST	Hatch	Hatch	M.C.
13	NDT SECOND COURSE INCLUDING FIRST HORIZONTAL	Sept 15	Steve	ST	Hatch	Hatch	M.C.
14	NDT THIRD COURSE INCLUDING SECOND HORIZONTAL	Sept 16	Steve	ST	Hatch	Hatch	M.C.
15	NDT FOURTH COURSE INCLUDING THIRD HORIZONTAL	Sept 16	Steve	ST	Hatch	Hatch	M.C.
18	LAYOUT & CUT OPENINGS TACK WELD FITTINGS	Sept 22	Keith Hopkins	KH			
19	AIR TEST REPADS	Sept 23	Keith Hopkins	KH	Hatch	Hatch	M.C.
20	ROOF FITTING ORIENTATION	Sept 22	Keith Hopkins	KH	Hatch	Hatch	M.C.
21	LADDER/STAIRS/LANDINGS	Sept 22	Keith Hopkins	KH	Hatch	Hatch	M.C.
22	INTERIOR SURFACE PREP FOR LINING (GRINDING ETC.)	Sept 22	Keith Hopkins	KH	Hatch	Hatch	M.C.
23	Vacuum Shell	Sept 21	Keith Hopkins	KH	Hatch	Hatch	M.C.
24	DOCUMENTATION PREPARED	Sept 27	Steve	ST			
25	OVERALL VISUAL	Sept 27	Steve	ST	Hatch	Hatch	M.C.
26	INSTALL NAMEPLATE	Sept 24	Keith Hopkins	KH	Hatch	Hatch	M.C.
27	Vacuum floor to shell	Sept 14	Keith Hopkins	KH	Hatch	Hatch	HATCH

REMARKS:

CUSTOMER ACCEPTED COMPLETE: HATCH

COMPANY REVIEW BY:

Marlon Coahly

DATE:

Sept 27/2011

CLOSED OUT BY:

5.6 Inspection Reports

FLOOR INSPECTION REPORT

SECTION 20

SHOP ORDER NUMBER:

CODE OR STANDARD: API 650 latest Edition

TANK No.: GEM-2008-3

DIAMETER: 84' - 6"

IDENTIFICATION No.: 7000-Tk001

CUSTOMER: Baffinland Iron Mines

DRWG No.: 1 THRU 3

REV.: B

CRN:

CUSTOMER'S P.O No.: H337697-CM010

REF. No.:

COMPONENT
PART/ITEM

MATERIAL

SPECIFIED
THICKNESS

THICKNESS

FLOOR INSPECTION

REPORT PREPARED BY: Keith Hopkins

ISSUE No. _____ REV. _____

REV. DATE _____

REV DATE _____

OP No	INSPECTION OR TEST POINTS	DATE	INITIAL	COMPANY OC INSP.	INITIAL				COMMENTS
1	MATERIAL CONDITION	<u>Sept 11</u>	<u>KH</u>	<u>Hatch</u>	<u>JA</u>				
3	CHECK FLOOR PLATE FIT	<u>Sept 12</u>	<u>KH</u>	<u>Hatch</u>	<u>JA</u>				
4	FIT FLOOR COMPONENTS,	<u>Sept 14</u>	<u>KH</u>	<u>Hatch</u>	<u>JA</u>				
5	CHECK ALL WELDING	<u>Sept 25</u>	<u>KH</u>						
6	VACUUM TEST	<u>Sept 21</u>	<u>KH</u>	<u>HATCH</u>	<u>M.C</u>				
7	SURFACE PREP FOR LINING (GRINDING ETC.)	<u>Sept 21</u>	<u>KH</u>	<u>HATCH</u>	<u>M.C</u>				
8	OVERALL VISUAL	<u>Sept 25</u>	<u>KH</u>	<u>HATCH</u>	<u>MC</u>				
9									
10									
11									
12									
13									
14									
15									
16									

REMARKS: _____ CUSTOMER ACCEPTED COMPLETE: HATCH

REVIEWED BY: Marlon Cooley DATE: Sept 27/2011 CLOSED OUT BY: _____

SECTION 20

SHOP ORDER NUMBER:

CODE OR STANDARD: API 650 latest Edition

SHELL COURSE No.:1

DIAMETER: 84' diameter x 32' high

IDENTIFICATION No.: 7000-Tk001

CUSTOMER: Baffinland Iron Mines

DRWG No.: 1 THRU 3

REV.: B

CRN:

CUSTOMER'S P.O No.: H337697-CM010

REF. No.:

COMPONENT PART/ITEM

MATERIAL

SPECIFIED
THICKNESS

THICKNESS

SHELL INSPECTION

REPORT PREPARED BY: Kerith Hopkins

ISSUE No. _____ REV. _____

REV. DATE _____

REV DATE

VERTICALS ASSEMBLY	FIT UP APPROVED	DATE	WELD INSIDE APPROVED BY	DATE	DATE GOUGE OUTSIDE APPROVED	DATE	WELD OUTSIDE	DATE
VERTICAL # 1	Keith Hopkins	Sep 12 ²	Keith Hopkins	Sep 12 ²	Keith Hopkins	Sep 12 ²		Sep 12
VERTICAL # 2	↑	↑	↑		↑	↑		↑
VERTICAL # 3	↓	↓	↓		↓	↓		↓
VERTICAL # 4								
VERTICAL # 5	Keith Hopkins	Sep 12 ²	Keith Hopkins	Sep 12 ²	Keith Hopkins	Sep 12 ²		Sep 12
VERTICAL # 6								
VERTICAL # 7								
VERTICAL TESTING & INSPECTION	SWEEP BOARD	DATE	FINAL FINISH APPROVED BY	DATE	NDT APPROVED BY	DATE	APPROVED BY	DATE
VERTICAL # 1	Keith Hopkins	Sep 12	Keith Hopkins	Sep 12	Steve Low	Sep 25	M.C	Sep 27
VERTICAL # 2	↑	↑	↑	↑		↓	↓	↓
VERTICAL # 3	↓	↓	↓	↓				
VERTICAL # 4								
VERTICAL # 5	Keith Hopkins	Sep 12	Keith Hopkins	Sep 12				
VERTICAL # 6						↓	↓	↓
VERTICAL # 7						Sep 27	M.C	Sep 27
FIRST COURSE TO FLOOR ASSEMBLY	ROUNDNESS APPROVED	DATE	GAP APPROVED BY	DATE	SWEEP FOR PEAKS APPROVED BY	DATE	CHECK FLOOR ELEVATION	DATE
	Keith Hopkins	Sep 12	Keith Hopkins	Sep 12	Keith Hopkins	Sep 12	Keith Hopkins	Sep 12

REMARKS:

HATCH

CUSTOMER ACCEPTED COMPLETE:

REVIEWED BY:

Marlon Coakley

DATE: Sept 27/2011

DATE: Sept 27/2011

CLOSED OUT BY: _____

SECOND SHELL COURSE INSPECTION REPORT

SECTION 20

SHOP ORDER NUMBER:

CODE OR STANDARD: API 650 latest Edition

SHELL COURSE No.: 2

DIAMETER: 84' diameter x 32' high

IDENTIFICATION No.: 7000-Tk001

CUSTOMER: Baffinland Iron Mines

DRWG No.: 1 THRU 3

REV.: B

CRN:

CUSTOMER'S P.O No.: H337697-CM010

REF. No.:

COMPONENT
PART/ITEM

MATERIAL

SPECIFIED
THICKNESS

THICKNESS

SHELL INSPECTION

REPORT PREPARED BY: Keith Hopkins

ISSUE No. _____ REV. _____

REV. DATE _____

REV DATE _____

VERTICALS ASSEMBLY	FIT UP APPROVED	DATE	WELD INSIDE APPROVED BY	DATE	DATE GOUGE OUTSIDE APPROVED	DATE	WELD OUTSIDE APPROVED BY	DATE
VERTICAL # 1	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14
VERTICAL # 2	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 3	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 4	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 5	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 6	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 7	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14
VERTICAL TESTING & INSPECTION	SWEEP BOARD	DATE	FINAL FINISH APPROVED BY	DATE	NDT APPROVED BY	DATE	APPROVED BY	DATE
VERTICAL # 1	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Keith Hopkins	Sept 25	Maclachlan	Sept 27
VERTICAL # 2	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 3	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 4	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 5	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 6	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 7	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Maclachlan	Sept 27
SECOND COURSE TO FIRST COURSE	ROUNDNESS APPROVED	DATE	GAP APPROVED BY	DATE	SWEEP FOR PEAKS APPROVED BY	DATE	APPROVED BY	DATE
	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14	Keith Hopkins	Sept 14		

REMARKS: _____ CUSTOMER ACCEPTED COMPLETE: HATCH

REVIEWED BY: Maclachlan DATE: Sept 27/2011 CLOSED OUT BY: _____

THIRD SHELL COURSE INSPECTION REPORT

SHOP ORDER NUMBER:

CODE OR STANDARD: API 650 latest Edition				SHELL COURSE No.: 3	
DIAMETER: 84' diameter x 32' high				IDENTIFICATION No.: 7000-Tk001	
CUSTOMER: Baffinland Iron Mines				DRWG No.: 1 THRU 3	REV.: B
CUSTOMER'S P.O. No.: H337697-CM010				REF. No.:	
COMPONENT PART / ITEM	MATERIAL	SPECIFIED THICKNESS	THICKNESS	SHELL INSPECTION REPORT PREPARED BY: <u>Keith Hopkins</u>	
	260 WT	1/4"	1/4"	ISSUE No. _____ REV. _____	
				REV. DATE _____	
				REV DATE _____	

VERTICALS ASSEMBLY	FIT UP APPROVED	DATE	WELD INSIDE APPROVED BY	DATE	DATE GOUGE OUTSIDE APPROVED	DATE	WELD OUTSIDE APPROVED BY	DATE
VERTICAL # 1	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16
VERTICAL # 2	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 3	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 4	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 5	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 6	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 7	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16
VERTICAL TESTING & INSPECTION	SWEEP BOARD	DATE	FINAL FINISH APPROVED BY	DATE	NDT APPROVED BY	DATE	APPROVED BY	DATE
VERTICAL # 1	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16	Steve Davis	Sept 16	Maclan Coahly	Sept 21
VERTICAL # 2	↑	↑	↑	↑				
VERTICAL # 3	↑	↑	↑	↑				
VERTICAL # 4	↑	↑	↑	↑				
VERTICAL # 5	↑	↑	↑	↑				
VERTICAL # 6	↑	↑	↑	↑				
VERTICAL # 7	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16			Maclan Coahly	Sept 23
THIRD COURSE TO SECOND COURSE	ROUNDNESS APPROVED	DATE	GAP APPROVED BY	DATE	SWEEP FOR PEAKS APPROVED BY	DATE	APPROVED BY	DATE
	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16	Keith Hopkins	Sept 16		

REMARKS:

HATCH

CUSTOMER ACCEPTED COMPLETE: _____

REVIEWED BY:

Maclan Coahly

DATE:

Sept 23 / 2011

CLOSED OUT BY: _____

FOURTH SHELL COURSE INSPECTION REPORT

SHOP ORDER NUMBER:

CODE OR STANDARD: API 650 latest Edition

SHELL COURSE No.: 4

DIAMETER: 84' diameter x 32' high

IDENTIFICATION No.: 7000-Tk001

CUSTOMER: Baffinland Iron Mines

DRWG No.: 1 THRU 3

REV.: B

CRN:

CUSTOMER'S P.O No.: H337697-CM010

REF. No.:

COMPONENT
PART/ITEM

MATERIAL

SPECIFIED
THICKNESS

THICKNESS

SHELL INSPECTION
REPORT PREPARED BY:

Keith Hopkins

ISSUE No. _____ REV. _____

REV. DATE _____

REV DATE _____

VERTICALS ASSEMBLY	FIT UP APPROVED	DATE	WELD INSIDE APPROVED BY	DATE	DATE GOUGE OUTSIDE	DATE	WELD OUTSIDE APPROVED BY	DATE
VERTICAL # 1	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>
VERTICAL # 2	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 3	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 4	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 5	↑	↑	↑	↑	↑	↑	↑	↑
VERTICAL # 6	↓	↓	↓	↓	↓	↓	↓	↓
VERTICAL # 7	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>
VERTICAL TESTING & INSPECTION	SWEEP BOARD	DATE	FINAL FINISH APPROVED BY	DATE	NDT APPROVED BY	DATE	APPROVED BY	DATE
VERTICAL # 1	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Blaine Davis</i>	<i>Sept 25</i>	<i>Marlon Coally</i>	<i>Sept 27</i>
VERTICAL # 2	↑	↑	↑	↑			↓	
VERTICAL # 3	↑	↑	↑	↑				
VERTICAL # 4	↑	↑	↑	↑				
VERTICAL # 5	↑	↑	↑	↑				
VERTICAL # 6	↓	↓	↓	↓				
VERTICAL # 7	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>			<i>Marlon Coally</i>	<i>Sept 27</i>
FOURTH COURSE TO THIRD COURSE	ROUNDNESS APPROVED	DATE	GAP APPROVED BY	DATE	SWEEP FOR PEAKS APPROVED BY	DATE	APPROVED BY	DATE
<i>Keith Hopkins</i>	<i>KH</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>	<i>Keith Hopkins</i>	<i>Sept 19</i>		

REMARKS:

HATCH

CUSTOMER ACCEPTED COMPLETE: _____

REVIEWED BY

Marlon Coally

DATE:

Sept 27 / 2011

CLOSED OUT BY: _____

SECTION 20

SHOP ORDER NUMBER:

CODE OR STANDARD: API 650 latest Edition

DIAMETER: 84' diameter

IDENTIFICATION No.: 7000-Tk001

CUSTOMER: Baffinland Iron Mines

DRWG No.: 1 THRU 3

REV.: B

CRN:

CUSTOMER'S P.O No.: H337697-CM010

REF. No.:

COMPONENT
PART/ITEM

MATERIAL

SPECIFIED
THICKNESS

THICKNESS

ANGLE IRON

A36 / 44W

3/8"

3/8"

SHELL INSPECTION

REPORT PREPARED BY: Kerth Hopkins

ISSUE No. _____ REV. _____

REV. DATE _____

REV DATE _____

[illegible]

REMARKS:

REMARKS: HATCH

CUSTOMER ACCEPTED COMPLETE:

REVIEWED BY:

Marlon Coahly

DATE: Sept 27 / 2011

CLOSED OUT BY: _____

ROOF INSPECTION REPORT

SECTION 20

SHOP ORDER NUMBER:

CODE OR STANDARD: API 650 latest Edition

TANK No.: GEM-2008-3

DIAMETER: 84' DIAMETER

IDENTIFICATION No.: 7000-Tk001

CUSTOMER: Baffinland Iron Mines

DRWG No.: 1 THRU 3

REV.: B

CRN:

CUSTOMER'S P.O No.: H337697-CM010

REF. No.:

COMPONENT
PART/ITEM

MATERIAL

SPECIFIED
THICKNESS

SIZE OR
THICKNESS

ROOF INSPECTION
REPORT PREPARED BY: Kent H. Hylton

ISSUE No. _____ REV. _____

REV. DATE _____

REV DATE _____

O P	INSPECTION OR TEST POINTS	DATE	INITIAL	COMPANY OC INSP.	INITIAL				COMMENTS
1	MATERIAL CONDITION	Sept 21	KH	Hatch	M.C.				
2	PLATE FIT-UP	Sept 22	KH		M.C.				
3	PLATE WELDING	Sept 24	KH		M.C.				
4	VACUUM TEST WELD	NA			M.C.				
5	RAFTER LAYOUT & INSTALLATION	Sept 21	KH		M.C.				
6	FITTING LAYOUT	Sept 23	KH		M.C.				
7	OVERALL VISUAL WELD INSPECTION	Sept 24	KH		M.C.				
8	OVERALL VISUAL	Sept 24	KH		M.C.				
9	LADDER/STAIRS/PLATE ORM	Sept 22	KH	Hatch	M.C.				
10									
11									
12									
13									
14									
15									
16									
17									

REMARKS: _____

ACCEPTED COMPLETE: HATCH

REVIEWED BY: Marlon Cooley

DATE: Sept 27/2011

CLOSED OUT BY: _____

5.7 Fuel Storage Tank Installation Check List



FUEL STORAGE TANK INSTALLATION CHECKLIST

EQUIPMENT: API 650 Storage Tank		MANUFACTURER: Gem - Steel					
LOCATION: Baffin Island, Nunavut		MODEL: N/A					
ID. NO.: T-001		PRODUCT: DIESEL					
ITEM #		CHECK	DATE	INITIALS	CONTRACTOR	CONSULTANT	COMMENTS
1	Name plate details as per API 650 data sheet & specifications.	✓	2013/09/11				M.C.
2	Tank internals are clean, free of debris and water.	✓	2013/09/11				M.C.
3	All access stairs and platforms are complete.	✓	2013/09/11				M.C.
4	All required external and internal welding to tank shell, floor plates, roof plates have been completed and tested as per API 650 requirements.	✓	2013/09/11				M.C.
5	All internal bolting and torque completed to specification.	✓	2013/09/11				M.C.
6	All external bolting and torque completed to specification.	✓	2013/09/11				M.C.
7	All internal piping installed as per engineering drawings and specifications.	✓	2013/09/11				M.C.
8	Water draw off piping / unobstructed.	✓	2013/09/11				M.C.
9	All internal flanged connections have the correct nuts, bolts and gaskets as per the engineering drawings and specifications.	✓	2013/09/11				M.C.
10	Roof vent, level transmitters and roof gauge hatches installed	✓	2013/09/11				M.C.
11	All required NDE has been complete and back up documentation has been received/approved.	✓	2013/09/11				M.C.
12	Pipe connections aligned and supported as per engineering drawings.	✓	2013/09/11				M.C.
13	All tank trim installed as per engineering drawings and manufacturer's instructions.	✓	2013/09/11				M.C.
14	Valve inspection / lockout on all connections.	✓	2013/09/11				M.C.
15	All internal and external tank instrumentation installed as per engineering drawings & specifications.	✓	2013/09/11				M.C.
16	All external flanged connections have the correct nuts, bolts and gaskets as per the engineering drawings and specifications.	✓	2013/09/11				M.C.
17	Clearance lights installed on Tank as per engineering drawing and specifications.	✓	2013/09/11				M.C.
18	Confirm grounding connections	✓	2013/09/11				M.C.
ITEM		DATE	INITIAL	Equipment Checklist #			
Checks Complete		2013/09/11		T-001			
HATCH Verification							
Gem-Steel Verification							
Client Verification							

