

Travel Sheet

Sample #3

Authorized Inspector to be given travel sheet prior to construction so that he can indicate hold points and Inspection Points.

"A"-Hold Point, "I"- Inspection Point, "R"-Revision, "W"- Witness Point

Hold Points established - Sign & Date

J. H. H. Feb 8/11
(Authorized Inspector)

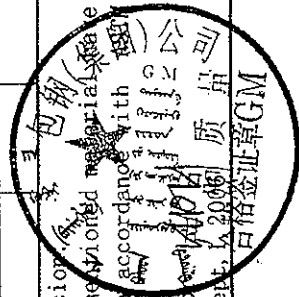
Serial number range 12010 to 12021

Vessel Serial # 12014		DWG # V01-381	(A) # 604368	
Vessel Title: 3 Phase Vertical Separator		CRN # P7217.231		
ITEM	COMMENTS	AUTH Insp., Hold Rev., Witness POINTS	DATE FUNCTION COMPLETE & INSPECTORS INITIALS	
			QC INSPECTOR	AUTHORIZED INSPECTOR
APPROVED DRAWING		X	February 1, 2011	J. H. H. Feb 24/11
CALCULATIONS ON FILE		X	February 1, 2011	J. H. H. Feb 24/11
MATERIAL CHECKED AGAINST DRAWING, MATERIAL LIST			February 1, 2011	
MTR'S CHECKED		X	February 1, 2011	J. H. H. Feb 24/11
VESSEL LAYOUT			February 3, 2011	
NOZZLES	ORIENTATION		February 3, 2011	
& FITTINGS	RATINGS	X	February 3, 2011	J. H. H. Feb 24/11
FIT	NOZZLES & FITTINGS		February 4, 2011	
UP	SHELL & HEAD		February 9, 2011	
INTERNALS (tray, baffles, etc)			February 7, 2011	
INTERNAL INSPECTION		H	February 8, 2011	J. H. H. Feb 8/11
WELD SIZES		X	February 16, 2011	J. H. H. Feb 24/11
WELDERS I.D.			February 16, 2011	
EXTERNAL AFTER COMPLETION OF ALL WELDING		X	February 16, 2011	J. H. H. Feb 24/11
RADIOGRAPHS		X	February 17, 2011	J. H. H. Feb 24/11
OTHER N.D.E.				
IMPACT TESTS				
POST WELD HEAT TREATMENT		YES: NO: ✓		
EXTERNAL BEFORE PWHT				
PWHT CHART CHECKED				
NAMEPLATE		X	February 24, 2011	J. H. H. Feb 24/11
HYDROSTATIC TEST		H	February 24, 2011	J. H. H. Feb 24/11
DATA REPORT		X	February 24, 2011	J. H. H. Feb 24/11
NONCONFORMANCES				

		SPECIFICATIONS	HEAT NUMBER	VERIFIED THICKNESS
SHELL	C1	SA-106-B	6304295 ✓	21.44mm
	C2			
HEADS	1	SA-516-70	323811-17790 ✓	20.63mm
	2	SA-516-70	323811-17790 ✓	20.63mm
	3			
REPADS	1			
	2			
	3			
	4			
		SPECIFICATIONS	SIZE	SCHEDULE
NOZZLES		SA-106-B	3"	Sch XXH
FITTINGS		SA-105	1/2", 3/4", 1", 2"	#6000 cplg.
TUBES				

Revision 0
Date JAN. 10, 2011

CONTRACT No.: 2006BGEL01		包头钢铁 (集团) 有限责任公司 BAOTOU IRON AND STEEL (GROUP) CO., LTD. Hexi Industrial Zone, Kun Distract, Baotou, Inner Mongolia, China		CERTIFICATE NO.: BSC001/2006												
SHIPPER: Baotou Steel International Economic and Trading Co., Ltd.				TOTAL QUANTITY: 482.722MT												
PURCHASER: Eldon Development Ltd. (LAI WU GROUP) 42/F., Office Tower, Convention Plaza, 1 Harbour Road, Wanchai, Hong Kong				PACKING: Binding together three pieces per bundle												
DESCRIPTION OF GOODS: CARBON SEAMLESS PIPE UNDER CONTRACT NO. 2006BGEL01 (1) 16" O.D. X 0.844" W.T. X 7.5FT (2) 16" O.D. X 0.844" W.T. X LESS THAN 7.5FT		SHIPPING MARKS: LW WSC COMMODITY: CARBON SEAMLESS PIPE SPEC.: ASTM A106B/ASME SA 106B SIZE: OD 16" X 0.844" WALL THICKNESS X 7.5FT OD 16" X 0.844" WALL THICKNESS X LESS THAN 7.5FT		HEAT NO.: BUNDLE NO.: BUNDLE WEIGHT: MADE IN CHINA												
		QUALITY AND TEST CERTIFICATE ORIGINAL 16" x .844" wall														
		Chemical Compositions(%)		Mechanical Properties												
Heat No.	Specification O.D.(in.) W.T.(in.)	Quantity Meters Tons	C	MN	S	P	SI	CR	CU	MO	NI	V	TS (Mpa)	YS (Mpa)	EL (%)	
6204801	16 0.844	225.06 45.806	0.200	0.550	0.016	0.011	0.270	0.036	0.008	0.005	0.008	0.005	480	240	33	
6104585	16 0.844	293.31 59.697	0.180	0.530	0.015	0.019	0.270	0.019	0.008	0.005	0.008	0.005	515	325	28	
6601454	16 0.844	355.3 72.314	0.190	0.540	0.007	0.012	0.260	0.018	0.008	0.005	0.009	0.005	505	300	27.5	
6704635	16 0.844	446.73 90.923	0.230	0.500	0.007	0.017	0.240	0.015	0.005	0.005	0.009	0.005	510	340	28	
6304294	16 0.844	296.23 60.292	0.230	0.560	0.004	0.016	0.300	0.022	0.010	0.005	0.009	0.005	510	325	27.5	
6704637	16 0.844	377.88 76.910	0.210	0.520	0.006	0.019	0.300	0.010	0.005	0.005	0.009	0.005	510	340	28	
6304295	16 0.844	377.24 76.780	0.180	0.530	0.009	0.014	0.260	0.024	0.009	0.005	0.016	0.005	480	260	30.5	
		2371.75 482.722														
Technical Testing		Flattening Test		Bending Test		Rolling process		Eddy Current Test		Conclusion		above mentioned materials have been made in accordance with B-2004 Inspector's Report Date: Sep 1, 2006				
Dimension Check	Surface Quality	Hydrostatic Test	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK



NOV 22 2006



CERTIFICATE OF COMPLIANCE

5545-89 Street Edmonton, Alberta Canada T6E 5W9

www.edmontonexchanger.com

tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD.

PO 2644

Work Order C86687 Date 2010/10/25 CorC# -

Page 1 of 2

Item#	Description	Qty	Heat#	Brinell Hardn.	Required Min Thk	Recorded Min Thk	Form. Proc.
H86687-1	HEAD(S) - Semi-Elliptical 2:1 - 0.8750" NOM (0.8125" MIN) X 16" OD (Material Spec: SA 516-70 Normalized) Conforms to NACE MR0175 / ISO 15156-2 2003 Annex A	1	290115-15589	MTR	0.8125"	0.8180"	1
		3	416084-8531309200	151	0.8125"	0.8340"	1
		4	SB05060-PB51686701	151	0.8125"	0.8150"	1
		2	297060-09333	MTR	0.8125"	0.8260"	1
		1	SB05060-PB51686703	151	0.8125"	0.8160"	1
		1	SB83713-PB40993002	151	0.8125"	0.8410"	1
		1	297059-20551	MTR	0.8125"	0.8290"	1
		1	SB14441-PB56689701	151	0.8125"	0.8330"	1
		2	7205623N-CA725858	158	0.8125"	0.8290"	1
		1	7205623N-CA725854	164	0.8125"	0.8290"	1
		1	416313-8607173100	151	0.8125"	0.8210"	1
		1	SB96749-PB46807801	151	0.8125"	0.8270"	1
		1	SB96746-PB46971202	171	0.8125"	0.8260"	1
		2	SB14463-PC43859303	158	0.8125"	0.8330"	1
		2	55415-58161	164	0.8125"	0.8260"	1
		2	313154-79005	MTR	0.8125"	0.8440"	1
		1	SB83708-PB40993103	158	0.8125"	0.8330"	1
		1	W7F874-C02	158	0.8125"	0.8210"	1
		3	333516-30242	MTR	0.8125"	0.8230"	1
		2	323809-17752	MTR	0.8125"	0.8390"	1
		2	323811-17790	MTR	0.8125"	0.8430"	1
		1	290117-15561	MTR	0.8125"	0.8300"	1

NOV 08 2010



edmonton exchanger
& manufacturing ltd.



CERTIFICATE OF COMPLIANCE

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Customer RJV GASFIELD LTD.

PO 2644

Work Order C86687 Date 2010/10/25 CofC# -

Page 2 of 2

Forming Procedure:

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

Brinell Equipment: Newage Calibrated Pin
Brinell Hardness Tester

Supplementary Requirements**Normalized Material Identification Marking:**

'MT' indicates normalized by the mill per ASME Code Section II, Part A, SA 20, Paragraph 13.1.1.

'GMT' indicates normalized by Edmonton Exchanger per ASME Code Section II, Part A, SA 20, Paragraph 13.1.2.

'GT' indicates normalized by Edmonton Exchanger per ASME Code Section VIII Division 1, UG-85 or ASME Code Section I, PG-77.4.

The item(s) listed above comply with the requirements of ASME Code Section I, PG-29, PG-81 and ASME Code Section VIII, Division 1, UCS-79(d), UG-79 & UG-81. All welders and procedures are qualified to ASME Code Section IX. Material being supplied conforms to the latest ASME Code Section II, Part A, 2007 Edition, Addenda July 1, 2009.

Supplementary Examination - Items

zurück: Änderungen siehe Rückseite / Explanations voir³ au verso / See reverse for explanations

[illegible]

Erklärungen siehe Rückseite / Explanations voir au verso / See reverse for explanations

ABNANPRUR2EUNGIS CERTIFICAT DE RECEPTION INSPECTION CERTIFICATE										3.1.B DIN 50049 - EN 10204 3.1.B NF EN 10204 3.1.B BS EN 10204 - ISO 10474										MILL TEST REPORT										A02 Established by/ Inspecting body										A05 Adv loc of dispatch No./ Date of dispatch										A09 Certificate No.										Manufacturer's order/ Certificate No.										Sheet																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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We hereby certify that the above mentioned materials have been delivered in accord, with the terms of order.

AG der Dillinger Hüttenwerke, Inspection department	20/102
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**AG der
Dillinger Hüttenwerke
SA Forges et Aciéries
de Dilling**



Inspector's stamp

Der Werkgeschwändige
Postfach 1580, D-66748 Dülmen

B. MUELLER
23.07.96 KW 01

Der Werksgeschverständige
B. MUELLER
Postfach 1580, D-66748 Dillingen/Saar, 23.07.96 KW 01

Erklärung: Die angegebenen stehende Rückseite / Explications voir au verso / See reverse for explanations

[illegible]

DILLINGER HÜTTE

Editionen siehe Rückseite / Explications voir au verso / See reverse for explanations

ABNAHMEPRÜFZEUGNIS CERTIFICAT DE RECEPTION INSPECTION CERTIFICATE		3.1.1.B DIN 50049 - EN 10204 3.1.1.B NF EN 10204 3.1.1.B BS EN 10204 - ISO 10474		MILL TEST REPORT		Established by/ Inspection body		A05 Advice of dispatch No./ Date of dispatch		A09		Manufacturer's order/ Certificate No.		Sheet	
B09 B10 Dimensions		B07 B08 B09 B10		B04 B05 B06 B07		B01 B02 B03 B04		B01 B02 B03 B04		B01 B02 B03 B04		B01 B02 B03 B04		B01 B02 B03 B04	
Item No.		Mass theor.		Heat No.		Rolled plate/ Test No.		Delivery condition		Test condition		C01 C02 C03 C04		C01 C02 C03 C04	
09 1 3,000 x120,000		49007 245035		55117 59894		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
13 2 2,000 x150,000		51046 51046		55325 97131		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
14 1 2,250 x150,000		28715 51046		55323 22154		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
14 1 2,250 x150,000		28715 51046		55324 22151		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
17 1 3,000 x152,000		39313 39313		55327 97132		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
18 1 3,250 x152,000		42589 42589		55327 97134		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
22 1 3,000 x180,000		27567 27567		55323 97488		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
23 1 3,250 x180,000		29864 29864		55329 97492		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
25 1 0,625 x200,000		14180 14180		51933 95267		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	
26 1 1,250 x200,000		28360 28360		55424 32299		N		N		K Q		C01 C02 C03 C04		C01 C02 C03 C04	

AG der Dillinger Hüttenwerke SA Forges et Acieries de Dilling		AG der Dillinger Hüttenwerke, Inspection department		201/02	
We hereby certify that the above mentioned materials have been delivered in accord, with the terms of order.		Inspector's stamp ADB		B. MUELLER Postfach 1580, D-66748 Dillingen/Saar, 23.07.96 KW 01	

DILLINGER HÜTTE

Erläuterungen siehe Rückseite / Explications voir au verso / See reverse for explanations

ABNAHMEPRÜFZEUGNIS CERTIFICAT DE RECEPTION INSPECTION CERTIFICATE										3.1.B DIN 50049 - EN 10204 3.1.B NF EN 10204 3.1.B BS EN 10204 - ISO 10474										A02 MILL TEST REPORT										A05 Advice of dispatch No./ Date of dispatch										A03 Manufacturer's order/ Certificate No.										A08/02 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DILLINGER HÜTTE

Erklärungen siehe Rückseite / Explications voir au verso / See reverse for explanations

ABNAHMEPRÜFZEUGNIS CERTIFICATE DE RECEPTION INSPECTION CERTIFICATE		3.1.B NF EN 10204 3.1.B BS EN 10204	3.1.B DIN 50049 NF EN 10204 3.1.B BS EN 10204	10204	A05 Advice of dispatch No./ Date of dispatch		78093	19.07.96	A09	Manufacturer's order/ Certificate No.		055.9407 - 002	5/ 8	A08/03 Sheet
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B16 FURTHER INFORMATION ABOUT MARKING OF PRODUCT

ITEM-NO	ITEM REFERENCE	HEAT-NO	TEST-NO	C01/C02	C	SI	LB-78	AN	P	S	N	AL	CU	MO	NI	CR	V	NB	TI	B	SN
51933 Y						0,175	0,324	1,13	0,008	0,0005	0,004	0,054	0,021	0,010	0,036	0,030	0,000	0,000	0,002	0,0000	0,001
51933 Y	95267	K				0,175	0,316	1,10	0,008	0,0009	0,004	0,053	0,021	0,010	0,036	0,029	0,001	0,000	0,002	0,0000	0,000
55116 Y						0,200	0,359	1,16	0,009	0,0010	0,005	0,045	0,014	0,005	0,024	0,032	0,001	0,001	0,002	0,0001	0,001
55116 Y	35911	K				0,196	0,341	1,12	0,008	0,0011	0,005	0,042	0,012	0,005	0,024	0,030	0,001	0,001	0,002	0,0001	0,000
55117 Y						0,191	0,356	1,18	0,008	0,0009	0,005	0,050	0,020	0,014	0,033	0,083	0,002	0,001	0,002	0,0001	0,001
55117 Y	59894	K				0,195	0,345	1,15	0,008	0,0013	0,005	0,047	0,012	0,004	0,024	0,029	0,001	0,000	0,002	0,0000	0,000
55322 Y						0,188	0,360	1,20	0,007	0,0019	0,005	0,047	0,013	0,003	0,022	0,029	0,000	0,001	0,002	0,0000	0,001
55322 Y	21929	K				0,188	0,382	1,16	0,008	0,0021	0,006	0,048	0,013	0,004	0,028	0,031	0,001	0,000	0,002	0,0000	0,000
55323 Y						0,185	0,369	1,16	0,007	0,0019	0,006	0,046	0,012	0,002	0,022	0,031	0,000	0,001	0,001	0,0000	0,000
55323 Y	22154	K				0,192	0,362	1,16	0,007	0,0020	0,007	0,046	0,011	0,003	0,023	0,031	0,001	0,000	0,001	0,0000	0,000
55324 Y						0,184	0,369	1,17	0,007	0,0023	0,006	0,044	0,011	0,003	0,022	0,029	0,000	0,001	0,002	0,0000	0,000
55324 Y						0,139	0,03	0,07	6,4												

AG der Dillinger Hüttenwerke SA Forges et Acières de Dilling		AG der Dillinger Hüttenwerke, Inspection department		26/02
We hereby certify that the above mentioned materials have been delivered in accord, with the terms of order.		Inspector's stamp AEB		3.10.96
Der Werksachverständige Postfach 1580, D-66748 Dillingen/Saar, 23.07.96 KW 01				

DILLINGER HÜTTE

Erläuterungen siehe Rückseite / Explications voir au verso / See reverse for explanations

ABNABEHREZEUGNIS CERTIFICAT DE RECEPTION INSPECTION CERTIFICATE										A02		A03		A05		A09		Manufacturer's order/ Certificate No.		Sheet	
3.1.1.B DIN 50049 - EN 10204 3.1.1.B NF EN 10204 3.1.1.B BS EN 10204 - ISO 10474										MILL TEST REPORT		Established by/ inspecting body		Date of dispatch		Date of dispatch		055.9407 - 002		7 / 8	
C71-C92 CHEMICAL COMPOSITION %																					
HEAT-NO	TEST-NO	CO1/CO2	C	CE-02	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	TI	B	SN		
55324 Y	22156	K	0,136	0,353	1,15	0,007	0,007	0,0020	0,007	0,042	0,010	0,003	0,022	0,029	0,001	0,000	0,002	0,0000	0,000		
55325 Y			0,138 0,40	0,376 0,03	1,19 0,07	0,009 6,3		0,0021	0,007	0,046	0,011	0,002	0,021	0,032	0,000	0,001	0,002	0,0000	0,000		
55325 Y	22157	K	0,137	0,366	1,17	0,008		0,0021	0,006	0,047	0,011	0,003	0,023	0,032	0,001	0,000	0,002	0,0000	0,000		
55327 Y			0,132 0,38	0,369 0,03	1,16 0,06	0,008 6,4		0,0021	0,007	0,048	0,011	0,002	0,022	0,024	0,000	0,001	0,001	0,0000	0,000		
55327 Y	97130	K	0,131	0,362	1,17	0,007		0,0023	0,008	0,046	0,011	0,003	0,022	0,032	0,001	0,000	0,002	0,0000	0,000		
55329 Y			0,132 0,39	0,362 0,04	1,17 0,09	0,009 6,4		0,0025	0,005	0,056	0,017	0,004	0,032	0,032	0,000	0,001	0,002	0,0001	0,000		
55329 Y	54524	K	0,132	0,352	1,16	0,009		0,0025	0,005	0,054	0,015	0,004	0,031	0,031	0,001	0,000	0,002	0,0000	0,000		
55415 Y			0,175 0,38	0,364 0,05	1,14 0,11	0,007 6,5		0,0021	0,006	0,045	0,036	0,009	0,027	0,040	0,001	0,001	0,002	0,0001	0,002		
55415 Y	61299	K	0,176	0,348	1,12	0,007		0,0022	0,008	0,040	0,036	0,009	0,025	0,038	0,001	0,000	0,002	0,0000	0,001		
55416 Y			0,170 0,37	0,342 0,04	1,14 0,09	0,008 6,7		0,0022	0,007	0,044	0,015	0,010	0,030	0,031	0,001	0,001	0,002	0,0001	0,001		
55416 Y	59461	K	0,175	0,337	1,13	0,007		0,0021	0,006	0,044	0,015	0,010	0,029	0,031	0,001	0,000	0,002	0,0000	0,001		
55417 Y			0,172 0,36	0,378 0,05	1,14 0,10	0,010 6,6		0,0021	0,006	0,037	0,028	0,006	0,028	0,041	0,001	0,001	0,002	0,0001	0,002		
55417 Y	60532	K	0,177	0,359	1,12	0,009		0,0017	0,006	0,038	0,027	0,005	0,027	0,040	0,001	0,000	0,002	0,0000	0,002		
55424 Y			0,137 0,40	0,380 0,05	1,20 0,11	0,008 6,4		0,0013	0,006	0,050	0,022	0,008	0,031	0,046	0,002	0,001	0,003	0,0000	0,003		
55424 Y	32299	K	0,133	0,373	1,19	0,009		0,0013	0,006	0,044	0,027	0,008	0,030	0,043	0,001	0,000	0,003	0,0000	0,002		

AG der Dillinger Hüttenwerke SA Forges et Acieries de Dilling		AG der Dillinger Hüttenwerke, Inspection department	
20/02		20/02	
We hereby certify that the above mentioned materials have been delivered in accord with the terms of order.		Inspector's stamp ADB	
B. MUELLER Der Werkschwerstände Postfach 1580, D-68748 Dillingen/Saar, 23.07.96 KW 01		B. MUELLER	

DILLINGER HÜTTE

Erklärungen siehe Rückseite / Explications voir au verso / See reverse for explanations

ACCEPTANCE CERTIFICATE		3.1.B DIN 50049 - EN 10204		3.1.B NF EN 10204		3.1.B BS EN 10204 - ISO 10474		MILL TEST REPORT		A02	Established by/ Inspecting body	DH	A05 Advice of dispatch No./ Date of dispatch	A09	Manufacturer's order/ Certificate No.	Sheet	
ABNAHMEPRUEFZEUGNIS		3.1.B		3.1.B		3.1.B		3.1.B		i						A0803	
CERTIFICAT DE RECEPTION		3.1.B		3.1.B		3.1.B		3.1.B									
INSPECTION CERTIFICATE		3.1.B		3.1.B		3.1.B		3.1.B									

C71-C92 CHEMICAL COMPOSITION %

B08 HEAT-NO	C70	B07 TEST-NO	C01/C02	C	CE-02	SI LB-78	MN LB-55	P LB-91	S	N	AL	CU	MO	NI	CR	V	NB	TI	B	SN
55426 Y				0.192 0.41	0.355 0.04	1.20 0.12	0.007 6.3	0.007	0.0013	0.007	0.037	0.026	0.008	0.054	0.035	0.001	0.001	0.903	0.0000	0.001
55426 Y		22834	K	0.191	0.358	1.18	0.008	0.008	0.0013	0.008	0.038	0.028	0.007	0.045	0.037	0.001	0.000	0.002	0.0000	0.000
55430 Y				0.197 0.41	0.368 0.03	1.19 0.08	0.007 6.0	0.007	0.0019	0.007	0.056	0.016	0.004	0.032	0.028	0.001	0.001	0.001	0.0000	0.001
55430 Y		53563	K	0.196	0.365	1.15	0.006	0.006	0.0019	0.006	0.057	0.017	0.004	0.031	0.027	0.001	0.000	0.001	0.0000	0.000

C94 CE-02 = C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15
LB-55 = CU+MO+NI+CR

C99 LADLE TREATMENT

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

D01 ITEM NO: 01- 06, 09, 13- 14, 17- 18, 22- 23, 25- 26, 35- 36,
INSPECTION RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS
SURFACE AS PER ASME-SA20
THICKNESS AS PER ASME-20/95
LENGTH AND WIDTH AS PER ASME-20/95
FLATNESS AS PER ASME-20/95



AG der
Dillinger Hüttenwerke
SA Forges et Acieries
de Dilling

DXH
Trademark

A04 We hereby certify that the above mentioned materials have been delivered in accord,
with the terms of order.

AG der Dillinger Hüttenwerke, Inspection department

Inspector's stamp

ADB

Der Werksachverständige
Postfach 1500, D-66748 Dillingen/Saar, 23.07.96 KW 01

201/02



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07	315779-002	1/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A06 Purchaser	B01 Product		
Final receiver	ARCELOR CANADA, BURLI	HOT ROLLED PLATES		
DH	EDMONTON STEEL, EDMON			
B02 Steel design.	SA516-70			
B03 Any suppl. requirements	ASME-2A:04+A05 DIL-HUE-2:R21-2006-04-27			



13040

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290115	15577-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290115	15578-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290115	15580-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290115	15585-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290115	15586-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290115	15588-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290115	15589-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15532-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15555-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15558-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15559-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15561-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15562-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15563-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15565-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15566-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15568-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15569-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15571-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15572-01	ITEM 1
01	1	0,8750 x	120,50000 x	480,00000 x	6510	N	290117	15574-01	ITEM 1
**	21				136710				
02	1	1,1250 x	97,00000 x	480,00000 x	6738	N	290119	15480-01	ITEM 2

Z014Z02Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001



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

B. MUELLER
Trust House Manager

Inspector's stamp

Date 22.01.07

KW

A01



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07	315779-002	2/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body DH	A06 Purchaser Final receiver			
	ARCELOR CANADA, BURLI			
	EDMONTON STEEL, EDMON			
B02/ Steel design.	SA516-70			
B03 Any suppl. requirements	ASME-2A:04+A05 DIL-HUE-2:R21-2006-04-27			
	A07.1 No. 61056			
	A07.2 No. E10408-J1010-LG			
		B01 Product HOT ROLLED PLATES		

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
02	1	1,1250 X	97,00000 X	480,00000 X	6738 N		290119	15481-01	ITEM 2
02	1	1,1250 X	97,00000 X	480,00000 X	6738 N		290119	15482-01	ITEM 2
02	1	1,1250 X	97,00000 X	480,00000 X	6738 N		290119	15483-01	ITEM 2
02	1	1,1250 X	97,00000 X	480,00000 X	6738 N		290119	15484-01	ITEM 2
**	5				33690				
***	26				170400				

B04 Product delivery condition

ITEM NO.: 01-02

N: HT: 1670 GR.F +36 -27 GR.F

SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)
COOLING IN STILL AIR

B06 Marking of the product

ITEM NO.: 01-02

STEEL DESIGNATION SA516 70 MTLTV SA516 60 MTLTV

HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B05 Rol./plate/ Test No.	B05 Reference (heat) treatment	C01 C02/ C03 C01	C04 C05 KSI GR.F	C06 C07 KSI RP02	C08 C09 RM	C10 C11 % LO=8IN	C12 C13 % LO=2IN	C14-C15
01	290115	15577		K1 Q	RT	48,9	72,9	32,4		
01	290115	15578		K1 Q	RT	49,9	72,8	31,9		
01	290115	15580		K1 Q	RT	49,0	72,6	29,9		

A04 Z01Z02Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001

ADHB

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

B. MUELLER
Test House Manager

Inspector's stamp Date 22.01.07

KW 1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07	315779-002	3/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A05 Purchaser	B01 Product		
DH	Final receiver	HOT ROLLED PLATES		
B02/ Steel design. SA516-70				
B03 Any suppl. ASME-2A: 04+A05				
requirements DIL-HUE-2:R21-2006-04-27				

C-10-C29 Tensile test

B14 B07.2 Item No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01 C01	C02/ C03 C01 Temp. GR.F	C10 C11 KSI RP02	C12 RM	C13	A % LO=8IN	A % LO=2IN	C14-C15
01	290115	15585	K1 Q	RT	48,7	72,5		29,9		
01	290115	15586	K1 Q	RT	49,9	72,9		31,4		
01	290115	15588	K1 Q	RT	49,4	72,9		30,4		
01	290115	15589	K1 Q	RT	50,0	72,8		30,4		
01	290117	15532	K1 Q	RT	50,0	73,7		30,9		
01	290117	15555	K1 Q	RT	49,6	74,1		29,4		
01	290117	15558	K1 Q	RT	49,2	72,8		31,9		
01	290117	15559	K1 Q	RT	50,2	73,1		30,9		
01	290117	15561	K1 Q	RT	49,7	74,0		28,0		
01	290117	15562	K1 Q	RT	49,6	73,1		38,3		
01	290117	15563	K1 Q	RT	49,2	73,8		27,5		
01	290117	15565	K1 Q	RT	50,9	74,0		31,9		
01	290117	15566	K1 Q	RT	48,6	73,2		29,4		
01	290117	15568	K1 Q	RT	48,7	72,5		31,4		
01	290117	15569	K1 Q	RT	50,2	72,6		29,9		
01	290117	15571	K1 Q	RT	49,7	72,8		28,9		
01	290117	15572	K1 Q	RT	50,6	73,4		28,4		
01	290117	15574	K1 Q	RT	49,4	73,2		30,9		
02	290119	15480	K1 Q	RT	49,6	72,9		31,9		
02	290119	15481	K1 Q	RT	49,6	73,4		31,9		
02	290119	15482	K1 Q	RT	50,6	73,5		29,9		
02	290119	15483	K1 Q	RT	49,9	73,8		29,9		
02	290119	15484	K1 QV	RT	50,3	74,8		33,9		

A04 Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



QM-System: Certification as per ISO 9001



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

A01

Manufacturer's
mark

B. MUELLER
Test House Manager

Inspector's stamp

Date 22.01.07

KW

1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07	315779-002	4/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A06 Purchaser			
DH	Final receiver			
ARCELOR CANADA, BURLI				
EDMONTON STEEL, EDMON				
A07.1 No. 61056				
A07.2 No. E10408-J1010-LG				
B02/ Steel design. SA516-70				
B03 Any suppl. ASME-2A:04+A05				
requirements DIL-HUB-2:R21-2006-04-27				

C30-C39 Hardness test

B14 Item No.	B07.2 Heat No.	B07.1 Roll plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GRF	C33 Testing method	C35 Individual values	C31	C32 Average value
01	290115	15577		K1	O	RT	HBW 10/3000	HB 142	142	142
01	290115	15578		K1	O	RT	HBW 10/3000	HB 143	149	145
01	290115	15580		K1	O	RT	HBW 10/3000	HB 141	141	140
01	290115	15585		K1	O	RT	HBW 10/3000	HB 143	141	141
01	290115	15586		K1	O	RT	HBW 10/3000	HB 142	144	142
01	290115	15588		K1	O	RT	HBW 10/3000	HB 146	143	144
01	290115	15589		K1	O	RT	HBW 10/3000	HB 144	143	143
01	290117	15532		K1	O	RT	HBW 10/3000	HB 142	142	142
01	290117	15555		K1	O	RT	HBW 10/3000	HB 143	142	142
01	290117	15558		K1	O	RT	HBW 10/3000	HB 145	143	143
01	290117	15559		K1	O	RT	HBW 10/3000	HB 143	142	142
01	290117	15561		K1	O	RT	HBW 10/3000	HB 142	140	141
01	290117	15562		K1	O	RT	HBW 10/3000	HB 145	143	144
01	290117	15563		K1	O	RT	HBW 10/3000	HB 142	143	142
01	290117	15565		K1	O	RT	HBW 10/3000	HB 145	143	144
01	290117	15566		K1	O	RT	HBW 10/3000	HB 144	143	143
01	290117	15568		K1	O	RT	HBW 10/3000	HB 142	142	141
01	290117	15569		K1	O	RT	HBW 10/3000	HB 149	149	147
01	290117	15571		K1	O	RT	HBW 10/3000	HB 149	149	147
01	290117	15572		K1	O	RT	HBW 10/3000	HB 140	141	140
01	290117	15574		K1	O	RT	HBW 10/3000	HB 144	143	144
02	290119	15480		K1	O	RT	HBW 10/3000	HB 147	145	146
02	290119	15481		K1	O	RT	HBW 10/3000	HB 143	141	143
02	290119	15482		K1	O	RT	HBW 10/3000	HB 142	143	143

Z01202Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001

ADB

AG der Dillinger Hüttenwerke

Postfach 1580, D-66748 Dillingen/Saar

Inspection department

B. MOELLER

Test House Manager

Inspector's stamp

Date 22.01.07

KW 1



Manufacturer's mark

A01



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A09 Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07	315779-002	5/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A06 Purchaser	B01 Product		
DH	Final receiver	HOT ROLLED PLATES		
B02/ Steel design.	ARCELOR CANADA, BURLI	A07.1 No. 61056		
B03 Any suppl.	EDMONTON STEEL, EDMON	A07.2 No. E10408-J1010-LG		
requirements				
DIL-HUE-2:R21-2006-04-27				

C30-C39 Hardness test

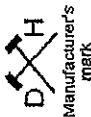
B14 Item No.	B07.2 Heat No.	B07.1 Roll plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C33 Testing method	C35 Individual values	C32 Average value
02	290119	15483		K1	O	RT	HBW 10/3000	HB 146	145
02	290119	15484		K1	O	RT	HBW 10/3000	HB 145	142

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Roll plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45 Individual values AV=FTLBF	C43 Average value
01	290115	15577		K1	LV	-51	-51	CHP-V			90	129
01	290115	15578		K1	LV	-51	-51	CHP-V			146	161
01	290115	15580		K1	LV	-51	-51	CHP-V			205	155
01	290115	15585		K1	LV	-51	-51	CHP-V			119	156
01	290115	15586		K1	LV	-51	-51	CHP-V			113	167
01	290115	15588		K1	LV	-51	-51	CHP-V			139	159
01	290115	15589		K1	LV	-51	-51	CHP-V			163	163
01	290117	15532		K1	LV	-51	-51	CHP-V			196	169
01	290117	15555		K1	LV	-51	-51	CHP-V			129	116
01	290117	15558		K1	LV	-51	-51	CHP-V			212	162
01	290117	15559		K1	LV	-51	-51	CHP-V			201	144
01	290117	15561		K1	LV	-51	-51	CHP-V			132	128
01	290117	15562		K1	LV	-51	-51	CHP-V			114	102
01	290117	15563		K1	LV	-51	-51	CHP-V			122	127
01	290117	15565		K1	LV	-51	-51	CHP-V			159	141
01	290117	15566		K1	LV	-51	-51	CHP-V			84	139
01	290117	15568		K1	LV	-51	-51	CHP-V			125	122
01	290117	15569		K1	LV	-51	-51	CHP-V			128	164
01	290117	15571		K1	LV	-51	-51	CHP-V			93	124

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

QM-System: Certification as per ISO 9001



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

Inspection department

B. MOELLER

Test House Manager

Inspector's stamp

Date 22.01.07

KW 1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07	315779-002	6/...
MATERIAL TEST REPORT (MTR)		B01 Product HOT ROLLED PLATES		
A05 Established inspecting body	A06 Purchaser	A07.1 No. 61056		
DH	Final receiver	A07.2 No. E10408-J1010-LG		
B02/ Steel design. SA516-70				
B03 Any suppl. requirements				
DIL-HUB-2: R21-2006-04-27				

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Roll plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45 Individual values AV=FT.LBF	C43 Average value
01	290117	15572		K1	LV	-51		CHP-V				
01	290117	15574		K1	LV	-51		CHP-V				
02	290119	15480		K1	LV	-51		CHP-V				
02	290119	15481		K1	LV	-51		CHP-V				
02	290119	15482		K1	LV	-51		CHP-V				
02	290119	15483		K1	LV	-51		CHP-V				
02	290119	15484		K1	LV	-51		CHP-V				

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	C	SI	MIN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
290115	Y	0,173	0,359	1,16	0,010	0,0012	0,0057	0,031	0,016	0,005	0,023	0,026	0,000	0,000	0,001
290117	Y	0,175	0,360	1,14	0,008	0,0009	0,0048	0,039	0,047	0,007	0,071	0,033	0,000	0,000	0,001
290119	Y	0,173	0,354	1,17	0,010	0,0008	0,0068	0,029	0,022	0,019	0,036	0,031	0,000	0,000	0,001

B07.2 Heat	C70	TI	B
290115	Y	0,003	0,0001
290117	Y	0,003	0,0001
290119	Y	0,003	0,0001

C94 Heat analysis Carbon equivalent / Alloying restrictions

B07.2 Heat	FO-02=	FO-55=	FO-78=	FO-91=
290115		0,38	0,07	6,7
290117		0,38	0,16	6,5
290119		0,38	0,11	6,8

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

QM-System: Certification as per ISO 9001

A04		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	Date 22.01.07	KW 1
Inspector's stamp		Inspector's stamp		
B. MUELLER Test House Manager		B. MUELLER Test House Manager		



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A05 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07		315779-002		7/...	
MATERIAL TEST REPORT (MTR)							
A05 Established inspecting body		A08 Purchaser		A07.1 No. 61056			
DH		ARCELOR CANADA, BURLI		A07.2 No. E10408-J1010-LG		B01 Product	
		EDMONTON STEEL, EDMON				HOT ROLLED PLATES	
B02/ Steel design.		SA516-70					
B03 Any suppl.		ASME-2A:04+A05					
requirements		DIL-HUE-2:R21-2006-04-27					

C95 Ladle treatment

ITEM NO.: 01-02

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

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
290115	15578	K1 0,170	0,345	1,14	0,009	0,0009	0,0051	0,031	0,015	0,004	0,019	0,024	0,000	0,000	0,000
290117	15569	K1 0,172	0,347	1,13	0,008	0,0010	0,0055	0,037	0,041	0,006	0,061	0,032	0,000	0,000	0,000
290119	15483	K1 0,168	0,354	1,16	0,009	0,0009	0,0070	0,030	0,021	0,019	0,032	0,031	0,000	0,000	0,000
B07.2 Heat	B07.1 Test No.	TH	B												
290115	15578	K1 0,003	0,0000												
290117	15569	K1 0,003	0,0000												
290119	15483	K1 0,003	0,0001												

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2 Heat	B07.1 Test No.	FO-02 =	FO-02 =	FO-02 =	FO-55 =	FO-55 =	FO-55 =
290115	15578	K1 FO-02 =	0,37	FO-55 =	0,06		
290117	15569	K1 FO-02 =	0,37	FO-55 =	0,14		
290119	15483	K1 FO-02 =	0,37	FO-55 =	0,10		

C94 Carbon equivalent formula / Alloying restrictions

FO-02 = $C + (Mn/6) + (Cr+Mo+V)/5 + (Ni+Cu)/15$
 FO-55 = $CU+MO+NI+CR$
 FO-78 = $CR+MO$
 FO-91 = MN/C

Z01/2023/03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001

ADB

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

A07

D/H
Manufacturer's mark

Inspector's stamp

Date 22.01.07

KW



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		242156-20.01.07		315779-002		8	
MATERIAL TEST REPORT (MTR)							
A05 Established inspecting body		A06 Purchaser		A07.1 No.		A07.2 No.	
DH		Final receiver		ARCELOR CANADA, BURLI		EDMONTON STEEL, EDMON	
B02/ Steel design.		SA516-70		61056		HOT ROLLED PLATES	
B03 Any suppl. requirements		ASME-2A: 04+A05					
		DIL-HUE-2: R21-2006-04-27					

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

ITEM NO.: 01-02

RESULT OF MARKING,

SURFACE, SHAPE AND DIMENSIONS: NO REMARKS

SURFACE AS PER ASME-SA20

THICKNESS AS PER ASME-SA20

LENGTH AND WIDTH AS PER ASME-SA20

FLATNESS AS PER 1/2-ASME-SA20



A04	Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke	A01
	QM-System: Certification as per ISO 9001	Postfach 1580, D-66748 Dillingen/Saar	
Manufacturer's mark	B. MUELLER Test House Manager	Inspector's stamp AHB	Date 22.01.07
			KW 1



A DIVISION OF SSAB

12400 Highway 43 North, Axis, Alabama 36505

Test Certificate

Form TC1: Revision 1: Date 31 Oct 2000

Customer: EDMONTON STEEL PLATE PARTNERSH 5545-89 STREET EDMONTON AB T6E5W9		Customer P.O. No.: E10606-J10101.G & 41- Product Description: ASTM A516-70(06)/ASME SA516-70(04ED.) EDMONTON STL SPEC IPS-INC.,1 (12SEP2006) LCVN 15/12 FT.LBS. @ -50F / A673-P NORMALIZED		Mill Order No.: 41-179706-02		Shipping Manifest : AR040901											
Ship Date: 26 Jul 07		Cert No: 081093970 (Page 1 of 1)		Ship Date: 26 Jul 07		Cert Date: 26 Jul 07											
Size: 0.875 X 120.5 X 480.0 (IN)																	
Tested Pieces		Tensiles		Charpy Impact Tests													
Heat Id	Piece Id	Piece Dimensions	YS (PSI)	UTS (PSI)	%RA	Elong % 2in	Average Hardness	Abs. Energy(FITLB)	% Shear	Tst Temp	Tst Dir	Tst Size (mm)	BDWTT Temp				
W7F874	C02	0.873 X 123.0 (DISCRD)	148000	73000		28		80	85	62	75.7						
W7F874	C03	0.873 X 123.1 (DISCRD)	148000	73000		28		85	88	68.3							
W7F874	C04	0.873 X 122.9 (DISCRD)	148000	72000		25		71	50	65	62.0						
Chemical Analysis																	
Heat Id	C	Mn	P	S	Si	Tot Al	Sol Al	Cu	Ni	Cr	Mo	Co	V	Ti	B	CEV	ORGN
W7F874	.19	1.18	.012	.003	.20	.031	.030	.18	.07	.10	.02	.002	.005	.021	.0003	.43	USA
W7F874-C02	.17	1.20	.015	.003	.21	.032	.030	.17	.07	.10	.02	.002	.005	.020	.0002	.41	USA
W7F874-C03	.19	1.20	.015	.003	.21	.033	.031	.18	.07	.10	.02	.002	.005	.024	.0003	.43	USA
W7F874-C04	.19	1.22	.014	.003	.22	.033	.031	.18	.07	.10	.02	.002	.005	.026	.0002	.44	USA
MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE CEV (IIR) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15 MTR DIN EN10204 - 3.1.B COMPLIANCE NORMALIZED PLATES, HEATED AT 1650F FOR 37 MINUTES.																	
W7F874 C02	6036301	PCES:	1, WGT:	14570													
W7F874 C03	6036303	PCES:	1, WGT:	14508													
W7F874 C03	6036305	PCES:	1, WGT:	14508													
W7F874 C02	6036347	PCES:	1, WGT:	14588													
W7F874 C02	6036349	PCES:	1, WGT:	14570													
W7F874 C04	6036345	PCES:	1, WGT:	14508													
W7F874 C02	6036302	PCES:	1, WGT:	14570													
W7F874 C03	6036304	PCES:	1, WGT:	14508													
W7F874 C03	6036306	PCES:	1, WGT:	14511													
W7F874 C02	6036348	PCES:	1, WGT:	14567													
W7F874 C03	6036350	PCES:	1, WGT:	14529													
W7F874 C04	6036346	PCES:	1, WGT:	14508													



13483

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

Cust Part # :

Jason Thomas
SENIOR METALLURGIST



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004

INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991

MATERIAL TEST REPORT (MTR)

A10 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet
264364-11.07.07		321444-001		1/...
A05 Established inspecting body		B01 Product		
DH		HOT ROLLED PLATES		
B02/ Steel design.		A07.1 No. 70072		
SA516-70		ARCELOR CANADA, BURLI		
B03 Any suppl. requirements		A07.2 No. E10435-J1010-LG		
ASME-2A: 04+A05		EDMONTON STEEL, EDMON		
DILL-HUE-2: R21-2006-04-27				



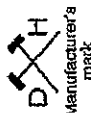
13727

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No. Test No.	A09 Purchaser article number
			INCH		KG				
01	1	0,7500 x	120,50000 x	480,00000	5580	N	292660	89773-01	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20557-01	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20557-02	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20558-01	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20558-02	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20558-03	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20560-01	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20560-02	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297056	20560-03	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297067	30527-01	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297067	30527-02	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297067	30527-03	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297067	30528-01	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297067	30528-02	ITEM 1
01	1	0,7500 x	120,50000 x	480,00000	5580	N	297067	30528-03	ITEM 1
**	15				83700				
02	1	0,8750 x	96,50000 x	480,00000	5214	N	297060	20452-01	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000	5214	N	297060	20452-02	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000	5214	N	297060	20452-03	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000	5214	N	297060	20618-01	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000	5214	N	297060	20618-02	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000	5214	N	297060	20619-01	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000	5214	N	297060	20619-02	ITEM 2

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

QM-System: Certification as per ISO 9001



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

ADB

B. MUELLER
Test House Manager

RECEIVED JUL 16 2007

KW 1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08 Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07	321444-001	2/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A08 Purchaser	B01 Product		
DH	Final receiver	HOT ROLLED PLATES		
B02/ Steel design.	ARCELOR CANADA, BURLI			
B03 Any suppl. requirements	EDMONTON STEEL, EDMON			
	SA516-70			
	ASME-2A:04+A05			
	DIL-HUE-2:R21-2006-04-27			

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
		INCH			KG				
02	1	0,8750 x	96,50000 x	480,00000 x	5214	N	297680	92858-01	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000 x	5214	N	297680	92858-02	ITEM 2
02	1	0,8750 x	96,50000 x	480,00000 x	5214	N	297680	92858-03	ITEM 2
**	10				52140				
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20544-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20544-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20544-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20550-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20550-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20550-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20551-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20551-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20551-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20552-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20552-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20552-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20553-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20553-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20553-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20554-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20554-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20554-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20555-01	ITEM 3

A04	Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar		A01
				Inspection department Date 12.07.07 KW 1	
QM-System: Certification as per ISO 9001		Inspector's stamp B. MUELLER Test House Manager			



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch:	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07	321444-001	3/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A06 Purchaser	B01 Product		
DH	Final receiver	HOT ROLLED PLATES		
B02/ Steel design. SA516-70				
B03 Any suppl. ASME-2A:04+A05				
requirements DIL-HUE-2:R21-2006-04-27				
ARCELOR CANADA, BURLI		A07.1 No. 70072		
EDMONTON STEEL, EDMON		A07.2 No. E10435-J1010-LG		

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width INCH	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20555-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20555-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20556-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20556-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297059	20556-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297060	20453-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297060	20453-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297060	20453-03	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297060	20526-01	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297060	20526-02	ITEM 3
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	297060	20526-03	ITEM 3
**	30				195300				
**	55				331140				

B04 Product delivery condition

ITEM NO.: 01-03

N: HT: 1670 GR.F +36 -27 GR.F

SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)

COOLING IN STILL AIR

B05 Marking of the product

ITEM NO.: 01-03

STEEL DESIGNATION SA516 70 MLTY SA516 60 MLTY

HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

A04	201202203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	Inspector's stamp	Date 12.07.07	KW 1
					
QM-System: Certification as per ISO 9001		B. MUELLER Test House Manager			



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A09/ Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07		321444-001		4/...	
MATERIAL TEST REPORT (MTR)				B01 Product			
A05 Established inspecting body		A06 Purchaser		A07.1 No.		A07.2 No.	
DH		ARCELOR CANADA, BURLI		70072		E10435-J1010-LG	
B02/ Steel design.		SA516-70					
B03 Any suppl.		ASME-2A:04+AO5					
requirements		DILL-HUE-2:R21-2006-04-27					
		Final receiver				HOT ROLLED PLATES	
		EDMONTON STEEL, EDMON					

C10-C29 Tensile test

B14 B07.2 Item Heat No.	B07.1 Rol./plate/ Test No.	B05 Reference (heat) treatment	C01 C02/ C03 C01 Temp. GR.F	C10 C11 KSI RP02	C12 RM	C13 A %	C14-C15 LO-BIN
01 292660	89773		K1 Q	RT	50,3	28,9	
01 297056	20557		K1 Q	RT	50,9	28,0	
01 297056	20558		K1 Q	RT	50,6	28,4	
01 297056	20560		K1 Q	RT	51,0	28,9	
01 297067	30527		K1 Q	RT	51,0	29,9	
01 297067	30528		K1 Q	RT	52,5	31,4	
02 297060	20452		K1 Q	RT	50,3	30,9	
02 297060	20618		K1 Q	RT	51,0	29,9	
02 297060	20619		K1 Q	RT	50,6	30,9	
02 297680	92858		K1 Q	RT	49,9	31,9	
03 297059	20544		K1 Q	RT	50,6	30,9	
03 297059	20550		K1 Q	RT	51,8	34,4	
03 297059	20551		K1 Q	RT	51,3	29,4	
03 297059	20552		K1 Q	RT	51,9	26,5	
03 297059	20553		K1 Q	RT	50,2	29,4	
03 297059	20554		K1 Q	RT	51,3	29,4	
03 297059	20555		K1 Q	RT	50,9	29,9	
03 297059	20556		K1 Q	RT	51,3	29,9	
03 297060	20453		K1 Q	RT	51,9	39,3	
03 297060	20526		K1 Q	RT	50,8	29,4	

A04	201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
	QM-System: Certification as per ISO 9001		
Manufacturer's mark	B. MUELLER Test House Manager	Inspector's stamp	Date 12.07.07
			KW 1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07		321444-001		5/...	
MATERIAL TEST REPORT (MTR)				B01 Product			
A05 Established inspecting body		A08 Purchaser		HOT ROLLED PLATES			
DH		Final receiver					
B02/ Steel Design.		ARCELOR CANADA, BURLI					
SA516-70		EDMONTON STEEL, EDMON					
B03 Any suppl.		A07.1 No. 70072					
requirements		A07.2 No. E10435-J1010-LG					
DIL-HUE-2:R21-2006-04-27							

C30-C39 Hardness test

B14 Item.	B07.2 Heat No.	B07.1 Rollplate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C33 Testing method	C35 C31 Individual values	C32 Mean value
01	292660	89773		K1	O	RT	HBW 10/3000	HB 145	145
01	297056	20557		K1	O	RT	HBW 10/3000	HB 147	147
01	297056	20558		K1	O	RT	HBW 10/3000	HB 146	148
01	297056	20560		K1	O	RT	HBW 10/3000	HB 147	148
01	297067	30527		K1	O	RT	HBW 10/3000	HB 150	148
01	297067	30528		K1	O	RT	HBW 10/3000	HB 145	145
02	297060	20452		K1	O	RT	HBW 10/3000	HB 148	148
02	297060	20618		K1	O	RT	HBW 10/3000	HB 148	148
02	297060	20619		K1	O	RT	HBW 10/3000	HB 151	151
02	297680	92858		K1	O	RT	HBW 10/3000	HB 142	144
03	297059	20544		K1	O	RT	HBW 10/3000	HB 147	149
03	297059	20550		K1	O	RT	HBW 10/3000	HB 149	149
03	297059	20551		K1	O	RT	HBW 10/3000	HB 146	147
03	297059	20552		K1	O	RT	HBW 10/3000	HB 148	147
03	297059	20553		K1	O	RT	HBW 10/3000	HB 146	148
03	297059	20554		K1	O	RT	HBW 10/3000	HB 148	147
03	297059	20555		K1	O	RT	HBW 10/3000	HB 150	148
03	297059	20556		K1	O	RT	HBW 10/3000	HB 148	148
03	297060	20453		K1	O	RT	HBW 10/3000	HB 149	148
03	297060	20526		K1	O	RT	HBW 10/3000	HB 148	149

A04		201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		AG der Dillinger Hüttenwerke		A01
QM-System: Certification as per ISO 9001				Postfach 1580, D-66748 Dillingen/Saar		
				Inspection department		
				Inspector's stamp		
				Date 12.07.07		
				KW 1		



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07	321444-001	6/...
MATERIAL TEST REPORT (MTR)		B01 Product HOT ROLLED PLATES		
A05 Established inspecting body		B01 Product HOT ROLLED PLATES		
DH		B01 Product HOT ROLLED PLATES		
B02/ Steel design. SA516-70		A07.1 No. 70072		
B03 Any suppl. ASME-2A:04+A05		A07.2 No. E10435-J1010-LG		
requirements DIL-HUE-2:R21-2006-04-27		EDMONTON STEEL, EDMON		

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rot.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GRF	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45 Individual values AV=FT.LBF	C49 Mean value
01	292660	89773		K1	LV	-51	-51	CHP-V	CHP-V	AV 96	118	202
01	297056	20557		K1	LV	-51	-51	CHP-V	CHP-V	AV 99	109	114
01	297056	20558		K1	LV	-51	-51	CHP-V	CHP-V	AV 115	118	137
01	297056	20560		K1	LV	-51	-51	CHP-V	CHP-V	AV 114	119	122
01	297067	30527		K1	LV	-51	-51	CHP-V	CHP-V	AV 135	108	98
01	297067	30528		K1	LV	-51	-51	CHP-V	CHP-V	AV 180	184	182
02	297060	20452		K1	LV	-51	-51	CHP-V	CHP-V	AV 73	105	117
02	297060	20618		K1	LV	-51	-51	CHP-V	CHP-V	AV 150	145	148
02	297060	20619		K1	LV	-51	-51	CHP-V	CHP-V	AV 131	111	126
02	297060	92858		K1	LV	-51	-51	CHP-V	CHP-V	AV 86	117	169
03	297059	20544		K1	LV	-51	-51	CHP-V	CHP-V	AV 131	128	149
03	297059	20550		K1	LV	-51	-51	CHP-V	CHP-V	AV 128	107	110
03	297059	20551		K1	LV	-51	-51	CHP-V	CHP-V	AV 111	133	89
03	297059	20552		K1	LV	-51	-51	CHP-V	CHP-V	AV 184	137	115
03	297059	20553		K1	LV	-51	-51	CHP-V	CHP-V	AV 95	182	134
03	297059	20554		K1	LV	-51	-51	CHP-V	CHP-V	AV 93	181	115
03	297059	20555		K1	LV	-51	-51	CHP-V	CHP-V	AV 126	136	100
03	297059	20556		K1	LV	-51	-51	CHP-V	CHP-V	AV 97	90	181
03	297060	20453		K1	LV	-51	-51	CHP-V	CHP-V	AV 193	187	147
03	297060	20526		K1	LV	-51	-51	CHP-V	CHP-V	AV 97	145	159

A04	QIM-System: Certification as per ISO 9001	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar	A01
	with the terms of order.	Inspector's stamp Date 12.07.07	KW 1
B. MUELLER Test House Manager			



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07		321444-001		7/...	
MATERIAL TEST REPORT (MTR)				B01 Product			
A05 Established inspecting body		A06 Purchaser		HOT ROLLED PLATES			
DH		Final receiver					
B02/ Steel design.		SA516-70					
B03 Any suppl. requirements		ASME-2A:04+A05 DIL-HUE-2:R21-2006-04-27					
		ARCELOR CANADA, BURLI		A07.1 No. 70072			
		EDMONTON STEEL, EDMON		A07.2 No. E10435-J1010-LG			

C70-C99 Chemical composition % - Heat analysis

	C70	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
B07.2 Heat															
292660	Y	0,177	0,369	1,16	0,008	0,0003	0,0035	0,050	0,028	0,012	0,056	0,026	0,001	0,000	0,001
297056	Y	0,188	0,365	1,17	0,010	0,0007	0,0068	0,030	0,030	0,009	0,041	0,020	0,000	0,000	0,001
297059	Y	0,187	0,358	1,18	0,009	0,0009	0,0064	0,035	0,028	0,004	0,024	0,029	0,000	0,000	0,001
297060	Y	0,183	0,367	1,18	0,010	0,0007	0,0065	0,035	0,020	0,013	0,027	0,035	0,000	0,000	0,000
297067	Y	0,190	0,356	1,18	0,009	0,0007	0,0059	0,034	0,025	0,008	0,034	0,029	0,001	0,000	0,002
297680	Y	0,179	0,373	1,19	0,008	0,0010	0,0060	0,049	0,029	0,008	0,040	0,027	0,000	0,000	0,001
B07.2 Heat															
292660	Y	0,002	0,0000	0,0010											
297056	Y	0,003	0,0002	0,0021											
297059	Y	0,002	0,0000	0,0014											
297060	Y	0,003	0,0001	0,0016											
297067	Y	0,002	0,0002	0,0010											
297680	Y	0,002	0,0001	0,0026											

C94 Heat analysis Carbon equivalent / Alloying restrictions

B07.2 Heat															
292660		FO-02=	0,38	FO-55=	0,12	FO-78=	0,04	FO-91=	6,6						
297056		FO-02=	0,39	FO-55=	0,10	FO-78=	0,03	FO-91=	6,2						
297059		FO-02=	0,39	FO-55=	0,09	FO-78=	0,03	FO-91=	6,3						
297060		FO-02=	0,39	FO-55=	0,10	FO-78=	0,05	FO-91=	6,4						
297067		FO-02=	0,40	FO-55=	0,10	FO-78=	0,04	FO-91=	6,2						
297680		FO-02=	0,39	FO-55=	0,10	FO-78=	0,04	FO-91=	6,6						

A04	Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
	QM-System: Certification as per ISO 9001	Inspector's stamp Date 12.07.07	KW 1
Manufacturer's mark		Test House Manager R. MUELLER	



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A03 Manufacturer's order/ Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07		321444-001		8/...	
MATERIAL TEST REPORT (MTR)							
A05 Established inspecting body		A06 Purchaser		A07.1 No. 70072		B01 Product	
DH		Final receiver		ARCELOR CANADA, BURLI		HOT ROLLED PLATES	
B02/ Steel design.		SA516-70		EDMONTON STEEL, EDMON			
B03 Any suppl. requirements		ASME-2A:04+A05 DIL-HUE-2:R21-2006-04-27					

C95 Ladle treatment

ITEM NO.: 01-03

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

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
292660	89773	K1 0,172	0,362	1,17	0,007	0,0005	0,0048	0,049	0,027	0,011	0,047	0,026	0,001	0,000	0,001
297056	20560	K1 0,180	0,362	1,16	0,010	0,0012	0,0079	0,028	0,028	0,010	0,042	0,023	0,000	0,000	0,001
297059	20553	K1 0,183	0,361	1,17	0,009	0,0009	0,0062	0,036	0,028	0,004	0,024	0,030	0,000	0,000	0,000
297060	20618	K1 0,182	0,362	1,17	0,010	0,0004	0,0066	0,034	0,019	0,014	0,029	0,034	0,000	0,000	0,001
297067	30528	K1 0,183	0,347	1,15	0,008	0,0006	0,0057	0,035	0,024	0,006	0,035	0,028	0,001	0,000	0,001
297680	92858	K1 0,178	0,362	1,17	0,008	0,0010	0,0061	0,046	0,026	0,007	0,039	0,027	0,000	0,000	0,000

C94 Product analysis

B07.2 Heat	B07.1 Test No.	TI	B
292660	89773	K1 0,002	0,0002
297056	20560	K1 0,003	0,0003
297059	20553	K1 0,002	0,0000
297060	20618	K1 0,003	0,0000
297067	30528	K1 0,002	0,0001
297680	92858	K1 0,002	0,0000

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2 Heat	B07.1 Test No.	K1 FO-02=	0,38	FO-55=	0,11
292660	89773	K1 FO-02=	0,38	FO-55=	0,10
297056	20560	K1 FO-02=	0,39	FO-55=	0,09
297059	20553	K1 FO-02=	0,39	FO-55=	0,10
297060	20618	K1 FO-02=	0,39	FO-55=	0,10

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

QM-System: Certification as per ISO 9001

A04		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department		A01	
		A+B		KW	
Manufacturer's mark		Inspector's stamp		Date 12.07.07	
B. MUELLER Test House Manager				1	



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No/ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		264364-11.07.07	321444-001	9
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A06 Purchaser	A07.1 No.	B01 Product	
DH	Final receiver	ARCELOR CANADA, BURLI	HOT ROLLED PLATES	
		EDMONTON STEEL, EDMON		

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2	B07.1	Cot
Heat	Test No.	
297067	30528	K1 FO-02= 0,39 FO-55= 0,09
297680	92858	K1 FO-02= 0,38 FO-55= 0,10

C94 Carbon equivalent formula / Alloying restrictions

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

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

ITEM NO.: 01-03
RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS
SURFACE AS PER ASME-SA20
THICKNESS AS PER ASME-SA20
LENGTH AND WIDTH AS PER ASME-SA20
FLATNESS AS PER 1/2-ASME-SA20



A04	Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
DH	Manufacturer's mark	Inspector's stamp	KW
	Test House Manager	Date	1

QM-System: Certification as per ISO 9001

B. MUELLER

12.07.07

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004

INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991

MATERIAL TEST REPORT (MTR)

A05 Established inspecting body

A06 Purchaser

Final receiver

ARCELOR CANADA, BURLI A07.1 No. 70316

EDMONTON STEEL, EDMON A07.2 No. E10440-J1010 LG

DE

B02 Steel design. SAS16-70

B03 Any suppl. ASME-2A: 04+A06

requirements DIL-HUE-2:R21-2006-04-27

A10 Advice of dispatch No./
Date of dispatch

266879-03.08.07

A08 Manufacturer's order/
A09 Certificate No.

325081-002

Sheet

1/...

B01 Product

HOT ROLLED PLATES

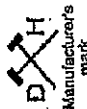


B01-B09 Description of the product

B14 Item No.	B08 Number of pieces	B05 Thickness	B10 Width INCH	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
01	1	0,6250 x	150,0000 x	480,0000 x	5789	N	297628	13856-04	4
01	1	0,6250 x	150,0000 x	480,0000 x	5789	N	298072	26069-01	4
01	1	0,6250 x	150,0000 x	480,0000 x	5789	N	298072	26069-02	4
01	1	0,6250 x	150,0000 x	480,0000 x	5789	N	298072	26069-03	4
**	4	0,6250 x	150,0000 x	480,0000 x	23156				
02	1	0,6250 x	172,0000 x	344,0000 x	4757	N	297628	13856-01	5
02	1	0,6250 x	172,0000 x	344,0000 x	4757	N	297628	13856-03	5
**	2				9514				
03	1	0,7500 x	150,0000 x	480,0000 x	6946	N	298072	26075-01	6
03	1	0,7500 x	150,0000 x	480,0000 x	6946	N	298072	26075-02	6
**	2				13892				
04	1	0,7500 x	172,0000 x	344,0000 x	5708	N	298072	26073-01	7
04	1	0,7500 x	172,0000 x	344,0000 x	5708	N	298072	26073-03	7
**	2				11416				
05	1	0,8750 x	150,0000 x	480,0000 x	8104	N	298072	26077-01	8
05	1	0,8750 x	150,0000 x	480,0000 x	8104	N	298072	26077-02	8
05	1	0,8750 x	150,0000 x	480,0000 x	8104	N	298072	26086-01	8
05	1	0,8750 x	150,0000 x	480,0000 x	8104	N	298072	26086-02	8
**	4				32416				
06	1	0,8750 x	178,0000 x	356,0000 x	7133	N	297060	09333-01	9
07	1	1,1250 x	178,0000 x	356,0000 x	9171	N	297630	09341-01	10
08	1	1,2500 x	150,0000 x	480,0000 x	11577	N	298076	25993-01	11
09	1	1,3750 x	150,0000 x	480,0000 x	12735	N	297630	39768-01	12

A04 2012032003 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001



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

Inspector's stamp

Date 05.08.07

KN

A01



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A08 Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		266879-03.08.07		325081-002		2/...	
MATERIAL TEST REPORT (MTR)				B01 Product			
A06 Established inspecting body		A05 Purchaser		A07.1 No. 70316			
DH		Final receiver		A07.2 No. E10440-U1010 LG			
B02 Steel design. SA516-70		ARCELOR CANADA, BURLI					
B03 Any suppl. ASME-2A:04+A06		EDMONTON STEEL, EDMON					
requirements DIL-HUE-2:R21-2006-04-27							

B01-B99 Description of the product

B04 Item No.	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass	B04 Product delivery condition	B07.2 Heat No.	B07.4 Rolled plate No./ Test No.	A09 Purchaser article number
09	1	1,3750 x	150,00000 x	480,00000	N	297630	39768-02	12
**	2			12735				
***	19			25470				
				143745				

B04 Product delivery condition

ITEM NO.: 01-09
N: HT: 1670 GR.F +36 -27 GR.F
SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)
COOLING IN STILL AIR.

B06 Marking of the product

ITEM NO.: 01-09
STEEL DESIGNATION SA516 70 MTLV SA516 60 MTLV
HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B05 Reference (heat) treatment	C01 C02/ C03 C01 Temp. GRF	C10 C11 KSI RP02	C12 RM	C13	A % LO-BIN	A % LP-BIN	C14-C15
01	297628	13856	K1 Q RT	50,9	75,5		27,0	41,3	
01	298072	26069	K1 Q RT	49,3	72,9				
02	297628	13856	K1 Q RT	50,9	75,5		27,0		
03	298072	26075	K1 Q RT	48,7	72,2		30,9		
04	298072	26073	K1 Q RT	48,9	72,9		29,9		
05	298072	26077	K1 Q RT	50,0	73,8		31,4		

A04 20120220Z We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001



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

Manufacturer's mark

Test House Manager

Inspector's stamp

Date 05.08.07

KW 1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004

INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991

MATERIAL TEST REPORT (MTR)

A05 Established inspecting body

A06 Purchaser

ARCELOR CANADA, BURLI A07.1 No. 70316

Final receiver

EDMONTON STEEL, EDMON A07.2 No. E10440-J1010 LG

B01 Product

HOT ROLLED PLATES

B02/ Steel design. SA516-70

B03 Any suppl. ASME-2A:04+A06

requirements DIL-HUE-2:R21-2006-04-27

A10 Advice of dispatch No./
Date of dispatch

266879-03.08.07

A08/ Manufacturer's order/
A03 Certificate No.

325081-002

Sheet

3/...

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B05 Rol. plate/ Test No.	B05 References (heat) treatment	C01 C01	C02 C02	C03 Temp. GRF	C10 C10	C11 KSI RP02	C12 RM	C13	A % L0=8IN	A % LoadIN	C14-C15
05	298072	26086	K1 Q	RT	49,7	74,1	30,9	30,9	74,1	30,9	30,9	30,9	
06	297060	09333	K1 Q	RT	49,0	73,7	30,9	30,9	73,7	30,9	30,9	30,9	
07	297630	09341	K1 Q	RT	50,8	74,5	28,9	28,9	74,5	28,9	28,9	28,9	
08	298076	25993	K1 QV	RT	49,0	74,4			74,4			32,9	
09	297630	39768	K1 QV	RT	49,4	75,7			75,7			33,4	

C30-C39 Hardness test

B14 Item No.	B07.2 Heat No.	B05 Rol. plate/ Test No.	B05 References (heat) treatment	C01 C01	C02 C02	C03 Temp. GRF	C33 Testing method	C35 C35	C31 Individual values	C32 Mean value
01	297628	13856	K1	RT	HBW 10/3000	148	148	148	148	148
01	298072	26069	K1	RT	HBW 10/3000	143	143	143	143	143
02	297628	13856	K1	RT	HBW 10/3000	148	148	148	148	148
03	298072	26075	K1	RT	HBW 10/3000	143	143	143	143	143
04	298072	26073	K1	RT	HBW 10/3000	148	148	148	148	148
05	298072	26077	K1	RT	HBW 10/3000	145	145	145	145	145
05	298072	26086	K1	RT	HBW 10/3000	146	146	146	146	146
06	297060	09333	K1	RT	HBW 10/3000	147	147	147	147	147
07	297630	09341	K1	RT	HBW 10/3000	142	142	142	142	142
08	298076	25993	K1	RT	HBW 10/3000	139	139	139	139	139
09	297630	39768	K1	RT	HBW 10/3000	150	150	150	150	150

Z01Z02Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001

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



LAMBERT
LAMBERT
Test House Manager

Inspector's stamp

Date 05.08.07

KW 1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A03/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		266879-03.08.07	325081-002	4/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A06 Purchaser	B01 Product		
DH	ARCELOR CANADA, BURLI	HOT ROLLED PLATES		
	EDMONTON STEEL, EDMON			
B02/ Steel design.	SA516-70			
B03 Any suppl. requirements	ASME-2A:04+A06 DIL-HUB-2:R21-2006-04-27			

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C45 Energy	C45 G42 Individual values AV=σ _Y /LEF	C43 Mean value
01	297628	13856		K1 LV		-51		CHP-V				
01	298072	26069		K1 LV		-51		CHP-V				
02	297628	13856		K1 LV		-51		CHP-V				
03	298072	26075		K1 LV		-51		CHP-V				
04	298072	26073		K1 LV		-51		CHP-V				
05	298072	26077		K1 LV		-51		CHP-V				
05	298072	26086		K1 LV		-51		CHP-V				
06	297060	09333		K1 LV		-51		CHP-V				
07	297630	09341		K1 LV		-51		CHP-V				
08	298076	25993		K1 LV		-51		CHP-V				
09	297630	39768		K1 LV		-51		CHP-V				

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	C	Si	Mn	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
297060	Y	0,183	0,367	1,18	0,010	0,0007	0,0065	0,020	0,013	0,027	0,035	0,000	0,000	0,000	0,003
297628	Y	0,183	0,368	1,18	0,013	0,0010	0,0059	0,024	0,009	0,035	0,032	0,001	0,000	0,001	0,001
297630	Y	0,178	0,387	1,18	0,012	0,0015	0,0056	0,022	0,007	0,033	0,027	0,001	0,000	0,000	0,002
298072	Y	0,170	0,364	1,20	0,011	0,0012	0,0046	0,024	0,005	0,033	0,043	0,000	0,001	0,001	0,002
298076	Y	0,189	0,318	1,14	0,008	0,0009	0,0045	0,027	0,005	0,030	0,019	0,000	0,000	0,001	0,002

A04	201202/203	We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
		 LAMBERT Test House Manager	ADB Inspector's stamp	Date 05.08.07 KW 1

QM-System: Certification as per ISO 9001



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1. AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		A10 Advice of dispatch No./ Date of dispatch 266879-03.08.07	A03 Manufacturer's order/ A03 Certificate No. 325081-002	Sheet 5/...
A05 Established inspecting body DH		B01 Product HOT ROLLED PLATES		
B02 Steel design. B03 Any suppl. requirements		A07.1 No. 70316 A07.2 No. E10440-J1010 LG		
A06 Purchaser DIL-HUB-21R21-2006-04-27		ARCELOR CANADA, HURLI EDMONTON STEEL, EDMON		
A06 Receiver Final receiver		ARCELOR CANADA, HURLI EDMONTON STEEL, EDMON		

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	B	CA	AL-T	
297060	Y	0,0001	0,0016	0,036	
297628	Y	0,0001	0,0025	0,035	
297630	Y	0,0001	0,0032	0,034	
298072	Y	0,0001	0,0022	0,035	
298076	Y	0,0000	0,0022	0,039	

B07.2 Heat	C94 Heat analysis	Carbon equivalent	Alloying restrictions	
297060	FO-02=	0,39	FO-55=	0,10
297628	FO-02=	0,39	FO-55=	0,10
297630	FO-02=	0,39	FO-55=	0,09
298072	FO-02=	0,38	FO-55=	0,11
298076	FO-02=	0,39	FO-55=	0,08

C95 Ladle treatment

ITEM NO.: 01-09
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

C70-C99 Chemical composition % - Product analysis

B07.2 Heat	B07.1 Test No.	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
297060	09333	K1	0,177	1,18	0,010	0,0009	0,0060	0,018	0,014	0,027	0,034	0,000	0,000	0,001	0,003
297628	13856	K1	0,178	1,16	0,009	0,0008	0,0058	0,022	0,008	0,034	0,030	0,001	0,000	0,001	0,002
297630	09341	K1	0,170	1,15	0,011	0,0018	0,0055	0,020	0,007	0,032	0,026	0,001	0,000	0,001	0,002
297630	39768	K1	0,168	1,17	0,012	0,0019	0,0052	0,021	0,008	0,033	0,026	0,002	0,000	0,001	0,002
298072	26069	K1	0,164	1,17	0,010	0,0008	0,0039	0,022	0,004	0,041	0,023	0,000	0,000	0,000	0,002

A04 2010/02/03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001

APB

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

LAMBERT
Test House Manager

Inspector's stamp Date 05.08.07

KW 1



See reverse for explanations (www.dillingerdg/certificate)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS FEN 150 10204:1995

MATERIAL: TEST REPORT (MTR)

MATERIAL: TEST REPORT 100 Work finished inspecting body	A06 Purchaser
---	-------------------------------

Sender	Receiver
1	1
2	2
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99	99
100	100

B02/ Steel design. SA516-70

ASME-2A: 04+A06

NYL-HUE-2:R21-2006-04-27

270.599 Chemical composition % - Product analysis

B072 Heat	B074 Test No.	C01	C	SI	MM	F	S	N	CU	MO	NI	CR	V	NB	SN	TI
298072	26073	K1	0,165	0,347	1,18	0,009	0,0006	0,0041	0,022	0,003	0,031	0,040	0,000	0,000	0,000	0,002
298072	26074	K1	0,163	0,341	1,17	0,010	0,0010	0,0045	0,022	0,003	0,031	0,023	0,000	0,000	0,000	0,002
298072	26075	K1	0,160	0,342	1,16	0,010	0,0010	0,0045	0,022	0,005	0,032	0,032	0,000	0,000	0,001	0,002
298072	26077	K1	0,158	0,355	1,18	0,009	0,0010	0,0046	0,022	0,004	0,030	0,084	0,001	0,001	0,000	0,002
298076	25993	K1	0,181	0,305	1,12	0,009	0,0013	0,0048	0,026	0,004	0,027	0,029	0,001	0,000	0,000	0,002

CO₂ Product analysis **Carbon equivalent / Alloying restrictions**

B07.2	B07.1	Test No.	
Host			
297060	09333	K1 FO-02=	0.39 FO-55=
297628	13856	K1 FO-02=	0.38 FO-55=
297630	09341	K1 FO-02=	0.37 FO-55=
297630	39768	K1 FO-02=	0.37 FO-55=
		K1 FO-02=	0.37 FO-55=
		K1 FO-02=	0.37 FO-55=

201/232/203 We hereby certify that the above mentioned materiel/s have been delivered in accordance with the terms of order.

QMS-System: Certification as per ISO 9001

Manufacturer's
mark

LAMBERT
Post Route Manager

Tool House Manager
TYNDEN

Inspector's stamp

Date 05.08.07

1. MDX

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



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08 Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		266879-03.08.07	325081-002	7
MATERIAL TEST REPORT (MTR)		B01 Product		
A05 Established inspecting body	A06 Purchaser	HOT ROLLED PLATES		
DH	Final receiver			
B02/ Steel design. SA516-70				
B03 Any suppl. ASME-2A:04+A06				
requirements DIL-HUB-2:R21-2006-04-27				
ARCELOR CANADA, BURLI A07.1 No. 70316				
EDMONTON STEEL, EDMON A07.2 No. B10440-J1010 LG				

C94 Product analysis Carbon equivalent / Alloying restrictions

EN7.2 Heat	B07.1 Test No.	CM
298072 26073	K1 FO-02=	0,37 FO-55= 0,10
298072 26074	K1 FO-02=	0,37 FO-55= 0,08
298072 26075	K1 FO-02=	0,36 FO-55= 0,09
298072 26077	K1 FO-02=	0,38 FO-55= 0,14
298076 25993	K1 FO-02=	0,38 FO-55= 0,09

C94 Carbon equivalent formula / Alloying restrictions

FO-02 = $C + (Mn/6) + (Cr+Mo+V)/5 + (Ni+Cu)/15$
FO-55 = $Cu+Mo+Ni+Cr$
FO-78 = $Cr+Mo$
FO-91 = Mn/C

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

ITEM NO.: 01-09
RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS
SURFACE AS PER ASME-SA20
THICKNESS AS PER ASME-SA20
LENGTH AND WIDTH AS PER ASME-SA20
FLATNESS AS PER 1/2-ASME-SA20



A04	D/H	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
QM-System: Certification as per ISO 9001		Inspector's stamp	Date 05.08.07
D/H		Test House Manager	KW

POSCO Mill Test Certificate/검사증명서

Certificate No./증명서번호: 070920-PPSA-002-007
Date of Issue/발행일자: 2007. 9. 27

Order No./계약번호: 0002923345

Supplier/주원자: DAE WOO INTERNATIONAL CORP.

Customer/고객사: EDMONTON EXCHANGER

PO No./주문번호: E10613
(ASME2004 EDITION)

Commodity/품명: HR STEEL PLATE (EN10204 3.1B)

Spec & Type/규격: ASME SA516-70 AND SA 20(ASME2004 EDITION)

Size/지수	Product No. 제품번호	COIL Weight 중량 (kg) (LBS)	Heat No. 제강번호	POSITION	Tensile/인장시험			Impact/ 충격시험		Chemical Composition/화학성분(%)																		
					YP (KSI)	TS (KSI)	EL (%)	V Notch -50°F	Energy SF (FT-LBS)	C	Si	Mn	P	S	Cr	Ni	B	Cu	Mo	Nb	Ti	V	Al					
0.750"x120.50"x480"	PB41012201-2203	36,897	SB83717	T	51.8	75.9	31	2:128 3:129 A:133 1:170 2:154 3:141 A:155 221,389 (LBS)		1728	347	1167	63	19	1	23	Tr	86	Tr	Tr	1	19	32					
*** Sub Total (960) ***		18			100,422 (kg)																							
0.875"x96.50"x480"	PB40988801-8903 HEAT TREATMENT ==> Normalized : 890°C 35min.	34,485	SB83713	T	50.9	76.7	29	1:138 2:112 3:144 A:131		1745	352	1200	76	18	2	22	Tr	84	Tr	Tr	2	18	31					
0.875"x96.50"x480"	PB40988801-8802	22,990	SB83713	T	51.5	78.8	30	1:131 2:153 3:118 A:134		1745	352	1200	76	18	2	22	Tr	84	Tr	Tr	2	18	31					
0.875"x96.50"x480"	PB40988801-8703	34,485	SB83715	T	50.3	75.3	29	1:116 2:96		1744	363	1154	76	18	2	24	Tr	97	Tr	Tr	1	19	34					

- * Position : T : Top, M : Middle, B : Bottom
- * Tensile Test. Direction : Transversal, Gauge Length : 200mm (Rectangular), YP Method : 0.2% off-set
- * Impact Test. Direction : Longitudinal, T.L.R. (Trans Longitude Ratio)
- * Division : L-Ladle Analysis
- * Chemical Composition Unit : 2x1/100, 3x1/1000, 4x1/10000, 5x1/100000
- * Tr : It is within the standard range (<0.008%) and include trace element.
- * Supply Condition : As-Rolled unless otherwise Heat Treated.



A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and approved by customer as conforming to the requirements of ASME Sec. III dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. III
B) No repair welding was performed to the products.
C) The product numbers listed on this test report identifies the material
- We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
* This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

W.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea

Chief of material testing section Jo, Won Gook

POSCO Mill Test Certificate/검사증명서

Certificate No./증명서번호: 070920-PPSA-002-008
Date of Issue/발행일자: 2007. 9. 27



Order No./계약번호: 0002923345
Supplier/주문자: DAE WOO INTERNATIONAL CORP.
Customer/고객사: EDMONTON EXCHANGER

PO No./주문번호: E10613
(ASME2004EDITION)
Commodity/품명: HR STEEL PLATE (EN10204 3.1B)
Spec & Type/규격: ASME SA516-70 AND SA 20(ASME2004EDITION)

Size/치수	Product No. 제품번호	COIL Weight 중량 (kg) (LBS)	Heat No. 제강번호	POSITION	Tensile/인장시험			Impact/ 충격시험		Chemical Composition/화학성분(%)
					YP (KSI)	TS (KSI)	EL (%)	V Notch -50°F Energy (FT-LBS)	SF (%)	
*** Sub Total (470) ***		8								
*** HEAT TREATMENT *** 0.875"x120.50"x480"	PB40992801-2803	3 19,536 43,068	SB83708	T	52.5	78.2	28		3:101 A-104 91,958 (LBS)	L 1950 343 1152 120 16 2 24 Tr 91 Tr Tr 2 20 36
0.875"x120.50"x480"	PB40993101-3103	3 19,536 43,068	SB83708	T	51.5	78.3	27		1:105 2:100 3:105 A-103 1:105 2:78 3:47 A-77	L 1950 343 1152 120 16 2 24 Tr 91 Tr Tr 2 20 36
0.875"x120.50"x480"	PB41011701-1703	3 19,536 43,068	SB83708	T	51.5	77.7	27		1:75 2:74 3:53 A-71	L 1950 343 1152 120 16 2 24 Tr 91 Tr Tr 2 20 36
0.875"x120.50"x480"	PB40992901-2903	3 19,536 43,068	SB83708	T	51.3	78.2	29		1:86 2:87 3:90	L 1950 343 1152 120 16 2 24 Tr 91 Tr Tr 2 20 36

Position - T: Top, M: Middle, B: Bottom
Tensile Test. Direction: Transversal, Gauge Length: 200mm(Rectangular),
YP Method: 0.2% off-set
Impact Test. Direction: Longitudinal,
T.L.R(Trans Longitude Ratio)
Division: L:Ladle Analysis
Chemical Composition Unit: -2x1/100, -3x1/1000, -4x1/10000, -5x1/100000
Tr: It is within the standard range(<0.008%) and include trace element.
Supply Condition: As-Rolled unless otherwise Heat Treated.

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2005 and PQ301 Rev.0 dated JUL.01.2005 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3800 and/or KEPIC MNAI SNA4300.
B) No repair welding was performed to the products.
C) The product numbers listed on this test report identifies the material.
We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
This material is fine grained steel.
* This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

W.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea

Chief of material testing section Jo, Won Gook



posco Mill Test Certificate/검사증명서

Certificate No./증명서번호: 070920-PPSA-002-009
Date of Issue/발행일자: [Redacted]

2007. 9. 27

Order No./계약번호: 0002923345
Supplier/주문자: DAE WOO INTERNATIONAL CORP.
Customer/고객사: EDMONTON EXCHANGER
PO No./주문번호: E10613 (ASME2004 EDITION)
Commodity/품명: HR STEEL PLATE (EN10204 3.1B)
Spec. & Type/규격: ASME SA516-70 AND SA 20(ASME2004 EDITION)

Size/치수	Product No. 제품번호	COIL Weight 중량 (kg) (LBS)	Heat No. 재강번호	Tensile/인장시험			Impact/ 충격시험 V Notch -50°F Energy -SF (FT-LBS) (%)	Chemical Composition/화학성분(%)																		
				YP (KSI)	TS (%)	EL (%)		C	Si	Mn	P	S	Cr	Ni	B	Cu	Mo	Nb	Ti	V	Al					
0.875"x120.50"x480"	PB40989001-3003	3 19,536 43,068	SB83713	52.4	76.7	28	A88 1:129 2:133 3:102 A:122	1745 352 1200 76 18 2 22 Tr 84 Tr Tr 2 18 31																		
0.875"x120.50"x480"	PB41073901-3902	2 13,024 28,712	SB83717	50.5	75.3	28	1:111 2:91 3:112 A:105	1728 347 1167 63 19 1 23 Tr 86 Tr Tr 1 19 32																		
0.875"x120.50"x480"	PB41254901	1 6,512 14,356	SB83717	50.6	76.6	32	1:133 2:111 3:125 A:123	1728 347 1167 63 19 1 23 Tr 86 Tr Tr 1 19 32																		
*** Sub Total (080) ***		18		117,216 (kg)			258,413 (LBS)																			
*** HEAT TREATMENT ***	Normalized: 890 C 48min.																									
1,000"x66.50"x480"	PB40988601-3602	2 11,916 26,270	SB83713	50.9	76.0	31	1:121 2:127 3:125	1745 352 1200 76 18 2 22 Tr 84 Tr Tr 2 18 31																		

* Position: T: Top, M: Middle, B: Bottom.
* Tensile Test: Direction: Transversal, Gauge Length: 200mm (Rectangular).
* Impact Test: Direction: Longitudinal.
* Division: L: Laid Analysis
* Chemical Composition Unit: 2x1/100, 3x1/1000, 4x1/10000, 5x1/100000
* Tr: It is within the standard range (<0.008%) and include trace element.
* Supply Condition: As-Rolled unless otherwise Heat Treated.

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and PQG01 Rev.0 dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3600 and/or KEPIC MINA/ SNA4300.
B) No repair welding was performed to the products.
C) The product numbers listed on this test report identifies the material.
We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
This material is fine grained steel.
* This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

W.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea

Chief of material testing section Jo, Won G

posco Mill Test Certificate/검사증명서

Certificate No./증명서번호: 070920-PPSA-002-018
 Date of Issue/발행일자: 2007. 9. 27

Order No./계약번호: 0002923345
 Supplier/주원자: DAE WOO INTERNATIONAL CORP.
 Customer/고객사: EDMONTON EXCHANGER
 PO No./주문번호: E10613 (ASME2004EDITION)
 Commodity/품명: HR STEEL PLATE (EN10204 3.1B)
 Spec & Type/규격: ASME SA516-70 AND SA 20(ASME2004EDITION)

Size/지수	Product No. 제품번호	COIL Weight 중량 (kg) (LBS)	Heat No. 재강번호	Tensile/인장시험 YP TS EL (KSI) (%)		Impact/충격시험 V Notch -50°F Energy SF (FT-LBS) (%)	Chemical Composition/화학성분(%)																		
*** Sub Total (150) ***		4		44,828 (kg)	98,827 (LBS)																				
*** HEAT TREATMENT T ==> Normalized : 890°C 71min. ***		186		1,078,680 (kg)	2,378,047 (LBS)																				
*** Lot Total ***		186		1,078,680 (kg)	2,378,047 (LBS)																				
*** Grade Total ***		186		1,078,680 (kg)	2,378,047 (LBS)																				
*** Grand Total ***		186		1,078,680 (kg)	2,378,047 (LBS)	=== Last Item. ===																			
* LOT NO ==> VACUUM DEGASSED																									

COIL

503030

MTR APPROVED

EDMONTON

HEMMINGER

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2008 and PQG01 Rev.0 III

* LOT NO ==> VACUUM DEGASSED

== Last Item ==



A) This material was produced under a quality system manual Rev.5 dated JUL 01, 2005 and PQG01 Rev.0 dated JUL 01, 2005 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3800 and (or) KEPIC MNA/ SNA4300.
 B) No repair welding was performed to the products.
 C) The product numbers listed on this test report identifies the material
 - We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
 This material is fine grained steel.
 * This Mill Test Certificate cannot be copied for any purpose.

* Position : T : Top, M : Middle, B : Bottom
 * Tensile Test. Direction : Transversal, Gauge Length : 200mm(Rectangular),
 YP Method : 0.2% off-set
 * Impact Test. Direction : Longitudinal,
 T.L.R.(Trans Longitude Ratio)
 * Division : L:Ladle Analysis
 * Chemical Composition Unit: -2x1/100, -3x1/1000, -4x1/10000, -5x1/100000
 * Tr : It is within the standard range(<0.008%) and include trace element.
 * Supply Condition : As-Rolled unless otherwise Heat Treated.

Surveyor To: *W.G. Jo*

Chief of material testing section Jo, Won G

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea



[illegible]

PAGE 01

舞阳钢铁有限责任公司
WUYANG IRON AND STEEL CO., LTD



42:58

地址: 中國河南省舞鋼市 Add: Wugang City, Henan Pro., P. R. China 462500

TO:	Wirth Steel Shanghai	E-mail:	wgieco66@vip.163.com
ATTN:	Mr. Gong Chenghua	TEL:	0086-375-8111899
FAX:	021-64153908	PAX:	0086-375-8112634
DATE:	February 12, 2008	PAGE:	1/1

RE: Certificate for PO#8155-V

CERTIFICATION

We hereby certify that all the liquid steel for A516-70 under PO#8155-V has been vacuum degassed and all the plates have been produced as per ASTM/ASME A/SA516-70(Edition 2004-A06). And the Quality Certificates are issued as per EN10204-3.1 (Edition 2004).

Wuyang Iron And Steel Co., Ltd.

February 12, 2008

For and on behalf of
WUYANG IRON AND STEEL CO., LTD

Authorised signature(s)



FROM : PHONE NO. : SEP. 16 2007 06:57PM P1

PAGE 01

舞阳钢铁有限责任公司
WUYANG IRON AND STEEL CO., LTD

地址: 中国河南省舞钢市 Add: Wuyang City, Henan Prov., P. R. China 462500
TO: Wirth Steel Shanghai E-mail: wjleco68@vip.163.com
ATTN: Mr. Gong Chenghua TEL: 0086-375-8111899
FAX: 021-64153908 FAX: 0086-375-8112634
DATE: September 14, 2007 PAGE: 1+1

RE: Certificate

CERTIFICATE

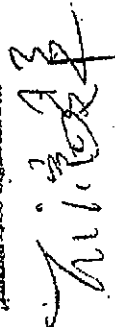
We hereby confirmed the condition of test piece in our MTR is normalized per ASTM A516-70/ASME SA516-70 spec requirement, which is same as the plate delivery condition - Normalized for the plates we sold to Wirth Steel.

Wuyang Iron And Steel Co., Ltd.

September 14, 2007

For and on behalf of
WUYANG IRON AND STEEL CO., LTD.

Authorized signature(s)



FROM :

PHONE NO. :

FEB. 12 2008 11:56AM P1

00003750112634

PAGE 01



舞阳钢铁有限责任公司
WUYANG IRON AND STEEL CO., LTD

地址: 中国河南省舞钢市 Add: Wugang City, Henan Pro., P. R. China 462500

TO:	Wirth Steel Shanghai	E-mail:	wgleco68@vip.163.com
ATTN:	Mr. Gong Chenghua	TEL:	0086-375-8111899
FAX:	021-64153908	PAX:	0086-375-8112634
DATE:	February 12, 2008	PAGE:	1/1

RE: Certificate for PO#8155-V

CERTIFICATION

We hereby certify that all the liquid steel for A516-70 under PO#8155-V has been vacuum degassed and all the plates have been produced as per ASTM/ASME A/SA516-70(Edition 2004-A06). And the Quality Certificates are issued as per EN10204-3.1 (Edition 2004).

Wuyang Iron And Steel Co., Ltd.

February 12, 2008

For and on behalf of
WUYANG IRON AND STEEL CO., LTD

Authorized signature(s)



FROM : PHONE NO. : SEP. 16 2007 06:57PM P1

PAGE 01

舞阳钢铁有限责任公司
WUYANG IRON AND STEEL CO., LTD

地址: 中国河南省舞钢市 Add: Wuyang City, Henan Pro., P. R. China 462500
TO: Wirth Steel Shanghai E-mail: wgleco66@vip.163.com
ATTN: Mr. Gong Chenghua TEL: 0086-375-8111889
FAX: 021-84153908 FAX: 0086-375-8112634
DATE: September 14, 2007 PAGE: 1+1

RE: Certificate

CERTIFICATE

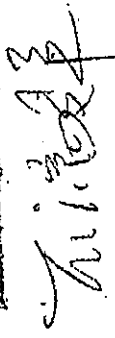
We hereby confirmed the condition of test piece in our MTR is normalized per ASTM A516-70/ASME SA516-70 spec requirement, which is same as the plate delivery condition - Normalized for the plates we sold to Wirth Steel.

Wuyang Iron And Steel Co., Ltd.

September 14, 2007

For and on behalf of
WUYANG IRON AND STEEL CO., LTD

Authorized signature(s)





DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)		A10 Advice of dispatch No./ Date of dispatch:		A08 Manufacturer's order/ A03 Certificate No.		Sheet	
A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		281462-30.11.07		329235-003		1/...	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991							
MATERIAL TEST REPORT (MTR)							
A05 Established inspecting body		A06 Purchaser		A07.1 No.		A07.2 No.	
DH		ARCELOR CANADA CHICA		EDMONTON STEEL, EDMON		E10453-J1010 LG	
B02/ Steel design.		SA516-70					
B03 Any suppl. requirements		ASME-2A:04+A06					
		DIL-HOE-2:R21-2006-04-27					
A06 Product		HOT ROLLED PLATES					



14083

B01-B99 Description of the product.

B14 Item No.	B03 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate No./ Test No.	A09 Purchaser article number
		INCH			KG				
01	1	0,8750 x	178,00000 x	356,00000	7133 N	N	313154	79005-01	
01	1	0,8750 x	178,00000 x	356,00000	7133 N	N	313154	79005-02	
01	1	0,8750 x	178,00000 x	356,00000	7133 N	N	313156	79075-01	
01	1	0,8750 x	178,00000 x	356,00000	7133 N	N	313156	79075-02	
**	4				28532				
***	4				28532				

B04 Product delivery condition

ITEM NO.: 01-02
 N: HT: 1670 GR.F +36 -27 GR.F
 SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)
 COOLING IN STILL AIR

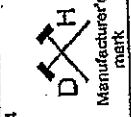
B06 Marking of the product

ITEM NO.: 01-02
 STEEL DESIGNATION SA516 70 MLTY SA516 60 MLTY
 HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B05 Reference (heat) treatment	C01 C02 C03 C04	C05 Temp. GR.F	C10 C11 KSI RPO2	C12 C13 RM	C14-C16 A % LQ=8IN
01	313154	79005	K1 Q	RT	48,0	72,6	30,4
01	313156	79075	K1 Q	RT	51,0	75,1	29,9

A04 201202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



QM-System: Certification as per ISO 9001

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

Inspector's stamp
 Date 30.11.07
 PP 1



DILLINGER HÜTTE

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

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		281462-30.11.07	329235-003	2/...
MATERIAL TEST REPORT (MTR)		B01 Product HOT ROLLED PLATES		
A05 Established inspecting body		A06 Purchaser		
DH		ARCELOR CANADA CHICA A07.1 No.		
Final receiver		EDMONTON STEEL, EDMON A07.2 No. E10453-J1010 LG		
B02/ Steel design.		SA516-70		
B03 Any suppl. requirements		ASME-2A:04+A06 DIL-HUE-2:R21-2006-04-27		

C30-C39 Hardness test

B14 Item No.	B07.2 Heat No.	B07.1 Rot./plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C33 Testing method	C35 Individual values	C32 Mean value
01	313154	79005		K1	O	RT HBW 10/3000	RT HBW 10/3000	HB 140 141 142	141
01	313156	79075		K1	O	RT HBW 10/3000	RT HBW 10/3000	HB 147 148 147	147

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rot./plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C44 Testing method	C46 Energy	C42 Individual values AV=FTLBF	C43 Mean value
01	313154	79005		K1	LV	-51	CHP-V	CHP-V	AV 141	111 121	124
01	313156	79075		K1	LV	-51	CHP-V	CHP-V	AV 150	129 91	123

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	C	Si	Mn	P	S	N	MO	NI	GR	V	NB	SN	TI
313154	Y	0,174	0,330	1,14	0,010	0,0010	0,0065	0,020	0,021	0,018	0,000	0,000	0,002	0,003
313156	Y	0,179	0,362	1,17	0,009	0,0009	0,0067	0,027	0,025	0,042	0,002	0,000	0,002	0,002

C94 Heat analysis Carbon equivalent / Alloying restrictions

B07.2 Heat	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=	FO-02=
313154														
313156														

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

QM-System: Certification as per ISO 9001

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection departmentLAMBERT
Test House Manager

Inspector's stamp

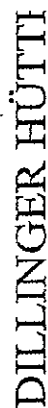
Date 30.11.07

PP

1



Manufacturer's mark

[illegible]

ITEM NO.: 01-02

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

C70-C99 Chemical composition % - Product analysis

B07.2	B07.1	C01	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
Heat	Test No.															
	78859	K1	0,173	0,309	1,13	0,009	0,0012	0,0064	0,019	0,021	0,022	0,018	0,001	0,000	0,001	0,003
	313154	K1	0,177	0,363	1,14	0,008	0,0010	0,0067	0,029	0,025	0,052	0,044	0,003	0,000	0,002	0,002
	79029	K1	0,175	0,359	1,14	0,008	0,0007	0,0068	0,030	0,024	0,052	0,045	0,002	0,000	0,000	0,002
	79075	K1	0,175	0,359	1,14	0,008	0,0007	0,0068	0,030	0,024	0,052	0,045	0,002	0,000	0,000	0,002

B07.2 Heat	B07.1 - Test No.	CD1	B	CA	AL-1
		K1	0,0002	0,0016	0,037
	313154				
	78859	K1	0,0002	0,0020	0,048
	313156				
	79029	K1	0,0000	0,0018	0,049
	313156				
	79075	K1	0,0000	0,0018	0,049

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2	B07.1	C01
Heat	Test No.	
313154	78859	K1 FO-02= 0,37 FO-55= 0,08
313156	79029	K1 FO-02= 0,39 FO-55= 0,15
313156	79075	K1 FO-02= 0,38 FO-55= 0,15

C94 Carbon equivalent formula / Alloying restrictions

$$\text{FeO-02} = \text{C} + (\text{Mn}/6) + (\text{Cr} + \text{Mo} + \text{V})/5 + (\text{Ni} + \text{Cu})/15$$
$$\begin{aligned} \text{FO-02} &= \text{C} + (\text{MN}/6) + (\text{C} \\ \text{FO-55} &= \text{CU} + \text{MO} + \text{NI} + \text{CR} \end{aligned}$$

EO-32 = CR+MO

FO-91 = MN/C

701/202/203 We hereby certify that the above mentioned materials have been delivered in accordance

with the terms of order.

QM-System: Certification as per ISO 9001

$$\frac{A-H}{B}$$

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

Manufacturer's
mark

Manufacturer's
mark

Test House Manager

Inspector's stamp

Date 30.11.07

pp. 1

1



DILLINGER HÜTTENWERKE

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

A02 INSPECTION CERTIFICATE 3.1. AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		281462-30.11.07	329235-003	4
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A08 Purchaser	B01 Product		
DH	Final receiver	HOT ROLLED PLATES		
		A07.1 No.		
		ARCELOR CANADA CHICA		
		A07.2 No.		
		EDMONTON STEEL, EDMON LG		
B02/ Steel design.		SA516-70		
B03 Any suppl. requirements		ASME-2A: 04+A06 DIL-HUE-2: P21-2006-04-27		

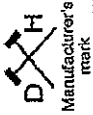
D01 Marking and Identification, surface appearance, shape and dimensional properties

ITEM NO.: 01-02
RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS
SURFACE AS PER ASME-SA20
THICKNESS AS PER ASME-SA20
LENGTH AND WIDTH AS PER ASME-SA20
FLATNESS AS PER 1/2-ASME-SA20



A04 2017/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001



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

L. Lambert
L. LAMBERT
Test House Manager

Inspector's stamp

Date 30.11.07

PP 1

POSCO Mill Test Certificate/검사증명서

Certificate No./증명서번호 : 080222-PPSA-006-009
Date of Issue/발행일자 : Feb., 27, 2008

Order No./계약번호 : 0003114506

PO No./주문번호 : E 10634-1
(ASME2004EDITION)

Supplier/주문자 : DAE WOO INTERNATIONAL CORP.

Commodity/품명 : HR STEEL PLATE (EN10204 3.1B)

Customer/고객사 : EDMONTON EXCHANGER

Spec & Type/규격 : ASME SA516-70 AND SA 20(ASME2004EDITION)



Size/치수	Product No. 제품번호	COIL Quantity 수량	Weight 중량 (kg) (LBS)	Heat No. 재강번호	P O S T O N	Tensile/인장시험 YP TS EFL (KSI) (%)	Impact/ 충격시험 V Notch -50°F Energy SF (FT-LBS) (%)	D I M E N S I O N	Chemical Composition/화학성분(%)	C C S I M n P S C r N i B C u M o N b T i V S o l A l
*** HEAT TREATMENT ==> Normalized : 890°C 35min.										
0.875"x96.50"x480"	PB46803601-3603	3	15,642 34,485	SB96741	T	50.3 75.6 29	1:134 2:130 3:117 A:128	L	1912 343 1151 120 9 2 22 1 100 Tr	1 19 23
0.875"x96.50"x480"	PB468030301	1	5,214 11,495	SB96741	T	51.1 76.0 29	1:136 2:82 3:68 A:98	L	1912 343 1151 120 9 2 22 1 100 Tr	1 19 23
0.875"x96.50"x480"	PB4680201-0203	3	15,642 34,485	SB96741	T	51.9 76.4 32	1:130 2:119 3:84 A:111	L	1912 343 1151 120 9 2 22 1 100 Tr	1 19 23
0.875"x96.50"x480"	PB46808901-8903	3	15,642 34,485	SB96741	T	51.1 75.9 28	1:125 2:117 3:131 A:125	L	1912 343 1151 120 9 2 22 1 100 Tr	1 19 23

Position : T : Top, M : Middle, B : Bottom
Tensile Test, Direction : Transversal, Gauge Length : 200mm (Rectangular),
YP Method : 0.2% off-set
Impact Test, Direction : Longitudinal,
T.L.R (Trans Longitude Ratio)
Division - L: Lade Analysis
Chemical Composition Unit : -2x1/100, -3x1/1000, -4x1/10000, -5x1/100000
Tr : It is within the standard range (<0.008%) and include trace element.
Supply Condition : As-Rolled unless otherwise Heat Treated.

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and PQG01 Rev.0 dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3800 and (or) KEPIC MNAV SNA4300.
B) No repair welding was performed to the products.
C) The product numbers listed on this test report identifies the material
- We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
This material is fine grained steel.
* This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

W.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea

Chief of material testing section

Jo, Won Gook



POSCO Mill Test Certificate/검사증명서

Certificate No./증명서번호: 080222-PPSA-006-010
Date of Issue/발행일자: Feb., 27, 2008

Order No./계약번호: 0003114506

PO No./주문번호: E 10634-1

(ASME2004EDITION)

Supplier/주문자: DAE WOO INTERNATIONAL CORP.

Commodity/품명: HR STEEL PLATE (EN10204 3.1B)

Customer/고객사: EDMONTON EXCHANGER

Spec & Type/규격: ASME SA516-70 AND SA 20(ASME2004EDITION)

Size/치수	Product No. 제품번호	COIL Quantity 수량	Weight 중량 (kg) (LBS)	Heat No. 제강번호	Tensile/인장시험 Yp TS EL (KSI) (%)	Impact/충격시험 V Notch : -50°F Energy SF (FT-LBS) (%)	D T V I S I P N	Chemical Composition/화학성분(%)	C	P	S	Cr	Ni	B	Cu	Mn	Nb	Ti	V	Al	
0.875"x86.50"x480"	PB46803501-3503	3	15,642 34,485	SB96743	51.1 76.9 31	1119 2123 3120 A121	L	1941 334 1183 88 20 2 20 1 93 Tr 1 16 34	1941	334	1183	88	20	2	20	1	93	Tr	1	16	34
0.875"x86.50"x480"	PB46803401-3403	3	15,642 34,485	SB96743	51.5 76.9 28	1125 2135 3138 A133	L	1941 334 1183 88 20 2 20 1 93 Tr 1 16 34	1941	334	1183	88	20	2	20	1	93	Tr	1	16	34
*** Sub. Total (480) *** *** HEAT TREATMENT ***			16 83,424 (kg) 183,916 (LBS)																		
0.875"x120.50"x480"	PB46995101-5102	2	13,024 28,712	SB96746	51.3 77.3 29	1177 2178 3177 A178	L	1948 334 1135 88 14 2 20 1 94 Tr 1 16 27	1948	334	1135	88	14	2	20	1	94	Tr	1	16	27
0.875"x120.50"x480"	PB46971201-1203	3	19,536 43,068	SB96746	51.5 76.9 29	1122 2399 386 A103	L	1948 334 1135 88 14 2 20 1 94 Tr 1 16 27	1948	334	1135	88	14	2	20	1	94	Tr	1	16	27
0.875"x120.50"x480"	PB46807801-7803	3	19,536	SB96749	50.3 76.6 28	1119	L	1950 330 1144 76 14 2 23 Tr 94 Tr 1 18 38	1950	330	1144	76	14	2	23	Tr	94	Tr	1	18	38

* Position : T : Top, M : Middle, B : Bottom
* Tensile Test. Direction : Transversal, Gauge Length : 200mm (Rectangular)
* YP Method : 0.2% off-set
* Impact Test. Direction : Longitudinal
* T.L.R (Trans Longitudinal Ratio)
* Division : L-Ladle Analysis
* Chemical Composition Unit : -2x1/1000, -3x1/1000, -4x1/10000, -5x1/100000
* Tr : It is within the standard range (<0.008%) and include trace element.
* Supply Condition : As-Rolled unless otherwise Heat Treated.

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and PQG01 Rev.0 dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3800 and (or) KEPIC MNA/ SNA4300.
B) No repair welding was performed to the products.
C) The product numbers listed on this test report identifies the material.
We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
This material is fine grained steel.
* This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

W.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea

Chief of material testing section Jo, Won Gook



POSCO Mill Test Certificate/검사증명서

Certificate No./증명서번호: 080222-PPSA-006-011
Date of Issue/발행일자: Feb., 27, 2008

Order No./계약번호: 0003114506

PO No./주문번호: 10634-1
(ASME2004EDITION)

Supplier/주문자: DAE WOO INTERNATIONAL CORP.

Commodity/품명: HR STEEL PLATE (EN10204 3.1B)

Customer/고객사: EDMONTON EXCHANGER

Spec & Type/규격: ASME SA516-70 AND SA 20(ASME2004EDITION)

Size/치수	Product No. 제품번호	COIL Quantity 수량	Weight 중량 (kg) (LBS)	Heat No. 제강번호	Tensile/인장시험 YP TS EL (KSI) (%)	Impact/충격시험 V Notch -50°F Energy SF (FT-LBS) (%)	Chemical Composition/화학성분(%)										
0.875"x120.50"x480"	PB46807701-7703	3	19,536 43,068	SB96749	52.2 79.0 30	2.133 3.105 A-119	C 4 -3 -3	Si 330	Mn 1144	P 78	S 14	Cr 2	Ni 23	Mo 94	Nb Tr	Ti 1	V Sol-Al 18 38
0.875"x120.50"x480"	PB46807601-7603	3	19,536 43,068	SB96749	50.8 75.9 29	2.91 3.39 A-108	C 4 -3 -3	Si 330	Mn 1144	P 78	S 14	Cr 2	Ni 23	Mo 94	Nb Tr	Ti 1	V Sol-Al 18 38
0.875"x120.50"x480"	PB46828001-8003	3	19,536 43,068	SB96749	50.8 75.7 29	1.81 2.81 3.114	C 4 -3 -3	Si 330	Mn 1144	P 78	S 14	Cr 2	Ni 23	Mo 94	Nb Tr	Ti 1	V Sol-Al 18 38
0.875"x120.50"x480"	PB46827901-7903	3	19,536 43,068	SB96749	49.2 75.3 30	1.136 2.131 3.143	C 4 -3 -3	Si 330	Mn 1144	P 78	S 14	Cr 2	Ni 23	Mo 94	Nb Tr	Ti 1	V Sol-Al 18 38

Position - T: Top, M: Middle, B: Bottom
Tensile Test: Direction: Transversal, Gauge Length: 200mm (Rectangular)
YP Method: 0.2% off-set
Impact Test: Direction: Longitudinal
T.L.R (Trans Longitude Ratio)
Division - L: Ladle Analysis
Chemical Composition Unit: -2x1/100, -3x1/1000, -4x1/10000, -5x1/100000
Tr: It is within the standard range (<0.008%) and include trace element.
Supply Condition: As-Rolled unless otherwise Heat Treated.

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and PQG01 Rev.0 dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3800 and/or KEPIC MNA/ SNA4300.
B) No repair welding was performed to the products.
C) The product numbers listed on this test report identifies the material
- We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
This material is fine grained steel.
* This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

W.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-795, Korea

Chief of material testing section Jo, Won Gook



Certificate No./증명서번호:080222-PPSA-006-012
Date of Issue/발행일자:Feb., 27, 2008

PO No./주문번호: E 10634-1
(ASME2004EDITION)

Commodity/품명: HR STEEL PLATE (EN10204 3.1B) (HIMELCOSELECTION)

Spec & Type/구분: ASME SA516-70 AND SA 20(ASME2004 EDITION)

TIME	PERSON	ROOM	DATE	TIME	PERSON	ROOM	DATE
10:00-10:15	NO	0-1	NO	10:15-10:30	NO	0-1	NO
10:30-10:45	NO	0-1	NO	10:45-11:00	NO	0-1	NO
11:00-11:15	NO	0-1	NO	11:15-11:30	NO	0-1	NO
11:30-11:45	NO	0-1	NO	11:45-12:00	NO	0-1	NO
12:00-12:15	NO	0-1	NO	12:15-12:30	NO	0-1	NO
12:30-12:45	NO	0-1	NO	12:45-1:00	NO	0-1	NO
1:00-1:15	NO	0-1	NO	1:15-1:30	NO	0-1	NO
1:30-1:45	NO	0-1	NO	1:45-2:00	NO	0-1	NO
2:00-2:15	NO	0-1	NO	2:15-2:30	NO	0-1	NO
2:30-2:45	NO	0-1	NO	2:45-3:00	NO	0-1	NO
3:00-3:15	NO	0-1	NO	3:15-3:30	NO	0-1	NO
3:30-3:45	NO	0-1	NO	3:45-4:00	NO	0-1	NO
4:00-4:15	NO	0-1	NO	4:15-4:30	NO	0-1	NO
4:30-4:45	NO	0-1	NO	4:45-5:00	NO	0-1	NO
5:00-5:15	NO	0-1	NO	5:15-5:30	NO	0-1	NO
5:30-5:45	NO	0-1	NO	5:45-6:00	NO	0-1	NO
6:00-6:15	NO	0-1	NO	6:15-6:30	NO	0-1	NO
6:30-6:45	NO	0-1	NO	6:45-7:00	NO	0-1	NO
7:00-7:15	NO	0-1	NO	7:15-7:30	NO	0-1	NO
7:30-7:45	NO	0-1	NO	7:45-8:00	NO	0-1	NO
8:00-8:15	NO	0-1	NO	8:15-8:30	NO	0-1	NO
8:30-8:45	NO	0-1	NO	8:45-9:00	NO	0-1	NO
9:00-9:15	NO	0-1	NO	9:15-9:30	NO	0-1	NO
9:30-9:45	NO	0-1	NO	9:45-10:00	NO	0-1	NO
10:00-10:15	NO	0-1	NO	10:15-10:30	NO	0-1	NO
10:30-10:45	NO	0-1	NO	10:45-11:00	NO	0-1	NO
11:00-11:15	NO	0-1	NO	11:15-11:30	NO	0-1	NO
11:30-11:45	NO	0-1	NO	11:45-12:00	NO	0-1	NO
12:00-12:15	NO	0-1	NO	12:15-12:30	NO	0-1	NO
12:30-12:45	NO	0-1	NO	12:45-1:00	NO	0-1	NO
1:00-1:15	NO	0-1	NO	1:15-1:30	NO	0-1	NO
1:30-1:45	NO	0-1	NO	1:45-2:00	NO	0-1	NO
2:00-2:15	NO	0-1	NO	2:15-2:30	NO	0-1	NO
2:30-2:45	NO	0-1	NO	2:45-3:00	NO	0-1	NO
3:00-3:15	NO	0-1	NO	3:15-3:30	NO	0-1	NO
3:30-3:45	NO	0-1	NO	3:45-4:00	NO	0-1	NO
4:00-4:15	NO	0-1	NO	4:15-4:30	NO	0-1	NO
4:30-4:45	NO	0-1	NO	4:45-5:00	NO	0-1	NO
5:00-5:15	NO	0-1	NO	5:15-5:30	NO	0-1	NO
5:30-5:45	NO	0-1	NO	5:45-6:00	NO	0-1	NO
6:00-6:15	NO	0-1	NO	6:15-6:30	NO	0-1	NO
6:30-6:45	NO	0-1	NO	6:45-7:00	NO	0-1	NO
7:00-7:15	NO	0-1	NO	7:15-7:30	NO	0-1	NO
7:30-7:45	NO	0-1	NO	7:45-8:00	NO	0-1	NO
8:00-8:15	NO	0-1	NO	8:15-8:30	NO	0-1	NO
8:30-8:45	NO	0-1	NO	8:45-9:00	NO	0-1	NO
9:00-9:15	NO	0-1	NO	9:15-9:30	NO	0-1	NO
9:30-9:45	NO	0-1	NO	9:45-10:00	NO	0-1	NO

A. This material was conducted under a multiple program mission. Day 5 ended 11:01 01 2005 and DAY04 DAY05

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and PQG01 Rev.0 dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3800 and (or) KEPIC MINA/ SNA4300.

C) The product numbers listed on this test report identifies the material.

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

This material is fine grained steel.

* This Mill Test Certificate cannot be copied for any purpose.

25

Chief of material testing section



POSCO Mill Test Certificate/검사증명서

Certificate No./증명서번호 :080225-PPSA-004-001
Date of Issue/발행일자:Feb., 27, 2008

Order No./계약번호:0003114506

PO No./주문번호:E 10634-1
(ASME2004 EDITION)

Supplier/주문자:DAE WOO INTERNATIONAL CORP.

Commodity/품명:HR STEEL PLATE (EN10204 3.1B)

Customer/고객사:EDMONTON EXCHANGER

Spec & Type/규격:ASME SA516-70 AND SA 20(ASME2004 EDITION)

Size/치수	Product No. 제품번호	COIL Quality 수량	Weight 중량 (kg) (LBS)	Heat No. 제강번호	F T S T O N	Tensile/인장시험 Y.P. T.S. E.L. (%) (KSI)	Impact/충격시험 V Notch 30°F Energy SF (FT-LBS) (%)	Chemical Composition/화학성분(%)											
								C	Si	Mn	P	S	Cr	Ni	B	Cu	Mo	Nb	Ti
0.875"x120.50"x480"	PC37834801	1	6,512 14,366	SB86670	T	53.4 77.3 28	1:119 2:142 3:133 A:131 14,356 (LBS)	L 1817 342 1151 68 15 2 23 Tr 89 Tr 1 19 25											
*** Sub Total (@90) ***			1			6,512 (kg)													
*** HEAT TREATMENT ***			Normalized : 890 C 45min.																
*** Lot Total ***			238			1,488,417 (kg)	3,281,349 (LBS)												
*** Grade Total ***			238			1,488,417 (kg)	3,281,349 (LBS)												
*** Grand Total ***			238			1,488,417 (kg)	3,281,349 (LBS)												

*** Last Item ***

*** LOT NO ==> VACUUM DEGASSED ***



* LOT NO ==> VACUUM DEGASSED



* Position - T: Top, M: Middle, B: Bottom
* Tensile Test. Direction: Transversal, Gauge Length: 200mm (Rectangular), YP Method: 0.2% offset
* Impact Test. Direction: Longitudinal, T.L.R (Trans Longitude Ratio)
* Division - L: Ladle Analysis
* Chemical Composition Unit: 2x1/100, 3x1/1000, 4x1/10000, 5x1/100000
* Tr: It is within the standard range (<0.008%) and includes trace element.
* Supply Condition: As-Rolled unless otherwise Heat Treated.

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and approved by customer as conforming to the requirements of ASME Sec. II dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. II
NCA-3800 and (or) KEPIC MINA/ SNA4300.
B) No repair welding was performed to the products.
C) The product numbers listed on this test report identifies the material
- We hereby certify that the material herein has been made and tested in accordance with the above specification, and also with the requirements called for by the above order.
This material is fine grained steel.
* This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

W.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea

Chief of material testing section

Jo, Won Gook





DAEWOO
INTERNATIONAL
www.daewoointernational.com

100-714 서울 중구 남대문로 52가41 (대우센터) 중랑사저항 2810호

C.P.O Box 2810 Seoul 100-714, Korea TEL: 755-2114 / FAX: 755-9450

Mar 11, 2008

ATTN : Edmonton Exchanger.
C.C : To whom it may concern.

Subject: Poseo Plate SA516 Grade 70 for Pressure Vessel Quality.

This letter is written to certify that Posco/Daewoo comply with DIN 50049/3.1B, EN10204(2004)/3.1B and ISO 10474/3.1B, also guarantee ASME 2004 Edition-2006 Addendum for PQ no. 10623 and 10634 which was supplied by Posco for Edmonton Exchanger. Due to limited space in MTR electric system, it only shows ASME 2004 Edition and EN10204 3.1(or ISO10474 3.1B) which please understand.

Best Regard,

Y.H.KIM

Team Leader

Hot Rolled Steel Team 3, Steel Division 1
Daewoo International Corporation



POSCO Mill Test Certificate/검사증명서

Certificate No./증명서번호 : 080611-PPSA-002-006
Date of Issue/발행일자 : Jun., 25, 2008

Order No./계약번호 : 0903236327

PO No./주문번호 : E10647

Supplier/추문자 : DAE WOO INTERNATIONAL CORP

Commodity/품명 : HR STEEL PLATE (EN10204 3.1B)

Customer/고객사 : EDMONTON EXCHANGER

Spec. & Type/규격 : ASME SA516-70 AND SA 20(ASME2004 EDITION)



Size/치수	Product No. 제품번호	Quantity 수량	Weight 중량 (kg) (LBS)	Heat No. 제강번호	P D S T R O N	Tensile/인장시험		Impact/충격시험 V-Notch -50°F Energy (FT-LBS) (%)	Chemical Composition/화합성분 (%)															
						YP (KSI)	TS (KSI)		EL (%)	C	Si	Mn	P	S	Cr	Ni	B	Cu	Mo	Nb	Ti	V	SoI-Al	
*** Sub Total (340) *** *** HEAT TREATMENT : 890°C 30min *** 0.875"x120.5"x480"		3	30,753	SB05056	T	51.2	76.4	30	A-115	102.513 (LBS)	L	1838	370	1177	85	21	3	24	Tr	112	Tr	1	19	26
0.875"x120.5"x480"	PB51666701-6703	3	19,536 43,068	SB05060	T	51.2	77.2	28	A-104	1125	L	1871	349	1142	94	17	2	21	Tr	84	Tr	1	17	29
*** Sub Total (1050) *** *** HEAT TREATMENT : 890°C 46min *** 1.000"x96.50"x480"	PG40445201-5202	2	11,916 26,270	SB05060	T	49.3	75.1	30	A-112	66.138 (LBS)	L	1871	349	1142	94	17	2	21	Tr	84	Tr	1	17	29

Position: T: Top, M: Middle, B: Bottom
 * Rupture Fast Direction: Transversal, Gauge Length: 200mm (Rectangular)
 YP Method: 0.2% Offset
 * Impact, Test Direction: Longitudinal, Division: L: Transverse, R: Longitudinal
 * Chemical Composition Unit: 2x1/100, 3x1/1000, 4x1/10000, 5x1/100000
 * Tr: It is within the standard range (<0.008%) and include trace element.
 * Supply Condition: As-Rolled unless otherwise Heat Treated.

A) This material was produced under a quality system manual Rev.5 dated JUL.01.2006 and PGG03 Rev.0 dated JUL.01.2006 audited and approved by customer as conforming to the requirements of ASME Sec. III NCA-3800 and/or KEPIC MNA/ SNA4300.
 B) No repair welding was performed to the products.
 C) The product numbers listed on this test report identifies the material.
 We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.
 This material is fine grained steel.
 * This Mill Test Certificate cannot be copied for any purpose.

Surveyor To:

M.G. Jo

POSCO Pohang Works, 5 Dongchon-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, 790-785, Korea

Chief of material testing section

Jo, Won Gook



W
RT-2

Certified By

P.J.V. *GAS FIELD*
SERVICE

Vegreville, Alberta
Phone (780)632-7774

A#604368

UNIT NAME

Vert. 3 Phase Separator

M.A.W.P. Internal

1480 p.s.i.
10205 Kpa.

C.R. NUMBER

P7217.231

HYDRO TEST

2220 p.s.i.
15307 Kpa.

DESIGN TEMP.

100 °F
38 °C

SERIAL NO.

12014

CORR. ALLOW.

1.6 mm

SHELL MAT'L

SA-106-B

SHELL THICK.

21.44 mm

HEAD THICK.

Top-20.63 mm
Bottom-20.63 mm

HEAT TREATMENT

Nil

HEAD MAT'L

Top- SA-516-70
Bottom- SA-516-70

SIZE

406 X 2285 mm

WEIGHT

685 Kg.

MIN. DESIGN METAL TEMPERATURE

TEMPERATURE

-20 °F

-29 °C

@

@

@

PRESSURE

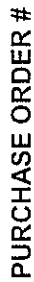
1480 p.s.i.

10204 Kpa.

DATE MFG.

February 2011

802403 #A



2644

DATE _____

October 19, 2010

VENDOR Edmonton Exchanger

DATE REQUIRED	ASAP

JOB NUMBERS

Stock Heads

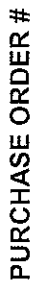
4901 Bruce Road Vegreville, Alberta T9C 1C3

Phone: (780) 632-7774

[illegible]

1. The above items are to be formed to meet the requirements of ASME Section VII, Div. 1 UA 79 and all reference paragraphs.
2. Tack welds that are welded must use procedures and welders qualified to ASME Section IX
3. On all code required material, Markings must be accurately transferred to formed material or cut pieces.

Authorized
Signature



2684

DATE February 3, 2011

VENDOR V.E.G. Oilfield Supply

CONTACT	ALL
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100	100

[illegible]

JOB NUMBERS Separators 12020 to 12021

4901 Bruce Road Vegreville, Alberta T9C 1C3

Phone: (780) 632-7774

[illegible]

1. The above items are to be formed to meet the requirements of ASME Section VII, Div. 1 USC 79(d).

2. Tack welds that are welded must use procedures and welders qualified to ASME Section IX

3. On all code required material, Markings must be accurately transferred to formed material or cut pieces.

Authorized
Signature



ALBERTA MUNICIPAL AFFAIRS

ABSA, the pressure equipment safety authority

9410 - 20th Avenue

Edmonton, AB T6N 0A4

Partial/ Partiel ☐

①604368

MANUFACTURER'S DATA REPORT
FOR PRESSURE VESSEL
DÉCLARATION DE CONFORMITÉ DU CONSTRUCTEUR
D'APPAREILS SOUS PRESSION

Upon shipment of a pressure vessel, this form fully and correctly filled in must be mailed to the office of the Chief Inspector in the province of installation in accordance with the regulations under the Act, governing the construction and installation of pressure vessels.

Au moment de l'expédition d'un appareil sous pression, ce formulaire complété correctement, doit être envoyé au bureau de l'inspecteur en chef de la province d'installation tel que prévu dans les règlements de la loi sur les appareils sous pression.

Manufactured by Construit par	Name and address of Manufacturer/ Nom et adresse du constructeur RJV Gasfield Services 4901 Bruce Road, Vegreville, Alberta T9C 1C3
Manufactured for Construit pour	Name and address of Purchaser or Consignee/ Nom et adresse du client ou de son représentant RJV Gasfield Services 4901 Bruce Road, Vegreville, Alberta T9C 1C3
Ultimate owner Utilisateur	Name and address/ Nom et adresse Stock
Location of installation Lieu d'installation	Address/ Adresse Stock

Pressure vessel/ Appareil

Type/ Genre Vertical 3 Phase Separator	Overall Length/Longueur totale 2285 mm sm/sm	Serial No./ N° de série 12014	Year built/Année de fabrication 2011
Provincial Registration No. - C.R.N./N° d'enregistrement provincial - N.E.C. P7217.231		National Board No./ N° National Board N/A	Drawing No./ N° de dessin V01-381

The chemical and physical properties of all parts meet the requirements of material specifications of the A.S.M.E. Code.

Les propriétés chimiques et physiques de toutes les composantes respectent les exigences des spécifications de matériaux de code ASME.

The design, construction and workmanship conform to CSA B51. La conception, la construction et la façon sont conformes à ACNOR B51.	ASME Section VIII 2007 Edition	Division 1	Addenda/Supplément 2009b	Code case No. N° de cas N/A
Manufacturer's partial data reports properly identified and signed by authorized inspectors have been furnished for the following items of the report, and attached to this report: Les rapports partiels du constructeur adéquatement identifiés et signés par les inspecteurs autorisés ont été produits pour les items suivants du rapport, et attachés à ce rapport:				
Names of parts/ Nom de la composante	Item No./ N° d'item	Manufacturer's Name/ Nom du constructeur	Identifying Stamp/ Estampe d'identification	

Shell/ Virole

Description	Material Matériau	Thickness Épaisseur	Corr. Allow. Surépais. de corr.	Diameter Diamètre	Longitudinal Joints Joints longitudinaux			P.W.H.T. Traitement therm		Girth Joints Joints de circonférence		Number of courses Nombre de sections
					Type	R.T. Radiog.	Efficiency Efficacité	Temp.	Time Durée	Type	R.T. Radiog.	
Shell	SA-106-B	21.44 mm	1.6mm	406mm	Sml's	N/A	100%	N/A	N/A	1	Spot	1
											70%	

Heads/ Tetes

Description	Material Matériau	Min. Thickn. Épais min.	Corr. Allow. Surépais. de corr.	Crown. Radius Rayon couron.	Knuckle Radius Petit rayon	Ellipse Ratio Rapp. ellipse	Conical Apex Angle Angle conique	Hemisph. Radius Ray. Hémisph	Flat Diameter Diam. plat	Side to pressure Côte sous pression
Top	SA-516-70	20.63mm	1.6mm	-----	-----	2.1	-----	-----	-----	Concave
Bottom	SA-516-70	20.63mm	1.6mm	-----	-----	2.1	-----	-----	-----	Concave
Removable bolts used (describe other fastenings) Boulons amovibles utilisés (décrire tout autre attache)					Mat'l Spec./ Spéc. du mat.			Grade		Size/ Dimension

Pressure - Temperature/ Pression - température

Pressure Vessel Part Partie de l'appareil	Constructed for max. allowable working pressure Construit pour une pression maximale de marche permise	At max. temp. A une temp. max.	Min. Temp. (when less than -29°C) Temp. min. (inférieure à -29°C)	Test pressure (hydro-pneumatic or combination) Pression d'épreuve (hydro-pneumatique ou combinaison)
Vessel	10,205 Kpa	38°C	-29°C	15,307 Kpa

Tube Section/ Faisceau tubulaire

Tubesheet/ Plaque tubulaire	Material/ Matériau	Diameter/ Diamètre	Nominal Thickness Épaisseur nominale	Corr. Allow. Surépais. corrosion	Attachment Mode d'attachement
Tube material/ Matériau des tubes	Diameter/ Diamètre	Nominal Thickness (gauge) Épaisseur nominale (calibre)	Number/ Nbre	Type (Straight or U) Type (Droit ou U)	Heating Surface Surface de chauffe

Jacket/ Chemise

Type of jacket/ Genre de chemise	Jacket closure Fermeture de chemise	Proof Test Pression d'épreuve	Heating Surface Surface de chauffe	Sketch/ Schéma
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Safety Valve Outlets/ Soupapes de sûreté

Number/ Nombre 1	Dimension 33.4 mm	Location/ Endroit Shell
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Nozzles and Openings/ Tubulures et ouvertures

Purpose/ But	Number Nombre	Dimension	Type	Material Matériau	Nominal Thickness Épaisseur nominale	Reinforcement matériau de renfort	How attached Genre d'attaches	Location/ Endroit
Inlet/Outlet	2	88.9mm	CL600	SA-105/SA-106-B	15.24mm	N/A	UW16.1(c)	Shell/Top Head
(2) L.L.C. /H.L.S.D./L.L.S.D./ Drain	5	60.3mm	Coupling	SA-105	CL6000	N/A	UW16.1(c)	Shell/Bottom Head
P.S.V.	1	33.4mm	Coupling	SA-105	CL6000	N/A	UW16.1(c)	Shell
(2) Sight Glass /Temp.Indicator	5	26.7mm	Coupling	SA-105	CL6000	N/A	UW16.1(c)	Shell
Pressure Indicator	1	21.4mm	Coupling	SA-105	CL6000	N/A	UW16.1(c)	Shell
(2) Liquid Out	2	33.4mm	Coupling	SA-105	CL6000	N/A	UW16.1(c)	Shell

Supports/ Supports

Skirt/ Jupe Yes/ Oui No/ Non ☒ ☐	Lugs/ Oreilles No./ Nbre No	Legs/ Pieds No./ Nbre No	Other/ Autres (Description) N/A	Attached/ Attaches (Where and How/ Méthode et endroit) Welded to bottom head
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Remarks/ Observations (Cubical capacity/ Volume)

Volume-(.262 Cubic meters)
Except from impact test requirements as per UG 20(f) 1 to 5
Hydrostatically tested in the Vertical Position
Nozzel to shell weld is full penetration

Certificate of Compliance/ Certificat de conformité

We certify that the statements made in this data report are correct and that the said vessel has been constructed in accordance with the Provincial Registered design below and the requirements of standard CSA B51.

Nous certifions que les données de la déclaration de conformité sont correctes et que l'appareil a été construit en accord avec l'enregistrement provincial ci-dessous et les exigences de la norme ACNOR B51.

Provincial Registered Design
Enregistrement provincial P7217.231

Manufacturer
Constructeur RJV Gasfield Services

Signature [Signature] Date FEB 24 2011

Certificate of Compliance - Field Work/ Certificat de conformité - Installation au chantier

We certify that the field installation of all parts of the vessel conforms with the requirements of Provincial Regulations.

Nous certifions que l'installation au chantier de toutes les composantes de l'appareil est conforme aux règlements provinciaux.

Installer's Name
Nom de l'installateur _____

Signature _____

Date _____

Certificate of Shop Inspection/ Certificat d'inspection en usine

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector
Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression
employed by ABSA

of/ de Alberta
have inspected the above vessel and state that to the best of my knowledge and belief, the manufacturer has constructed the vessel in accordance with the Provincial registration CRN P7217.231

and the requirements of standard CSA B51.
ai inspecté l'appareil précité et autant que je sache, crois que le constructeur a construit l'appareil en accord avec l'enregistrement provincial NEC

et les exigences de la norme ACNOR B51. NB 12899A
Inspector's Name JASON RENHART AB248A
Nom de l'inspecteur

Signature [Signature] Date FEB 24/11

Certificate of Field Inspection/ Certificat d'inspection - Installation au chantier

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector
Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression
employed by _____

have inspected the items not covered by the Shop Inspection Certificate and the installation of the items and state that to the best of my knowledge and belief the construction and assembly of the items are in accordance with the Provincial Regulations.

ai inspecté les composantes non couvertes par le certificat d'inspection en usine et l'installation de l'appareil et, autant que je sache, la construction et l'assemblage de l'appareil sont en accord avec les règlements provinciaux.

Inspector's Name _____
Nom de l'inspecteur

Signature _____ Date _____



ACUREN

CLIENT
ATTENTION
ADDRESS

R3V

Dave

Project
Vessel - Spot
Work Location
Vegreville

DATE

Feb 17/11

ACUREN JOB #

231-56647-84

PO/NO #

Serial # 12014

PROCEDURE #

AI-0016

ACCEPTANCE

ASME sec VIII

STANDARD

DIV. 4.552 2010 FOCAL SPOT

Legend 1. Accept 2. Moderate 3. Reject *Weider Symbol

RADIOGRAPHIC TESTING REPORT

R-206186

PAGE

1

OF

1

MATERIAL TYPE

PI

FILM BRAND

Agfa

RADIATION SOURCE

IR 192 ☐ Co 60 ☐ X-RAY

42 ☐ 6.14" MM/IN

KV

	IDENTIFICATION	PIPE DIA.	PIPE SCH	PIPE TYPE	REIN.	TECH #	SOD (D)	OFD (t)	# OF EXP	C R K	I F P	S U C R P	*	DEFECT LOCATION & REMARKS	ACC	REJ
1	SP1 0-6	16"	80	DS	1/8"	2	8"	84"	1					M, K		✓
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																

SIGNATURES
CLIENT REPRESENTATIVE: Wes PRINT
TECHNICIAN (SIGN): B. Osmund PRINT
PRINT NAME: Brod Osmund TECHNICIAN
CGSB LEVEL: II SNT LEVEL: II
CGSB REGISTRATION # 3161
CGSB LEVEL: II SNT LEVEL: II
CGSB REGISTRATION # 3161
TECHNICIAN/ASSISTANT: M. Lederec
SIGNATURE: Wes
FILM USED: 1 PCS
FILM SIZE: 4 1/2 x 8 1/2 DTR # A 345512
REFER TO OPPOSITE SIDE FOR SCOPE OF SERVICES AND STANDARD OF CARE

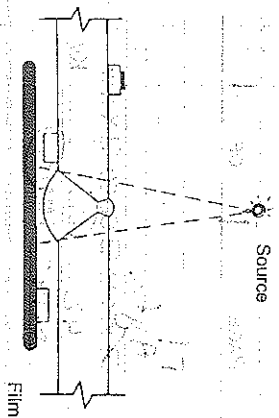
*Please note: Film that is not accepted by the client when the report is issued will be disposed of by Acuren unless otherwise notified and acknowledged in writing.

White - Client Copy

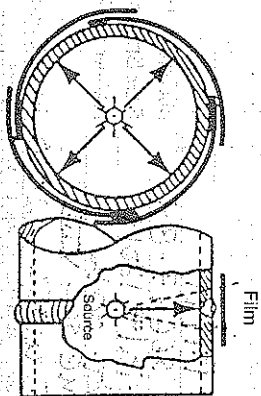
Canary - Office Copy

Pink - Technician Copy

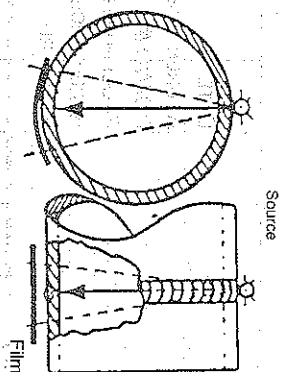
Golden Rod - Office Copy



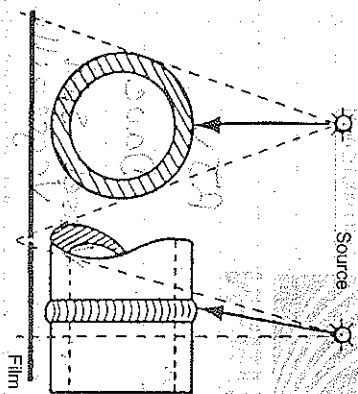
Technique "1"
SWE-SWV



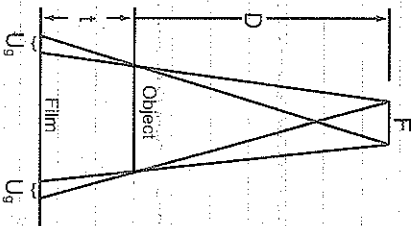
Technique "2"
SWE-SWV



Technique "3"
DWE-SWV



Technique "4"
DWE-DWV



Technique "5"
DWE-DWV

DEFECT LEGEND		OTHER LEGENDS	
CRK	Crack	SWE	Single Wall Exposure
LF	Lack of Fusion	DWE	Double Wall Exposure
IP	Incomplete Penetration	SWV	Single Wall Viewing
P	Porosity	DWV	Double Wall Viewing
S	Slag	EXP	Exposures
UC	Undercut	REIN	Reinforcement
CR	Concave Root	DIA	Diameter
EP	Excessive Penetration	SCD	Source Object Distance
BT	Burn Through	OFD	Object to Film Distance
HB	Hollow Bead		
PH	Pinhole		

DISCLAIMERS

SCOPE OF SERVICE

The agreement of Acuren to perform the Services extends only to those Services provided for in writing. Under no circumstances shall such Services extend beyond the performance of the requested Services provided for in writing and the preparation of reports or similar documents reflecting the data obtained or the opinion formulated on the basis of such Services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinion or observations of the examiner/engineer and are not intended, nor can they be construed, as representations or warranties as to the actual circumstances. Acuren does not assume any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, repair and use decisions as a result of the data or other information provided by Acuren. In no event shall Acuren's liability in respect of the Services referred to herein exceed the amount paid for such Services.

STANDARD OF CARE

In performing the Services provided, Acuren uses the degree of care and skill ordinarily exercised under similar circumstances by others performing such Services in the same or similar locality. If at any time during the performance of the Services or within one (1) year thereafter, Purchaser discovers that the Services do not conform to the warranty, Acuren shall, upon receipt of written notice from Purchaser, promptly provide technicians/engineers to reperform the Services to the extent necessary to conform to the warranty and Acuren shall have no other liability whatsoever. No other warranty, expressed or implied, is made or intended by Acuren.

LIMITATIONS OF LIABILITY

Nothing in this Agreement shall be construed to mean that Acuren assumes any liability on account of injury to persons or property, including death, except those directly caused by negligent acts of Acuren or its employees and that Purchaser's own responsibility for injury to persons or properties while on or about Purchaser's property or equipment is in no way affected by this Agreement. Acuren shall not be held responsible or liable for any loss, damage, detention or delay caused by accidents, strikes, labour shortages, lock-outs, fire, flood, severe weather conditions, acts of civil or military authorities, or by insurance or riot, or by any other cause that is unavoidable or beyond Acuren's control or in any event for consequential damages including, without limitation, downtime, loss of use or loss of profits.

Note: If it is omitted from this report, the Pipe Schedule shall apply as t.

$$U_g = F_t/D$$

- U_g = Geometric Unsharpness
- D = source to object distance
- t = object to film distance
- F = Focal Spot Size