

QC	Turnover Index – N	<b>1echanical</b>	Page 1 of 1
Department	QC	Document No.	QCFORM-0154
Label/Project No.	QC Turnover Index - Facility	Revision	0.00
Document Type	Form	Revision Date	2021-04-14



<b>SECTION 1.</b>	0 – Project Details				
Client	Fuelled Energy Marketing Inc.	Project No.	22-02056W	Project Name	Install 8" Nozzle in FWKO
Date	2024-12-17	Location/LSD		AFE	

SECTION 2.0 -	- Index		
Section No.	Section Description	Con	plete
Section No.	Section Description	Initial	Date
	SCOPE OF WORK		
1	Contract Review	то	2024-12-07
_	Design / Piping Specs		20211207
	ITP – Completed & Signed Off		
	CLIENT INFORMATION		
2	Client Issued IFC Drawings	то	2024-12-07
_	P&ID Redlines		
	RFIs & Scope Change Communication		
	WELDING		
	Welders Log	_	
3	Welder's Declaration & Qualification Records	ТО	2024-12-07
	Weld Procedures		
	As-Built Drawings		
	NON-DESTRUCTIVE EXAMINATION		
_	NDE Requests & Reports		
4	NDE Certifying Statement – signed & dated.	ТО	2024-12-07
	NDE Technician Certifications & Eye Exams		
	NDE Equipment Calibration Records		
	PRESSURE TESTS		
	Pressure Piping Examination Guide – signed & dated.		
5	Pressure Test Report – signed & dated.	ТО	2024-12-07
	Test Chart – signed & dated.		
	Pressure Test Mapping		
	Equipment Calibration Records		
6	HEAT TREATMENT	N/A	
6	Heat Treatment Instruction Sheet, Report & Chart – signed & dated.	IN/A	
	Equipment Calibration Records		
	MATERIAL CONTROL  Material Resolution Resolution Client		
7	Material Receiving Reports & Packing Slips	то	2024-12-07
,	MTR Log	10	2024-12-07
	MTRs – Verified, Dated & Initialed CRN's as applicable		
	<del>                                     </del>		
8	NON-CONFORMANCE	N/A	
	NCRs – signed off & closed.		
	PROJECT COMPLETION	3.T / A	
9	AB-83 Construction and Test Data Report or equivalent	N/A	
	AB-40 Vessel Repair/Alteration Report or Equivalent		
	MISCELLANEOUS		
10	Coating Records	AC	2024-12-12
	Torque Reports, Mapping & Calibration Records	,	
	Miscellaneous Project Information / Requirements		

 $\label{printed copy} \mbox{Printed copy is uncontrolled. Refer to STRAIT's SharePoint for most recent version.}$ 





# **SCOPE OF WORK**

Contract Review ITPs



# Contract Review Page 1 of 3 Department QC Document No. QCFORM-0007 Label/Project No. Contract Review Revision 3.00 Document Type Form Revision Date 2023



SECTION 1.0 -	Project Details			
Client	Fuelled	Project No.	22-02056W	AFE No.
Location/LSD	Grande Prairie	Scope	Install 8" Nozzle in FWKC	

	Owner	STRAIT
Materials Receiving Inspection, Identification and		X
Traceability		
Welding (Includes Weld Procedures)		X
Site Control of Heat Treatment	N/A	N/A
Site Control of NDE		X
Measuring and Test Equipment		Х
Witness of Pressure Tests	N/A	N/A
Data & Document Control		X
Preparing and Retention of Quality Control Records		X

(A Quality Management System, authorized by the Local Jurisdictional Authority, is required if the Owner assumes any of the Quality Management System functions listed above. A piping system over 500 litres in capacity must be registered with a Jurisdictional Authority.)

SECTION 3.0 – Responsible for Supply		
	Owner	STRAIT
Materials		X
Design Registration with Jurisdictional Authority	N/A	N/A
Design & Specifications	Х	
Construction Drawings	Х	
NDE		X (MPI ONLY)
Heat Treatment	N/A	N/A
Pressure Testing		X
Project Test Pressures (Minimum and Maximum	Х	
allowable)		
Inspections	X	X

SECTION 4.0 – Additional Details	
Test Pressures (if not supplied on a line list)	HYDROTEST – 75PSI
Code(s) of Construction	NON-CODE
Additional Customer Specifications	N/A
Coating Requirements	INTERNAL & EXTERNAL REPAIRS

SECTION 5.0 – Sign Off	
STRAIT Representative's Initials	Owner Representative's Initials
	me









# Contract Review Page 2 of 3 Department QC Document No. QCFORM-0007 Label/Project No. Contract Review Revision 3.00 Document Type Form Revision Date 2023



Owner's Rep. On Site	Superintendent
QCM	QCI on Site
Document Distribution List Established	
Requirements for contract	t amendment, change orders or RFI's
STRAIT documents to be used. Approval required pri	or to proceeding with work.  or signing off "Issued for Construction" drawings
Name of owner's rep. responsible for Ajay Sing Mark 18 A Ler, Alt	or to proceeding with work.  or signing off "Issued for Construction" drawings

SECTION	7.0 – Percentage of NDE Rec	quired			
Visual	100%	HT	N/A	Additional	
RT	N/A	MPI	100% Category D welds	Additional	

SECTION 8.0 – Pressure Piping Construction & Test Data	a Report (If applicable)
Person designated to sign for STRAIT	Person designated to sign for Owner
N/A	N/A

	capacity
STRAIT Representative	Owner Representative
N/A	N/A
Comments & other items:	

Extent & Type of NDE required for Scope	has been identified, reviewed, and agreed.
STRAIT Representative Initials	Owner Representative's Initials
CN	N.Z
CN	









#### Page 3 of 3 **Contract Review** Department QC Document No. QCFORM-0007 Label/Project No. Contract Review Revision 3.00 **Document Type** Form **Revision Date** 2023-



SECTION 11.0 – Turnover Pacl	kage Requirements & Cont	ents	
No. of Digital Copies	1	No. of Paper Copies	0
Turnover package to be	Ajay Singh <ajay.singh@fu< th=""><th>elled.com&gt;</th><th></th></ajay.singh@fu<>	elled.com>	
sent to			

ltem	Req by Customer	Stored for 5 Years	Item	Req by Customer	Stored for 5 Years
Contract review form		٧	Physical test reports: charpy, hardness		٧
Design Specifications		٧	NDE Location Map		٧
Drawings and Calculations		٧	Materials Heat Number Identification Drawings	✓	٧
Non-Conformity Reports		٧	Heat Treatment Identification Drawings		٧
Material Test Reports	<b>✓</b>	٧	Pressure Piping Examination Guide		٧
Material lists, Spool lists, Purchase Orders generated by STRAIT		٧	Pressure/Temperature Gauge Calibration Records		٧
Radiography Reports		٧	Pressure test records	✓	٧
Radiographic Film		٧	Piping Construction and Test Data Report		٧
Other NDE Reports, MT, UT	<b>✓</b>	٧	ITP's		٧
Welding Procedures	<b>✓</b>	٧	AB-81 Completion of Construction		٧
Welder Log and Tickets	<b>✓</b>	No	AS Built Drawings	✓	No
Welder Identification Map	<b>√</b>	٧	RFI's		٧
Heat treatment records		٧	Coating Related Documentation		٧
Personnel Certificates		٧	Calibration Certificates		٧
Backfill reports		٧	Regulatory Documents		٧

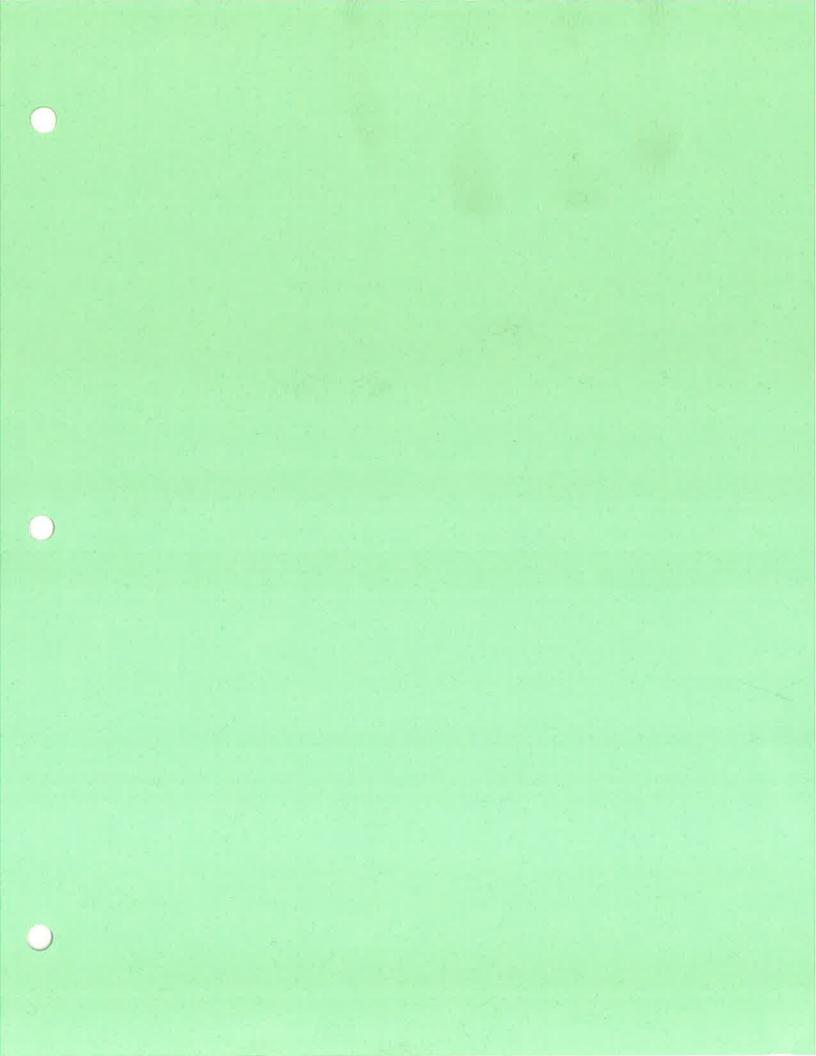
<sup>√</sup> Designates documents to be stored by STRAIT for a minimum of 7 years.

SECTION 11.0 -	Additional	Requirements
----------------	------------	--------------

Client Rep	Client Signature	Date
Narty Baker, Altec	M82	Nov 30/2024
STRAIT Rep	STRAIT Signature	Date
Cam Neal	Cam Neal	Nov. 20, 2024









Repair/A	Repair/Alteration Examination & Inspection		Page 1 of 2
Department	QC	Document No.	QCFORM-0133
Label/Project No.	Repair & Alteration Exam	Revision	0.00
Document Type	Form	Revision Date	2020-12-17



SECTION 1.0 – Genera	I Information		
Job No.	22-02056W	Boiler or Pressure Vessel Title	Knock-Out Tank
Drawing No.	843-1 Rev .1	Alberta (A) No.	N/A

				Owner	
Sequence	Operations	Comments	QCC	Hold Print	Insp.
1	Repair or Alteration Procedure Accepted by ABSA Safety Codes Officer (and Owner's Inspector when applicable)	Travel Sheet	TO 2024-11-19		10
2	Welding Procedures Registered for Welding to be done	STRAIT-1 Rev. 1	TO 2024-11-19		the party
3	Welders have valid Alberta P.Q. Card for work to be done	Jeremy Cheney ABSA File: W-34533	TO 2024-11-19		M
4	Cracks Mag Particle/Dye check after removal		N/A		
5a	Materials to be used  • Checked against PO/Drawing		TO 2024-11-20		
5b	<ul> <li>Material identified with correct SA/SB specifications</li> </ul>		TO 2024-11-20		
5c	<ul> <li>Material test reports checked against specifications</li> </ul>		TO 2024-11-20		
6a	Fitup  Shell courses-flush patches-heads		N/A		
6b	Tubesheet/shell/ firetube		N/A		
6c	Nozzles and fittings		TO 2024-11-20		
7	Radiographic Examination		N/A		
8	Mag. Particle Inspection		TO 2024-11-21		
9	Internal Visual after welding		TO 2024-11-21		
10	External Visual after welding		TO 2024-11-21		
11	Heat Treatment		N/A		
12	Hardness Tests		N/A		
13	FWKO - Hydrostatic Pressure Test (75 PSI for 15 minutes) Secondary Containment - Pneumatic Pressure Test (5 PSI for 60 seconds)		TO 2024-12-02		
14	Alternative Test (Specify)		N/A		







Repair/A	Repair/Alteration Examination & Inspection		Page <b>2</b> of <b>2</b>	
Department	QC	Document No.	QCFORM-0133	
Label/Project No.	Repair & Alteration Exam	Revision	0.00	
Document Type	Form	Revision Date	2020-12-17	



15	Nonconformance Report No. Cleared	N/A	
16	Alberta Repair or Alteration Form completed	N/A	
17	Repair or Alteration name plate attached	N/A	

SECTION 3.0 – Outline Sketch	
Record Welder's Symbols and Heat No's, Radiograph I.D No's. Attach separate sketch if required.	

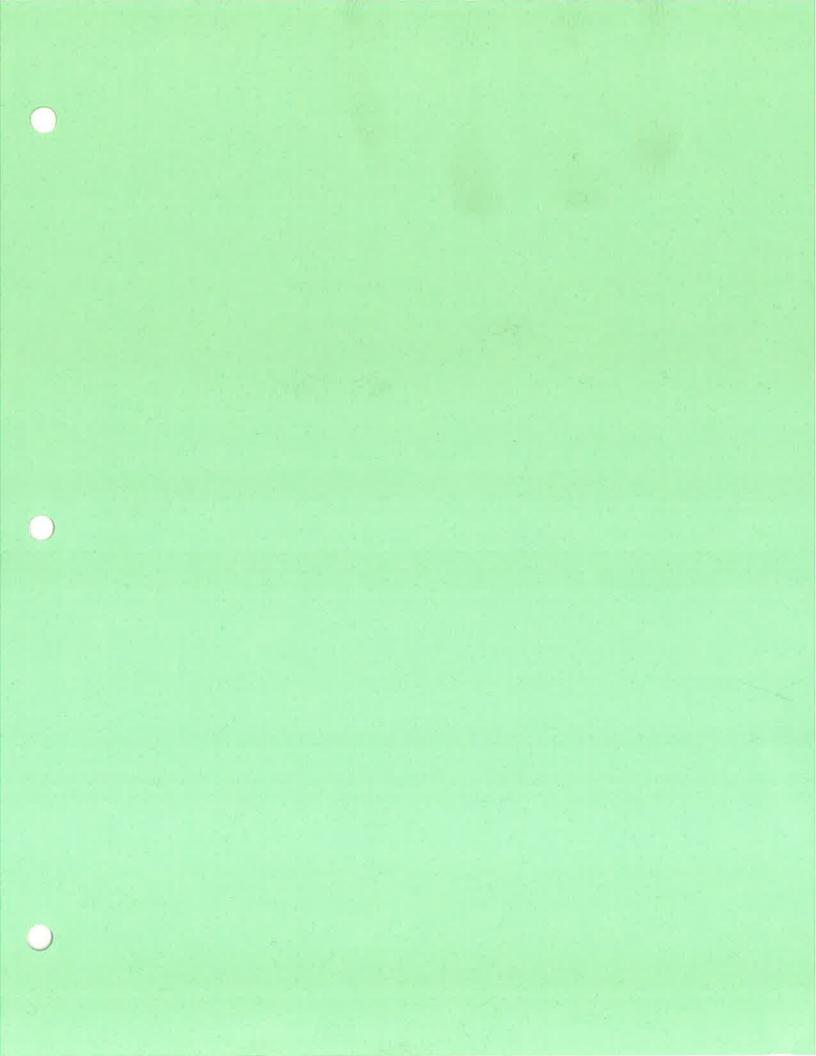
Item	Mat'l Spec	Plate & Heads	Thickness	Sch	Rating
Shell/Patches					
Heads/End					
Tubesheet					
Tubes					
Firetube					
Nozzles	SA-333-6		12.7mm	XH	N/A
Fittings					
Flanges	SA-350-LF2 CL1		12.7mm	XH	CL150

SECTION 5.0 – Travel Sheet Agreement										
By signing below, you	By signing below, you are agreeing that this ITP is acceptable and meets all project requirements.									
	Name Signature ,									
Client Representative	Marta Baker, Altec	MALL								
Project Engineer	4/14									
STRAIT Quality Representative	Tasie Okoro	JAN								

SECTION 6.0 – Final Acceptanc	e							
The signature below certifies that the project applicable to this ITP was constructed in accordance with the requirements of the contract review and the client issued SOW.								
	Name	Signature						
Client Representative								









SECTION 3.0 –ITP Agreement

Coatings Inspection and Test Plan								
Department	QCFORM-0065							
Label/Project No.	Coatings ITP	Revision	0.00					
Document Type	Form	Revision Date	2021-05-14					

SECTION 1.0 – Inspection and Test Plan Information										
Job Number	22-50393	Owner	Fulled	Date	November 19 2024					
Client	Strait	Owner PO	N/A	Project	Nozzle Re-coat					
Client Job Number	22-02056	Owner LSD	N/A	Scope	Internally and externally coat nozzle					
Client Rep	Ajay Singh	Owner AFE	241104	ITP Revisions	0					

SECTION 2.0 –Legend	
Inspection Legend	H: Mandatory Hold Point W: Witness SU: Surveillance R: Review V: Verify
Code(s)	IDEAL Quality Management System

	By signing below, you are agreeing that this ITP is acceptable and meets all project requirements.								
	Representative	Name			Signat	ure			Date
	Client Representative								
	IDEAL Quality Representative	Shawn Perks		\ _	Shawn	Perke	L		November 19 2024
SECT	ION 4.0 –Inspection								
Ref.		Acceptance Criteria		IDEAL		C	lient/TPI		
Item	Description	Document Verification	Inspection Code	Initials	Date	Inspection Code	Initials	Date	Notes
1	PRE-COATING								
1.1	Project Inspection & Test Plan has been reviewed and accepted	IDEAL Quality Management System (Section 3.0)	н	SP	Nov 19/24	н			Verify that the Project Inspection & Test Plan has been reviewed and accepted
1.2	Hold points for recordable activities	Signed ITP	v	SP	Nov 19/24	R			Ensure that all hold points have been communicated to all personnel involved with recordable activities. The Contractor shall notify the Owner/Purchaser of all hold point inspections and provide a minimum of 24 hours advanced notice.
1.3	Client IFC documentation, Specifications and PDS	IDEAL Quality Management System (Section 3.0)	н	Andre	Digitally signed by Andrew Coates Discombindry Coates Discombindry Coates, outded Coatings, email-accesses/discoatings/ca_coates/discoatings/ca_coates/discoatings/ca_coates/discoatings/ca_coates/discoatings/ca_coates/discoates	н			Verify that all Client IFC documentation, Specifications and Manufacturer Qualified Application Procedure (MQAP) documentation has been received & reviewed
1.4	Coating inspection equipment	Measurement equipment shall be calibrated within 6-12 months	R/V	Andrev Coates	Digitally signed by Andrew Costes Discon-Andrew Costes, or-Ideal Costings, empsilescostes/fideal cost- ings.cs, CCA Date: 2024/12.12 07:14:09 -07:00	R			Ensure that coating inspection equipment have current calibration certificates and are checked for damages prior to use
1.5	Applicator Standards	IDEAL Quality Control Forms & Procedures (Section 5.0)	R/V	Andre w Coate	Digitally signed by Andrew Coates ON: cn=Andrew Coates, o=ideal Coatings, o=ideal Co	R			The minimum qualification of the Contractor's Quality Control/Assurance representative shall be NACE Level 1 Coating Inspector Certification. Certificate of applicator competency.
1.6	Coating verifying documents	IDEAL Quality Control Forms & Procedures (Section 5.0)	R/V	Andrev Coates	e-Ideal Coatings,	R			Ensure that all coating verifying documents, referenced for the approved ITP, are available for use



Coatings Inspection and Test Plan								
Department	QCFORM-0065							
Label/Project No.	Coatings ITP	Revision	0.00					
Document Type	Form	Revision Date	2021-05-14					

SECT	CTION 4.0 –Inspection								
Ref.		Acceptance Criteria		IDEAL		C	ient/TPI		
Item	Description	Document Verification	Inspection Code	Initials	Date	Inspection Code	Initials	Date	Notes
2	MATERIAL MANAGEMENT								
2.1	Material procurement activities	Material to be verified to the purchase order and packing slip	V	Andrev Coates	twee course.	R			Ensure activities have been completed in accordance with the Client's material specifications and QMS requirements
2.2	Coating material batch numbers	IDEAL Quality Management System (Section 5.0)	٧	Andrew Coates	Digitals agoed by Andrew Codes DR constrainers Codes, see Held Codespe, repail accommendad codespe, each. Date: NSA11112-021528-4799	R			Batch numbers are verified against manufacturers documentation
2.3	Material quantities and conditions	IDEAL Quality Management System (Section 5.0)	V	Andrew Coates	o-treat costrati,	R			Ensure that any material overages, shortages or damages have been identified and documented
2.4	Material storage	IDEAL Quality Management System As per manufacturer Recommendations	v	Andrew Coates	Digitally signed by Andrew Coates Dix cm=Andrew Coates, o=Ideal Coorings, email=accoates@idealco artigstag, c=CA Date: 202412.12 07:15:45-07:00	R			Ensure the material is stored in a cool, dry, well-ventilated area. No material that has exceeded its shelf life recommended by the Manufacturer shall be used.
3	ABRASIVE BLASTING								
3.1	Pre-Blast Visual	IDEAL Quality Management System (Section 7.0 & 10.0)	Н	Andrew Coates	c-Hold Courings most lacousing intelligence a CoCA Date 2834/11/100/1547 40/207	R			Verify that the surfaces are free of oil, grease or other contaminants.
3.2	Compressed Air Quality	IDEAL Quality Management System (Section 7.0 & 10.0) ASTM 4285	Н	Andrev Coates	emal-acontesideal coatin gr.z. c=CA Date 2024,12,12 g7:16:10 e7:00	R			Clean, dry air with no contaminants to be taken at start of shift.
3.3	Blotter test	IDEAL Quality Management System (Section 7.0 & 10.0) ASTM 4285	н	Andrew Coates	Digitally signed by Andrew Coates DPL on-Andrew Coates, o-Ideal Coatings, crast Inaccoresolides (coatings of page 12, 225 Date: 2024;12.12.07:16:23	R			During blasting or painting air supply shall be blotter tested in accordance with ASTM D4285 at the start of each shift and a minimum of every four hours.
3.4	Soluble Salt Test prior to Blasting	IDEAL Quality Control Forms & Procedures (Section 5.0) SCAT Chlor*test	н	Andre		R			Soluble salts on the finished surface profile shall be avoided or controlled to a maximum value of 10 ppm or less or otherwise when specified by the Manufacturer
3.5	Environmental Conditions	IDEAL Quality Management System (Section 7.0 & 10.0)  ASTM D 3276	V/R	W	Digitally signed by Andrew Coates DN: cn=Andrew Coates, o=ideal Coatings, email=accoates@coatings.ca,=CA  Date: 2024.12.12 07:16:48-07:00	R			To be documented every 4 hours during shift. Substrate shall be 5°F (3°C) above Dew point, and the Relative Humidity must be below 80%. If ambient conditions change, additional measurements shall be taken.
3.6	Blast Media	IDEAL Quality Management System (Section 7.0 & 10.0)	V/R	Andrev Coates	Digitally signed by Androw Coates DN creates DN creates, o-16cd Costings, email-accesses/girdeal-coates DNe 2024.12.12.07/17/68-07/07	R			Black Magic and Green Diamond. Abrasives used for surface preparation shall be free of dust, dirt and contaminants and shall be kept dry at all times and shall not be recycled.
3.7	Post-Abrasive Blast Visual	IDEAL Quality Management System (Section 7.0 & 10.0)	н	Andrew Coates	Digitally agreed by Asdraw Coutes Dis craw Andrew Coutes, on End Couterge, and Associates of Coutergrico. COM. Date 2014 (212 07:17:17-0700)	R		_	NACE No.1/SSPC-SP-5 White Metal blast
3.8	Surface Profile	IDEAL Quality Management System (Section 7.0 & 10.0) As per manufacturer	Н	Andrev Coates	Digitally signed by Androw Costes Doctors Costes, orldoil Costings, entral recodesplored costin group excellent 2024;12:12 07:17:29 -07007	R			NACE No.1/SSPC-SP-5 White Metal blast Profile 2.5 - 5 mils jagged profile



Coatings Inspection and Test Plan							
Department	QCFORM-0065						
Label/Project No.	Coatings ITP	Revision	0.00				
Document Type	Form	Revision Date	2021-05-14				

SECT	ECTION 4.0 –Inspection								
Ref.		Acceptance Criteria		IDEAL		C	lient/TPI		
Item	Description	Document Verification	Inspection Code	Initials	Date	Inspection Code	Initials	Date	Notes
4	COATINGS & INSPECTION								
4.1	Environmental Conditions	IDEAL Quality Management System (Section 7.0 & 10.0) ASTM D 3276	V/R	w	Digitally signed by Andrew Coates DN: cn-Andrew Coates, outkiel Coatings, email:accoates@ide alcoatings.c, e-CA Date: 2024.12.12 02:17:48-07:00*	R			To be documented every 4 hours during shift. Substrate shall be 5°F (3°C) above Dew point, and the Relative Humidity must be below 80%. If ambient conditions change, additional measurements shall be taken.
4.2	Coating Application Control	IDEAL Quality Management System (Section 8.0) Coating Manufacturer	н	Andre w Coate	Digitally signed by Andrew Coates DN: cn=Andrew Coates Coates, o-Ideal Coatings: email-accoates/bideal Coatings.ca, (==CA Date: 2024.12.12 07:17:55-07:00*	R			Internal: Enviroline 2405 External: Hempel Hempathane 55610 HS Warm grey
4.3	Material Batch Numbers	IDEAL Quality Management System (Section 8.0) Coating Manufacturer	R/V	Andre w Coate	Digitally signed by Andrew Costes Discriminatew Coates, oeldeal Coatings, email-acoates@idea Icoatings.ca, c=CA Date: 2024-12-12 07:18:07-07:00	R			To be recorded on QC document.
4.4	Dry Film thickness	IDEAL Quality Management System (Section 8.0 & 10.0) Coating Manufacturer / SSPC-PA-2 Level 2	Н	w	Digitally signed by Andrew Coates DN: cn-Andrew Coates, o=Ideal Coatings , email=accoates@id ealcoatings.ca, S c=CA Date: 2024.12.12 07:18:20 -07'00'	R			Internal: Enviroline 2405 TDFT 16 - 30 mils External: Hempathane 55610 HS TDFT 5 - 7 mils
4.5	Visual Appearance	Quality Management System (Section 8.0 & 10.0)  Coating Manufacturer	Н	w	Digitally signed by Andrew Coates DN: cm=Andrew Coates, on-Ideal Coatings, cmail =acoates@idea Icoatings.ca, cmCA Date: 2024.12.12 07:18:32 -07'00'	R			To be free of runs, drips, sags, and or debris.
4.6	Non-conformities and Holiday Testing	Quality Management System (Section 10.0) Coating Manufacturer	н	Coatings	M.	R			All coated surfaces shall be visually inspected for holidays and discontinuities after completion and curing of the final coat. For under insulation services, the coated surfaces shall be subject to holiday inspection according to NACE SP0188.
4.7	Correction Procedure	Quality Management System (Section 10.0) Coating Manufacturer	н	Andre w Coate	Digitally signed by Andrew Coates DN: cm=Andrew Coates DN: cm=Andrew Coates, 0-16ed Coatengs, emb 1=scoates@idealcoatengs.c, c=CA Date: 2024.1212 07.1932-0700	R			To be completed in strict accordance with manufacturer recommended repair procedure



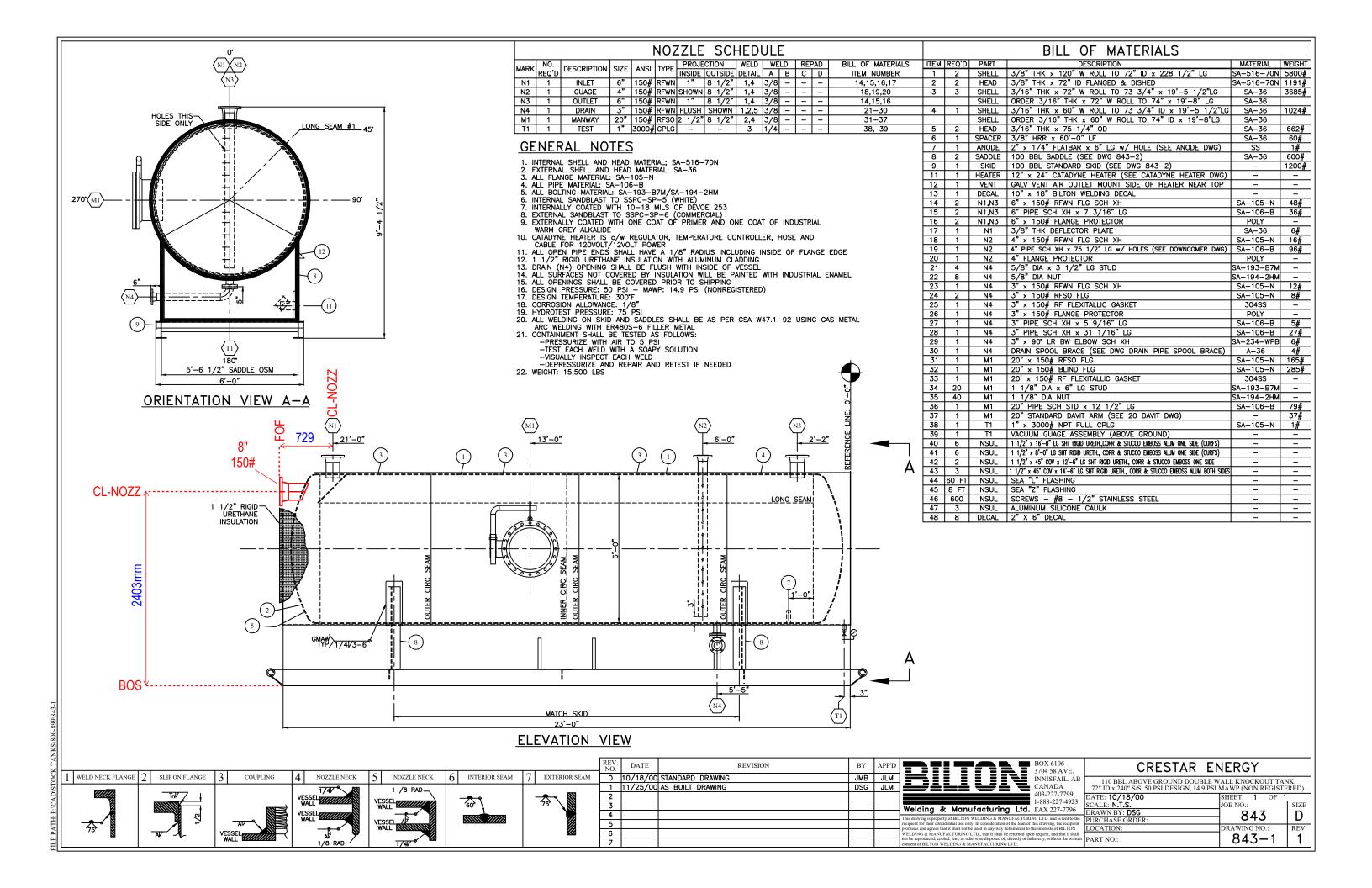
Coatings Inspection and Test Plan							
Department	QCFORM-0065						
Label/Project No.	Coatings ITP	Revision	0.00				
Document Type	Form	Revision Date	2021-05-14				

SECT	SECTION 4.0 –Inspection											
Ref.		Acceptance Criteria		IDEAL		Client/TPI						
Item	Description	Document Verification	Inspection Code	Initials	Date	Inspection Code Initials		Date	Notes			
5	PROJECT COMPLETION											
5.1	Non-conformance Reports (NCR's) are approved and closed out	All NCR's are reported, logged and resolved	R/V	Andre w Coates	Digitally signed by Andrew Coates Discr=Andrew Coates, o=ideal Coatings, email=acoates@idealc oatings.os, e=CA Date: 2024.12.12 07:19:46-07:00	н			Compile all NCR's into turnover package			
5.2	RFI's are resolved and closed out	All RFI's are reported, logged and resolved	R/V	Andre w Coate	Digitally signed by Andrew Coates DN: cn=Andrew Coates, o=Ideal Coatings, email=acoates@ide alcoatings.ca, c=CA Date: 2024.12.12 07:20:01-07:00	R			Compile all RFI's into turnover package			
5.3	Final turnover documentation has been reviewed and accepted by all parties	All 100% assessment findings resolved within 14 days	н	Andre w Coate s	Digitally signed by Andrew Coates DN: cn=Andrew Coates, o=Ideal Coatings, emall=acoates@i dealcoatings.ca, c=CA Date: 2024.12.12 07:20:14-07:00'	н			Compile all documentation into turnover package Completed QC Paint Report to be turned over 7-10 days after project completion.			
			'									
Proje	ect Completion – Final Acceptance											
	The signature below certifies that the project applicable to this ITP was constructed and completed in accordance with the requirements of the applicable codes and the Client's Specifications.											
	Representative Name Signature Date						Date					
Client Representative												
	IDEAL Quality Representative	Andrew Coates Digitally agreed by Andrew Coates  One 2004-12 (12 0/2013) - 4/7/W  Digitally agreed by Andrew Coates Digitally agreed by Digitall	Andı	ew C	oates Digital	tally signed by Andrew cn=Andrew Coates, o=I iil=acoates@ideakoatin :: 2024.12.12 07:20:44 -0	Coates deal Coatings , gs.ca, c=CA 17'00'		Andrew Coates  Digitally signed by Andrew Coates  Dic cn-Andrew Castes, outload Coatings, email-acoates/élealecoatings.c, e-CA Date: 2024 12.12 07:20:58-9.07:00'			

# STRAIT

# **CLIENT INFORMATION**

**Client Issued Drawings** 





# WELDING

Welders Log
Welder's Declarations & Qualification Records
Weld Procedures
As-Built Drawings



Department

Label/Project No.

Form

**Document Type** 

#### Page 1 of 1 **ASME Welder's Log** QC Document No. QCFORM-0141 Welder's Log Revision 0.00

**Revision Date** 

2021-01-08



SECTION 1.	SECTION 1.0 – Welder's Log								
	Job No.	22-02056							
Welders Name & ABSA File No.	Symbol	Process	Welding Procedure (WPS #)	"P" No.	"F" No.	Position(s)	Max. Dep. Weld Metal Thk.	Min. Pipe Dia.	Expiry Date P.Q. CD.
Jeremy Cheney W-34553	JC	SMAW/SMAW	STRAIT-1 Rev.1	P1 to P1	F3/F4	All	0.104" To Max	1"OD	July 17, 2026
Jordan Williams W-35261	JW	SMAW/SMAW	STRAIT-1 Rev.1	P1 to P1	F3/F4	All	0.250" To Max	1"OD	May 01, 2026





#### Page 1 of 2 **ASME Continuity Log** Document No. Department QCFORM-0151 Label/Project No. ASME Continuity Log Revision 0.00 2021-04-05 **Document Type** Form **Revision Date**



	SECTION 1.0 – Continuity Log							
Year	2024							
Welder's Name & File No.	Symbol	Process / Method	Jan – Mar	Apr – Jun	Jul – Sep	Oct - Dec		
0 - 1:		SMAW	Χ	Х	Х			
Gary Tomkins	GT	GMAW/FCAW						
W-75641	GI	GTAW	Χ	Х	Х			
,3012		GMAW/SMAW	Χ	Х	Х			
Chance Headin		SMAW	Χ	Х	Χ			
Chance Hogelie	СН	GMAW/FCAW						
W-29775	СП	GTAW						
VV 23773		GMAW/SMAW	Χ	Х	Х			
		SMAW	Χ	Х	Х	Х		
Jeremy Cheney	JC	GMAW/FCAW				Х		
W-34533	JC	GTAW						
W-34333		GMAW/SMAW	Х	Х	Х	Х		
	SS	SMAW	Х	Х	Х			
Shane Slaney		GMAW/FCAW						
W-23157		GTAW						
W-23137		GMAW/SMAW		Х	Х			
5	DH	SMAW	Х	Х	Х			
Dave Hicks		GMAW/FCAW						
W-21266		GTAW						
VV-21200		GMAW/SMAW	Х	Х	Х			
		SMAW	Х	Х	Х	Х		
Jordan Williams	11/47	GMAW/FCAW				Х		
W-32561	JW	GTAW						
W-32301		GMAW/SMAW	Х	Х	Х	Х		
		SMAW	Х	Х	Х			
Calyn Cody	66	GMAW/FCAW						
W-31517	CC	GTAW						
AA-2121/		GMAW/SMAW	Х	Х	Х			
		SMAW		Х	Х			
Sean Hansen	CII	GMAW/FCAW						
W-22431	SH	GTAW						
VV-ZZ431		GMAW/SMAW		Х	Х			









#### Page **2** of **2 ASME Continuity Log** Document No. Department QCFORM-0151 Label/Project No. ASME Continuity Log Revision 0.00 2021-04-05 **Document Type** Form **Revision Date**



	CW	SMAW	Х	Х	
Clint Watts		GMAW/FCAW			
(W-16511)	CW	GTAW			
		GMAW/SMAW			
		SMAW	Х	Х	
Mike Woodford	D 4147	GMAW/FCAW			
(W-22102)	MW	GTAW			
		GMAW/SMAW			
		SMAW	Х	Х	
Timothy Janzen	т,	GMAW/FCAW			
(W-27133)	TJ	GTAW			
		GMAW/SMAW			
	DT	SMAW	Х	Х	
Darcy Thompson		GMAW/FCAW			
(W-20251)		GTAW			
		GMAW/SMAW			
		SMAW	Х	Х	
Travis Strome	TS	GMAW/FCAW			
(W-34707)	13	GTAW			
		GMAW/SMAW	Х	Χ	
Haidus Chausar		SMAW		Х	X
Haidyn Chowace- Loxam	HL	GMAW/FCAW			
(W-75763)	П	GTAW			
(** 73703)		GMAW/SMAW		Х	X





	Page 1 of		
Department	QC	Document No.	QCFORM-0026
Label/Project No.	Welder's Declaration	Revision	2.00
Document Type	Form	Revision Date	2020-06-04



SECTION	1.0 - Project Details				
Client	Fuelled	Location		Project No.	22-02056W
Welder	Jeremy Cheney	Welder File No.	W-34533	Welder Symbol	JC

#### **SECTION 2.0 – Declaration**

- 1. That I have reviewed the Welding Procedures Specifications (WPS) applicable to the work as listed below and I will comply with all stipulated criteria.
- 2. I am qualified to the WPS's list in accordance with the Act and Regulations, which encompasses CSA Z662-19 requirements and/or ASME Sec IX.
- 3. The Client may have additional requirements / instructions that I will be required to follow.
- 4. That a copy of each WPS required for the work has been given to me and I will keep it immediately accessible for reference.
- 5. That, upon request to the Site Superintendent, I have access to the Welding Control section of the Quality Management System (QMS), and such other sections of the Manual as may be applicable to the work I have to perform.
- 6. I shall use only STRAIT supplied and controlled electrodes. Under no circumstance shall I supply and/or use existing rods that may have been brought onto Site with my truck.
- 7. F4/F5 electrodes need to be maintained in a rod oven or kept in the hermetically sealed box until needed.
- 8. I shall ensure preheat & interpass temperatures are verified, check with temp stick provided.
- 9. Lines that require PWHT, I shall ensure that the proper preheat is achieved.
- 10. I shall ensure the variables are within the parameters of the weld procedures (i.e.: Backing, Pipe diameter, P-Number, F-Number, t-Weld deposit, Position, Vertical welding up or down).
- 11. I shall transfer heat numbers to pipe pups as well as drawings.

SEC	SECTION 3.0 – WPS Qualified to Use					
1.	STRAIT 1 Rev .1	6.				
2.		7.				
3.		8.				
4.		9.				
5.		10.				

N 4.0 – Signatures		
Welder's Name	Welder's Signature	Date
Jeremy Cheney	Jen Ja	November 19, 2024
STRAIT Rep	STRAIT Signature	Date
Tasie Okoro	JAN	November 19, 2024







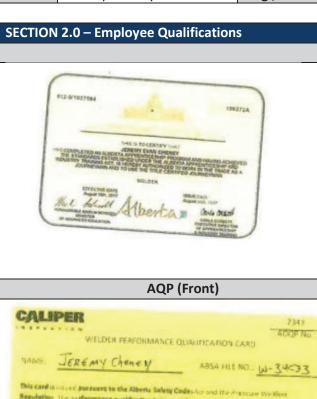


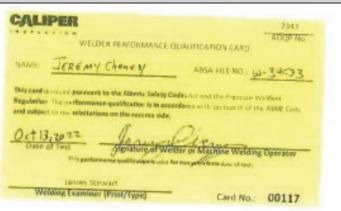
#### Page 1 of 2 **Employee Qualification Record - Welder** QCFORM-0011 Department Document No. Label/Project No. **Employee Qualification - Welder** Revision 3.00 **Document Type** Form **Revision Date** 2024-03-21

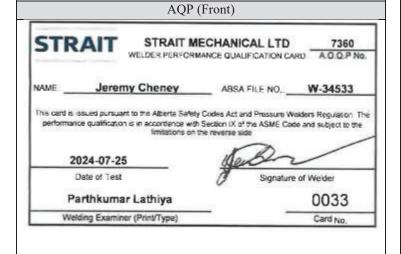


**SECTION 1.0 – Employee Data** 

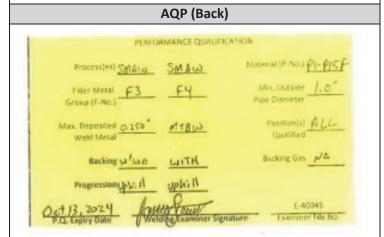
Reg./File No. Welder Symbol Welder | Jeremy Cheney W-34533

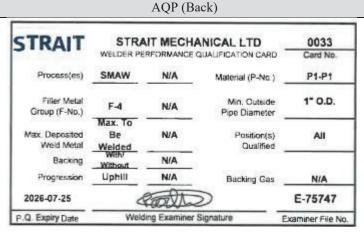














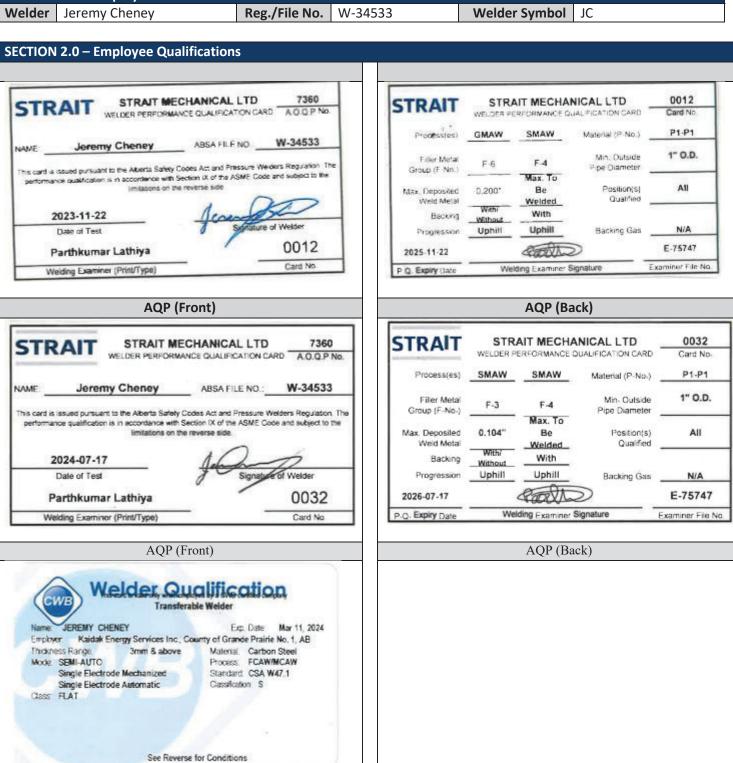


#### Page 2 of 2 **Employee Qualification Record - Welder** Department Document No. QCFORM-0011 Label/Project No. **Employee Qualification - Welder** Revision 3.00 **Document Type Revision Date** 2024-03-21 Form



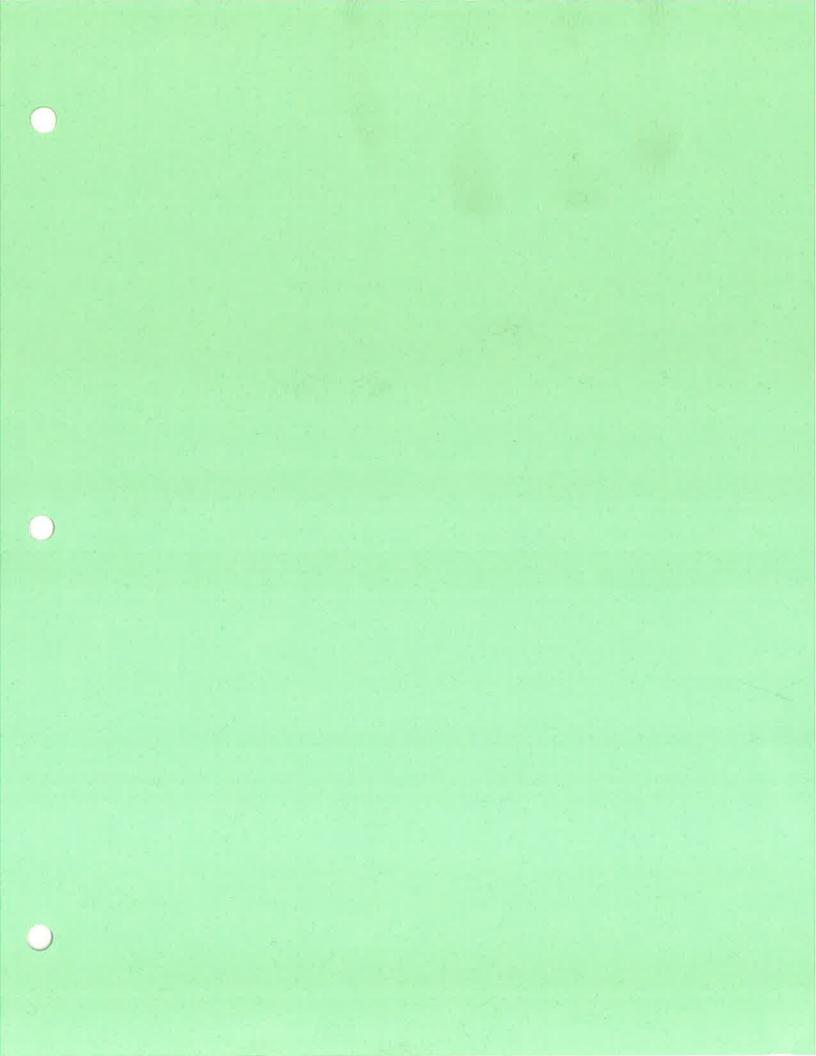
#### **SECTION 1.0 – Employee Data**

Welder Symbol W-34533









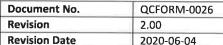


Department

Label/Project No.

**Document Type** 

## Welder's Declaration





Page 1 of 1

SECTION	1.0 – Project Details				
Client	Fuelled	Location		Project No.	22-2056W
Welder	Jordan Williams	Welder File No.	W-32561	Welder Symbol	1W

#### **SECTION 2.0 – Declaration**

- 1. That I have reviewed the Welding Procedures Specifications (WPS) applicable to the work as listed below and I will comply with all stipulated criteria.
- 2. I am qualified to the WPS's list in accordance with the Act and Regulations, which encompasses CSA Z662-19 requirements and/or ASME Sec IX.
- 3. The Client may have additional requirements / instructions that I will be required to follow.

Welder's Declaration

Form

- 4. That a copy of each WPS required for the work has been given to me and I will keep it immediately accessible for reference.
- 5. That, upon request to the Site Superintendent, I have access to the Welding Control section of the Quality Management System (QMS), and such other sections of the Manual as may be applicable to the work I have to perform.
- 6. I shall use only STRAIT supplied and controlled electrodes. Under no circumstance shall I supply and/or use existing rods that may have been brought onto Site with my truck.
- 7. F4/F5 electrodes need to be maintained in a rod oven or kept in the hermetically sealed box until needed.
- 8. I shall ensure preheat & interpass temperatures are verified, check with temp stick provided.
- 9. Lines that require PWHT, I shall ensure that the proper preheat is achieved.
- 10. I shall ensure the variables are within the parameters of the weld procedures (i.e.: Backing, Pipe diameter, P-Number, F-Number, t-Weld deposit, Position, Vertical welding up or down).
- 11. I shall transfer heat numbers to pipe pups as well as drawings.

SECTION 3.0 – WPS Qualified to Use	
1. STRAIT-1 Rev. 1	6.
2.	7.
3.	8.
4.	9.
5.	10.

Welder's Name	Welder's Signature	Date
Jordan Williams	SA	November 24, 2024
STRAIT Rep	STRAIT Signature	Date
Tasie Okoro	- 1, l	November 24, 2024









Employee Qualification Record - Welder Page 1 of					
Department	QC	Document No.	QCFORM-0011		
Label/Project No.	Employee Qualification - Welder	Revision	2.00		
Document Type	Form	Revision Date	2021-03-26		



SECTION	1.0 – Project Data				
Welder	Jordan Williams	Reg./File No.	W-32561	Welder Symbol	JW











# **Welder Qualification**

Name: JORDAN T. WILLIAMS CWB ID: 12 022 697

Employer: Roger's Repair And Welding Ltd. Effective Date: 2023-04-20

Expiry Date: 2025-04-20

Standard: CSA W47.1 Classification: S Process: SMAW Class: Flot

See Reverse for Additional Variables & Conditions

Date of Issue: 2023-04-25

## **Welder Qualification**

hickness Range: Zwin and above Process Mode: Mareni

Electrode: F4

This nated is the property of CMB Combination and must be returned on demand. This turnt must be available for improches by CMB Combination start or other designative officials. This quantitation may be revoked by OMB Combination of the included named is not engaged in the process qualified for a period of 3 months or more

1-800-844-6790

www.cwbgroup.org

T K A	RAIT MECHA PERFORMANCE	7360 A O Q P No	
NAME: Jordan Willia	ıms	ABSA FILE NO.:	W-32561
This card is issued pursuant to the Alt performance qualification is in accolim		n IX of the ASME Code	
2024-05-01		efter	
Date of Test		Signature	of Welder
Parthkumar Lathi	ya		
			0016

STRAIT	STR	STRAIT MECHANICAL LTD						
	WELDER P	WELDER PERFORMANCE QUALIFICATION CARD						
Process(es)	SMAW	SMAW	Material (P-No.)	P1-P1				
Filler Metal Group (F-No.)	F-3	F-4	Min. Outside Pipe Diameter	1" O.D.				
Max Deposited Weld Metal	0.250"	Max. To Be Welded	Position(s) Qualified	All				
Backing	With/ _Without	With						
Progression	Uphill	Uphill	Backing Gas	N/A				
2026-05-01		STOOL .	D	E-75747				
P.Q. Expiry Date	We	Iding Examiner S	Signature	Examiner File No.				

PK A-A	ECHANICAL LTD	7360
WELDER PERFORM	MANCE QUALIFICATION CAI	RD A.O.Q.P No
NAME: Jordan Williams	ABSA FILE NO.:	W-32561
This card is issued pursuant to the Alberta Safety performance qualification is in accordance with		
limitations on	the reverse side	o and babjeon to the
limitations on 2023-11-27		o and oddjoor to the
	the reverse side	of Welder
2023-11-27	the reverse side	

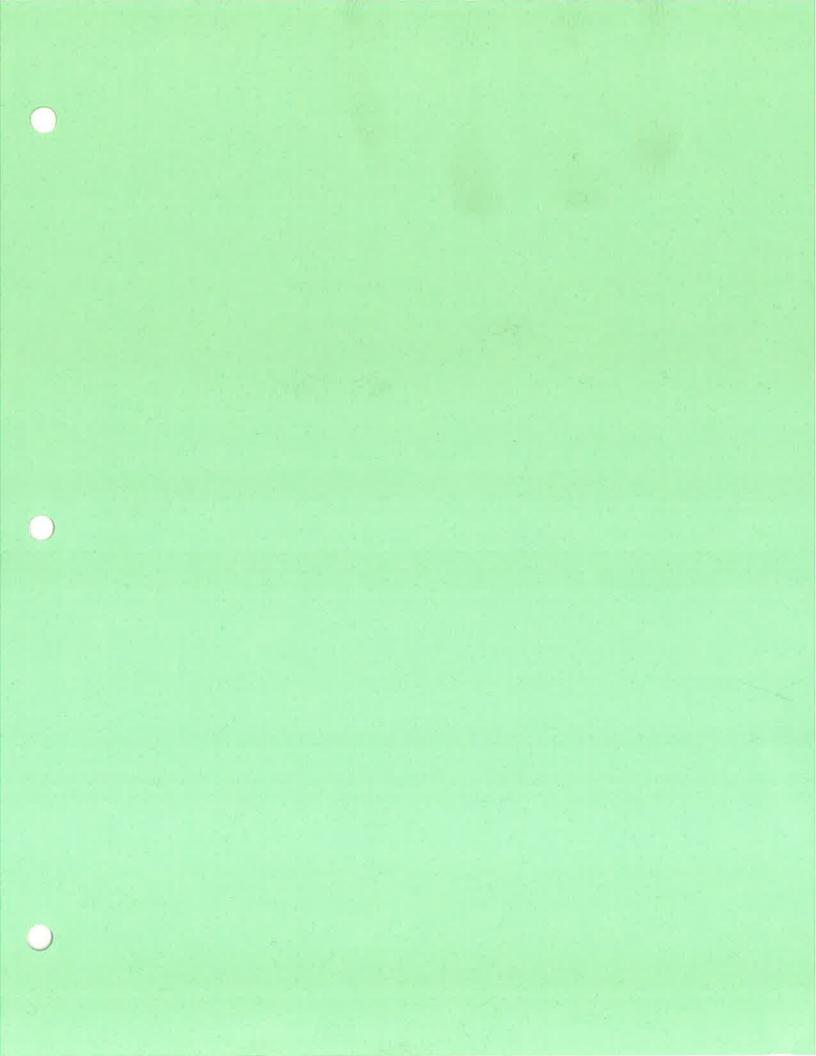
STRAIT	STR	STRAIT MECHANICAL LTD						
	WELDER PI	WELDER PERFORMANCE QUALIFICATION CARD						
Process(es)	GMAW	SMAW	Material (P-No.)	P1-P1				
Filler Metal Group (F-No.)	F-6	F-4	Min, Outside Pipe Diameter	1" O.D.				
		Max. To						
Max, Deposited	0.200"	Be	Position(s) Qualified	All				
Weld Metal Backing	With/ Without	Welded With	Qualified					
Progression	Uphill	Uphill	Backing Gas	N/A				
2025-11-27		COOL	9	E-75747				
P.Q. Expiry Date	Wei	ding Examiner	Signature	Examiner File No				

Front

		MECHANICAL LTD	7360	
	WELDER PERFOR	RMANCE QUALIFICATION CARD	A.O.Q.P No.	
NAME:Jord	dan Williams	ABSA FILE NO.;	W-32561	
This card is issued pursua	ınt to the Alberta Safe	ty Codes Act and Pressure Welder	re Population The	
	on is in accordance wi	ith Section IX of the ASME Code and the reverse side.	nd subject to the	
2024-10-29 Date of Test	in is in accordance wi limitations or	ith Section IX of the ASME Code an	nd subject to the	
2024-10-29	in is in accordance wi limitations or	ith Section IX of the ASME Code and the reverse side.	nd subject to the	

Back

STRAIT	STRA	36		
2000	WELDER PE	RFORMANCE (	QUALIFICATION CARD	Card No.
Process(es)	GMAW	FCAW	Material (P-No.)	P1 thru P15A
Filler Metal Group (F-No.)	F6	F6	Min. Outside Pipe Diameter	1.0"
Max. Deposited Weld Metal	0.110"	MAX	Position(s) Qualified	ALL
Backing	With/Witho ut	With		
Progression	Downhill	Uphill	Backing Gas	N/A
2026-10-29		-		E-40418
P.Q. Expiry Date	Weld	ing Examiner S	Signature	Examiner File No.





Weld Procedure Matrix & Acceptance					
Department	QC	Document No.	QCFORM-0106		
abel/Project No.	Weld Procedure Matrix & Acceptance	Revision	8.00		
Document Type	Form	Revision Date	2024-09-17		



SECTION 1.0 - Project Details			
Client	Fuelled	Date	19-Nov-24
Project No.	22-02056W	Location/LSD	

	ECTION 2.0 - Weld Procedure Matrix												
ſ	WPS Number	C.E / Pcm	Process(es)	Diameter Restrictions	Base Th	ickness	WPS Consumables & Weld	PWHT	Impact	Piping	"p" No. or Grade	Position	Preheat
	STRAIT-1 (Rev 1)	0.45 if Gr. > 386	SMAW	All Diameters	0.116"	1.750"	E6010 / E7018-1	N	-46°C		P1 Groups 1 or 2 to P1 Groups 1 or 2	All Positions	Misc.

Date
Date
19-Nov-20
Date

### STRAIT MECHANICAL LTD.

## **Welding Procedure Specification**

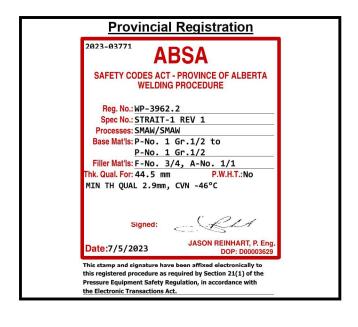
in accordance with

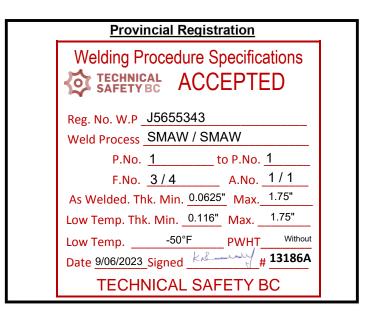
#### **ASME Section IX**

Welding Procedure Specification No.:		STRAIT-1 Revision 1 <sup>1</sup>					
Suppor	ting PQR No. (s):	AS-1-1CVN-2 Rev. 0, IPAC-1-1 Rev. 1, IPAC-1-3 Rev. 1,					
		IPAC-1-4 Rev. 1, IPAC-1-5 Rev. 0, REL-1-2 Rev.0					
		Qualified for					
Process(es):	SMAW	/ SMAW	Position(s):	All / All			
Filler Metal F-No.:	F-3	/ F-4	A-No.:	A-1 / A-1			
AWS Classification:	E6010 /	E7018-1	Weld Type(s):	Groove, Fillet, Weld Buildup			
Base Metal:	P-1 Gro	up 1 or 2	To:	P-1 Group 1 or 2			
Typical Materials:			as specified in Table QW/QB-422 of ASME Section				
	IX for applications whe	ere toughness properties	are not required, ar	nd for welding P-1 Group 1 or 2			
	materials only for appli	ications where toughness	properties are req	uired.			
CSA Z662:19				roject requirements and CSA			
	Z662 is mandatory bef	ore commencing product	ion welding.				
Diameter Range:	All Dia	meters	Condition(s):	As-Welded			
Thickness Range:		Normal Service	Impact	Tested to -46°C (-50°F)			
	ASME Section IX	0.062" to 1.750"	0.116" t	o 1.750"			
	ASME Section VIII-1	0.062" to 1.500"	o.116" to 1.500"				
	ASME B31.1	0.062" to 1.750"					
	ASME B31.3	0.062" to 1.750"	0.116" t	o 1.750"			
	CSA 7662 Clause 7.2	<b>5</b> 0.062" to 1.250"	0 116" t	o 1 250"			

Reference to relevant construction code is mandatory prior to production welding to determine any supplementary restrictions

<sup>&</sup>lt;sup>1</sup>Revision 1: Addition of PQR REL-1-2 Rev.0 and updated supplementary CSA Z662 requirements and limitations.





## WELDING PROCEDURE SPECIFICATION (WPS) QW-482

(Section IX, ASME Boiler and Pressure Vessel Code)

Company Name: Strait Mec	hanical Ltd.		By: Nata	sha Francoeur		
WPS No.: STRAIT-1				30, 2021		
Revision No.: 11		Revision		13, 2023		
	N-2 Rev. 0, IPAC-1-1 Rev. 1				RFI -1-2 R	ev 0
Welding Process(es): SMAW / S			Type(s): Man		\LL-1-2  \\	34.0
Welding Frocess(es). OMANY C	IVICTOR	<u></u>	Type(s)wan	dai / Wandai		
JOINTS	QW-402			loint Details		
Joint Design: Butt, Tee, Lap, 0	Corner, etc.	All ASME jo	oint designs. F	Reference construct	ion	
Backing: With or without I	backing.	drawings for	joint details. W	here joint details ar	e not	
		specified, re	fer to typical joir	nt detail sheet provid	ded.	
Backing Material (Type): Similar b	oase or weld metal or backwe					
	BASE MI					
P-No.: P-1 *Group	No.: 1 or 2	to P-No.:	P-1	*Group No.:	1	or 2
OR						
Spec. type & grade:	Not Applicable	to Spec. type &	k grade:	Not	Applicable	i
Chem. Analysis & Mech. Prop.:	Not Applicable	to Chem. Analy	sis & Mech. Pr	op.:	Not Ap	plicable
Thickness Range		_	5			
		<b>Normal Service</b>	Impact Teste	d to -46°C (-50°F)	_	
Base Metal: Groove (As Welded):	ASME Section IX	0.062" to 1.750"	0.116	" to 1.750"	Fillet:	All**
***************************************	ASME Section VIII-1	0.062" to 1.500"	0.116	" to 1.500"	Fillet:	All**
	ASME B31.1	0.062" to 1.750"			Fillet:	All**
	ASME B31.3	0.062" to 1.750"		" to 1.750"	Fillet:	All**
	CSA Z662 Clause 7.2.5	0.062" to 1.250"	0.116	" to 1.250"	Fillet:	All**
Pipe Dia Range: Groove: All diam					let: All c	iameters
	zed for ASME Section VIII-1		perties are requ	ired.		
	any weld layer shall not exce					
* Limited to P-1 Group *	1 or 2 only when toughness p	properties are requir	ed.			
**Limited to 0.116" mini	mum for applications where t		s are required.			
	FILLER M	IETALS QW	-404			
Process:	SMA	W		SMAW	/	
Specification No. (SFA):	5.1			5.1		
AWS Classification No.:	E601	0		E7018-	-1	
F-No.:	F-3			F-4		
A-No.:	A-1			A-1		
Size of Filler Metals:	3/32", 1/8", 5/			3/32", 1/8", 5/32",		
Weld Metal Thickness - Groove:	0.188" n	nax.1		1.750" m		
- Fillet:	Unlimit			Unlimite	ed	
Electrode-Flux (Class):	Not Appli			Not Applic		
Wire Trade Name:	Not Appli			Not Applic	able	
Flux Trade Name:	Not Appli			Not Applic		
Flux Type:	Not Appli			Not Applic		
Alloy/Flux Element:	Not Appli			Not Applic		
Recrushed Slag:	Not Appli			Not Applic		
Consumable Insert:	Not Appli			Not Applic		
Supplemental Filler Metals:	Not Appli			Not Applic		
Product Form:	Covered El			Covered Ele		
Other:	E6010 deposit is limited to	root pass only when	e toughness pro	perties are required	d.	

Reference to relevant construction code is mandatory prior to production welding to determine any supplementary restrictions

<sup>&</sup>lt;sup>1</sup>Revision 1: Addition of PQR REL-1-2 Rev.0 and updated supplementary CSA Z662 requirements and limitations.

<sup>&</sup>lt;sup>2</sup>E6010 deposit limited to 0.098" maximum for ASME VIII applications where toughness properties are required.

## WELDING PROCEDURE SPECIFICATION (WPS) QW-482 (Section IX, ASME Boiler and Pressure Vessel Code)

WPS# STRAIT-1 Revision 1

	POSITIONS	QW-405	P	OSTWELD	HEAT TREAT	MENT	QW-407	
Position(s) of	Groove: All		Te	mp. Range:				
C		IAW: Vertical up or down		ime Range:	No	ne: As-V	Velded	
	F-4 SM	IAW: Vertical up		Heating:			8	
Position(s)	of Fillet: All			Cooling:			12	
	PREHEAT	QW-406			GAS QW-	408		
			ı	Process(es):			100	
Temperat	ure Min.:		Shield	ng Gas(es):				
Interpass Te	mp Max.:	See Page 4		omposition:				
Interpass Te	mp Min.:	200				lot Appli	cable	
Preheat Main	(1996) SS (1996)	r using tempilstiks, pyrome	ter B					
	or othe	r suitable methods.						
	200000							
710	257522			g Gas Rate:				
		ELECTRICAL CH	ARACTERIS	TICS QV	/-409			
	Current:	F-3 SMAW:	Direct (DC)		F-4 SMA	W: D	irect (DC)	
		F-3 SMAW:	Reverse (EP)		F-4 SMA	W: R	everse (EP)	
	Volts (Range):	(i)			F-4 SMA	W: 18	8 – 34	
	Amps (Range):		40 – 300		F-4 SMA	W: 50	0 – 360	
Travel Spe	ed (Range) - ipm:	43	1 – 18		F-4 SMA	W: 1	<b>– 22</b>	
Max. Heat I	nput (As Welded)	50		See Page	4			
Mode	of Metal Transfer:	F-3 SMAW:	Not Applicable	2000	F-4 SMA	W: N	ot Applicable	
Wire Feed Spe	ed (Range) - ipm:	F-3 SMAW:	Not Applicable	Э	F-4 SMA	1476 W.S	ot Applicable	
Tungsten Elect	rode Type & Size:	Not Applicable						
	Other:	Maximum heat input mar	ndatory only wh	en toughness p	roperties are requi	red.	9	
		TECHN	IIQUE Q\	V-410				
Strin	g or Weave Bead:	String and weave. Weav	e size shall be o	controlled to pre	event exceeding m	aximum	heat input.	
	or Gas Cup Size:	Not Applicable			<b>3</b>			
			noroughly clean	ed of all foreign	material (scale, ru	st, oil, a	rease, paint, tar, etc.)	
	Initial Cleaning:	at least 1" back on each	side of the joint	prior to welding	g. All surfaces to be	e welded	d shall be smooth,	
		uniform and free from no	tches, slag, fins	and burrs.				
In	terpass Cleaning:	Perform by wire brush, chipping hammer, power brushing, grinding, etc. after each weld layer.						
Method	of Back Gouging:	Arc air, gouge, grinding, etc., if required. Grind to clean metal where thermal processes are used.						
	Oscillation:	Duging: Arc air, gouge, grinding, etc., if required. Grind to clean metal where thermal processes are used.  Not Applicable						
	Wire Stickout:	Not Applicable	Veave size shall be controlled to prevent exceeding maximum heat input.  be thoroughly cleaned of all foreign material (scale, rust, oil, grease, paint, tar, etc.) each side of the joint prior to welding. All surfaces to be welded shall be smooth, m notches, slag, fins and burrs.  sh, chipping hammer, power brushing, grinding, etc. after each weld layer.  ling, etc., if required. Grind to clean metal where thermal processes are used.  asses per side. Multiple only when toughness properties are required ally ed					
Theorem of the person of the control	e Pass (per side):	Single or multiple passes per side. Multiple only when toughness properties are required						
Multiple or S	ingle Electrodes:	Single electrodes only	al must be thoroughly cleaned of all foreign material (scale, rust, oil, grease, paint, tar, etc.) ick on each side of the joint prior to welding. All surfaces to be welded shall be smooth, free from notches, slag, fins and burrs.  Vire brush, chipping hammer, power brushing, grinding, etc. after each weld layer.  e, grinding, etc., if required. Grind to clean metal where thermal processes are used.  le  le  le  ltiple passes per side. Multiple only when toughness properties are required odes only  ot allowed  le  cess may be used  PICAL WELDING PARAMETERS  Current					
	Peening:	Peening is not allowed						
Closed /Out of Cl	E .	Not Applicable						
Th	ermal Processes:	Thermal Process may be	e used					
£-		TYPICAL WE	ELDING PAR	RAMETERS				
	Fille	er Metal	Cı	rrent	8			
	AWS	Diameter	Type &	Amp.	Volt	8.	Travel Speed	
Process	Classification	(in)	Polarity	Range			(IPM)	
SMAW	E6010	3/32"	DC EP	40 - 80			1 – 12	
SMAW SMAW	E6010 E6010	1/8" 5/32"	DC EP	60 – <b>1</b> 40 105 – 25			3 – 14 4 – 16	
SMAW	E6010	3/16"	DC EP	120 – 30			4 – 18	
SMAW	E7018-1	3/32"	DC EP	50 - 130	18 – 2	28	1 – 14	
SMAW	E7018-1	1/8"	DC EP	70 – 205			2 – 16	
SMAW SMAW	E7018-1 E7018-1	5/32" 3/16"	DC EP	90 - 230 130 - 29			3 – 18 4 – 19	
SMAW	E7018-1	1/4"	DC EP	180 – 29			4 – 19	
Notes:		yers and size of filler metal		Anna anna anna anna anna anna anna anna				
Notes.		yers and size of filler metal 018-1 electrodes are limited				artion of	WGIU.	
	0/10 and 1/4 E/C	, io i ciccii caes ale illillet	a to not (10) and	HOHZUHAN (ZC	, positions only.		V.	

Reference to relevant construction code is mandatory prior to production welding to determine any supplementary restrictions

# WELDING PROCEDURE SPECIFICATION (WPS) QW-482 (Section IX, ASME Boiler and Pressure Vessel Code)

WPS# STRAIT-1 Revision 1

PREHEAT & INTERPASS TEMPERATURE MINIMUM AND MAXIMUM					
ASME Section VIII :	tion VIII: 50°F minimum for all P-1 materials except as listed below:				
	175°F if the joint thickness exceeds 1.00" and the specified carbon content exceeds 0.30%				
ASME B31.1 :	50°F minimum for all P-1 materials except as listed below:				
	200°F if the joint thickness exceeds 1.00" and the specified carbon content exceeds 0.30%				
ASME B31.3 :	50°F minimum for all P-1 materials except as listed below:				
	200°F if the joint thickness exceeds 1.00" and the specified carbon content exceeds 0.30%				
Max. Interpass Temp.:	650°F for normal service, 500°F for applications requiring toughness properties				

Reference to relevant construction codes is mandatory prior to production welding to determine any supplementary restrictions.

	HEAT INPUT LIMITATIONS – ASME Section IX / ASME B31.1 / B31.3					
Max.	Heat Input (As-Welded)					
0.116" to 0.375":		F-3 SMAW:	35 127 J/in	F-4 SMAW:	53 475 J/in	
	0.375" to 0.625":	F-3 SMAW:	38 182 J/in	F-4 SMAW:	61 043 J/in	
	0.625" to 1.750":	F-3 SMAW:	48 750 J/in	F-4 SMAW:	89 294 J/in	
Note:	Reference to the relevant	t construction code is man	datory prior to pr	oduction welding to determine any su	ipplementary restrictions.	

HEAT INPUT LIMITATIONS - ASME SECTION VIII-1					
Max.	Heat Input (As-Welded)				
0.116" to 0.375":		F-3 SMAW:	35 127 J/in	F-4 SMAW:	53 475 J/in
0.375" to 0.625":		F-3 SMAW:	35 127 J/in	F-4 SMAW:	63 800 J/in
	0.625" to 1.500":	F-3 SMAW:	35 127 J/in	F-4 SMAW:	73 800 J/in
Note:	Reference to the relevan	nt construction code is man	datory prior to production	welding to determine any su	upplementary restrictions.

### WELDING PROCEDURE SPECIFICATION (WPS) QW-482

(Section IX, ASME Boiler and Pressure Vessel Code)

WPS # STRAIT-1 Revision 1

### Supplementary CSA Z662 Requirements and Limitations:

#### Preheat and Interpass:

Preheat shall be achieved prior to any tacking or welding operations.

The minimum preheat shall be achieved for a distance of at least 50 mm (2") on both sides of the weld joint. See the table below for recommended minimum preheat temperatures.

PREHEAT & INTERPASS TEMPERATURE MINIMUM AND MAXIMUM				
CSA Z662:19	50°F minimum for all P-1 materials except as listed below:			
(Recommended):	248°F (120°C) if the CSA carbon equivalency on the MTRs of the materials to be welded exceeds 0.40			
	248°F (120°C) if the reported yield strength on the MTRs of the materials to be welded exceeds 414 MPa			
	248°F (120°C) if the thickness of the materials to be welded exceeds 0.750"			
	248°F (120°C) required for all repair welding			
	104°F (40°C) minimum preheat is advised for sour service per clause 16.6.7			
	Alternative preheat temperatures could be considered on a case by case basis with engineering assessment			
Max. Interpass Temp.:	650°F for normal service, 550°F for applications where toughness properties are required			

Preheat and interpass temperature shall be monitored on all production weld joints using thermocouples, tempilstiks, or other suitable methods. If thermocouples are used guidance for placement can be found in AWS D10.10.

Maximum interpass temperature shall not be exceeded.

#### Carbon Equivalent:

- Carbon equivalent shall be determined using the formula in CSA Z662 clause 7.6.4.4.
- For materials with a SMYS greater than 386 MPa, the maximum C.E. shall be 0.45.
- For materials with a SMYS ≤ 386 MPa, the C.E. maximum is limited to the material specification. Engineering evaluation for project suitability is required.

#### Repairs:

- The minimum preheat for all repairs shall be 248°F (120°C) extending at least 3.0" (75 mm) in all directions from the repair location.
- The minimum repair length shall be 2.0" (50 mm) at the bottom of the repair groove, and should have a minimum 3:1 taper transition at both ends of the groove.
- For Sour service applications, backwelding to the inside surface to correct misalignment or root bead defects shall be treated as repairs following clause 7.12.3 (See clause 16.6.8).

#### Other Considerations:

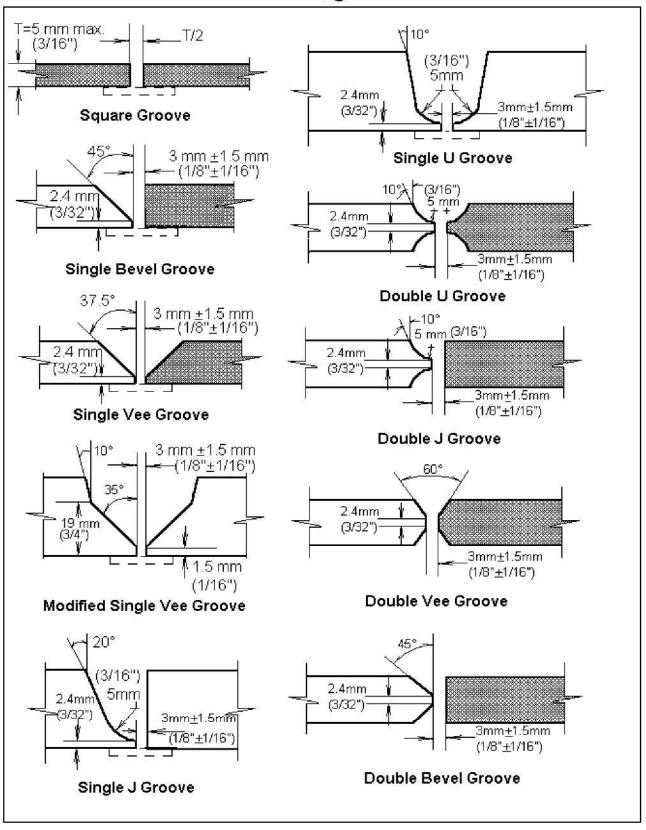
 Unless otherwise permitted by the project engineer, this procedure is limited to material with a maximum SMYS of 386 MPa on at least one side of the joint and not greater than SMYS of 448 MPa on the other side of the joint.

Reference to relevant construction codes is mandatory prior to production welding to determine any supplementary restrictions.

Review of client specifications for supplementary requirements is strongly suggested.

## Typical Joint Details QW-482

Prepared by: Qualimet



## PROCEDURE QUALIFICATION RECORD (PQR) QW-483

(Section IX, ASME Boiler and Pressure Vessel Code)

Date: December 11, 2006

Revision Date: ----

Company Name: IPAC Services Corp.

PQR No.: AS-1-1CVN-2

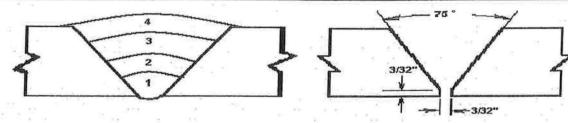
Revision No.: 0

WPS No.: AS-1-1CVN Revision 2

Welding Process(es): SMAW / SMAW

Types: Manual / Manual

## **JOINTS QW-402**



BASEN	METALS QW	-403	POSTWELD HEA	T TREATMEN	IT QW-407					
Material:	SA-516	SA-516	Temperature	*						
Grade/Type/Class:	Grade 60 to	Grade 70	Time	The Control of the second state of the second						
P-No.:	P-1 Group 1	P-1 Group 2	Heating:	Not	Applicable					
Coupon Thickness: 0.375" wt. Coupon Diameter: Plate		Cooling:								
		Other:								
Other:	Heat No: 29316 (	C.E.: 0.38	GAS QW-408							
FILLER	WETALS QW	404	Type or Gas(es):							
Process:	SMAW	SMAW	Gas Composition:							
SFA Spec. No.:	5.1	5.1	Flow Rate:	Not A	pplicable					
AWS Class.:	E6010	E7018-1	Gas Backing Rate:							
Manufacturer:	Lincoln Electric	Air Liquide	Other:							
Trade Name:	Fleetweld 5P+	LA7018	-							
F-No.:	F-3	F-4	1							
A-No.:	A-1	A-1								
Filler Metal Size: 3/32" 3/32", 1/8"		ELECTRICAL CHARACTERISTICS QW-409								
Deposited Metal:	0.125"	0.250"	Process:	SMAW (F-3)	SMAW (F-4)					
Other:	Covered	Covered	Current:	Direct	Direct					
47	Electrode	Electrode	Polarity:	Reverse	Reverse					
POSIT	TON QW-405		Amps:	57 – 73	77 – 128					
Position of Groove	: 3G	- Artist Control	Volts:	24 - 32	19 – 26					
Weld Progression	: Vertical Up		Heat Input (Joules/in):	38 182 J/in	61 043 J/in					
Other: N/A		TECHNIQUE QW-410								
PREHEAT QW-406			Travel Speed (IPM):	F-3: 3.3 – 4.7	F-4: 2.3 – 6.6					
Preheat Temp. Min.: 50°F Interpass Temp. Min.: 500°F Interpass Temp. Min.: 500°F Temperature monitored			String or Weave Bead: String & Weave							
		Oscillation: N/A Single/Multiple Pass: Multiple Single/Mult. Electrodes: Single								
						using tempilstik		Other:	N/A	

## PROCEDURE QUALIFICATION RECORD (PQR) QW-483

(Section IX, ASME Boiler and Pressure Vessel Code)

PQR# AS-1-1CVN-2

### **Tensile Test** QW-462

Specimen No.	Width in	Thickness in	Area in²	Ultimate Total Load Ib	Ultimate Unit Stress psi	Type of Failure & Location
ZGT1	0.756	0.364	0.275	21 570	78.4	Ductile-Base Meta
ZGT2	0.761	0.368	0.280	21 984	78.5	Ductile-Base Meta

### **Guided Bend Tests**

QW-462

Specimen No.	Туре	Figure No.	Result
ZGB1	TSB	QW-462.2	Pass
ZGB2	TSB	QW-462.2	Pass
ZGB3	TSB	QW-462.2	Pass
ZGB4	TSB	QW-462.2	Pass

# Toughness Tests QW-170

Specimen Notch		Notch	Test	Test Impact	Lateral Exp		Drop Weight	
No.	Location	Туре	Temp	Values	% Shear	Mils	Break	No Brk
1	Weld	Charpy-V	-50°F	49	30	N/A	N/A	N/A
2	Weld	Charpy-V	-50°F	54	30	N/A	N/A	N/A
3	Weld	Charpy-V	-50°F	84	40	N/A	N/A	N/A
4	HAZ Gr. 1	Charpy-V	-50°F	71	30	N/A	N/A	N/A
5	HAZ Gr. 1	Charpy-V	-50°F	71	30	N/A	N/A	N/A
6	HAZ Gr. 1	Charpy-V	-50°F	35	20	N/A	N/A	N/A
7	HAZ Gr. 2	Charpy-V	-50°F	98	40	N/A	N/A	N/A
8	HAZ Gr. 2	Charpy-V	-50°F	93	40	N/A	N/A	N/A
9	HAZ Gr. 2	Charpy-V	-50°F	121	60	N/A	N/A	N/A

# **Fillet-Weld Tests**

Not Applicable

Result-Satisfactory: Macro-Results:	Yes No	Pen. into	Parent Material:	Yes	_ No
×		Other Tests			
Type of Test: 10	kg Vickers Hardnes	s test to NACE - See Att	ached Report		
Other:					,
	***************************************				-
Welder's Name:	Patrick Cully	Reg. No.:	N/A	Stamp ID:	ZG
<b>Tests Conducted By:</b>	Qualimet		Lab. Test N	lo.: 34-0500	02
		cord are correct and the rements of Section IX o			ared, welded,



ASME Section IX.

7817 CORONET ROAD, EDMONTON, AB T6E 4N7 (780) 469-5870 FAX (780) 465-5829
 CALGARY (403) 278-9862 1-800-621-8979 www.qualimetinc.com

"Your source of Quality Materials Engineering"



### **MECHANICAL TEST REPORT**

for Procedure Qualification Record # AS-1-1CVN-2

Client:	IPAC Services Corp.	Job Number:	34-06003
Address:	RR3 Site 1 Box 29 Grande Prairie AB, T7Z 1X3	Date:	December 11, 2006
Materials:	SA-516 Gr. 60 to Gr. 70		
Size:	0.375" wt Plate	Condition:	As Welded
Test Specification	n: AS	SME Section IX	

## Tensile Tests QW-462.1(a)

Sample Identification:	ZGT1	ZGT2
Sample Size - inch:(W x T)	0.756 x 0.364	0.761 x 0.368
Least X-Sect. Area - in2:	0.275	0.280
Ultimate Load - lbs:	21 570	21 984
Ult. Ten. Strength - ksi:	78.4	78.5
Character of Fallure:	Ductile	Ductile
Location of Failure:	Base Metal - P-1 Group 1	Base Metal – P-1 Group 1
Req'd Tensile Strength - ksi:	60.0	60.0
Pass or Fall:	Passed	Passed
Remarks:		

# Bend Test QW-462.2

Sample Identification:	ZGB1	ZGB2	ZGB3	ZGB4
*Type of Bend Test:	TSB	TSB	TSB	TSB
Pass or Fail:	Passed	Passed	Passed	Passed
Remarks:				

We certify that the statements in this record are acceptable, in accordance with the requirements of

TEST RESULTS CERTIFIED BY:

Um leeps



\* 7817 CORONET ROAD, EDMONTON, ÅB T6E 4N7 \* (780) 469-5870 \* FAX (780) 465-5829 \* CALGARY (403) 278-9862 \* 1-800-621-8979 \* www.qualimetinc.com

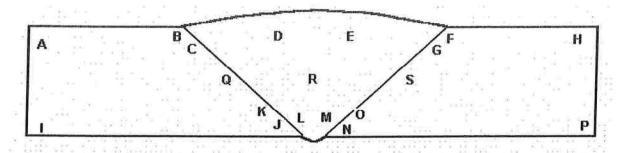
"Your source of Quality Materials Engineering"



## HARDNESS TEST REPORT

for Procedure Qualification Record # AS-1-1CVN-2

Client :	IPAC Services Corp.	Job Number:	34-06003
Address:	RR3 Site 1 Box 29 Grande Prairie AB, T7Z 1X3	Date:	December 11, 2006
Materials:	SA-516 Gr. 60 to Gr. 70		
Size:	0.375" wt Plate	Condition:	As Welded
Test Method:	Hardness testing performed in accordance with AS with a 10kg load	TM E-92 using a Vi	ckers hardness Tester
Equipment:	Matsuzawa Seiki Co. Ltd. model VK-M, S/N; 7193N	Λ	
Edubilione:	Material College Colle		The state of the s



### **Hardness Values**

A	159	× E.	182	2 To 1	159	M	170	<b>Q</b>	177
В	213	F	212	J	174	N	187	R	168
C :	213	G	205	* * K ::	172	O	197	. S	178
D	168	is a glade space	151	· PL	177	Ρ	160		

These hardness test results do not exceed 250 HV10 (250 HV10 = 22 HRC)

We certify that the statements in this record are acceptable, in accordance with the requirements of ASME Section IX and NACE MR01-75 ISO15156

TEST RESULTS CERTIFIED BY:	ll	on deep	4	Qualime
	,	/	J	



• 7817 CORONET ROAD, EDMONTON, AB T6E 4N7 • (780) 469-5870 • FAX (780) 465-5829 • CALGARY (403) 278-9862 • 1-800-621-8979 • www.qualimetinc.com

"Your source of Quality Materials Engineering"



## CHARPY V-NOTCH IMPACT TEST RESULTS

For Procedure Qualification Report # AS-1-1CVN-2

Client :	IPAC Services Corp.	Job Number:	34-06003
Address:	RR3 Site 1 Box 29 Grande Prairie AB, T7Z 1X3	Date:	December 11, 2006
Materials:	SA-516 Gr. 60 to Gr. 70		
Size:	0.375" wt Plate	Condition:	As Welded
Specimen Type:	8.5 mm Charpy V Notch impact specimens		у
Specification:	ASTM A-370, ASME Section VIII UG-84		
Qualification Temp.:	-50°F		

Sample Set	Sample Number	Impact Energy ft-lb	Converted Full Size Impact Energy (ft-lb)	% Shear
Weld Zone	1	42	49	30
	2	46	54	30
** 1	3	71	84	40
	Average:	53	62	33
· 大大學的語言的				
Heat Affected Zone	1	60	71	30
SA-516 Gr. 60	2	60	71	30
	3	30	35	20
Face March	Average:	50	59	27
		Property of the second	Carrier State	<b>从</b> 上"国家"。
Heat Affected Zone	1	83	98	40
SA-516 Gr. 70	2	79	93	40
	3	103	121	60
THE THE TOTAL THE STATE OF THE	Average:	88	104	47

Remarks:

These Charpy v-notch impact test results exceed the minimum requirements of ASME Section VIII and B31.3 Codes for -50°F; or CSA Z662-03 Codes for -50°F.

We certify that the statements in this record are acceptable, in accordance with the requirements of ASME Section IX.

**Test Results Certified By:** 

el andeeps

Qualimet

# QW-483 PROCEDURE QUALIFICATION RECORD (PQR)

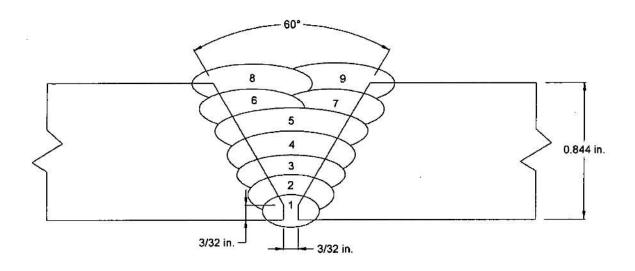
Organization Name _		IPAC Services Corp					
Procedure Qualification	on Record No.	IPAC-1-1 (Re	ev. 1)				
<b>Date Originally Qualif</b>	ied	August 13, 2	015 Revision Date _	February 5, 2020			
Revision(s) Rev. 1	(Editorial) - Corre	ction to (QW	-403) Base Metal P-No.	1 Group No.'s.			
	Format update.	04-68	50				
Welding Process(es)	20 0000	Shielded Me	tal Arc Welding (SMAW	}			
	3						
JOINTS (QW-402)							
Joint Design	Butt joint, single v	vee groove, s	ee next page				
Root Opening				100 000			
Backing	Without	200 AND 120 120 120 120 120 120 120 120 120 120	Retainers	Without			
		*8	32				
manda arrea ar							
BASE METALS (Q)							
Material Specification	No. SA 333 to	SA 350	Type or Grade	Gr. 6 to Gr. LF2			
			Thickness				
Heat Number	242119 to 18871	2	Carbon Equivalent (1)	0.34 to 0.41			
Diameter	10.75 in. O.D.		Other	N/A			
Deposited Weld Meta	I (Per Pass)	Did not exce	ed 0.094 in. for E6010,	9			
			. for E7018-1				
(1) Per CSA Z662	Carbon Equivale	nt formula. S	ee chemical compositio	n of			
	alysis on attached						
13 40/6/69				200			
			24				
FILLER METALS (	QW-404)	SMAW	SMAW				
Specification No. (SF.	A)	SFA 5.1	SFA 5.1	100000			
AWS No. (Class)				(3)			
F-No	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
A-No.	W-184	A1	A1				
Diameter	W-			220			
Deposited Weld Meta							
(2) The Lincoln E	ectric Company:	Lincoln Fleet	weld 5P+				
(3) Air Liquide Ca				<del></del>			
			· · · · · · · · · · · · · · · · · · ·				
<b>POSITION (QW-40</b>	5)						
Position of Groove		000000	Weld Progression	Vertical up			
PREHEAT (QW-40)	6)						
Preheat Temperature			Interpass Temp. (Max.	) <u>400 °F</u>			
Preheat Maintenance		allowed to co	ool to ambient temperat	ure in still air after			
		as completed	d.				
	S. VO.	4,500	700 - No.				
<b>POSTWELD HEAT</b>	TREATMENT (	QW-407)					
With or Without	Without	minoraciiiiii 4568° <b>=</b> 7					
Temperature		- 03	Time	N/A			

# **ELECTRICAL CHARACTERISTICS (QW-409)**

Current		Direct	Polari	ity Reverse, electrode positive
Amps	382	See below	Volts	See below
Heat Input		E6010: 42,900 J/in. maximur	n	E7018-1: 73,371 J/in. maximum

# **TECHNIQUE (QW-410)**

Manual or Automatic	Manual	
String or Weave	E6010: String	E7018-1: Weave
Initial & Interpass Cleaning	Brushing, chipping	and grinding as required
Method of Back Gouging	Not conducted	
Multiple or Single Pass Per Side	E6010: Single	E7018-1: Multiple
Peening	Not conducted	The state of the s
Travel Speed	See below	A0 0
Use of Thermal Process	N/A	



Pass	Process	Filler Metal	Diameter in.	`Current Type & Polarity	Amperage Range	Voltage Range	Travel Speed i.p.m.
1	SMAW	E6010	1/8	DCRP	86 - 90	25 - 27	3.2
2	SMAW	E7018-1	3/32	DCRP	85 - 89	23 - 25	3.4
3	SMAW	E7018-1	3/32	DCRP	91 - 95	22 - 24	2.7
4	SMAW	E7018-1	1/8	DCRP	105 - 109	23 - 25	2.1
5	SMAW	E7018-1	1/8	DCRP	115 - 119	21 - 23	3.4
6	SMAW	E7018-1	1/8	DCRP	114 - 118	22 - 24	3.8
7	SMAW	E7018-1	1/8	DCRP	114 - 118	21 - 23	2.2
8	SMAW	E7018-1	1/8	DCRP	106 - 110	21 - 23	2.1
9	SMAW	E7018-1	1/8	DCRP	105 - 109	21 - 23	2.2

# **TENSILE TEST (QW-150)**

Fracture Type & Location	Ultimate Stress psi	Ultimate Load Ibf	Area sq. in.	Thickness in.	Width in.	Sample No.
Partial Cup & Cone Parent Metal (SA 333 Gr. 6)	70,600	39,500	0.599	0.740	0.756	T1
Partial Cup & Cone Parent Metal (SA 333 Gr. 6)	70,800	39,400	0.557	0.740	0.752	T2

## **GUIDED BEND TEST (QW-160)**

Type & Figure No.	Result	Type & Figure No.	Result
QW-462.2, TSB - S1	Pass	QW-462.2, TSB - S3	Pass
.QW-462.2, TSB - S2	Pass	QW-462.2, TSB - S4	Pass

### **CHARPY V-NOTCH IMPACT TEST**

Type of Test	Charpy \	/-Notch	Orientation .	Transverse
Test Temperature	-50 °F		Specimen Size	0.391 X 0.394 in.
Specimen N	lo.	I	lotch Location	Impact Values ftlbf
W2.1			Weld Metal	. 56

Specimen No.	Notch Location	Impact Values ftlbf
W2.1	Weld Metal	56
W2.2	within 1/16 in.	49
W2.3	of root	12
18 8 188		· ·
W3:1	Gr. 6 HAZ	16
W3.2	1/4 - 1/2t from	118
W3.3	cap surface	130.
X3.1	Gr. LF2 HAZ	. 29
X3.2	1/4 - 1/2t from opposite	- 28
X3.3	cap surface	32

### **OTHER TESTS**

Weider's Name	Blain Turner	Certificate File No.	W-28725
Tests Conducted By	SGS Canada Inc.	Section and the section of the secti	
Laboratory Test No.	E15-535.1		
Paragraph QW-200.2 an	nd that the test welds welds welds we section IX of the ASME	2	
Paragraph QW-200.2 an with the requirements of	d that the test welds v	vere prepared, welded and to Code.	
	d that the test welds v Section IX of the ASME IPAC Services Co	vere prepared, welded and to Code.	



### TENSILE / BEND TEST

Customer:

**IPAC Services Corporation** 

8701 - 102 Street Clairmont, Alberta

TOH OWO

Laboratory Test No.: E15-535.1

Date: August 27, 2015 P.O. No.: 16-107-17,793

Attention:

Sheldon Rule

PQR No.:

IPAC-1-1 (Rev. 0)

Material:

SA 333 Gr. 6 to SA 350 Gr. LF2

Size:

273.1 mm (10.75 in.) O.D. x 21.4 mm (0.844 in.) w.t.

Thermal Condition:

As Welded

Governing Spec.: ASME Section IX - 2013 Instrument:

Heat No.:

Satec S/N: 1314

242119 to 188712

SAMPLE NO.(QW-150)	T1		T2	
WIDTH mm (in.)	19.2	(0.756)	19.1	(0.752)
THICKNESS mm (in.)	18.8	(0.740)	18.8	(0.740)
AREA sq. mm (sq. in.)	361	(0.559)	359	(0.557)
ULTIMATE LOAD N (lbf)	175 643	(39,500)	175 342	(39,400)
ULTIMATE STRESS MPa (psi)	487	(70,600)	488	(70,800)
FRACTURE TYPE	Partial Cu	p & Cone	Partial Cu	p & Cone
FRACTURE LOCATION	Parent Me	etal	Parent Me	etal
8	(SA 333 G	Gr. 6)	(SA 333 G	Gr.6)

Note: Imperial values calculated by direct conversion.

SAMPLE TYPE(QW-462.2)

Side Bend

Side Bend

Side Bend

Side Bend

SAMPLE NO. RESULTS

**Pass** 

S2 Pass **S3** Pass **S4** Pass

T.T. (Calgary) Test Conducted By: Alvia Mathew

Certified By:

L-A-B Accredited Certificate Number L2057-1 Testing

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the Fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

SGS Canada Inc. |

4027 - 14 Street S.E. Calgary AB T2G 3K6 7925 Davies Road Edmonton AB T6E 4N1

t+1 (780) 468-3030

t+1 (403) 262-7072 f+1 (403) 266-3169 f+1 (780) 468-3032

www.sgs.com



### CHARPY V-NOTCH IMPACT TEST

Customer:

**IPAC Services Corporation** 

8701 - 102 Street Clairmont, Alberta

TOH OWO

Laboratory Test No.: E15-535.1

Date: August 28, 2015 P.O. No.: 16-107-17,793

Attention:

Sheldon Rule

PQR No.:

IPAC-1-1 (Rev. 0)

Heat No.:

242119 to 188712

Material:

SA 333 Gr. 6 to SA 350 Gr. LF2

Size:

273.1 mm (10.75 in.) O.D. x 21.4 mm (0.844 in.) w.t.

**Thermal Condition:** 

As Welded

Specimen Size:

10 x 10 mm (0.394 x 0.394 in.)

Machine:

Satec SI-1C SN: 1363

Orientation:

Transverse

Capacity:

325 J (240 ft-lbf)

Test Temperature: Governing Spec .:

-46°C (-50°F)

ASME Section VIII, Div. I, UG-84 - 2013

Verified Range:

1.7 - 260 J (1.3 - 192 ft-lbf)

Specimen	Notch	Impact Values	
Number	Location	Joules	(ft-lbf)
W2.1		76	(56)
W2.2	Weld Metal	66	(49)
W2.3	within 1.5mm (1/16") of root	16	(12)
W3.1		22	(16)
W3.2	Gr. 6 - HAZ	160	(118)
W3.3	within 1/4-1/2t from cap surface	176	(130)
X3.1	6	39	(29)
X3.2	Gr. LF2 - HAZ	38	(28)
X3.3	within 1/4-1/2t from opposite cap surface	43	(32)

Note: Metric values calculated by direct conversion.

Test Conducted By: Alvin Mathew, T.T. (Calga

Certified By:

L-A-B Accredited Certificate Number L2057-1 Testing

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contracty are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ton times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

Page 1 of

Page 1 of 1

SGS Canada Inc. |

4027 - 14 Street S.E. Calgary AB T2G 3K6 t+1 (403) 262-7072 f+1 (403) 266-3169 7925 Davies Road Edmonton AB T6E 4N1

t+1 (780) 468-3030 f+1 (780) 468-3032

www.sgs.com



### HARDNESS TEST

**Customer:** 

**IPAC Services Corporation** 

8701 - 102 Street Clairmont, Alberta

TOH OWO

Attention:

Sheldon Rule

PQR No.:

IPAC-1-1 (Rev. 0)

Material:

SA 333 Gr. 6 to SA 350 Gr. LF2

Size:

273.1 mm (10.75 in.) O.D. x 21.4 mm (0.844 in.) w.t.

Thermal Condition:

As Welded

Type of Test:

Vickers 10kg (HV10)

Instrument:

Heat No.:

DuraScan 667

242119 to 188712

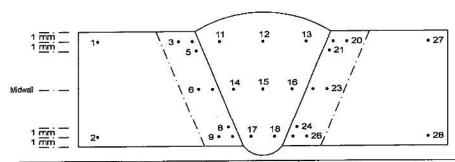
Laboratory Test No.: E15-535.1

Date: August 27, 2015

P.O. No.: 16-107-17,793

Governing Spec.:

ASTM E384-11<sup>E1</sup> & ANSI/NACE MR0175/ISO 15156:2009(E)



SA 333 Gr. 6.		SA 333 Gr. 6. Weld Metal		SA 350 Gr. LF2					
Pare	arent Metal HAZ		vveiu Wetai		HAZ'		Parent Metal		
1	147	3	163	11	205	19	225	27	194
2	151	4	185	12	174	20	201	28	185
		5	180	13	196	21	197		
		6	164	14	189	22	202		
8		7	174	15	203	23	186		
		8	187	16	182	24	207		
		9	175	17	187	25	206		
		10	179	18	196	26	193		

Test Conducted By: Alvin Mathew,

Certified By:

Eric Dacyk, C.F.T.

L-A-B Accredited Certificate Number L2057-1 Testing

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

Page 1 of 1



V&M DEUTSCHLAND GmbH

Werk Reth-Stopfen Rether Kreuzweg 106 40472 Düsseldorf



VAM

VALLOUREC & MANNESMANN TUBES

Valleurec Group

MATERIAL TEST REPORT (3.1 NACH EN 10204:2004) PARAGRAPH 16, C

No.: 72603RS09

(A03)

(AD2)

Page: 3 / 5 Date: 24.01.2009

(C72)

### PRODUCT CHEMICAL ANALYSIS

(907.1) Heat	(coo.1) Test Plece	C %	S1 %	Mn %	P %	5 %	Cu   %	Cr %	NI %	Mo %	V %
min		0.250	0.100	0.40 1.35	0.025	0.0250	:	•	1.000	•	0.110
242119		0.157	0,243	/0.91	0.011	0,0005	9.095	0.072	0.044	0.008	0.001
242119	+	0.167	0.246	0.92	0.011	0.0005	0.097	0,073	0.044	0.009	0.002

(807.1) Heat	(coo.t) Test Plece	TI %	Nb/Cb %	B %	CQ 27					N .	
min		- 0.110	0.110	D,0010	.40						<u> </u>
242119		0.003	0.001	0.0001	.34	<i>Y</i>	i	11 - 30 - 0	200 00 00 00		
242119		0.003	0.001	0.0001	.34	1					

CQ 27

CAE=C+F X(MN/6 + SI/24 + CU/15 + NI/20 +(CR+MO+V+NB)/5 + 5B)

TENSILE TEST RESULTS

Type (C10,1)

Test tempsrature (C03)

Direction (CO2)

ROUND TEST SPECIMEN

ROOM TEMPERATURE

longitudinal

(807.1) Heat	(Coo.1) Test Piscs	(C10) Diameter	(C11) YS	(C12) TS	(C13) Elong.	(C14,1) Ratio			
		Inch	R <sub>p0,2</sub> psi	R <sub>m</sub> psl	2" %	R/R <sub>m</sub>			_
min max		-	42000 72000	60000 91000	28.0			ją.	
242119	71A	00,49	44525	69906	35,8	0.64	/		
242119	728	00.49	45830	70341	35.1	0,65			

IMPACT TEST ON CHARPY-V LONGITUDINAL SPECIMEN
WITH REPORT OF PERCENT DUCTILE AREA VALUES
TEMPERATURE AND IMPACT VALUES ARE VALID FOR SPECIMEN 10 X 10
IN CASE OF SUBSIZE SPECIMEN, REDUCTION OF TEMPERATURE AND OF
IMPACT VALUES ARE TO BE CALCULATED ACC. TO STANDARD
HARDNESS HRC MAX. 22
(WITHOUT TESTING, ONLY CERTIFICATE)

10" CL 150 W/N FLANGE RF SCH 160 BORE A350-LF2 CL (SQ. CUT) BORE & BEVEL TO S/120

METALFAR PRODOTTI INDUSTRIALI SPA 23861 CESANA BRIANZA (LC) - ITALY VIA G. PARINI, 28 PHONE + 39 031 655441 - FAX +39 031 655149 quality.mff@farmas.com	AD1			COMPANY WITH MANAGEMENT SYSTEM CERTIFIED BY DNV = ISO 9001 = = ISO 14001 =
INSPECTION CERTIFICATE EN 10204:2004 / 3.1	A02	Nr <sup>A03</sup> 2014-C_MFF-	07559	Data / Dated 28.10.2014
TRANS AM PIPING PRODUCTS LTD 9335 ENDEAVOR DRIVE S.E. T3S 0A1 CALGARY, ALBERTA	CA	Ordine / PO Item DDT / Delivery note Packing List Fattura / Invoice Ns. rif. / Our ref.	2014- 2014-	-441 3E301-0004446 3E401-0003967 3E401-0003967 3E201-0002508-0025
Dest. TRANS AM PIPING PRODUCTS LTD 9335 - Endeavor Drive S.E. T3S OA1 Calgary, ALBERTA	A CA		· • · · · · ·	
Cod. colata ao Nr. colata Guaritis en Heat Nr. Guaritis en Heat Nr. Guaritis Wild State (1987)	0 160 SØ (	pescuzjen Descriptio Libergoon	i	B91 - (B00 - 81
NABEMROUTSCOOLSE PASS. S NABEMROUTSCOOLSE PASS. S NABEMROUTS JULE SOURSERN DISHARE ORD WITH PASS SEC THE SERI (4687 2014 DE 114 ACERTEDIA SEST 223 10 GRADE 248 CAT II SO	DUR GERM IGE JUREN DIRE	CT:97/29/EC(RED) AN		aragraph (3
	0,090 (	5,106	6.14 GES 0.37	0 0.003 0.003 0.000
Provetta Forma 19 5000 Snervamento>0,2%01 Snervamen	vamento>1,0	%C11 Rottura 612 A	lungan Elongat	iento <sup>(1)</sup> . Contrazione <sup>(</sup> libri Reduction of area (6) 81,0
DUREZZA / NARONESS  HEW Hochopy  10x10 mm  10x10 mm  Tall Jenny Hoppingstment   NorMAtiZED AT 930° C - COOLED	°C <sup>cós</sup> -46	A / IMPACT TEST 1-Joule <sup>CO2</sup> 2-Joule 70 454		Joule C42. Media/Average C
im Trace at 5077 acc 88 (12 ASMEANS) B16.5 -2013 ASMEANS(#36.10M -2004	IN STILL A			LELECTRIO FURNACE
Initura Rouginess 125250 WICKOINCH AARH Marcetula in acc. 1853 Bast d 2013 Visia Dim. 18510 Marking in acc. 26 1 MSS Bast d 2013 Visia Dim. 18510	FACTORY	origine Original Steat		EUROPEAN UNION

WANTEROTURING IN ADEGROANCE WITH ORDER AND RECIFICATION

MEDITIES AERIEED SECTION II

	SECT	TON	H
TO DEST AND IN IN IN			
REQUI	REVE	¥ 15	AEEE

Edition_	1013	Adder	ndum
Initial	y.1	Date	AUGOTA

<b>UFFICIO CONTROLLO QUALIT</b>	A.
QUALITY CONTROL DEPARTME	MT

Ha + rigerio

ENTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY

MARCHIO PRODUZIONE MANUFACTURER'S SYMBOL



# QW-483 PROCEDURE QUALIFICATION RECORD (PQR)

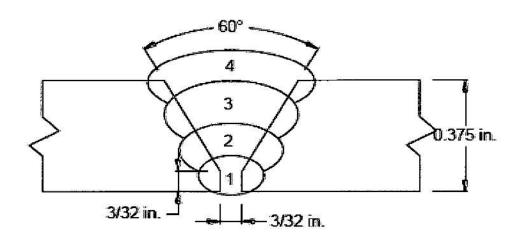
Organization Name		C Services Corp	
Procedure Qualification Re			======================================
Date Originally Qualified _	Jan	uary 28, 2019	Date February 5, 2020
Revision(s) Rev. 1 (Edit	orial) - Addition of ext	racted MTR pages	. Format update.
Welding Process(es)	Shie	elded Metal Arc We	elding (SMAW)
JOINTS (QW-402)			
	joint, single vee groov	ve see next page	
Root Opening See			/
	out	Retainers	Without
			(20 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -
BASE METALS (QW-40			
Material Specification No	SA 516	Type or Grade	e Gr. 60/70
Heat Treat Condition (1) P-No. P1 Groups 1/2 To	Normalized		
P-No. P1 Groups 1/2 To	P-No. P1 Groups	<u>1/2</u> Thickness	0.375 in.
Heat Number 4162	49 20814-03	Carbon Equiv	alent (2) <u>0.36</u>
Diameter N/A Deposited Weld Metal (Per	122 10 1220010	Other	Plate product form
Deposited Weld Metal (Per	Pass)Did	not exceed 0.094	n. for E6010,
			8-1
(1) Condition of base m			and the same
	on Equivalent formul		omposition of
neat analysis on att	ached material test re	eports.	
FILLER METALS (QW-4	(04) SM	AW	SMAW
Specification No. (SFA)			
AWS No. (Class)	F60	)10 (3)	
F-No.	F3		F4
A-No.	A1		A1
Diameter	See	attached sketch	
Deposited Weld Metal Thic		94 in.	
(3) The Lincoln Electric			
(4) ESAB: OK 55.00	0.00		i Marieri
DOCITION (OM 405)			
POSITION (QW-405)	20	W-H D	-i Vadiani
Position of Groove	36	vveia Progres	sion Vertical up
PREHEAT (QW-406)			
Preheat Temperature	50 °F	Internass Ten	n (Max.) 400 °F
Preheat Maintenance			
Trefleat Wallterlance	welding was comp		temperature in our air arter
	Tolding Was somp		
POSTWELD HEAT TRE		)	
With or Without Temperature	Without	) Time	N/A

# **ELECTRICAL CHARACTERISTICS (QW-409)**

Current	Direct	Polar	ity Reverse, electrode positive
Amps	See below	Volts	See below
Heat Input	E6010: 23,537 J/in. maximu	ım	E7018-1: 63,800 J/in. maximum

# **TECHNIQUE (QW-410)**

Manual or Automatic	Manual	
String or Weave	E6010: String	E7018-1: Weave
Initial & Interpass Cleaning	Brushing, chipping a	and grinding as required
Method of Back Gouging	Not conducted	*
Multiple or Single Pass Per Side _	E6010: Single	E7018-1: Multiple
Peening	Not conducted	
Travel Speed	See below	No construction with the second
Use of Thermal Process	N/A	



Pass	Process	Filler Metal	Diameter in.	Current Type & Polarity	Amperage Range	Voltage Range	Travel Speed i.p.m.
1	SMAW	E6010	1/8	DCRP	84 - 88	25 - 27	5.7
2	SMAW	E7018-1	3/32	DCRP	85 - 89	22 - 24	4.9
3	SMAW	E7018-1	3/32	DCRP	84 - 88	21 - 23	2.0
4	SMAW	E7018-1	3/32	DCRP	85 - 89	21 - 23	1.8

PQR NO.	IPAC-1-3 (Rev. 1).	
r wit HO.	11-70-1-3 (Nev. 1)	-

# CHARPY V-NOTCH IMPACT TEST

Type of Test	Charpy V-Notch	Orientation	Transverse
Weld Thickness	E6010 (t1) = 0.094 in.,	E7018-1 (t2) = 0	.281 in.

Governing Specification	Notch Location	Specimen Size in.	Test Temperature "F	Specimen Number	Impact Values ft-lbf
	t2 Weld Metal	0.204 ×	7/	V2.1	13
ASME VIII Div.1 - 2017	within 1/16 in.	0.394 x 0.262	-51	V2.2	. 20
	of t2 weld surface	0.202		V2.3	19
<del></del>	12 HAZ	0.204	<del></del>	V3.1	105
ASME VIII Div.1 - 2017	1/4 - 1/2t from	0.394 x 0.262	-51	V3.2	90
	t2 weld surface	0.202		V3.3	103

### OTHER TESTS

Welder's Name	Wayne Kruger	_ Certificate File No	W-25763
Tests Conducted By	SGS Canada Inc.		
Laboratory Test No.	E19-049.2		
Paragraph QW-200.2 ar	the statements in this raid that the test welds wer Section IX of the ASME C		
Paragraph QW-200.2 ar with the requirements of	d that the test welds wer	e prepared, welded and	
Paragraph QW-200.2 ar with the requirements of Organization	d that the test welds wer Section IX of the ASME C	e prepared, welded and ode.	
Paragraph QW-200.2 ar with the requirements of Organization	d that the test welds wer Section IX of the ASME C	e prepared, welded and ode.	



### **CHARPY V-NOTCH IMPACT TEST**

Customer: IPAC Services Corp.

8701 102 Street Clairmont, Alberta

T8X 5G8

Attention: Sheldon Rule

PQR No.:

IPAC-1-3 (Rev.0)

Material:

SA 516 Gr. 60/70 9.52 mm (0.375 in.)

Material Thickness: Filler Metal:

E6010 (t<sub>1</sub>) / E7018-1 (t<sub>2</sub>)

Weld Thickness:

 $t_1 = 2.39 \text{ mm} (0.094 \text{ in.}) / t_2 = 7.14 \text{ mm} (0.281 \text{ in.})$ 

Thermal Condition: As Welded

Specimen Size:

10 x 6.7 mm (0.394 x 0.262 in.)

Machine:

Satec SI-1K3, S/N: 1503

SMAW

Single Sided

Orientation:

Transverse

Capacity:

407 J (300 ft-lbf)

416249 20814-03

Test Temperature:

-46 ℃ (-51 °F)

Verified Range:

3.4-325 J (2.5-240 ft·lbf)

Governing Spec.:

ASME Section VIII, Div. I, UG-84 - 2017

Calibration Date:

Material Heat No.:

Welding Process:

Weld Type:

March 19, 2018

Laboratory Test No.: E19-049.2

Date: February 4, 2019

Specimen	Notch	Impact	Values
Number	Location	Joules	(ft·lbf)
V2.1	A. Weld March	18	(13)
V2.2	t <sub>2</sub> - Weld Metal	27	(20)
V2.3	within 1.5mm (1/16") from t <sub>2</sub> weld surface	26	(19)
V3.1	1107	142	(105)
V3.2	t <sub>2</sub> - HAZ	122	(90)
V3.3	1/4-1/2t <sub>2</sub> from weld surface	140	(103)

Note: Metric values calculated by direct conversion.

Test Conducted By: Mohamed Botan (Edmonton)

Certified By:\_\_\_\_\_

Patrick Lysz, C.E.T.

ARAB
ACCREDITED
SONEGIOUS
TESTING LABORATORY
Certification # L2057.01-1

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

Page 1 of 1



### HARDNESS TEST

IPAC Services Corp. Customer:

8701 102 Street Clairmont, Alberta

T8X 5G8

Sheldon Rule Attention:

PQR No.:

IPAC-1-3 (Rev.0)

Material:

SA 516 Gr. 60/70

Material Thickness:

9.52 mm (0.375 in.) E6010 (t<sub>1</sub>) / E7018-1 (t<sub>2</sub>)

Filler Metal: Weld Thickness:

 $t_1 = 2.39 \text{ mm} (0.094 \text{ in.}) / t_2 = 7.14 \text{ mm} (0.281 \text{ in.})$ 

Thermal Condition:

As Welded

Type of Test:

Vickers 10 kg (HV10)

Governing Spec .:

ASTM E92-17 & ANSI/NACE MR0175 ISO

15166:2015

Laboratory Test No.: E19-049.2

Date: February 1, 2019

Material Heat No.:

416249 20814-03

Welding Process:

**SMAW** 

Weld Type:

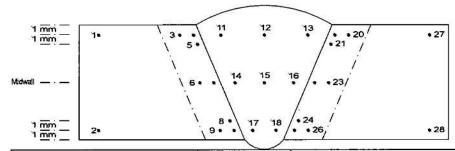
Single Sided

DuraScan 70

Calibration Date:

Instrument:

September 19, 2018



Pare	ent Metal		HAZ	Wel	d Metal		HAZ	Pare	nt Meta
1	159	3	163	11	189	19	168	27	155
2	152	4	170	12	205	20	155	28	148
		5	179	13	192	21	172		
		6	164	14	186	22	163		
		7	161	15	181	23	160		
		8	167	16	189	24	163		
		9	161	17	157	25	166		
		10	165	18	152	26	163		

Test Conducted By: Eric Dacyk, C.E.T. (Edmonton)

Certified By:\_

Patrick Lysz, C.E.T.

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

# DILLINGER &

# QM-System: Certification as per ISO 9001

Erigor	Grunden Slone r	Ruckseite/Explic.	SHOUS YOU BU YOU	30/See reverse	Erigulerungen slohe Rückseite/Explications voir au verse/Sce reverse for explanations (www.dilinger.de/certificate)	dillinger, de/cei	(lificate)					
A02	INSPECTI	TON CERTI	INSPECTION CERTIFICATE 3.1 AS PER EN	1 AS PER	: EN 10204:2004	3004			A10 Advice	Advice of dispatch No./ Date of dispatch	A08/ Manufacturers order/ A03 Certificate No.	Shear
	INSPECT	TON CERTI	FICATE 3.	1 AS PER	INSPECTION CERTIFICATE 3.1 AS PER ISO 10474:2013	2013					100	
	MATERIAL	TEST RE	MATERIAL TEST REPORT (MTR)	(3					57397	573971-13.07.16	415180-003	1/
A05E	A05 Established Inspecting body DH		A06 Purchaser		EDMONTON STEEL, EDMON		Š.	ED10688-J1010ER			BOI Product	
			Final receiver		EDMONTON STEEL, EDMON	DMON A07.2	7.2 No.				HEAVY FLAIES	
B02/	B02/ Steel design.	SA516-70	0				SA20-S5					=
803	BO3 Any suppl.	ASME-IIA:2013	A:2013									
	requirements	DIL-HUE	DIL-HUE-1:R33-2014-04-04	114-04-04		5			200		20414	
	B01-E	399 Descrip	B01-B99 Description of the product	product -								
814	808	809	810		111	B12	804	807.2	807.1	409		
Itam		Thickness	Width	-	Longth	Theoretical	Product delivery	Heat No.	Rolled plate No./	Purchaser article number	number	
ġ Ż	or pieces		NCH			mass KG	condition		lest no.		口の一つなり	
10	н	0,3750 x		120,50000 x	480,00000	2790	Z	416249	20814-01	ITEMOOI	うという	
011	: i	0,3750 x		120,50000 x	480,00000.	.2790	z	416249	20814-03		JEZY February 21,3018	'n
0	н	0,3750 x		20000 x	480,00000	2790	z	416249	20816-01		300	
0	н	0,3750 x		120,50000 x	480,00000	2790	z	416249	20816-02		JA 316 Gr. 80/70	
0	н	0,3750 x	×	120,50000 x	480,00000	2790	z	416249	20816-03		0.375" Thickness	
r o	н	0,3750	×	120,50000 x	480,00000	2790	z	432367	20925-01		אבין איני פורנייון אבלי	23
ರ	н	0,3750 x	5	120,50000 x	480,00000	2790	2	432367	20925-02		T 1/00/1	)
0	н	0,3750 x		120,50000 x	480,00000	2790	z	432367	20925-03	ITEMOO1 T	Internal POF FOODY'S	~≼
*	ω					22320				0	139861 # 00	
* *	<b>60</b>					22320				-		
	B04 P	roduct deli	B04 Product delivery condition	tion								
ITE	ITEM NO.: 01	-										
SOA COO	HT: 1670 KING TIMI LING IN S	N: HT: 1670 GR.F +36 SOAKING TIME TO ATTA COOLING IN STILL AIR	N: HT: 1670 GR.F +36 -27 GR.F SOAKING TIME TO ATTAIN THE TAI COOLING IN STILL AIR	F ARGET TEM	PERATURE OVI	ек тне и	HOLE SECTION	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	MM (25-45 MIN	1/INCH)	( <b>x</b> ))	
	B06 M	larking of ti	B06 Marking of the product									

STEEL DESIGNATION SASIG 70 MTLTV SASIG 60 MTLTV
HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

201/202/203 We hereby cordify, that the above mentioned materials have been delivered in accordence with the terms of order.

404

AF)B

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

A01

Date 13.07.16

B, BALDAUF Test House Manager

Ξ
ISO 900.
o
(455)
per
as
_
tification
fic
Ĭ
င်
Ë
/stem
5
Š
G

Eritularungan stato Rückrafte/Exellcations voir au verso/Soo ravarse for oxplanations (www.dillinger.de/contificate)				\$ 3
A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./	A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1 AS PER ISO 10474:2013				
MATERIAL TEST REPORT (MTR)		573971-13.07.16	16 415180-003	2/
A05 Established inspecting body A08 Purchasor EDMONTON STEEL, EDMON A07.1 No.	* ED10688-J1010ER		B01 Product	
Final receiver EDMONTON STEEL, EDMON A07.2 No.	,		HEAVY PLATES	
B02/ Stool design. SAS16-70 SA	SA20-S5			
803 Any suppl. ASME-IIA; 2013			al es	
requirements DIL-HUE-1:R33-2014-04-04				
B07-B99 Further information about the product				
THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED - CF. A/SA20(M)	) (M) PAR. 5.3			
C10-C29 Tensile test				
B07.1 B05 C01 C02/	C12 C13		C14-C15	
n Heat No. Rol.plate/ Reference (heat) treatment C01 Tomp.	∢ 8			
No. Test No. RP02	RM LOSSIN	2		
RT	ω,			
01 416249 20816 KI Q RT 51,2	73,1. 26			
432367 20925 KI Q RT	74,4 28			
C30-C39 Hardness test				
B07.1 B05 C01 C02/C01	C30 C35		C32	
Hoat No. Rol.plate/ Raference (heat) freatment	Tomp. Mothod of tost Ind	Individual values	Mean	
416249 20814 K1 O	HBW 5/750 HB	5 146 146	146	
416249 20816 K1 O	HBW 5/750 HB		143	
432367 20925 K1 O	HBW 5/750 HB	145	146	
C40-C49 Impact test				
B07.2 B07.1 B05 C01 C02/ C03	C40	C46 C45 C42		C43
Item Heat No. Religiate Reference (heat) treatment C01 Temp. Width of	of Type of Testing method		Individual values AV=FT LBF	Mean
416249 20814 KI LV -51	~	AV 8 99	149 142 1	0
416249 20816 K1 LV -51	CHP-V	8	125	4
432367 20925 K1 LV -51	CHP-V	AV 8 144	135 151 143	3
A04 Z01/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance	accordance	AG	AG der Dillinger Hüttenwerke	A01
×	S BAN	AHB Pos	Postfach 1580, D-66748 Dillingen/Saar Inspection department	n/Saar
Manufacutor's	B. BALDAUF	lococctor's stamp	0ale 13 02 16	-
S NITH	Indiated Activity 1951	1		

# QM-System: Certification as per ISO 9001

Erläuterungen siohe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)	<b>Ocksella/Explica</b>	tions voir au ve	erso/See reven	se for explana	fons (www.dilling	ter.de/certificate)			8	30		900000			
A02 INSPECTION	INSPECTION CERTIFICATE	FICATE 3	3.1 AS PE	PER EN 1	10204:2004	•				A10 A0	Advice of dispatch No./ Date of dispatch		A08/ Manufacturor's order/ A03 Certificate No.	n's order/ lo.	Sheet
INSPECTI	INSPECTION CERTIFICATE	FICATE 3	3.1 AS PE	PER ISO 1	10474:2013	3						veetile.			
MATERIAL	MATERIAL TEST REPORT (MTR)	PORT (MI	R)	88		20				573	573971-13.07.16	91.16	415180-003	003	3/
A05 Established Inspecting body	22.5	A06 Purchasor	67,05	EDMONTON S'	STEEL, EDMON	N A07.1 No.		ED10688-J1010ER	22			<b>a</b>	B01 Product	1000000	
HO		Final receiver		EDMONTON ST	STEEL, EDMON	N A07.2 No.						н	HEAVY PLATES	TES	
802/ Steel design.	SA516-70						SA20-S5								
BO3 Any suppl.	ASME-IIA:2013	4:2013										- C			
raquirements	DIL-HUE	-1:R33-2	DIL-HUE-1:R33-2014-04-04	40											
C70-C	C70-C99 Chemical composition % - Heat analysis	al compo	sition % -	Heat ana	lysis										
_1	C70		ī	•	c	•		ā	9	5	ą	;	9	2	F
416249		0.155 (	0.373	1.17	0.006	0.0008	0.0077 0	98	7	33	ō,	0.000	0	н	0,003
432367	٥ ٠			1,17	0,007	, 0007						0,000			0,003
	C70	c	;	,											
4 1 6 2 4 9	٠ ۲	0.0002	0.00.0	0.029											
432367				0,036											
C94 Hk	C94 Heat analysis		n equivale	ent / Alloy	Carbon equivalent / Alloying restrictions	tions —									
	,		,	; ;		, ,		C		C	ם				
432367	L LL	FO-02=	0,37	FO-51=	0,001	FO-55=	0,19 0,19		90,0	FO-91=	4,7				
C951a	C95 Ladle treatment	ent								22 11					
ITEM NO.: 01 HEAT OF THE	NO.: 01 OF THE INDICATED ITEM: VACUUM DEGASSED	D ITEM:	<b>УАСТОМ</b>	DEGASSEI	D / SULPHI	DE	SHAPE CONTROL	8							
C95 FL	C95 Further information about ladle treatment	mation al	bout ladle	treatmen	1					1	ñ				
ITEM NO.: 01 CALCIUM TREATED	(TED														
C70-C5	C70-C99 Chemical composition % - Product analysis	al compos	sition % -	Product 2	analysis -										
B07.2 B07.1 Heat Test No. 416249 20814	9. A	0,156	SI 0,370	MN 1,15	0,006	0,0010	N 0,0094	au 0,026	0,007	NI 0,032	CR 0,017	0,000	0,001	SN 0,001	0,003
432367 20924	74.	0,161				23.507			0,014					0,000	0,003
A04	Z01/Z02/Z03 W	Ve hareby certi	fy, that the abo	we mentioned	materials have t	201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance	accordance		000 <b>.</b>			AG der Dil	AG der Dillinger Hüttenwerke	enwerke	A0:
××	5	with the terms of order.	of order.					S BAR	M	(A)	~~	Postfach 1580, Inspection department	Postfach 1580, D-66748 Dillingen/Saar	48 Dillinge	n/Saar
Manufacturer's mark								B, BALDAUF Test House Man	B, BALDAUF Test House Manager	Inspecto	Inspector's stamp (	Dale 13.07.16	7.16	d	PP 1

# QM-System: Certification as per ISO 9001

_Eriquierungen siehe Rockseke/Expilcetions voir au voreo/See reverse for expianstions (www.dilingsy.de/certificate)	seke/Explice	itions voir au varac	VSee reverse to	r explanations	(www.dillingsr.	de/certificate)				
A02 INSPECTION CERTIFICATE 3.1 AS PER EN	CERTI	FICATE 3.1	AS PER	EN 102	10204:2004			A10 Advice of dispatch No./	A08/ Manufacturer's order/	Sheet
INSPECTION CERTIFICATE 3.1 AS PER ISO 10474:2013	I CERTI.	FICATE 3.1	. AS PER	ISO 104	74:2013					
MATERIAL TEST REPORT (MTR)	EST RE	PORT (MTR)		•			The Control of the Co	573971-13.07.16	415180-003	4
A05 Established Inspecting body		A08 Purchaser	EDMON	EDMONTON STEEL, EDMON	L, EDMON	A07.1 No.	ED10688-J1010ER		801 Product	
		Final receiver	EDMON	EDMONTON STEEL, EDMON	L, EDMON	A07.2 No.			HEAVY PLATES	
802/ Steal design. 8	8A516-70	0			8	SA	SA20-S5			- 200
B03 Any suppl. A	ASME-IIA:2013	A:2013								
requirements D	IL-HUE	DIL-HUE-1:R33-2014-04-04	4-04-04							
C70-C99	Chemic	C70-C99 Chemical composition % - Product analysis	ion % - Pr	oduct ana	Ivsis					
B07.2 807.1	S									
			8	AL-T						
41802 642414	2 5	5,000	0,0006	970'0					i	
	2	7000'0	1100'0	0,00		•				
C94 Pro	duct ana	C94 Product analysis Carbon equivalent / Alloying	on equiva	ent / Allo)		restrictions —				- 0.000000
B07.2 B07.1	8								300	
249	₫.	FO-02m	0,36	FO-51=	100'0	FO-55=	0,08			
432367 20924	Ø	FO-02=	0,38	FO-51=	0,001	FO-55=	0,19		•	
C94 Carl	pou edu	C94 Carbon equivalent formula / Alloying restrictions	ula / Alloy	ing restric	tions —					
П	/6) + (CR	1+MO+V) /5+	(NI+CU)	15		÷				
	+NI+CR								ž.	
						3				
FO-91 a MW/C							29			
DO1 Mari	king and	i identificatio	on, surface	e appeara	nce, shap	e and dime	D01 Marking and Identification, surface appearance, shape and dimensional properties			
ITEM NO.: 01							the state of the s	5.	Con a series	
EXAMINATION OF MARKING,	F MARKI	NG, SURFACE,	CE, SHAP.	E AND DI	MENSIONS	THE RB	SHAPE AND DIMENSIONS: THE RESULTS MEET THE REQUIREMENTS	TS.	一十	
SURFACE	- Control (1)		ME-SAZO		•		9		リンプ	
THICKNESS			MB-5A20		73			蘇	30, I	
PLATNESS		AS PER ASME-SAZO	PER ASME-SAZO	720					Salvoria Par	
				)						

K KAN

B. BALDAUF Teel House Manager

A A

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

ā

Inspector's stemp

Date 13,07,16

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

# DILLINGER

# QM-System: Certification as per ISO 9001

	ı
ww.dillinger.de/certificate)	ı
픙	ı
ü	ı
Ξ	ı
3	ı
ō	ı
ō	ı
근	ı
9	ŀ
달	Ļ
≊	ľ
ē	ı
3	ŀ
5	
3	ı
~	ı
č	ı
무	۱
8	۱
읆	۱
품	۱
×	ı
5	ı
ō	l
63	ľ
'n	ſ
ō	Ì
á	ı
=	
H	ı
in	
4,1	ı
ò	۱
rso/	
verso/	
u verso/S	
nu versols	
olr au versols	
volr au versol	
is volr au versol	
ons valr au versol	
illons valt nu versals	
cations volr au versols	
pilcations voir nu versols	
explications volt au versol	
VExplications volt nu versol	
ite/Explications volr nu verso/s	
seite/Explications votr nu verso/S	
kseite/Explications voir nu verso/S	
ückseite/Explications volr au verso/S	
Ruckselte/Explications volr au verso/S	
a Rückselta/Explications volr nu verso/	
she Rückseite/Explications volt au versol?	
sione Ruckselte/Explications volt au versol?	
n siche Rückseite/Explications volr au versof	
on siche Rückseite/Explications volr au versof	
ngan sloha Rückselta/Explications volt au versol?	
rungan sloha Rückselta/Explications volt au versol?	
erungan sloha Rückselta/Explications volt av verso/S	
iutorungan siaha Rückselta/Explications volt au verso/S	
fautorungan siche Rückseite/Explications volr au verso/S	
Erfautarungan Bioha Rückseita/Explications volt au verso/See rovorse for explanations (www	

Ü	uterungen Bione	RUCKSeiterExplic	allons voir nu versoise	Enbutafungan Biona Ruckseitafexpilcations voir no versolage ravarse for explanations (www.ciminger.ue/cerniticate)	www.ammoer.de/cen	licare)					
AO	INSPECT	ION CERT	FICATE 3.1 P	INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004	4:2004			A10 Advice Date of	A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
-	INSPECT	ION CERTI	FICATE 3.1 P	INSPECTION CERTIFICATE 3.1 AS PER ISO.10474:2013	4:2013						
_	MATERIA	L TEST RE	MATERIAL TEST REPORT (MTR)					57397	573971-13.07.16	415180-003	1/
AOE	A05 Established Inspecting body A06 Purchasor	ecting body	A06 Purchasor	EDMONTON STEEL, EDMON		A07.1 No. ED10688-J1010ER	JIOIOER	5750 197 - 198 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195 - 195		B01 Product	
7	Н		Final receiver	EDMONTON STEEL, EDMON		A07.2 No.		1		HEAVY PLATES	
803	B02/ Steel design.	SA516-60	20			SA20-S5					
803	BO3 Any suppl.	ASME-II	ASME-IIA:2013								
	requirements	DIL-HUE	DIL-HUE-1:R33-2014-04-04	.04-04							
		B99 Descri	B01-B99 Description of the product	duct						E1497	
814	4 808	809	B10	811	812	804	807.2	B07.1			
Hon		Thicknoss	Width	Length	Theoretical	Product dolivery	Heat No.	Rolled plate No./	Purchaser article number	umber	

Hom Number No. of plocos 01 1 01 1 01 1	B09 Thicknoss	B10	811	812	700	6 140	B07.1	404
·					*00	7: 100		
.н н н		Width	Length	Theoretical mass KG	Product dollvary condition	Heat No.	Rolled plate No./ Test No.	Purchaser adiclo number
	x 03750 x	120,50000 x		2	z	416249	20814-01	ITEMOOL
н	0,3750 x	120,50000 x	480,00000	2790	z	416249	20814-03	ITEMOOI
	0,3750 x	120,50000 x			z	416249	20816-01	ITEM001
-	0,3750 x	120,50000 x	(2)	2790	Z	416249	20816-02	ITEMOO1
н	0,3750 x	120,50000 x	15	2790	2	416249	20816-03	ITEMOO1
<b>н</b>	0,3750 x	120,50000 x	000	2790	z	432367	20925-01	ITEMOO1
н	0,3750 x		989	2790	2	432367	20925-02	ITEMOOI
H	0,3750 x		480,00000	2790	2	432367	20925-03	ITEMOOI
8				22320				
C) ***				22320				

B04 Product delivery condition -

ITEM NO.: 01 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 STEEL DESIGNATION SASI6 70 MTLTV SASI6 60 MTLTV HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

Z01/Z0Z/203 We hereby cortify, 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

AO1

Date 13.07.16

B. BALDAÚF Test House Manager

404

Ξ
8
9001
0
80
perl
ě
38
c
.0
Certification
0
\$
-
Õ
::
Ė
=
S
QM-System
ż
ā
-

Eritluterungen siehe F	Rocksollo/Explica	Erituteningen siehe Röcksollo/Explications voir au verso/Seo reverse for explanations (www.dillinger.dc/certificate)	seo reverse for expla	inations (v	ww.dilln	ger.de/cen	ficate)									
A02 INSPECTION		CERTIFICATE 3.1	AS PER EN	1020	10204:2004	4					A10 Advice of O	Advice of dispatch No./ Date of dispatch	A08/ Manu A03 Certifi	A03 Certificate No.	rio.	Sheet
INSPECTION		CERTIFICATE 3.1	AS PER ISO		10474:2013	e				**						
MATERIAL	L TEST RE	MATERIAL TEST REPORT (MTR)	2000 000								573971-	573971-13.07.16	4151	415180-003	2/	2/
A05 Established Inspecting body		A06 Purchaser	EDMONTON	STEEL, EDMON	, EDMC		Š	D10688	ED10688-J1010ER	10			BO1 Product	BO1 Product		
5		Final receiver	EDMONTON	STEEL, EDMON	, EDM	NO A07.2	Z No.						i vegu	001014		
802/ Steel design.	SA516-60	0					SAZ	SA20-S5	507	re fo						
BO3 Any suppl.	ASME-11A: 2013	A:2013														
requirements	DIL-HUE	DIL-HUE-1:R33-2014-04-04	1-04-04													
000		for port of the profession of	Cycle ode ellectic	100												
ITEM NO.: 01 THE THICKNESS PRINCIPLE NAME OF STREET	01 PENTOTION	THE THE STATE OF T	about the pro	TLEBD		CF. A/	A/SA20(M) .PAR.	.PAR.	ري دع							
J-013	C10-C29 Tensile test	test							( )	ŀ			2000			
807.2	B07.1 B(	805	C01	C02/		C10 C11			C12 C13			C14-C15	15			
Heat No.	-	Reference (heat) treatment		5	a.					∢ %						
- No.	Test No.				2	RP02			RM	LO=8IN						
01 416249 2	20814.		KI	0	RT	51,8	8		73,5	56						
416249	20816		Ŋ		RT	51,2	2		73,1	26						
432367	20925		Z		RT	51,0	0		74,4	28						
230-0	C30-C39 Hardness test	ss test									S					
B14 807.2	807.1	ş	805 Polosopro (host) treatment		C04	C02/C01	C03 Temb.		C30. Mothod of test	C35 C31 Indiv	C31 Individual values			C32 Mean	an an	
	Tost No.						GR.F							anlex	en	
01 416249	20814	14			ĭ	0	RT	HBM	5/750			146		14	146	
01 416249	20816	16			ğ	0	RT	HBN	5/150	HB 142		142		14	143	
	20925	35			₫.	0	RT	HBN	5/750	HB 147	145	145		1.4	146	
C40-C	C40-C49 Impact test	test													1	
		805		C01	202	C03	C41	1.00	C44 Toeting mothed		C46 C45 Fuerav	C42 Individual values	values		C43 Mean	
Itom Heat No.	Rol.plate/ Test No.	Reference (neat) treatment	at) treatmont		3	GR.F	test place	test place			fa i	AV=FT.LBF	Š		value	
01 416249				ĸ	Γ	-51	3/4	CHP-V				8	149	142	130	
	20816			귗	2		3/4	CHP-V					66	125	124	
01 432367	20925			ĸ	Ľ	-51	3/4	CHP-V			AV	8 144	135	151	143	
, , , , , , , , , , , , , , , , , , , ,					19		ž								54	
A04	Z01/Z02/Z03 \	2011.2021.203 We hereby certify, that the above mentioned malerials have been delivered in accordance	at the above mention	ned malor	lais have	been deliv	erod in acce	rdance				AG der	Dillinger	AG der Dillinger Hüttenwerke	ke	AD1
×		with the terms of ord	lor,						K KAR	K	A-B	Postfac	Postfach 1580, Dinspostlon dopartment	Postfach 1580, D-66748 Dillingen/Saar Inspection department	ingen/Saar	
Manufactures's	W								8. BALDAUF Test House Manager	iF nager	Inspector's stamp		Date 13,07.16		PP 1.	
Hain		The state of the s										ı		200		

2
8
SO
per
98
tion
ifica
Cert
ë.:
yst
S-N
ā

A02 INSPECTION	ION CERTI	CERTIFICATE 3	3.1 AS PER	ER EN 10	10204:2004	Enfaured unique status rucks status received as versus as versus as versus and adjusted to the versus of the versus versus ruckets and versus				A10	Advice of dispatch No./		A08/ Manufacturer's order/	rer's order/	Sheot
INSPECTION	ION CERTII	CERTIFICATE 3	AS	ISO	10474:2013	E					Date of Oispatel		מס כפווויכוים	j Z	
MATERIA	MATERIAL TEST REPORT (MTR)	PORT (MT.	R)							.57	573971-13.07.16	07.16	415180-003	003	3/
A05 Established Inspecting body DH	ecting body A	A06 Purchasar Final receiver	100 50	EDMONTON ST EDMONTON ST	EDMONTON STEEL, EDMON	A07.1 A07.2	No. ED106	ED10688-J1010ER	ER				BO1 Product HEAVY PLATES	ATES	
BO2/ Staol dosign.	SA516-60						SA20-S5								
BO3 Any suppl.	ASME-IIA:2013	1:2013													
requirements	DIL-HUE.	DIL-HUE-1:R33-2014-04-04	014-04-C	74											
C70-C	C70-C99 Chemical composition % - Heat analysis	al compos	sition % -	Heat analy	vsis	H 3									
807.2	070														
Hóat						Ø	z	3	MO	Z	۳ .	> 3	88	SN	F .
416249	۰ o	0,155	0,373	1,17	0,006	0,0008	0,0077	0,026	700,0	0,033	0,019	0,000	000,0	100,0	0,003
201214										1					
25	C70														
Hoat	>	0 0003	400	AL-1											
432367				0,036											
	t analys	s Carbor	ı equivale	nt / Allovi	no restrict	ions									4
				•	,										
Heat 416249	Œ	FO-02#		FO-51=	0.00	FO-55=	0.09	FO-78=	0.03	FO-91=	7.5				
432367	, Œ		0,37	FO-51=		FO-55=	0,19	FO-78=	90'0	FO-91=	7,4				
C95 L	C95 Ladle treatment	ent									27				
ITEM NO.: 01	н														
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE	INDICATE	D ITEM:	VACUUM 1	DEGASSED	/ SULPH		SHAPE CONTROL	7							
C95 F	C95 Further information about ladle treatment	mation at	out ladle	treatment											
ITEM NO.: 01	ч														
CALCIUM TREATED	ATED														
7-072 ——	C70-C99 Chemical composition % - Product analysis	sodmoo le	sition % - 1	Product a	nalysis –				# 1 m					200000	
807.2 807.1	8	U	ŭ	2	۵	ø	z	9	Q	ž	S	>	88	SN	F
249	4 K1	0,156	0,370	1	0,006	ò	o	ò	ò	o,	ò	000'0	ò		
432367 20924	4 K1	0,161	0,366		0,007	0,0007			0,014	4 0,108	8 0,049	000'0	0 0,001	000'0	0,003
And	W 20212021107	in horoby certif	v. that the above	ve mentioned o	naterials have b	neen delivered is	n accordance					A G dor D	A dor Dillippor Hittonworks	tonworks	100
X	3	ith the terms of	f order.			with the terms of order.		8 Ball	200	∢`	A P	Postfach 1580, L	Postfach 1580, D-66748 Dillingen/Saar Inspection department	748 Dilling	2
Manufacturer's								80	B. BALDAUF				· ·		
mark	-							10St HO	lest House Manager	adsut	durals storadsult	Date 13.0/.10	97.76		77

# QM-System: Certification as per ISO 9001

Eriguterungen siehe	Rocksette/Expl	Engulerungan siehe Rückselte/Explicalions volr av versolSee reverse for explantilons (www.dillinger.delcontificate)	lee reverse for explant	ations (www.dilinger.d	elcertificate)			, !
A02 INSPECT INSPECT	TION CERT	INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1 AS PER ISO 10474:2013	AS PER EN	10204:2004	¥)	A10 Advice of dispetch No./ Date of dispetch	A08/ Manufacturers order/ A03 Cartlicate No.	Sheet
MATERIA	AL TEST R	MATERIAL TEST REPORT (MTR)				573971-13.07.16	415180-003	4
A05 Established Inspecting body A08 Purchaser DH Finel receit	pecting bady	A08 Purchisser Finel receiver	EDMONTON S	EDMONTON STEEL, EDMON A07.2 No.	EDMONTON STEEL, EDMON A07.1 No. ED10688-J1010ER EDMONTON STEEL, EDMON A07.2 No.	٠	BO1 Product HEAVY PLATES	
BO2 Steel design. BO3 Any suppl. requirements		88516-60 ASME-IIA:2013 DIL-HUE-1:R33-2014-04-04	-04-04	<b>.</b>	SA20-S5			
-020	C99 Chem	C70-C99 Chemical composition % - Product analysis	on % - Product	analysis				
807.2 807.1 Heat Test No.	_ vo	. m	CA ALT	-		54		

0,19 0,08 FO-55= FO-55e C94 Product analysis Carbon equivalent / Alloying restrictions 0,001 C94 Carbon equivalent formula / Alloying restrictions FO-51a ALT 0,026 0,036 CA 0,0006 0,0011 0,36 K1 0,0003 K1 0,0002 FO-02= FO-02= ねな 432367 20924 B07.1 Test No. 432367 20924 20814 416249 BO7.2 Heat

20814

416249

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

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

7.

EXAMINATION OF MARKING, SURFACE, SHAPE AND DIMENSIONS: THE RESULTS NEET THE REQUIREMENTS.
SURFACE AS PER ASME-SÃ20 AS PER ASME-SÃ20 AS PER ASME-SA20 AS PER 1/2-ASME-SÃ20 THICKNESS LENGTH AND WIDTH ITEM NO.: 01 SURFACE

FLATNESS

201/202/203 We hereby cardy, that the above mentioned materials have been delivered in accordance with the terms of order.

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

è

B. BALDAUF Test House Menage

8

# QW-483 PROCEDURE QUALIFICATION RECORD (PQR)

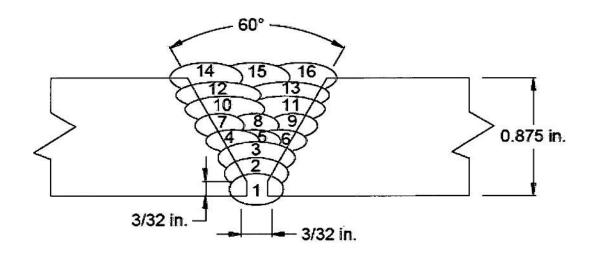
Organization Name _	1P/	AC Services Corp	
Procedure Qualification	on Record No. IP/	AC-1-4 (Rev. 1)	-
Date Originally Qualifi	edJai	nuary 28, 2019 Da	te <u>February 5, 2020</u>
Revision(s) Rev. 1	(Editorial) - Addition of ex	<u>tracted MTR pages. Co</u>	rrection to
W 16 GE-	Charpy V-Notch Impact 7	est Specimen Size. PQ	R condensed
	to 3 pages. Format updat		
Welding Process(es)	Sh	ielded Metal Arc Weldin	g (SMAW)
JOINTS (QW-402)		9925 Se	
Joint Design	Butt joint, single vee groo	ve, see next page	132
Root Opening	See next page		- 1400
Backing	Without	Retainers	Without
DACE METALS (O)	A/ 402\		
BASE METALS (Q)	N-403)	T C d -	C- 60/70
Material Specification	No. <u>SA 516</u>	Type or Grade	Gr. 60/70
Heat Treat Condition	No. SA 516 Normalized 2 To P-No. P1 Groups	4/0 Thisteres	0.075 !
P-No. P1 Groups 1/	2 10 P-No. P1 Groups	1/2 Inickness	0.875 In.
Heat Number	432444-58770-03	Carbon Equivalen	t (2) <u>0.39</u>
Diameter	432444-58770-03 N/A I (Per Pass)	Other Plate	e product form
Deposited Weld Meta	(Per Pass)Did	not exceed 0.094 in. to	or E6010,
		d 0.188 in. for E7018-1	
(1) Condition of ba	ase metal prior to welding		
	Carbon Equivalent formu		osition of
heat analysis (	on attached material test	enorts	
	on attached material test	орого.	<del>*************************************</del>
	on attached material test	ороги.	
EU LED METALS //			SMAW.
FILLER METALS (C	<b>QW-404)</b> SN	<b>MAW</b>	SMAW
Specification No. (SF)	<b>QW-404)</b> SM A)SF	/AW A 5.1	SFA 5.1
Specification No. (SF/AWS No. (Class)	<b>QW-404)</b> SM A) SF E6	//AW A 5.1 010 (3)	SFA 5.1 E7018-1 (4)
Specification No. (SFAAWS No. (Class) F-No	QW-404) SN A) <u>SF</u> E6 F3	MAW A 5.1 010 (3)	SFA 5.1 E7018-1 (4) F4
Specification No. (SFAAWS No. (Class) F-No A-No	QW-404) SN A) SF E6 F3	MAW A 5.1 010 (3)	SFA 5.1 E7018-1 (4)
Specification No. (SFAAWS No. (Class) F-No A-No Diameter	QW-404) SM A) SF E6 F3 A1	A 5.1 010 (3) e attached sketch	SFA 5.1 E7018-1 (4) F4 A1
Specification No. (SFA AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta	QW-404) SN A) SF E6 F3 A1 Se I Thickness 0.0	MAW A 5.1 010 (3) e attached sketch	SFA 5.1 E7018-1 (4) F4
Specification No. (SFAAWS No. (Class) F-No A-No Diameter Deposited Weld Meta (3) The Lincoln El	QW-404) SM A) <u>SF</u> E6 F3 A1 Se I Thickness <u>0.0</u> ectric Company: Fleetwe	MAW A 5.1 010 (3) e attached sketch	SFA 5.1 E7018-1 (4) F4 A1
Specification No. (SFA AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta	QW-404) SM A) <u>SF</u> E6 F3 A1 Se I Thickness <u>0.0</u> ectric Company: Fleetwe	MAW A 5.1 010 (3) e attached sketch	SFA 5.1 E7018-1 (4) F4 A1
Specification No. (SFAAWS No. (Class) F-No A-No Diameter Deposited Weld Meta (3) The Lincoln El	QW-404) SM A) <u>SF</u> E6 F3 A1 Se I Thickness <u>0.0</u> ectric Company: Fleetwe	MAW A 5.1 010 (3) e attached sketch	SFA 5.1 E7018-1 (4) F4 A1
Specification No. (SF/AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55	QW-404) SN A) E6	MAW A 5.1 010 (3) e attached sketch	SFA 5.1 E7018-1 (4) F4 A1
Specification No. (SFAAWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55	QW-404) SN A) SF E6 F3 A1 Se I Thickness 0.0 ectric Company: Fleetwe	MAW A 5.1 010 (3) e attached sketch 194 in. Id 5P+	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.
Specification No. (SF/AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55	QW-404) SN A) SF E6 F3 A1 Se I Thickness 0.0 ectric Company: Fleetwe	MAW A 5.1 010 (3) e attached sketch	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.
Specification No. (SFAAWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55	QW-404) SN A) SF E6 F3 A1 Se I Thickness 0.0 ectric Company: Fleetwe	MAW A 5.1 010 (3) e attached sketch 194 in. Id 5P+	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.
Specification No. (SFAWS No. (Class)	QW-404) SN A) E6	MAW A 5.1 010 (3) e attached sketch 194 in. Id 5P+	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.
Specification No. (SF/AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55  POSITION (QW-408) Position of Groove PREHEAT (QW-408)	QW-404) SN A) E6	MAW A 5.1 010 (3) e attached sketch 994 in. Id 5P+  Weld Progression	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.
Specification No. (SF/AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55  POSITION (QW-408) Position of Groove PREHEAT (QW-408) Preheat Temperature	QW-404) SN A) E6	MAW A 5.1 010 (3)  e attached sketch 994 in. Id 5P+  Weld Progression  Interpass Temp. (	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.  Vertical up  Max.) 500 °F
Specification No. (SF/AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55  POSITION (QW-408) Position of Groove PREHEAT (QW-408)	QW-404) SN A) E6	MAW A 5.1 010 (3)  e attached sketch 194 in. Id 5P+  Weld Progression  Interpass Temp. (	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.  Vertical up  Max.) 500 °F
Specification No. (SF/AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55  POSITION (QW-408) Position of Groove PREHEAT (QW-408) Preheat Temperature	QW-404) SN A) E6	MAW A 5.1 010 (3)  e attached sketch 194 in. Id 5P+  Weld Progression  Interpass Temp. (	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.  Vertical up  Max.) 500 °F
Specification No. (SF/AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55  POSITION (QW-408) Position of Groove PREHEAT (QW-408) Preheat Temperature	QW-404) SN A) E6	MAW A 5.1 010 (3)  e attached sketch 194 in. Id 5P+  Weld Progression  Interpass Temp. (	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.  Vertical up  Max.) 500 °F
Specification No. (SFA AWS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55  POSITION (QW-40) Position of Groove PREHEAT (QW-40) Preheat Temperature Preheat Maintenance	QW-404) SA A)	MAW (A 5.1 010 (3)  e attached sketch (94 in. Id 5P+  Weld Progression  Interpass Temp. (1 to cool to ambient templeted.	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.  Vertical up  Max.) 500 °F
Specification No. (SFANS No. (Class) F-No. A-No. Diameter Deposited Weld Meta (3) The Lincoln El (4) ESAB: OK 55  POSITION (QW-408) Position of Groove PREHEAT (QW-408) Preheat Temperature Preheat Maintenance	QW-404) SN A) E6	MAW (A 5.1 010 (3)  e attached sketch (94 in. Id 5P+  Weld Progression  Interpass Temp. (1 to cool to ambient templeted.	SFA 5.1 E7018-1 (4) F4 A1 0.781 in.  Vertical up  Max.) 500 °F

# **ELECTRICAL CHARACTERISTICS (QW-409)**

Current	Direct	Polari	ity Reverse, electrode positive
Amps	See below	Volts	See below
Heat Input	E6010: 20,800 J/in. maximus	m	E7018-1: 73,800 J/in. maximum

# **TECHNIQUE (QW-410)**

Manual or Automatic	Manual	
String or Weave	E6010: String	E7018-1: Weave
Initial & Interpass Cleaning	Brushing, chipping	and grinding as required
Method of Back Gouging	Not conducted	70
Multiple or Single Pass Per Side	E6010: Single	E7018-1: Multiple
Peening	Not conducted	_
Travel Speed	See below	
Use of Thermal Process	N/A	



Pass	Process	Filler Metal	Diameter in.	Current Type & Polarity	Amperage Range	Voltage Range	Travel Speed i.p.m.
1	SMAW	E6010	1/8	DCRP	74 - 78	25 - 27	5.7
2	SMAW	E7018-1	3/32	DCRP	73 - 77	21 - 23	2.6
3	SMAW	E7018-1	3/32	DCRP	86 - 90	21 - 23	1.9
4	SMAW	E7018-1	3/32	DCRP	86 - 90	21 - 23	2.6
5	SMAW	E7018-1	3/32	DCRP	85 - 89	20 - 22	2.7
6	SMAW	E7018-1	3/32	DCRP	85 - 89	20 - 22	4.7
7	SMAW	E7018-1	3/32	DCRP	87 - 91	20 - 22	4.6
8	SMAW	E7018-1	3/32	DCRP	86 - 90	20 - 22	2.8
9	SMAW	E7018-1	3/32	DCRP	85 - 89	20 - 22	4.4
10	SMAW	E7018-1	1/8	DCRP	118 - 122	20 - 22	2.5
11	SMAW	E7018-1	1/8	DCRP	121 - 125	20 - 22	2.1
12	SMAW	E7018-1	3/32	DCRP	88 - 92	20 - 22	2.3
13	SMAW	E7018-1	3/32	DCRP	95 - 99	21 - 23	2.4
14	SMAW	E7018-1	3/32	DCRP	78 - 82	21 - 23	2.2
15	SMAW	E7018-1	3/32	DCRP	79 - 83	21 - 23	2.3
16	SMAW	E7018-1	3/32	DCRP	83 - 87	21 - 23	1.8

PQR NO. \_\_\_\_\_\_\_\_ (Rev. 1)\_\_\_\_\_

### **CHARPY V-NOTCH IMPACT TEST**

Type of Test	Charpy V-Notch	Orientation	Transverse	20 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -
Weld Thickness	E6010 (t1) = 0.094 in.,	E7018-1 (t2) = (	).781 in.	

Governing Specification	Notch Location	Specimen Size in.	Test Temperature °F	Specimen Number	Impact Values ft•lbf
	t2 Weld Metal	0.394 x		W2.1	70 -
ASME VIII Div.1 - 2017	within 1/16 in.	0.394 X 0.394	-50	W2.2	63
	of t2 weld surface	0.554	0.554		W2.3
	t2 HAZ	0.304 %		W3.1	138
ASME VIII Div.1 - 2017	1/4 - 1/2t from	0.394 x 0.394	-50	W3.2	56
	t2 weld surface	0.394		W3.3	70

### OTHER TESTS

Vickers Hard			
Welder's Name	Wayne Kruger	_ Certificate File No	W-25763
Tests Conducted By	SGS Canada Inc.		
Laboratory Test No.			
	d that the test welds we	record have been revised re prepared, welded and lode.	
Paragraph QW-200.2 and	d that the test welds we Section IX of the ASME C	e prepared, welded and ode.	
Paragraph QW-200.2 an with the requirements of	d that the test welds we Section IX of the ASME C	re prepared, welded and ode.	



### CHARPY V-NOTCH IMPACT TEST

Customer: IPAC Services Corp.

8701 102 Street Clairmont, Alberta

T8X 5G8

Attention: Sheldon Rule

PQR No.:

IPAC-1-4 (Rev.0) Material: SA 516 Gr. 60/70 **Material Thickness:** 22.2 mm (0.875 in.)

Filler Metal: E6010 (t<sub>1</sub>) / E7018-1 (t<sub>2</sub>)

Weld Thickness:  $t_1 = 2.39 \text{ mm} (0.094 \text{ in.}) / t_2 = 19.8 \text{ mm} (0.781 \text{ in.})$ 

Thermal Condition:

Specimen Size:

10 x 10 mm (0.394 x 0.394 in.)

Orientation: Test Temperature:

Transverse

Governing Spec.:

-46 °C (-50 °F) ASME Section VIII, Div. I, UG-84 - 2017 **Material Heat No.:** 

**Welding Process:** 

Machine:

432444-58770-03 **SMAW** 

Laboratory Test No.: E19-049.3

Date: February 4, 2019

Weld Type:

Single Sided

Satec SI-1K3, S/N: 1503

Capacity: 407 J (300 ft·lbf) Verified Range: 3.4-325 J (2.5-240 ft·lbf)

Calibration Date: March 19, 2018

Specimen	Notch	Impact	Values
Number	Location	Joules	(ft·lbf)
W2.1		95 .	(70)
W2.2	t <sub>2</sub> - Weld Metal	85	(63)
W2.3	within 1.5mm (1/16") from t <sub>2</sub> weld surface	89	(66)
W3.1	1 1107	187	(138)
W3.2	t <sub>2</sub> - HAZ	76	(56)
W3.3	1/4-1/2t <sub>2</sub> from weld surface	95	(70)

Note: Metric values calculated by direct conversion.

Test Conducted By: Mohamed Botan (Edmonton)

Certified By:

Patrick Lysz, C.E.T.

ISABER MAZE Certification # L2057.01-1

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not This report (or certificate) is issued by the Company under its General Condutions for inspection and resting Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or selfers from exercising all their institutes under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should no our professional opinion be taken into account.

Member of the SGS Group (SGS SA)



### HARDNESS TEST

Customer: IPAC Services Corp.

8701 102 Street Clairmont, Alberta

T8X 5G8

Attention:

Sheldon Rule

PQR No.:

IPAC-1-4 (Rev.0)

Material:

SA 516 Gr. 60/70

Material Thickness:

22.2 mm (0.875 in.)

Filler Metal:

E6010 (t<sub>1</sub>) / E7018-1 (t<sub>2</sub>)

Weld Thickness:

 $t_1 = 2.39 \text{ mm} (0.094 \text{ in.}) / t_2 = 19.8 \text{ mm} (0.781 \text{ in.})$ 

Thermal Condition:

As Welded

Type of Test:

Vickers 10 kg (HV10)

Governing Spec.:

ASTM E92-17 & ANSI/NACE MR0175 ISO

15166:2015

Laboratory Test No.: E19-049.3

Date: February 4, 2019

Material Heat No.:

432444-58770-03

Welding Process:

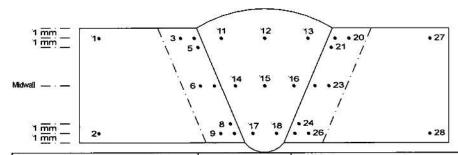
SMAW

Weld Type: Single Sided

Instrument: DuraScan 70

Calibration Date:

September 19, 2018



Pare	ent Metal		HAZ	wei	d Metal		HAZ	Pare	nt Meta
1	154	3	182	11	218	19	219	27	155
2	153	4	216	12	183	20	199	28	156
		5	212	13	226	21	212		
		6	175	14	198	22	190		
		7	188	15	198	23	183		
		8	171	16	230	24	181		
		9	175	17	170	25	180		
		10	177	18	174	26	178		

Test Conducted By: Mohamed Botan (Edmonton)

Certified By:

Patrick Lysz, C.E.T.

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

Page 1 of 1

$\mathbf{\Xi}$
=
8
C)
0
င္တ
<u>8</u>
-
be
0
-
6
1025
=
=
R
(1
-=
=
+
-
o
=
-
0
75
2
V)
-
2
~
·

MATERIAL TEST REPORT (MTR)  A05 Established Inspecting body A06 Purchaser  DH Final receiver  B02 Steel design. SAS16-70  B03 Any suppl. ASME-IIA;2013  requirements DIL-HUE-1:R33-201	CERTIFICATE		5				Cara		AUS CERTIFICATE NO.
MATERIAL slabilshed inspecif Shall design. Any suppl. requirements	A STATE OF THE PERSON NAMED IN	AS.	PER 150 10474:2013	5013					
stablished Inspect 3H Steel design. Any suppl. requirements	T REPOR	T (MTR)					56723	567238-18.05.16	414327-002 . 1/
Steel design. Any suppl. requirements		A06 Purchaser ED	EDMONTON STEEL, EDMON		Ś	ED10686-J1010ER			BO1 Product
Steel design. Any suppl. requirements	Œ	Final receiver ED	EDMONTON STEEL, EDMON	DMON A07.2	2 No.		3		neavi Funies
Any suppl. requirements	SA516-70				SA20-S5		,		
	ASME-IIA: 2013	013							
The second secon	-HUE-1,:	DIL-HUE-1:R33-2014-04-04	-04.	Tento est concentration and		0.00			20334
B01-B99 De	scription	801-899 Description of the product	, t	٠					
N E	1989	B10 Width	B11 Length	B12 Theorotical	BD4 Product dollvary	B07.2 Heat No.	807.1 Rolled plate No./	A09 Purchaser article number	number
No. of places		INCH		mass	condition		Test No.		) ar
01 ,1 0,	0,5000 x	150,00000	× 450,00000	4342	z	432585	70324-01 "	ITEMOOS	
н	0,5000 x	150,00000	×	4342	z	432585	70324-02	ITEM005	「アーダダン
01 1 0,	x 0005'0	150,00000	x 450,00000	4342	2	432585	70324-03	ITEMOOS	DIVE AND DE DOLD
е				13026					SE Danca y as a sup
	,8750 x	120,50000	x 480,00000	6510	z	432436	58267-03,	125.11	SP 516 C- 60170
H		120,50000	x 480,00000	6510	z	432436	58279-01		
۲,	0,8750 x	120,50000	x 480,00000	6510	z	432436	58279-02	ITEM002 .	O. 8/3" (hickness
-		120,50000	× 480,00000	6510	z	432444	58770-01	ITEM002	Hr4 U33000 58770-03
rt ,		120,50000		6510	Z	432444	58770-02	ITEM002	יייייייייייייייייייייייייייייייייייייי
۲				6510	, , ,	432444	58770-03	ITEM002	Tribernel POH FIGURAL
H				6510	Z	432444	58780-01	ITEM002	つこでできます。
ed i		120,50000		6510	z:	432444	58780-02	ITEM002	70t   100 a 1 0
0		120,50000		6510	Z "	432444	58780-03	ITEMBOZ	5 7
0	,8750 x	120,50000	× 480,00000	6510	2	432444	58782-03 -	ITEM002	
10				65100					¥8
н			×	5959	2	432436		ITEM003	2
<b>-</b> 1 :		96,50000	×	5959	z:	432446	58802-01-	ITEM003	
A ,		96,50000		5959	<b>Z</b> :	432446	58802-02	ITEM003	
⊣ .	1,0000 x	96,50000	× 480,00000	5959	z	432446	58802-03	ITEM003	
♂ .				23836					
<b>-</b> 1 ,		120,50000	×	7440	z:	432443	58728-02	ITEM004	25°
Ä,				7440	z	432444	58798-01	ITEM004	
34	1,0000 ×	120,50000	x 480,00000	7440	z	432444	58798-02	ITEM004	×
A04 Z01/Z0	ad aw 602/20	We hereby carlify, that the	Z01/Z02/Z03 We hereby certify, that the above manitoned materials have been until the terms of order	have been delive	delivered in accordance	1		AG de	AG der Dillinger Hüttenwerke
*		5	) •3:			Mary S	A B		Postfach 1580, D-66748 Dillingen/Saar Inspection department
Manufacturer's						B. BALDAUF	Control Contro		Delta Control

# DILLINGER®

-
ISO 9001
õ
G)
_
0
CO
-
0
bed
SE
40
-
7
~
Certification
12
=
*
*
ж.
u
F
~
۳
O
>
O
1
QM-System:
~
J

Erigist	erungen sleha RO	ckselle/Explical	flons voir au versof.	See reverse t	Eriāuterungen sieha Rücksellei Explications voir au veraci/Sea reverse for explanations (www.dillinger.de/cartificate)	w.dillinger.de/ce	rtificate)						
A02	INSPECTIC	N CERTII	INSPECTION CERTIFICATE 3.1 AS PER EN	AS PER	EN 10204:2004	2004			A10 Advice	Advice of dispatch No./	A08/ Manufacturer's order/ A03 Certificate No.	Sheet	1000
	INSPECTIC	N CERTII	FICATE 3.1	AS PER	INSPECTION CERTIFICATE 3.1 AS PER 1SO 10474:2013	2013							33
	MATERIAL	TEST RE	MATERIAL TEST REPORT (MTR)						567238	567238-18.05.16	414327-002	2/	
A05 E	A05 Established Inspecting body		A09 Purchaser	EDMON	EDMONTON STEEL, EDMON		A07.1 No. ED10686-	ED10686-J1010ER	E01;		801 Product		
4	H		Final receiver	EDMON	EDMONTON STEEL, EDMON		A07.2 No.	•			HEAVY PLATES		
802/	802/ Steel design.	SA516-70	6				SA20-S5						
B03	BO3 Any suppl.	ASME-IIA:2013	A:2013										51
	requirements	DIL-HUE	DIL-HUE-1:R33-2014-04-04	4-04-04	7992				e	- 12 - 14 - 14 - 14 - 14 - 14 - 14 - 14		3 3	
	B01-B9	19 Descrip	B01-B99 Description of the product	roduct .									
B14	808	809	Bto		B11	812	804	807.2	807.1	A09			_
E S	Number	Thickness	Width		Length	Theoretical	Product delivery	Heat No.	Rolled plate No.	Purchaser article number	mber		
<u> </u>	2012		INCH			KG	Countries		1651 NO.				200
40	H	1,0000	x 120,50000	× 0000	480,00000		Z	432444	58798-03	ITEM004			
04	н	1,0000	x 120,50000	× 0000	480,00000	7440	z	432444	58799-01-	ITEM004	22		
9	н	1,0000	x 120,50000	x 000	480,00000	7440	Z	432444	58799-03	ITEM004			
*	Q					44640							
0.5	н	1,1250 x	x 150,00000 x	× 000	450,00000	9768	Z	432446	58801-02 -	ITEMOOS			
* * *	24	3				156370							
	B04 Pr	oduct deli	804 Product delivery condition	<u>ا</u>						35			
ITB	ITEM NO.: 01-05	-05											
SON COO	N: HT: 1670 GR.F +36 SOAKING TIME TO ATTA COOLING IN STILL AIR	GR.F +36 TO ATTA TILL AIR	N: HT: 1670 GR.F +36 -27 GR.F SOAKING TIME TO ATTAIN THE TAR COOLING IN STILL AIR	GET TEN	4PERATURE O	VER THE	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	1-1,75 MIN/M	IM (25-45 MIN	/INCH)			****
	B06 Ma	irking of ti	B06 Marking of the product							Ņ.			
STE	STEEL DESIGNATION HEAT NO. / TRADEMAN	-05 ATION S RADEMARK	AS16 70 MT / ROLLED	LTV SAS PLATE N	STEEL DESIGNATION SASIG 70 MTLTV SASIG 60 MTLTV HEAT NO. / TRADEMARK / ROLLED PLATE NOTEST NO.		/ INSPECTOR'S STAMP		¥				
	<b>B07-B9</b>	9 Further	B07-B99 Further information about the product	about the	e product —		,						
THI	ITEM NO.: 01-05 THICKNESS REDUC	-05 DUCTION	RATIO >= 3	SIO,	ITEM NO.: 01-05 THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED (CF. A/SA20 PAR.	JF. A/SA	20 PAR. 5.3)			(¥	٠		<u> </u>
_					•								

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

K Kaly

A B

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

Date 19,05,16

inspector's stamp

B. BALDAUF Test House Manager

_
99
爰
ᇑ
80
ñ
===
per
98
Certification
₩
100
<u>u</u>
Œ
≂
-
ė.
o
토
프
75
5
System
7
S
=
ON-S

EUBINE	Maria alern	R PUCKSEIIGILA	CHENNOLIGER SIETE PACKISETIEL PRINCIPALIONS VOIR BU VERBASSES FOR EXPERSE TO EXPENDIBLE (WWW.dillinger. Geroentings)	see reverse tor expl	Phallons I	WWW.dillen	Der Cercentilica	9			2000		0.0000000000				200000000000000000000000000000000000000
V02	INSPECT	TION CER	INSPECTION CERTIFICATE 3.1	AS PER EN	1020	10204:2004	4					×	A10 Advice of dispatch No.J.	Ispatch No./	A08/ Manufacturer's order/ A03 Certificate No.	₽.	Sheet
	INSPECT	TION CER	INSPECTION CERTIFICATE 3.1	AS PER ISO	1047	10474:2013	9					-					
176	MATERIA	AL TEST	MATERIAL TEST REPORT (MTR)									-	-8EC733	A 70 81-850735	414327-603	12	
ANK Fe	Johnson Jon	Ank Felchished Joseph Body	And Describeror									-	201630	07.00.01	200-/2CTF	7	
DHO		appends only	AUD PURCHESSE	EDMONTON	STEE	STEEL, EDMON			ED10686-J1010ER	1010ER					801 Product		
			Final receiver	EDMONTON	STEEL	STEEL, EDMON	A07.2	No.							HEAVY PLATES		
802/	Steel design.	SA516-70	-70					SA20-85	55								
803	Any suppl.	ASMB-	ASMB-IIA:2013														
	requirements	West.	DIL-HUE-1:R33-2014-04-04	-04-04											3	50	
	95	C10-C29 Tensile test	le test												, market	The state of the s	
B14	807.2	B07.1	B05	-CO	202	C03	C10 C11			C12	53			C14-C18	0.5		
E S	Heat No.	Rol.piate/	Reference (heal) treatment	fment	50	Temp.	Ş					∢;					
į		den no.				EX.	RP02			2		NEED!					
0.1	432585	70324		K		RT	52.5			76.1		25					
02	432436	58267		2	0	RT	50.3			74.8		30					
02	432436	58279		2		E	49.9			74.7		2					
02	432444	58770		2		E	200			75.5		9 0					
		58780		, D		T.	51.1			75,3		0 C					
	432444	58782		. X		Į.	9 05			7 2 2		י ה ו					
		58283		2		Ľ	50.6			7 2 2		2 6			•		30
		SAROS		5		Ē	700		*	1 7		2 6					•
		58728		2 5	y (	Į į	, ,			, ,		<u>.</u>			ě		
		82799		3		4 6	0 0					7 .					
		00100		₹ \$		2 1	9,00			7,4		7 ;					
		2000		2 5		2 5	D ( D )			4,4		T :					
	432446	TORRC		TY.		KI	47,6			72,8		31	*				
	39	C30-C39 Hardness test	ness test														
914	B07.2		B07.1 B05			5	C02/C01	CO3	030		ຮ	C35 G31			C32	2	
Hell F	Heat No.		7	Reference (heat) treatment				Temp.	Method of test	test			Individual values		Mean	=	\$ <del></del> 3.
9 5	2000		rest No.				•							1	value	90	
1 5	20000		10324				<b>5</b> (			10/3000	#		144	141	143	13	
2 5	432430		79790				0			10/3000	HB		138	137	138	38	2.7
20	432436		58279				0			10/3000	HB		142	141	142	12	
02	432444		58770				0	RT	HBW 10/	10/3000	HB	136	138	138	137	37	
02	432444		58780			Z	0	RT	<b>HBW 10/</b>	10/3000	Ħ	143	143	142	143	13	
02	432444		58782			ŭ	0	RT 1	<b>HBW 10/</b>	10/3000	HB	143	142	142	142	7	
03	432436		58283			ŭ	0	RT	HBW 10/	10/3000	HB		136	136	136	9	
60	432446		58802			젚	0	RT	HBW 10/	10/3000	HB		139	136	137	27	
A04		201/202/2	Z01/Z02/Z03 We hereby certify, that the above mantioned materials have be	it the above mention	ned maler	ials have	been delivered in accordance	'n accorda	883			1		1 - V	The state of the s		A01
0	**	•	with the terms of order.	<b>4</b>						8 Ba	18	خ	<b>₽</b>	Postfach 1580, I	AS der Dillinger runenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	ke ingen/Saar	2.5
Wa	Manufacturer's									B. BALDAUF	DAUF						
٦	HEBIL									Test House Manager	э Маладаг		spector's stam	Inspector's stamp Date 19,05,16	05.16	PP	

Σ
₫
Ġ,
O
ន
per
98
텯
Ca
<u>=</u>
F
O
em:
ist
Ý
Ξ
a

Erfautenungen	slehe Rückselle/Ex	Erfäuterungen siehe Rückselle/Explications volr au versolSee reverse for explanations (www.dtilinger.de/centificale)	reverse for explana	tions (w	ww.dillin	ger.de/certifice	ale ale										
A02 INSE	INSPECTION CER	CERTIFICATE 3.1 AS	PER EN	.0204	10204:2004	4					A10 Advi	ce of dispar	Advice of dispatch No./ Date of dispatch	A08/ Manu A03 Cerill	A08/ Manufacturer's order/ A03 Certificate No.		Sheet
INSI	INSPECTION CER	CERTIFICATE 3.1 AS	PBR ISO	.0474	10474:2013	3											
MATE	MATERIAL TEST REPORT	REPORT (MTR)							0.00 € 0.00 € 0.00 €		5672	38-18	567238-18.05.16	4143	414327-002	4	/
A05 Establishe	A05 Established Inspecting body	A06 Purchaser	EDMONTON S'	TEBL	STEEL, EDMON	A07.1	No. ED	10686-	ED10686-J1010ER					801 Product	ŭ		
5		Final receiver	EDMONTON S'	TEBL	STEEL, EDMON	A07.2	ġ							HEAVY	HEAVY PLATES		
B02/ Steel design.	1819n 8AS16-70	-70		•		- Anna	SA20-S5	-85									
B03 Any suppl.		ASME-IIA:2013															
requirements		DIL-HUE-1:R33-2014-04-04	34-04														
Ĭ	C30-C39 Hardness test	lness test									$ \  $						
B14 B07	B07.2 B0	B07.1 B05		0.756	50	C02/C01	C03			C38 C31	_				ម:	C32	
			reigrence (neat) treament				GR.F	Melhod or test	25 1631		individual values	2			Ē >	wean	
		58728		<del></del>	Z	0	RI	HBW	10/3000	HB 140	140		140		1	140	
04 43		58798		eardin <del>e</del>	K	0	RT	HBM	10/3000	HB 136	5 137		137		Н	137	S: <b>*</b> 2)
	432444 56	58799			덫	0	RT	HBW	10/3000	HB 138	3 139		138		н	138	
05 43	432446 SE	58801		1	덮	0	RT	HBW	10/3000	HB 136	5 . 136		135		-	136	
	C40-C49 Impact test	act test		8													
B14 B07.2	7.2 807.1	808		5	C02	175.4500		55	3	3.	C46	C45	242	6		85	,
	near No. Test No.	(e) Kererence (near) (resument	rearment		5	GR.F tes	Width of	type of	Fasting mathod		Energy		Individual values AV=FT.LBF	/alues		Wean	
	432585 70324			¥	3		570	CHP-V			4:30 ·	AV 8	206	207	196	203	
		7		Z	Ľ	-51	ভক্	CHP-V				AV 8	150	159	124	144	
	432436 58279	6		Z	ĭ	-51	N.T.	CHP-V				AV 8	103	120	118	114	
		P		₽	'n	-51	·	CHP-V			m#R	AV 8	111	130	142	128	
		0		ĭ	ΓΛ	-51		CHP-V			• <b></b>	AV 8	198	149	213	187	
		~		Z	ង	-51	<b>5</b> 0	CHP-V.				055700	09	149	115	108	
		 		Z	r.	-51	100	CHP-V			<b></b>	AV 8	108	123	109	113	
		2		Z	3	-51	:T.	CHP-V				AV 8	138	108	120	122	
		601		Z	ΓΛ	-21	•	CHP-V				AV 8	153	128	165	149	
		er CD		덛	ដ	-51	<b>3</b>	CHP-V				AV B	119	121	119	120	
		G.		Z	?	-51		CHP-V				AV '8	111	117	115	114	
05 43	432446 58801	_		Z	Ŋ	-51	:5	CHP-V				AV B	128	97	26	100	
						e e				*						Đ.	
A04	Z01/Z02/Z	201/202/203 We haveby certify, that the above mantioned materials have been delivered in accordance	he above mentioned	msleris	als have	been delivered	1 In accord	fance					A 4.	Dillian	110140	1	Ą
<b>\$</b>	a <sup>±</sup> /	with the terms of order.	34 55						8 Ball	<b>\</b> .	\$	<u>8</u>	Postfac	AG der Dillinger Postfach 1580, D Inspection department	AG der Dillinger nuttenwerke Postfach 1580, D-66748 Dillini Inspection department	AG der Dillinger nuttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	
Manufacturer's	ror's								B. BALDAUF			į		,			
									lest nouse manager	age.	Inspector's stemp	SSIBILD	OBIG TA'OS'TP	47.50		7.7.7	

# DILLINGER®

# QM-System: Certification as per ISO 9001

INSPECTION CERTIFICATE 3.1 AS PER ISC	1440	-			TOTAL SOLUTION					2	TONE OF CISE	COLUMN TO THE PARTY OF THE PART	AUDI MAIILIBAAN	VBC COOL	10010	=
TINGERCAT	Tago NO.	and the	2	,	10204 : 2004					1000	Date of dispatch	5	A03 ,Certificate No.	No.		
	ON CERT	FICATE	A.	PER ISO	10474:2013	2				1000		STATE STATE OF STATE	202		2627-09	
MATERIAL	2	PORT (M	TR)							\$	567238-18.05.16	.05.16	414327-002	002	5/.	:
A05 Established inspecting body	0.50%	A08 Purchaser		EDMONTON S	STEEL, EDMON	A07.1	No. ED106	ED10686-J1010ER	ER				BO1 Product			
5		Final receiver	55000	EDMONTON S	STEEL, EDMON	A07.2	No.						HEAVY PLATES	ATES		
B02/ Steel design.	SA516-70	0					SA20-85									
BO3 Any suppl.	ASME-IIA:2013	A:2013														
requirements	DIT-HOE	DIL-HUE-1:R33-2014-04-04	2014-04	-04										2 <b>*</b> 8		
C70-C	99 Chem	cal compo	osition %	C70-C99 Chemical composition % - Heat analysis												
	C70				•											٠
Heat		0	55	Z,	۵.	S	z	3	Ş	2	8	>		S	F :	
432436		0,175	0,377	1,16	0,011	0,0011	0,0077	0,019	900'0	0,037	0,043	0,001		0,001	0,002	
432443		0,172	0,385	1,18	600'0	6000'0	0,0066	0,022	900'0	0,035	0,031	0,001		100'0	0,003	
432444		0,175	0,380	1,19	0,010	6000'0	0,0072	0,028	0,008	0,042	0,047	100'0		0,001	0,004	
432446		0,172	0;377	1,18	0,010	0,0014	0,0066	0,022	0,008	0,033	0,036	000'0		100'0	0,002	
432585	- ⊁	171,0	0,379	1,18	0,009	0,0013	0,0085	0,018	0,010	0,035	0,026	0,001	0,000	0,001	0,003	
907.2	C70		į	:												
432436	>	1000	0005	000												
432443		1000	200,0	620,0												
432444		0.000	0.0012	0.044												
432446		0000	1500 0	1000									•			
432585		0.000	0.0020	0.034												
			•			1										
C94 H	C94 Heat analysis	is Carbo	on equiva	Carbon equivalent / Alloying restriction	ying restri	ctions —										્
B07.2 Heat																
432436		FO-02=	0,38	FO-51=	0,001	FO-55=	11,0	FO-78=	0,05	FO-91=	9,9					
432443		FO-02=	0,38	FO-51=	0,001	FO-55=	60'0	FO-78¤	0,04	FO-91=	6,9				: <b>:</b>	
432444		FO-02=	0,39	FO-51=	0,001	FO-55=	0,13	FO-78=	90'0	FO-91=	6,8	,				
432446		FO-02=	0,38	FO-51=	000'0	FO-55=	0,10	FO-78=	0,04	FO-91=	6,9					
432585		FO-02=	0,38	FO-51s	0,001	FO-55e	60'0	FO-78=	0,04	FO-91=	6,9					
7 65	C95 Ladle treatment -	nent		1			100,000					15 21 23			4,9 C 1	
ITEM NO. 1 01-05	1-05															
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE	INDICAT	SD ITEM:	VACUUR	I DEGASSE	o / Surp	HIDE SHA	SHAPE CONTROL	, 청								
A04	Z01/Z07/Z03	We hereby certify, that with the terms of order	nify, that the	above mentione	d materials have	201/202/203 We hereby cartify, that the above mentioned materials have been delivered in eccordance with the terms of order.	in eccordance	'	1		4	AG der D	AG der Dillinger Hüttenwerke	tenwerke		A01
<b>₹</b>								Ø	Now &	1	孛	Postfach 1580, I Inspection department	Postfach 1580, D-66748 Dillingen/Saar Inspection department	748 Dilling	en/Saar	
Manufacturar's							93	9.6	B. BALDAUF							

DILLINGER®

QM-System: Certification as per ISO 9001

INSPECTION CERTIFICATE 3.1 AS PER ISO 10474:20   MATERIAL TEST REPORT (MTR)	10474:2013		567238-18.05.16	V20000	AV3 Ceruinaria NO.	
MATERIAL TEST REPORT (MTR)   Final receiver EDMONTON   Final F			567238-18.0	77	27-002	
Steel design.   SAS 16-70   Final receiver   EDMONTON   Steel design.   SAS 16-70   AGS Purchaser   EDMONTON   Steel design.   SAS 16-70   ASMB-IIA: 2013						/3
Final receiver   EDMONTON	STEEL, EDMON A07.1 No. ED10	ED10686-J1010RR		8	luct	
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	A07.2 No.			HEAUY	HEAUY PLATES	
Manuella Man	SA20-85					
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
0						8
0						
010			900 C			
4444448 8 6 6 4 4 4 4 4 8 6 8 6 6 4 4 4 4						ez.
## BO7.1 CO1  ## Feetho.  ## 58269 K1 0,178 0,361  ### 5872 K1 0,177 0,365  ### 5879 K1 0,177 0,365  ### 5879 K1 0,175 0,362  ### 58801 K1 0,172 0,372  ### 58802 K1 0,173 0,373  ### 58269 K1 0,0002 0,0024  ### 5879 K1 0,0002 0,0024  ### 5879 K1 0,0000 0,0010  ### 58801 K1 0,0000 0,0010  ### 58802 K1 0,0000 0,0010  ### 58802 K1 0,0000 0,0010	malysis					
436 58269 K1 0,178 0,361 444 58728 K1 0,174 0,365 444 58782 K1 0,177 0,365 444 58799 K1 0,175 0,362 444 58801 K1 0,175 0,372 446 58802 K1 0,177 0,372 585 70324 K1 0,177 0,373 585 70324 K1 0,107 0,372 446 58801 K1 0,0000 0,0010 444 58782 K1 0,0000 0,0010 444 58782 K1 0,0000 0,0010 446 58801 K1 0,0001 0,0011 446 58802 K1 0,0001 0,0011	o.	2	2	>	200	F
436 58279 K1 0,174 0,363 444 58782 K1 0,177 0,365 444 58799 K1 0,175 0,365 446 58801 K1 0,175 0,372 446 58802 K1 0,176 0,372 446 58802 K1 0,173 0,373 585 70324 K1 0,167 0,373 585 70324 K1 0,000 0,0024 436 58269 K1 0,0002 0,0024 444 58782 K1 0,0000 0,0010 444 58782 K1 0,0000 0,0010 444 58782 K1 0,0001 0,0011 446 58801 K1 0,0001 0,0012 446 58802 K1 0,0001 0,0012	0015 0,	0,018 0,	0,036 0,	ò	000 000	0,002
444 58728 K1 0,177 0,365 444 58799 K1 0,175 0,362 444 58799 K1 0,175 0,362 446 58801 K1 0,172 0,372 446 58802 K1 0,173 0,373 585 70324 K1 0,167 0,372 436 58269 K1 0,0002 0,0024 436 58269 K1 0,0002 0,0024 444 58782 K1 0,0000 0,0010 444 58799 K1 0,0001 0,0011 446 58801 K1 0,0001 0,0012 446 58802 K1 0,0001 0,0012	0,0012	0,019	0,036	0,000	0,000 0,000	0,002
444 58782 K1 0,175 0,362 444 58799 K1 0,176 0,380 446 58801 K1 0,172 0,372 446 58802 K1 0,173 0,373 585 70324 K1 0,167 0,372 436 58269 K1 0,0003 0,0024 436 58269 K1 0,0002 0,0014 444 58782 K1 0,0000 0,0010 444 58782 K1 0,0000 0,0010 446 58801 K1 0,0001 0,0011 446 58802 K1 0,0001 0,0011	0,0011	0,022	0,037	0,001		0,003
444 58799 K1 0,176 0,380 446 58801 K1 0,172 0,372 446 58802 K1 0,173 0,373 585 70324 K1 0,167 0,372  436 58269 K1 0,0003 0,0024 436 58279 K1 0,0002 0,0025 444 58782 K1 0,0000 0,0010 444 58799 K1 0,0000 0,0011 446 58801 K1 0,0000 0,0011 585 70324 K1 0,0000 0,0012	0,0011	0,027	0,041	0,001		0,004
446 58801 K1 0,172 0,372 446 58802 K1 0,173 0,373 585 70324 K1 0,167 0,372  BD7.1 C01 B CA 1061No. B CA 436 58269 K1 0,0002 0,0024 444 58728 K1 0,0000 0,0010 444 58799 K1 0,0000 0,0010 446 58801 K1 0,0000 0,0010 446 58801 K1 0,0001 0,0011 585 70324 K1 0,0000 0,0012	0,0011	0,027	0,041	0,001		0,004
446 58802 K1 0,173 0,373 585 70324 K1 0,167 0,372  B07.1 C01 B CA 1661N0. K1 0,0003 0,0024 436 58269 K1 0,0002 0,0025 444 58782 K1 0,0000 0,0010 444 58799 K1 0,0001 0,0011 446 58801 K1 0,0001 0,0011 446 58802 K1 0,0001 0,0011 585 70324 K1 0,0000 0,0020	0,0016	0,022	0,033	0,000		0,002
B07.1 C01 B CA Test No. C01 B CA 436 58269 K1 0,0002 0,0024 443 58728 K1 0,0002 0,0014 444 58782 K1 0,0000 0,0010 444 58799 K1 0,0000 0,0010 446 58801 K1 0,0001 0,0011 446 58802 K1 0,0001 0,0011 585 70324 K1 0,0000 0,0020	0,0015	0,027	0,040	0,001		0,004
Hebriton Cut B CA Test No. 18 CA 1845 58269 K1 0,0003 0,0024 443 58728 K1 0,0002 0,0014 444 58782 K1 0,0000 0,0010 444 588901 K1 0,0000 0,0020 446 58802 K1 0,0000 0,0020 644 58802 K1 0,0000 0,0020 645 58802 K1 0,0000 0,0017 585 70324 K1 0,0000 0,0017	0,008 0,0016 0,0082	82 0,018 0,010	0,034 0,026	0,001	0,000 0,000	0,003
136 58269 K1 0,0003 0,0024 436 58279 K1 0,0002 0,0025 443 58728 K1 0,0002 0,0014 444 58782 K1 0,0000 0,0010 444 58799 K1 0,0001 0,0011 446 58801 K1 0,0000 0,0020 446 58802 K1 0,0001 0,0012 585 70324 K1 0,0000 0,001	Š				*	ž.
58259 K1 0,0003 0,0024 58279 K1 0,0002 0,0025 58728 K1 0,0000 0,0014 58782 K1 0,0000 0,0010 58799 K1 0,0001 0,0011 58801 K1 0,0001 0,0012 70324 K1 0,0001 0,0012	20					
58728 K1 0,0002 0,0014 58782 K1 0,0000 0,0010 58799 K1 0,0001 0,0011 58801 K1 0,0000 0,0020 58802 K1 0,0001 0,0012 70324 K1 0,0000 0,0017	and the same of th					
58782 K1 0,000 0,0010 58799 K1 0,0001 0,0011 58801 K1 0,0000 0,0020 58802 K1 0,0001 0,0012 70324 K1 0,0000 0,0017	na n					
58799 K1 0,0001 0,0011 58801 K1 0,0000 0,0020 58802 K1 0,0001 0,0012 70324 K1 0,0000 0,0017	5					
58801 K1 0,0000 0,0020 58802 K1 0,0001 0,0012 70324 K1 0,0000 0,0017	•	8			8.5	
58802 K1 0,0001 0,0012 70324 K1 0,0000 0,0017						
70324 K1 0,0000 0,0017	Thirs					
A04 Z01/Z02/Z03 We hereby cardity, that the above mentioned materials have been delivered in accordance	materials have been delivered in accordance		1	AG der Dillinger Hüttenwerke	. Hüttenwerke	AO1
with the terms of order.	·	N KAR	A A	Postfach 1580, I	Postfach 1580, D-66748 Dillingen/Saar Inspection department	n/Saar
Manufacturer's mark		B. BALDAUF	ometo electronari	21 20 01 010	9	

### DILLINGER®

## QM-System: Certification as per ISO 9001

v <sub>e</sub>	A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004	CERT	IFICATE 3	.1 AS PE	PER EN 102	10204:2004			A10 Advice of dispetch No./	A08/ Manufacturer's order/	Sheet
Name	INSPECTION	I CERT	IFICATE 3.	.1 AS PE	3R ISO 104	74:2013			Care of cispand	ALL CHIMENE NO.	
SAS16-70   AGR Furcheser   BDMONTON STEEL, EDMON   AGT 2 No.	MATERIAL T	EST RI	SPORT (MT	(X)					567238-18,05.16	414327-002	7
### Final freeliver   EDMONTON STERL, EDMON A072 No.   ### SAS16-70  ### SAS16-70  ### SAS16-70  ### SAS16-70  ### SAS16-70  ### SAS16-70  ### SAS16-85  ###	A05 Established Inspecting		A08 Purchaser	BDM	ONTON STEE	SL, EDMON	A07.1 No.	ED10686-J1010ER		B01 Product	
### SA20-S5  ### SA20-S6  ### SA20-S6  ### SA20-S0  ### SA20-S6  ### S	но		Final receive		ONTON STEE	SL, EDMON	A07.2			HEAVY PLATES	
ASWE-IIA;2013  4 Product analysis Carbon equivalent / Alloying restrictions  4 Product analysis Carbon equivalent / Alloying restrictions  5170  5180		A516-7	70		- 100 Sept. (100)		87	720-85			
ct analysis Carbon equivalent / Alloying restrictions  cot  K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,11  K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10  K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13  K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12  K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,09  n equivalent formula / Alloying restrictions  1+CR+MO+V / 5+ (NI+CU) / 15  1+CR  g and identification, surface appearance, shape and dimensional properties		SME-II	IA:2013								
ct analysis Carbon equivalent / Alloying restrictions  Cot  X1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,11  X1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10  X1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10  X1 FO-02= 0,39 FO-51= 0,001 FO-55= 0,13  X1 FO-02= 0,39 FO-51= 0,001 FO-55= 0,12  X1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12  X1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12  X1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,00  X1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12  X2 FO-03= 0,38 FO-51= 0,001 FO-55= 0,12  X3 FO-03= 0,38 FO-51= 0,001 FO-55= 0,12  X4 FO-03= 0,38 FO-51= 0,001 FO-55= 0,13  X4 FO-03= 0,38 FO-03= 0,38 FO-03= 0,10  X4 FO-03= 0,38 FO-03= 0,		IL-HU	E-1:R33-2	014-04-C	74						
K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,11 K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,11 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-51= 0,001 FO-55	C94 Pro	duct an	alysis Car	bon equi	valent / Allo	ving restri	ctions				
K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,11 K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,11 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-51= 0,001 FO-51= 0,10 K1 FO-02= 0,38 FO-03= 0,38 FO-03= 0,10 K1 FO-03= 0,38 FO-03= 0,38 FO-03= 0,10 K1 FO-03= 0,38 FO-03= 0,38 FO-03= 0,10 K1 FO-03=		0	, F	•							
K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,11 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,37 FO-51= 0,001 FO-55= 0,09 n equivalent formula / Alloying restrictions 1+(CR+MO+V) / 5+(MI+CU) / 15 1+CR		K1		0,38	FO-51e	0,000	FO-55=	0,11			
K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10  K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13  K1 FO-02= 0,39 FO-51= 0,001 FO-55= 0,13  K1 FO-02= 0,39 FO-51= 0,001 FO-55= 0,10  K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10  K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12  K1 FO-02= 0,37 FO-51= 0,001 FO-55= 0,09  n equivalent formula / Alloying restrictions  1+(CR+MO+V) /5+(NI+CU) /15  1+CR  g and identification, surface appearance, shape and dlmensional properties		ğ	9 08	0,38	FO-51=	0,000	FO-55m	0,11	8 100		
K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,13 K1 FO-02= 0,39 FO-51= 0,001 FO-55= 0,13 K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,37 FO-51= 0,001 FO-55= 0,09 n equivalent formula / Alloying restrictions ) + (CR+MO+V) / 5+ (MI+CU) / 15 I+CR  g and identification, surface appearance, shape and dImensional properties		Z		0,38	FO-51=	0,001	FO-55=	0,10			
K1 FO-02= 0,39 FO-51= 0,001 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12 K1 FO-02= 0,37 FO-51= 0,001 FO-55= 0,09 n equivalent formula / Alloying restrictions + (CR+MO+V) / 5+ (MI+CU) / 15  I+CR formula / Section is surface appearance, shape and dimensional properties		Z	300	0,38	FO-51=	0,001	FO-55=	0,13		,	
K1 FO-02= 0,38 FO-51= 0,000 FO-55= 0,10 K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12 K1 FO-02= 0,37 FO-51= 0,001 FO-55= 0,09 n equivalent formula / Alloying restrictions + (CR+MO+V) / 5+ (MI+CU) / 15  I+CR and identification, surface appearance, shape and dimensional properties		Ø		0,39	FO-51=	0,001	FO-55=	0,13			
K1 FO-02= 0,38 FO-51= 0,001 FO-55= 0,12 K1 FO-02= 0,37 FO-51= 0,001 FO-55= 0,09 n equivalent formula / Alloying restrictions + (CR+MO+V) / 5+ (MI+CU) / 15  I+CR  g and identification, surface appearance, shape and dimensional properties		Ϋ́		0,38	FO-51=	0,000	FO-55=	0,10			
K1 F0-02= 0,37 F0-51= 0,001 F0-55= 0,09 n equivalent formula / Alloying restrictions + (CR+MO+V) / 5+ (MI+CU) / 15  I+CR and identification, surface appearance, shape and dimensional properties		₫		0,38	FO-51=	0,001	FO-55=	0,12			
n equivalent formula / Alloying restrictions + (CR+MO+V) / 5+ (NI+CU) / 15 I+CR I and identification, surface appearance, shape and dimensional properties		ğ		0,37	FO-51=	0,001	FO-55a	60'0			
) + (CR+MO+V) /5+ (NI+CU) /15 I+CR ig and identification, surface appearance, shape and dimensional properties	C94 Carl	bon equ	uivalent for	mula / All	oying restrik	ctions —					
1+CR Ig and identification, surface appearance, shape and dimensional properties		)+ (9/	R+MO+V) /5	+ (NI+CU	)/15						
1+CR ig and identification, surface appearance, shape and dimensional properties											
ig and identification, surface appearance, shape and dimensional properties	۵	+NI+CR									
ig and identification, surface appearance, shape and dimensional properties										4	
g and identification, surface appearance, shape and dimensional properties											
	D01 Mari	king an	d identifica	tion, surf	ace appeara	nce. shan		ansional properties			
	Y TO - ON MENT	,			•					(	

A BB

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

ş

A04 :

Z01/Z02/203 We hereby cortify, that the above mentioned materials have been delivered in accordance with the terms of order.

EXAMINATION OF MARKING, SURFACE, SHAPE AND DIMENSIONS: THE RESULTS MEET THE REQUIREMENTS.

AS PER ASME-SA20 AS PER ASME-SA20 AS PER ASME-SA20 AS PER 1/2-ASME-SA20

SURFACE THICKNESS LENGTH AND WIDTH

FLATNESS

B. BALDAUF Test House Manager

Date 19,05,16

-
906
둟
80
×
¥
_
9
0
(A)
35
-
ħ
×
ation
ö
E
=
=
'n.
Cert
ystem
0
75
5
S
_1
唇
Œ
1000

MATERIAL TE	THE CHAPTER		200					Cate o	Uate of dispatch	AUS Certificate No.	
	ON CERTIFIC	1.c a	AS PEK	150 104/4:201	5073			1			
TUTTUTU	2	RT (MTR)						56723	567238-18.05.16	414327-002	:
A05 Established Inspecting body DH	A08	A06 Purchaser Final receiver	EDMONTON			A07.1 Na. BD10686 A07.2 No.	BD10686-J1010ER	343		BO1 Product HEAVY PLATES	3.7
	- 1		EDWON 1 ON	NION SIREL, ELMON							
Steel design. Any suppl.	<b>SA516-60</b> ASME-IIA:2013	2013				SA20-85					
requirements	DIL-HUE-1:R33-2014-04-04	:R33-2014	-04-04			(4) (4)				20335	
B01-B	B01-B99 Description of the product	on of the pr	oduct								I.,
808	B09	910		811	812	804	B07.2	1.10	A09		i
Item Number No. of places	Thickness	Width	-	Length	Theoretical mass	Product delivery condition	Heat No.	Rolled plate No./ Tost No.	Purchaser article number	un ber	
н	0,5000 x		× 000	450,00000		Z	432585	70324-01	ITEM005		To Ve
				450,00000	43		432585	70324-02	ITEM005		
	0,5000 x	x 150,00000		450,00000	4342		432585	70324-03	ITEM005		
М											5566
<b>н</b>	0,8750 x	x 120,50000	× 000	480,00000		Z	432436	58267-03	ITEM002	8	
-1	0,8750 x		× 000	480,00000			432436	58279-01	ITEM002		
ч			x 000	480,00000	6510		432436	58279-02	ITEM002		
-1	0,8750 x		× 000	480,00000			432444	58770-01	ITEM002		1000
<b>н</b>	0,8750 x		x 000	480,00000	65		432444	58770-02	ITEM002		
<b>н</b>	0,8750 x		x 000	480,00000	65		432444	58770-03	ITEM002		
1	0,8750 x	K 120,50000	× 000	480,00000	65	×	432444	58780-01	ITEM002		,
п	0,8750 x	K 120,50000	× 000	480,00000		z	432444	58780-02	ITEM002		
т			× 000	480,00000			432444	58780-03	ITEM002		
п	0,8750 x	K 120,50000		480,00000	6510	z	432444	58782-03	ITEM002		i¥
10					65100						
<b>-</b> 1	1,0000 ×		× 000	480,00000	5959		432436	58283-01	ITEM003		olica (fr
н.				480,00000	23		432446	58802-01	ITEM003		
п				480,00000	59	200	432446	58802-02	ITEM003		
н	1,0000 x	k 96,50000	× 000	480,00000	5959	×	432446	58802-03	ITEM003		
ø					23836		,				
ਜ	1,0000 x		× 000	480,00000			432443	58728-02	ITEM004		
н	1,0000 x		x 000	480,00000			432444	58798-01	ITEM004		
н	1,0000 x	120,50000		480,00000	7440	z	432444	58798-02	ITEM004		
	Z01/Z02/Z03 We I	heroby certify, the	at the above	mentloned materials	s have been de	Z01/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance	1		AG der I	AG der Dillinger Hüttenwerke	AD1
<b>₹</b>		שונה מיש ופוחוז כו מיטפו.	i.			*	May S	₹	Postfach 1580, C	Postfach 1580, D-66748 Dillingen/Saar Inspection department	•
Manufacturer's							B. BALDAUF	B. BALDAUF			24

### DILLINGER®

_
2
ă
0
8
-
8
1000
38
c
유
ī
₽
₹
8
C
Ë
9
8
ž
7
፷
u

	Editionarian clota Bhréachtaí vallachtac unir as coraco (or avalanchtac ésses differen	BlickooltelEvol	Irrational	on Viorent ine	Contractor	for everlen	offices friends	dillogoe dolor	de la contraction de la contra					4
A02	INSPECT	INSPECTION CERTIFICATE 3.1 AS PER EN	FIFICAT	E 3.1 AS	3 PER	EN	10204:2004	2004			A10 Advice	Advice of dispatch No./	A08/ Manufacturer's order?	Sheet
-	INSPECT	INSPECTION CERTIFICATE	FIFICAT	E 3.1 AS	S PER	ISO	10474:2013	2013			<u> </u>			
- 10 - 10 - 10	MATERIA	MATERIAL TEST REPORT (MTR)	REPORT	(MTR)							56723	567238-18.05.16	414327-002	2/
AOSE	A09 Established Inspecting body	Apoq Bulpac	A06 Purchaser		EDMO	EDMONTON S	STEEL, EDMON		A07.1 No. ED10686	ED10686-J1010ER			B01 Product	
	H		Final	Final receiver	EDMOI	EDMONTON S	STEEL, EDMON		A07.2 No.				HBAVY PLATES	
802/	Steel design.	SA516-60	.60						SA20-S5					
803	Any suppl.	ASME-I	ASME-IIA:2013	Э						*			i i	
8	requirements	DIL-HC	JE-1:R3	DIL-HUE-1:R33-2014-04-04	74-04								·	
	B01-E	801-899 Description of the product	ription o	f the prod	nct i								2	
874	808	803	610	9	1005100	B11		B12	<b>B</b> 04	807.2	B07.1	A08		
Š Š	of pleces	Inickness		Widin				Theoretical	Product delivery condition	Heat No.	Rolled pisto No. Test No.	Purchaser afficie n	umber	
9	-	1,0000	- ×	120.50000 x	×	480	480.00000	7440	Z	432444	58798-03	TTEMO04		
04	-1	1,0000	×	120,50000 x	×	480	480,00000	7440		432444	58799-01	ITEM004		
04	-	1,0000	×	120,50000 x	×		480,00000	7440	z	432444	58799-03	ITEM004		
: :	ω,				39			44640						
0.5	٦ .	1,12	1,1250 x 1	150,00000 x	×	450	450,000000	9768	z	432446	58801-02	ITEMOOS		
								126370						
	B04 F	<b>B04 Product delivery condition</b>	elivery c	ondition										
II	ITEM NO.: 01-05	01-05												•
: č	N: HT: 1670 GR.F +36 -27 GR.F CONFINC TIME TO ATTENTY THIS TAN	O GR.F +	36 -27	GR.F	Ē	r dear	2	2 2 2 2	MOTINGES BYOM		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	11104147		
3 8	COOLING IN STILL AIR	STILL A	IR	TE INVES	ā -	PERM	O TOKE	PK INE	HOTE SECTION	NTW 6/17-T :	SOCRETAIN AND TO ATTAIN THE TAKKET TEMPERATURE OVER THE WHOLE SECTION: I-I,/3 MIN/MM (23-45 MIN/INCH)	N/ TINCH)		
_[	B06 A	806 Marking of the product	f the pro	duct									,	
STE	ITEM NO.: 01-05 STEEL DESIGNATION SASI6 70 MTLTV SASI6 60 MTLTV HEAT NO. / TRADEMARK / ROLLED PLATE NOTEST NO.	01-05 GNATION TRADEMAN	<b>SA516</b> RK / RC	SASI6 70 MTLTV SASI6 60 MTLTV RK / ROLLED PLATE NOTEST NO.	V SA	516 60 NOTE	D MTLTV SST NO.	_	INSPECTOR'S STAMP					
	B07-E	807-899 Further information about the product	er inforn	nation ab	out th	e prod	luct							
41	ITEM NO.: 01-05 THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED (CF. A/	01-05 REDUCTION	N RATIC	3,0	IS 1	FULFII	O) GETT	F. A/SA	'SA20 PAR. 5.3)					
	•													
A04		Z04/Z0Z/ZC	03 We hereb with the te	y certify, that ti	he above	е тепволе	ed materials	have been de!	Z01/Z02/Z03 We hareby certify, that the above mendoned materials have been delivered in accordance with the terms of order.	K Bay	Д.		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar	A01 Lar
- 2	D H	> <b>-</b>						e e		B. BALDAUP			inspection department	
2	mark	2								Test House Manag	ter inspector's stamp	stamp Date 19.05.16	.05.16 PP	-

卿
$\simeq$
Ш
U
Ž
$\overline{}$

9001
8
per
98
ē
fical
Cer
Ë
-Sys
Š

INSPECTION CERTIFICATE 3.1 AS PER EN  INSPECTION CERTIFICATE 3.1 AS PER EN  INSPECTION CERTIFICATE 3.1 AS PER ISO  MATERIAL TEST REPORT (MTR)  Established Inspecting body  Steel dosign. SAS16-60  Any supp.  C10-C29 Tensile test  A32585 70324  A32445 58270  A32445 58283  C30-C39 Hardness test  A32445 58801  C30-C39 Hardness test  C30-C39 Hardness test  A32445 58801  C30-C39 Hardness test  A32445 58801  C30-C39 Hardness test  A32445 58801  C30-C39 Hardness test  C30-C39 Hardness test  A32445 58801  C30-C39 Hardness test	204:2004  2474:2013  EEL, EDMON  EEL, EDMON  ON COS C10 C  ON Temp. K  RT  RT  RT  RT  RT  RT  RT  RT  RT  R	A07.1 No. ED10686-J1010BR A07.2 No. SA20-SS SS1 SA20-SS SS1 SA20-SS SS2 SS2 SS2 SS2 SS2 SS2 SS2 SS2 SS2 S	C12 C13 RM 76,1 74,8 75,5 75,5 75,9 75,9 73,8		567238-18.05.16	Aug manusquers access Aug 27-002 B01 Product HEAUY PLATES	3/
REPORT (MTR)  A08 Purchaser EDMONTON  Final receiver EDMONTON  Sile test  B05  Reference (hoat) treatment  K1  K2  K3  K4  K1  K1  K1  K1  K1  K1  K1  K1  K1	0 25 21 -1 4 21 21	07.1 No.		20 Acces	-		3/
A08 Purchaser   EDMONTON   Final receiver   EDMONTON	0 25 - 1 - 1 - 1 - 1 - 1	07.2. No			18.05.16 C14C1s		3/
A06 Purchaser   EDMONTON	0 255 4 1	27.1 No. 27.		8600	C14C1S		
Steel design.   SA516-60	0 25 21 -1 4 -1 -1	N M M N N N N N N N N N N N N N N N N N		25 20 30 30 30 30 30 30 30 30	C14-C15		
Steel dozign. SA516-60 Any suppl. ASMB-IIA:2013 requirements DID-HUE-1:R33-2014-04-04  C10-C29 Tensile test DID-HUE-1:R33-2014-04-04  B07.2 807.1 805 Heat No. Test N	M COS C10 ON Temp. RT	n w o v m o v	Y	A % % % % % % % % % % % % % % % % % % %	014018		
Any suppl. ASMB-IIA:2013 requirements DIL-HUE-1:R33-2014-04-04  C10-C29 Tensile test B07.1 B05 Heat No. Rolplate/ Reference (heat) treatment Test No. Test No. Test No. 43244 58770 43244 58782 43244 58782 43244 58782 43244 58782 43244 58782 43244 58782 43244 58782 43244 58799	OS COS COS COS COS COS COS COS COS COS C	nmonwo	1. 430.00	%% Lo-61N 25 30 30 28 28 28 30 30 30 30 30 30 30 30 30 30 30 30 30	C14C1S		
C10-C29 Tensile test B07.2	OS COS COO OF Temp. GR.F. I RT RT RT RT RT RT	200 00 00 00 00 00 00 00 00 00 00 00 00	45/35	%% A 25 30 30 28 28 28 30 30 30 30 30 30 30 30 30 30 30 30 30	C14-C15		
C10-C29 Tensile test  B07.1 B07.2 Heat No. Rol.piate/ Reference (heat) treatment Test No. 432585 70324 43244 58770 43244 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58799	OM COS	2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	439,400	25 25 30 30 28 28 28 30	94-94		
Heat No. Rol.plate/ Reference (hoat) treatment Test No. Rol.plate/ Reference (hoat) treatment Test No. Rol.plate/ Reference (hoat) treatment Test No. Rol.plate/ Reference (hoat) treatment 432436 58267 432444 58780 432444 58780 432444 58780 432444 58780 432444 58798 432444 58798 432444 58798 432444 58798 432445 58801 C30-C39 Hardness test Rol.plate/ Reference (heat) treatment Test No. Rol.plate/ Ref	ON COS			%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%	214-018		
432585 70324 432445 58267 432444 58770 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58780 432444 58799 432444 58799 432444 58799 432445 58801  C30-C39 Hardness test  Rol.plate/ Reference (heat) treatme 75270 70324 75270 752	ON Temp, GR.F. RT RT RT RT RT RT RT	ນ ພ ພ ທ ໝ ໜ ຮ		%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%			ı
Test No. 432585 70324 432436 58267 432444 58770 432444 58780 432444 58782 432444 58782 432444 58782 432444 58782 432444 58799 432444 58799 432444 58799 432446 58801  C30-C39 Hardness test  Rol.plate/ Roference (heat) treatment of the set of t	GR.F RT RT RT RT		76,1 74,8 74,2 75,3 75,0 73,8	% 16-6IN 30 30 28 28 30			
432585 70324 432436 58267 432444 58770 432444 58780 432444 58780 432444 58782 432444 58782 432444 58782 432444 58782 432444 58789 432444 58799 432444 58799 432444 58799 432446 58801  C30-C39 Hardness test  R07.1 805 1. Heat No. Religiate/ Reference (heat) treatment of the second of	R R R R R R R R R R R R R R R R R R R	יין אין אין אין אין אין אין אין אין אין	74,1 74,2 75,5 75,3 73,8	25 30 30 28 28 30			
432436 58267 432436 58279 432444 58770 432444 58782 432444 58782 432446 58802 432444 58798 432444 58798 432444 58799 432444 58799 432446 58801 C30-C39 Hardness test  Rol.plate/ Reference (heat) treatment of the standard of the	RTT	יים מו ש מיע מיש מו ש מיע	74,6 74,6 75,3 75,3 73,0 74,5	30 30 30 30 30			
432436 58279 432444 58770 432444 58780 432444 58782 432444 58782 432444 58798 432444 58798 432444 58799 432444 58799 432445 58801  C30-C39 Hardness test  Rol.plate/ Reference (heat) treatment	RT	9 2 8 9 4	75,377,39,00	30 28 30 30			
43244 58770 432444 58780 432444 58782 432445 58283 432445 58728 432444 58798 432444 58799 432446 58801 <b>C30-C39 Hardness test</b> 807.2 807.1 805 Heat No. Religiate/ Reference (heat) treatments	RT	1 1 8 6 4	75,5 75,3 73,8 74,5	30 30			
432444 58780 432444 58782 432445 58283 432445 58728 432444 587798 432444 58799 432446 58801 <b>C30-C39 Hardness test</b> 807.1 805 Heat No. Religiate/ Reference (heat) treatment of the state	RT	1 8 6 V	75,3 75,0 73,8	30			
432444 58782 432446 58802 432444 58728 432444 58799 432446 58801 <b>C30-C39 Hardness test</b> 807.1 805  Heat No. Religiate/ Reference (heat) treatments test 703243 70324		6,0	75,0 73,8 74,5	30			
432436 58283 432446 58802 432444 58728 432444 58799 432446 58801 C30-C39 Hardness test  807.1 805  Heat No. Rol.plate/ Reference (heat) treatme 7est No. 7e	T-2		73,8 74,5	30			
432445 58802 432444 58728 432444 58799 432446 58801 — C30-C39 Hardness test  807.1 805  1. Heat No. Rol.plate/ Reference (heat) treatme 7521585 70324 432585 70324	RT		74,5	•			
43244 5879 43244 58799 43244 58801 <b>C30-C39 Hardness test</b> 807.1 805  1. Heat No. Rol.plate/ Reference (heat) treatment of the set of the s		48,7		30			
43244 58799 432446 58801  C30-C39 Hardness test  B07.1  B07.1  R01.plate/ Test No. 75st No. 7	RT	50,6	74,7	32		18	
43244 58799 43244 58801  C30-C39 Hardness test  B07.1 805  R0I.plate/ Reference (heat) treatme 7551 70324 432585 70324 432436 58267	RT	49,0	74,2	31			
432446 58801  C30-C39 Hardness test  B07.1 B05  R01,plate/ Roference (heat) treatment restrue.  432585 70324  432436 58267	Q RT 49	49,6	74,1	31			
C30-C39 Hardness test  B07.2 B07.1 B07.1 Rollplate/ Test No. 43.2585 703.24 43.2436 582.67	Q RT 47	9',	72,8	31			
B07.2 B07.1 Heat No. Rol.plate/ 76st No. 70324 432585 70324							
Heat No. Religiate/ Test No. 70324 432585 70324 432436 58267	C01 C02/C01		C38	16 C31		C32	
432585		Tamp. Mathod of test	of test	individual values	99	Mean	
432436	0 13	r HBW	10/3000 HB	144 144	141	143	
,,,,,,,	27	RT HBW 1	10/3000 HB	138 138	137	138	
0.2 432436 58279		RT HBW 1	10/3000 HB		141	142	
02 432444 58770	K1 0	RT HBW 1	10/3000 HB	136 138	138	1.37	
432444	χ <sub>1</sub>	RT HBW 1	10/3000 HB	143 143	142	143	
02 432444 58782	KIO	RT HBW 1	10/3000 HB	143 142	142	142	
03 432436 58283	KI 0	*	10/3000 HB	136 136	136	136	
03 432446 58802		O RT HBW 1	10/3000 HB	137 139	136	137	
A04 Z01/Z02/Z03 We hereby certify, that the above mentioned malarials have		elivered in accordance	,	Ì	AG der D	AG der Dillinger Hüttenwerke	A01
With the talms of order.	82		Jan S. San	<b>₽</b>	Postfach 1580, I Inspection department	Postfach 1580, D-66748 Dillingen/Saar nspection department	ar
Manufacturer's			B. BALDAUF			!!	31

迎	).
C	4
L	U
ľ	)
2	Ź
=	Ę
_	1
Ξ	Ξ
	٦

X
9001
ᇙ
ũ
<u>80</u>
₹
5
ē
7900
SE
Ξ
2
=
75
Z
Certification
Ç
œ
u
**
Е
0
K
Š
-System
1
Š
Œ

Time   Test	A02 II	NSPECTI	TON CERTIF	A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004	PER EN	10204	10204:2004	-					A10	Actvice of	Advice of dispatch No.!		A08/ Manufacturer's order/		Sheet
Find the design   ASME-115.2   ASME-115.2	F	NSPECTI	TON CERTIF	PICATE 3 1 AS	-	0474	.20							Date of dit	chatch		artificate No.		
Shell design.   Sh. 26 - 10   Sh. 20   Sh. 20	. 2	ATCOTAL	TAG TSGT	(allw)	2	5	103:	7					-	0000			200		-
Shared continues of the process of	105 Fetab	Mehod Joseph	4	A TOOK	- 10	200000000000000000000000000000000000000		- 12	4				ñ	2/238-	18.03.	- 18	414327-002	4/	4/
Shadled beingstonering   Finite brooking   Kill   Line	DH	Tourse Tourse				TEEL	, EDMC		Š	10686-	71010ER					eor Product	odno		
Should shape   SASE 6-50   Should shape   SASE 0-55   Should shape   SASE 0-55   Should shape   SASE 1733-2014-04-04	i					TERL	BDWC									HEAV	HEAVY PLATES		
C130-C39 Hardness test	302/ Ste	el design.	SA516-60						SA20-	.85						I			
C30-C39 Hardness test		sapp.	ASME-ILA	1:2013						1									
C30-C39 Hardness test	PB .	uirements	DIL-HUB-	-1:R33-2014-04	-04			*											
19244   58798		- C30-C	339 Hardnes	ss test															
Hole   No.   Pack plant   Pack   Pack plant   Pack   Pack plant   Pa	7	B07.2	807.1	605		_		302/C01	C03	C30			5					C32	
432443	feg.	Heal No.	Rol.plz		it) treatment				Temp.	Method o	ftest		Individual	values				Mesn	
132444   58798	94	432443				200		0	RT	HBW	/3000		140	140	140			140	
1,2244   58801	94	432444		80		35E		0	RT	HBW	/3000		136	137	137			137	
C40-C49 Impact test         K1         O         RT HBW 10/3000         HB 136         136         1           4 B07.2         B07.3         B07.3         B07.3         B07.3         B07.3         HB 136         136         1           4 B07.2         B07.3         B07.3         B07.3         C44         C40         C44         C45         C44         C45         C44         C45         C44         C45         C44         C45         C45         C44         C45         C41         LV         C51         CHP-V         AV         RV	40	432444		6		86%		0	RT		/3000		138	139	138			138	
C40-C49 Impact test         C040-C49 Impact test         C010-C49 Impact test         C011 C02 C03 C03 C03 C04	92	432446		д				0	RT		/3000		136	136	135		10.0	136	
House, Robertone (trans) treatment   Cots   Temp. Width of Pape of Testing method   Energy   Test No.   Test		_ C40-C	249 Impact	test.		3													
100   100	314	B07.2	807.1	808	,	8	C02			C40	\$	8	648	3.24.	C42		64 64 53	C43	
43286 70324 K1 LV -51 CHP-V AV 8 AV 8 432446 58279 K1 LV -51 CHP-V CHP-V AV 8 A32444 58770 K1 LV -51 CHP-V AV 8 A32444 58782 K1 LV -51 CHP-V AV 8 AV 8 A32444 58782 K1 LV -51 CHP-V AV 8 AV 8 A32444 58788 K1 LV -51 CHP-V AV 8 AV 8 A32444 58798 K1 LV -51 CHP-V AV 8 AV 8 A32444 58798 K1 LV -51 CHP-V AV 8 AV 8 A32444 58798 K1 LV -51 CHP-V AV 8 AV 8 A32444 58798 K1 LV -51 CHP-V AV 8 AV 8 A32444 58798 K1 LV -51 CHP-V AV 8 AV 8 A32446 58801 K1 LV -51 CHP-V AV 8 AV	E 0	HERE NO.	Test No.	Reference (neal) tres	mont		5		10.2	Type of test piece	Testing methor		Everg	_	AVEF	Ind™idual values AV≊FT.LBF		Mean	
432436 58279   K1 LV -51 CHP-V	ĭ	432585				豆	ΓΛ	-51	٠	HP-V					CA	207	196	203	
43244   58770	2	432436		Ži.		¥	Ľ	-51	J	JHP-V					8 150	159	124	144	
43244	22	432436				豆	Ľ	-51	J	V-9H					8 103	120	118	114	
# # # # # # # # # # # # # # # # # # #	2	432444				₽	ř	-51	_	HP-V						130	142	128	
43244	2	432444				덫	ΓŅ	-51	J	HP-V					8 198	149	213	187	
432436 58283	22	432444				Ø	ΓΛ	-51	J	HP-V						149	115	108	
432446	3	432436				젚	2	-51	J	WP-V					8 108	123	109	113	
432444   58798   K1   LV   -51   CHP-V   AV 8   A32444   58799   K1   LV   -51   CHP-V   AV 8   A32446   58801   K1   LV   -51   CHP-V   AV 8   A32446   58801   K1   LV   -51   CHP-V   AV 8   AV 8   A32446   58801   K1   LV   -51   CHP-V   AV 8   AV 8   A32446   S8801   K1   LV   -51   CHP-V   AV 8   AV 8   A32446   S8801   K1   LV   -51   CHP-V   AV 8   AV 8   A32446   S8801   K1   LV   -51   CHP-V   AV 8   AV 8   A32446   S8801   K1   LV   -51   CHP-V   AV 8   AV 8   A32446   S8801   AV 8	23	432446	66			₽	ΓΛ	-51	J	WP-V					8 138	108	120	122	
432444 58799 K1 LV -51 CHP-V AV 8 432446 58801 K1 LV -51 CHP-V AV 8 A32446 58801 K1 LV -51 CHP-V AV 8 A32446 58801 K1 LV -51 CHP-V AV 8 A12446 58801 K1 LV -51 CHP-V AV 8 AN 8  Z01/Z02/Z03 We hereby cartify, that the above mentioned malerials have been delivered in accordance with the terms of order.	4	432443				컾	ΓΛ	-51	J	THP-V					8 153	128	165	149	
432446 58801  X1 LV -51 CHP-V  AV 8  432446 58801  X1 LV -51 CHP-V  AV 8  ADB   ADB	4	432444				Ā	ΓΛ	-51	J	HP-V					1119	121	119	120	
A 32446 58801  X1 LV -51 CHP-V  AV 8  Z01/Z02/Z03 We hereby cartity, that the above mentioned materials have been delivered in accordance  With the terms of order.  A H)B	4	432444	8			₫	ΓΛ	-51	J	Y-9H					111 8	117	115	114	
Z01/Z02/203 We here by cartify, that the above mentioned malerials have been delivered in accordance with the terms of order.	5	432446				ğ	Γ	-51	J	WP-V					8 128	76	97	100	
Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.																			
with the terms of order.	4		Z01/Z02/Z03 W	Ve hereby certify, that the a	above mentioner	1 malerle	ds have	been delly	and in accord	ance		33			VOV	Joe Dillings	Act Officers Differential	4	AO
	49/	×	*	Alh the terms of order.							& Bac	1	٩	學	Pos Inspe	Postfach 1580, Dineper Inspection department	D-66748 Di	Postfach 1580, D-66748 Dillingen/Saar Inspection department	}
Manual B. BALDAUF	Manu	facturer's									B. BALDAUF		84			1	70.	1	

~
0
Ö
<b>9</b>
<u>8</u>
in
¥
-
面
per
as
0
Ξ
0
₽
Œ
U
Certification
÷
Ξ
0
13
·
==
E
~
₽
40
System
S
ġ
≈
u

A02 INSPECT	TON CER	Enfauterungen siene KütkseiterExpirations vom su versowsee feverse für expanations (www.dillinger.de/comiticate) A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004	3.1 AS I	PER EN	10204 : 2004	nger.de/ceruiice	(e)			A10	Advice of dispatch No./	tch No./	A08/ Manufacturer's order	rer's order	Sheet	_
INSPECT	TON CER	INSPECTION CERTIFICATE 3.1	3.1 AS 1	_	ISO 10474:2013						Date of dispate	=	אווא הפונותפופ	į		
MATERIA	T. TEST 1	MATERIAL TEST REPORT (MTR)					34	•		, r	567738-18 05 16	16	414327-002	002	2/.	3
A05 Established inspecting body	secting body	A08 Purchaser		A MONTH	100	A07.1	No. mar of	GOLDET 2020100	00				BO1 Product			
HC HC		Final receiver	ver	EDMONTON STEEL, EDMON	STEEL, EDMON	A07.2			Z Z				HEAVY PLATES	ATES		
802/ Steel design.	SA516-60	9					SA20-85						•06			
BO3 Any suppl.	ASME-	ASME-IIA: 2013											- 00000			
requirements		DIL-HUE-1:R33-2014-04-04	2014-04	-04												
C70	C99 Chen	C70-C99 Chemical composition % - Heat analysis	osition %	- Heat ans	lysis											
807.2	670															
Heat		υ	<u></u>	Z.	•	ø	z	3	Ş	2	5	>	82	NS S	F 6	
432436	×	0,175	0,377	1,16	0,011	0,0011	0,0077	0,019	0,008	0,037	0,043	0,001	0,000	0,001	0,002	
432443	<b>&gt;</b>	0,172	0,385	1,18	600'0	6000'0	9900'0	0,022	900'0	0,035	0,031	0,001	0,000	0,001	0,003	
432444	×	0,175	0,380	1,19	0,010	0,0009	0,0072	0,028	0,008	0,042	0,047	0,001	0,000	0,001	0,004	
432446	×	0,172	0,377	1,18	0,010	0,0014	9900'0	0,022	0,008	0,033	0,036	0,000	0,000	100'0	0,002	
432585	×	0,171	0,379	1,18	600'0	0,0013	0,0085	0,018	0,010	0,035	0,026	0,001	0,000	0,001	0,003	
607.2 Heat	C70	œ	Ą	AL-T												
432436	×	0,0001	0,0025	0,029												
432443	¥	0,0001	0,0015	0,033												
432444	×	0,0001	0,0012	0,044												
432446	¥	0,0000	0,0021	0,041												
432585	×	0,0000	0,0020	0,034												
C94	Heat anal	C94 Heat analysis Carbon equivalent / Alloying restrictions	on equiva	lent / Allo	ing restri	ctions										
121																
11881 433436		EO-04	000	1200		- 66-	-	-92-04	9	-10-04	¥					
432443		FO-02=	0.38	PO-51=	0.001	FO-55=	0.09	FO-78=	0.04	FO-91=	6,9					
432444		FO-02	66.0	FO-51	100	FO-55=	£1.0	FO-78m	0.06	FO-91=	8.9				6	
432446		FO-02=	0,38	FO-51=	000.0	FO-55=	0,10	FO-78=	0,04	FO-91=	6,9					
432585		FO-02=	0,38	FO-51=	0,001	FO-55=	0,09	FO-78m	0,04	FO-91=	6'9					
C95	C95 Ladle treatment -	atment														
ITEM NO.: 01-05	01-05					•										
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHID	E INDICA	VTED ITEM	: VACUUM	DEGASSE	o / surb	œ	SHAPE CONTROL	OI								
A04	Z01/Z02/Z	Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance	erUfy, that the e	towe mentione	d materials hav	e been delivered	In accordance					AG der [	AG der Dillinger Hittenwerke	Henwerke		A V
*		with the terms of order.	s of order.	٠					& Bay		<b>\$</b>	Postfach 1580, I	Postfach 1580, D-66748 Dillingen/Saar	748 Dillin	gen/Saar	
Manufedurer's								.69	B. BALDAUF							
mark	_							1691 M	Test House Manager		Inspector's slamp	Date 19.05.16	97.50		7 44	

### DILLINGER®

# QM-System: Certification as per ISO 9001

91	Rockselfe/Explic	ations volr au verso.	/See reverse fo	or explanations	(www.dillinger.c	e/certificate)				- 4					
A02 INSPECT	ION CERTI	INSPECTION CERTIFICATE 3.1 AS PER EN	AS PER		10204:2004					A10 Advic Date	Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.	order	Sheet
INSPECT	ION CERTI	INSPECTION CERTIFICATE 3.1	AS PER	ISO	10474:2013						•				
MATERIA	C TEST RE	MATERIAL TEST REPORT (MTR)				id const	2000			5672	567238-18.05.16		414327-002		/9
A05 Established inspecting body		A06 Purchaser	EDMONTON	TON STER	STERL, EDMON	No.	ED10686-J1010ER	JIOIOER				100	B01 Product	,	
5		Final receiver	BDMONTON		STEEL, EDMON	A07.2 No.		2000000					HEAVY PLATES	Ŋ	138
802/ Steel design.	SA516-60	50	621 TO 1 TO			SAS	SA20-S5								
	DIL-HUE	DIL-HUE-1:R33-2014-04-04	4-04-04									250			
C951	urther infc	C95 Further information about ladie freatment	ut ladle tr	eatment -											
ITEM NO.: 01-05	1-05														
CALCIUM TREATED	ATED					4.									
-020	C99 Chemi	C70-C99 Chemical composition % - Product analysis	ion % - Pr	oduct ana	lysis										
~		C01			61	9		ij		3				2000	ij
432436 58269	 19 K1	0,178	si 0,361	1,12	0,011	0,0015	D, 0084	0,018	0.008	NI 0,036	0.044	0.00	0,000 0,000	o, 000	0,002
432436 58279	27 K		0,363	1,13	0,011	0,0012	0,0084	0,019	0,008	0,036	0,044	0,000	0,000	0,000	0,002
			0,365	1,14	0,009	0,0011	6900'0	0,022	900'0	0,037	0,030	0,001	000,0	000'0	0,003
			0,362	1,16	600'0	0,0011	0,0074	0,027	0,008	0,041	0,049	0,001	000'0	0,001	0,004
			0,380	1,18	0,010	0,0011	0,0068	0,027	600'0	0,041	0,048	0,001	000'0	0,001	0,004
432446 58801	1		0,372	1,17	0,010	0,0016	0,0075	0,022	0,008	0,033	0,038	0,000	0,000	0,001	0,002
			0,575	1,10	600'0	0,0015	0,0074	0,027	600,0	0,0	0,048	100,00	000,0	100,0	#00 °
436285 /0324		0,167	0,372	1,17	800'0	0,0016	0,0082	0,018	0,010	0,034	0,026	0,001	0, 000	000,0	500 'n
807.2 807.1 Heat Test No.			40	T- 34			¥								
436	6. K1	0	0.0024	0.026											
			0,0025	0,027											
432443 58728	18 K1		0,0014	0,034											
			0,0010	0,045											
432444 58799	90 17 17 17	0,0001	0,0011	0,045					RI						
			0,0012	0,046											
		0,000	0,0017	0,032											
								ž.							
AO4	201/Z02/Z02	Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance	that the above	mentioned mak	arials have been	delivered in acc	эпдапсе	1	,	"	¥	3 der Dillir	AG der Dillinger Hüttenwerke	werke	AD1
*			<u>.</u>					S. S.	N	<del>P</del>	<b>8</b>	Postfach 1580, Inspection department	Postfach 1580, D-66748 Dillingen/Saar Inspection department	3 Dillingen	Saar
Manufacturer's								B. BALDAUF	Manager	Inspectore clamo		31 30 01 at 16	31	90	2 <del>-</del>
											ŀ		2		



Erläutenunge	an siehe Rücks	selte/Expit	Erisuterungen siehe RocksellerExplications voir au versoßee reverse for explanations (www.dillinger.de/oarlificate)	ofSee ravers	e for explanations	(www.dillinger,	de/certificate)				[ [
A02 INS	PECTION	CERT.	INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004	1 AS PE	R EN 102	04:2004			A10 Advice of dispatch No./	A03 Certificate No.	Sheet
INS	SPECTION	CERT.	INSPECTION CERTIFICATE 3.1 AS PER ISO 10474:2013	1 AS PE	R ISO 104	74:2013		2			
MAT	TERIAL T	EST R	MATERIAL TEST REPORT (MTR)	,		57.5%		20 00000 Copp.	567238-18.05.16	414327-002	7
A05 Establis	A05 Established Inspecting body		A06 Purchaser	EDM	EDMONTON STEEL, EDMON	IL, EDMON	A07.1 No.	ED10686-J1010ER		B01 Product	
			Final receiver	24	EDMONTON STEEL, EDMON	IL, EDMON	A07.2 No.	2.		HEAVY PLATES	
BO2/ Steel design.		SA516-60	20				S	SA20-S5			
BO3 Any suppl.		SME-I	ASME-IIA:2013		¥8						
medulir	requirements D	IL-HU	DIL-HUE-1:R33-2014-04-04	14-04-0	4			3			
	C94 Proc	duct an	C94 Product analysis Carbon equivalent / Alloying restrictions	on equiv	ralent / Alloy	Ang restri	ctions				
807.2	B07.1	3	69	•							
Heat	Test No.										
432436	58269	₽	FO-02=	0,38	FO-51=	000'0	PO-55=	0,11			
432436	58279	₽	. FO-02=	0,38	FO-51=	000'0	PO-55=	נו,0			
432443	58728	¥	. FO-02=	0,38	FO-51=	100'0	FO-55=	0,10			
432444	58782	¥	. PO-02=	0,38	FO-51=	100,0	FO-55=	0,13			
432444	58799	₽	. FO-02=	0,39	FO-51=	0,001	FO-55a	0,13			
432446 58801	58801	Z	FO-02=	0,38	FO-51=	0,000	FO-55=	0,10			÷
432446	432446 58802	짚	. FO-02-	0,38	FO-51=	100'0	PO-55=	0,12			
432585 70324	70324	₽	. FO-02=	0,37	FO-51=	0,001	FO-55=	60'0			
	C94 Carl	bou ed	C94 Carbon equivalent formula / Alloying restrictions -	nula / Allk	oying restric	tions —	32				
FO-02	= C+ (MN/	) + (9/	FO-02 = C+(MN/6)+(CR+MO+V)/5+(NI+CU)/15	(NI+CU)	1/15						
2	EO-61 - 17 - NO										

FO-51 = V + NB

FO-55 = CU+MO+NI+CR

FO-78 = CR+MO FO-91 = MN/C

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

EXAMINATION OF MARKING, SURFACE, SHAPE AND DIMENSIONS: THE RESULTS MEET THE REQUIREMENTS. ITEM NO.: 01-05 SURFACE

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

FLATNESS

201/202/201 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

B, BALDAUF Test House Manager

A BB

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

ş

Date 19.05.16

### QW-483 PROCEDURE QUALIFICATION RECORD (PQR)

D	IF	AC Services Corp	V-0000
Procedure Qualification Re	cord NoIP	AC-1-5 (Rev. 0) Date	January 22, 2020
Welding Process(es)	SI	<u>nielded Metal Arc Welding</u>	(SMAW)
		**	
IOINTS (OW 402)			
JOINTS (QW-402)	ioint ainala voo aro	ava ana novit nogo	
		ove, see next page	2000
Root Opening See Backing With	next page	Deteiners	Mithout
Backing	out	Retainers	without
<b>BASE METALS (QW-40</b>	3)		
Material Specification No.	SA 516	Type or Grade	Gr. 60/70
Heat Treat Condition (1)	Normalize	d	00 00 00 00 00 00 00 00 00 00 00 00 00
P-No. P1 Groups 1/2 To	P-No. P1 Groups	s 1/2 Thickness	0.232 in.
Heat Number3679	999 - 14829-01	Carbon Equivalent	(2) 0.38
Diameter N/A			
Other 0.37	5 in. thick plate mad	chined to 0.232 in. thickne	ss
Deposited Weld Metal (Per	r Pass) Di	id not exceed 0.094 in. for	E6010,
25	ar	nd 0.138 in. for E7018-1	
(1) Condition of base n	netal prior to welding	g.	
(2) Per CSA Z662 Cart	oon Equivalent form	ula. See chemical compos	sition of
heat analysis on att	ached material test	reports.	1888 200 Un 30
)(		37.40	to the to
FILLER METALS (QW-4	104) S	MAW	SMAW
Specification No. (SFA)	SI	FA 5.1	SFA 5.1
AWS No. (Class)	E	6010 (3)	E7018-1 (4)
F-No.		3	F4
A-No.	Α.	1	* 4
ATINU.	A	1	A1
		ee attached sketch	A1
Diameter	Se	ee attached sketch	1/2/2
Diameter	kness 0.	ee attached sketch 094 in.	0.138 in.
Diameter	kness 0. Company: Fleetwo	ee attached sketch 094 in.	0.138 in.
Diameter	kness 0. Company: Fleetwo	ee attached sketch 094 in.	0.138 in.
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00	kness 0. Company: Fleetwo	ee attached sketch 094 in.	0.138 in.
Diameter	kness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+	0.138 in.
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00	kness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+	0.138 in.
Diameter Deposited Weld Metal Thic  The Lincoln Electric  ESAB: OK 55.00  POSITION (QW-405)	kness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+	0.138 in.
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove	kness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+	0.138 in.
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406)	Seckness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+  Weld Progression	0.138 in.  Vertical up
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406) Preheat Temperature	Sekness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (N	Vertical up  Max.) 400 °F
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406)	Sekness 0. Company: Fleetween  3G  100 °F  Weld was allowe	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (Not to cool to ambient temp	Vertical up  Max.) 400 °F
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406) Preheat Temperature	Sekness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (Not to cool to ambient temp	0.138 in.  Vertical up  //ax.) 400 °F
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406) Preheat Temperature	Sekness 0. Company: Fleetween  3G  100 °F  Weld was allowe	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (Not to cool to ambient temp	0.138 in.  Vertical up  //ax.) 400 °F
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406) Preheat Temperature Preheat Maintenance	Seckness 0. Company: Fleetwood 3G  100 °F  Weld was allowed welding was company.	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (Not to cool to ambient temponpleted.	0.138 in.  Vertical up  //ax.) 400 °F
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406) Preheat Temperature Preheat Maintenance  POSTWELD HEAT TRE	Schness 0. Company: Fleetwo	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (Not to cool to ambient temp apleted.	0.138 in.  Vertical up  //ax.) 400 °F
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406) Preheat Temperature Preheat Maintenance  POSTWELD HEAT TRE With or Without	Seckness 0. Company: Fleetwood  3G  100 °F  Weld was allowed welding was company  ATMENT (QW-40)  Without	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (Not to cool to ambient temp apleted.	Vertical up  Max.) 400 °F erature in still air after
Diameter Deposited Weld Metal Thic (3) The Lincoln Electric (4) ESAB: OK 55.00  POSITION (QW-405) Position of Groove  PREHEAT (QW-406) Preheat Temperature Preheat Maintenance  POSTWELD HEAT TRE	Seckness 0. Company: Fleetwood  3G  100 °F  Weld was allowed welding was company  ATMENT (QW-40)  Without	ee attached sketch 094 in. eld 5P+  Weld Progression  Interpass Temp. (Not to cool to ambient temp apleted.	Vertical up  Max.) 400 °F erature in still air after

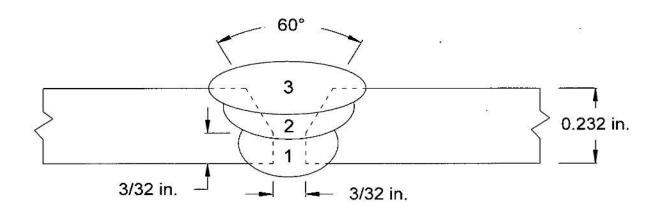
PQR NO. | IPAC-1-5 (Rev. 0)

### **ELECTRICAL CHARACTERISTICS (QW-409)**

Current	Direct	Polari	ty Reverse, electrode positive
Amps	See below	Volts	See below
Heat Input	E6010: 35,127 J/in. maximu	m	E7018-1: 53,475 J/in. maximum

### **TECHNIQUE (QW-410)**

Manual or Automatic	Manual	
String or Weave	E6010: String	E7018-1: Weave
Initial & Interpass Cleaning	Brushing, chipping	and grinding as required
Method of Back Gouging	Not conducted	8 3
Multiple or Single Pass Per Side	E6010: Single	E7018-1: Multiple
Peening	Not conducted	
Travel Speed	See below	28 41 Woman
Use of Thermal Process	N/A	



Pass	Process	Filler Metal	Diameter in.	Current Type & Polarity	Amperage Range	Voltage Range	Travel Speed i.p.m.
1	SMAW	E6010	1/8	DCRP	89 - 95	26 - 30	4.4
2	SMAW	E7018-1	3/32	DCRP	90 - 96	20 - 24	3.7
3	SMAW	E7018-1	3/32	DCRP	90 - 96	21 - 25	2.4

PQR NO. \_\_\_\_IPAC-1-5 (Rev. 0)

### **CHARPY V-NOTCH IMPACT TEST**

Type of Test	Charpy V-Notch	Orientation	Transverse	
Weld Thickness	E6010 (t1) = 0.094 in.;	E7018-1 (12) = 0	).138 in.	2.34,57
A			•	

Governing Specification	Notch Location	Specimen Size in.	Test Temperature °F	Specimen Number	Impact Values ft-lbf
	Weld Metal	0.204	W 6 10	F2.1	20
ASME B31.3 - 2018	within 1/16 in.	0.394 x 0.197	-50	F2.2	23
	of root surface	0.197	2	F2.3	27
2000/20 FB   FB		0.394 x		F3.1	8
ASME B31.3 - 2018	HAZ	0.197	-50	F3.2	7
		U.187	ii ii	F3.3	15
	t2 Weld Metal			G2.1_	21
ASME VIII Div.1 - 2019	within 1/16 in.	0.394 x	-50	G2.2	24
	of t2 weld surface 0.11	0.118		G2.3	22
	t2 HAZ			G3.1	26
ASME VIII Div.1 - 2019	1/4 - 1/2t from	0.394 x	-50	G3.2	28
	12 weld surface	0.118		G3.3	19

### **OTHER TESTS**

Vickers Hard	iness - see attached Lab	oratory Test Report No.: C	20-061.1
Welder's Name	Wayne Kruger	Certificate File No.	W-25763
Tests Conducted By	SGS Canada Inc.		
Laboratory Test No.		10 10 10 10 10 10 10 10 10 10 10 10 10 1	
		rrect and that the test we ments of Section IX of the	
Organization	IPAC Services Corp	i =	
Date	020 / Prin	· Negar Laleb	We.
Signed	t Sin	<b>6</b> : <b>4</b>	Sec. 18 - 19 - 19 - 19 - 19 - 19 - 19 - 19 -



### **CHARPY V-NOTCH IMPACT TEST**

Customer: IPAC Services Corp.

8701 102 Street Clairmont, Alberta

T8X 5G8

Attention: Megan Lefebvre

 PQR No.:
 IPAC-1-5 (Rev. 0)

 Material:
 SA 516 Gr. 60/70

 Material Thickness:
 5.89 mm (0.232 in.)

 Filler Metals:
 E6010 (t<sub>1</sub>) / E7018-1 (t<sub>2</sub>)

Weld Thickness:  $t_1 = 2.39 \text{ mm} (0.094 \text{ in.}) / t_2 = 3.50 \text{ mm} (0.138 \text{ in.})$ 

Thermal Condition: As Welded

Specimen Size: 10 x 5 mm (0.394 x 0.197 in.)

Orientation: Transverse
Test Temperature: -46 °C (-50 °F)

Governing Spec.: ASME B31.3 - 2018

Instrument:

Satec, SI-1C SN:1363

367999 - 14829-01

Laboratory Test No.: C20-061.1

SMAW

Date: January 31, 2020

Capacity: 325 J (240 ft·lbf)

Verified Range:

Material Heat No.:

Welding Process:

1.7 - 260 J (1.3 - 192 ft lbf)

Calibration Date: June 5, 2019

Specimen	Notch	Impact	Values
Number	<sup>-</sup> Location	Joules	(ft·lbf)
F2.1	Wald Makel	27	(20)
F2.2	Weld Metal	31	(23)
F2.3	within 1.5 mm (1/16") of root surface	37	(27)
F3.1		11	(8)
F3.2	HAZ	9 .	(7)
F3.3		20	(15)

Note: Metric values calculated by direct conversion.

Test Conducted By: Ibrahim Mohamoud (Calgary)

Certified By:\_

Jamiu (Jide) Lawal, C.E.T.

ARABAC C REDITIED

SOMECIFORM
TESTING LABORATORY
Certification # L2057 - 1

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

Page 1 of 1



### **CHARPY V-NOTCH IMPACT TEST**

Customer: IPAC Services Corp.

8701 102 Street Clairmont, Alberta

T8X 5G8

Attention: Megan Lefebvre

PQR No.: IPAC-1-5 (Rev. 0)

Material: SA 516 Gr. 60/70 **Material Thickness:** 5.89 mm (0.232 in.)

Filler Metals: E6010 (t<sub>1</sub>) / E7018-1 (t<sub>2</sub>)

 $t_1 = 2.39 \text{ mm} (0.094 \text{ in.}) / t_2 = 3.50 \text{ mm} (0.138 \text{ in.})$ Weld Thickness:

Thermal Condition: As Welded

Specimen Size: 10 x 3 mm (0.394 x 0.118 in.)

Orientation: Transverse Test Temperature: -46 °C (-50 °F)

Governing Spec.: ASME Section VIII, Div. 1, UG-84 - 2019

Material Heat No.:

Welding Process:

Satec, SI-1C SN:1363 Instrument:

Laboratory Test No.: C20-061.1

**SMAW** 

367999 - 14829-01

Date: January 31, 2020

Capacity: 325 J (240 ft·lbf) Verified Range: 1.7 - 260 J (1.3 - 192 ft·lbf)

Calibration Date: June 5, 2019

Specimen	Notch	Impact	Values
Number	Location	Joules	(ft·lbf)
G2.1	1 M. 1111	28	(21)
G2.2	t <sub>2</sub> - Weld Metal	33	(24)
G2.3	within 1.5 mm (1/16") of t₂ weld surface	30	(22)
G3.1	1107	35	(26)
G3.2	t <sub>2</sub> - HAZ	38	(28)
G3.3	1/4-1/2t <sub>2</sub> from t <sub>2</sub> weld surface	26	(19)

Note: Metric values calculated by direct conversion.

Test Conducted By: Ibrahim Mohamoud (Calgary)

Certified By:

Jamiu (Jide) Lawal, C.E.T.

- ISO/IEC 17025 Certification # L2057 -1

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The Information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should no our professional opinion be taken into account.



### HARDNESS TEST

**Customer:** 

IPAC Services Corp.

8701 102 Street Clairmont, Alberta

T8X 5G8

Attention:

Megan Lefebvre

PQR No.:

IPAC-1-5 (Rev. 0)

Material:

SA 516 Gr. 60/70

Material Thickness: Filler Metals:

5.89 mm (0.232 in.) E6010 (t<sub>1</sub>) / E7018-1 (t<sub>2</sub>)

Weld Thickness:

 $t_1 = 2.39 \text{ mm} (0.094 \text{ in.}) / t_2 = 3.50 \text{ mm} (0.138 \text{ in.})$ 

Thermal Condition:

As Welded

Type of Test: Governing Spec .: Vickers 10kg (HV10)

ASTM E92-17 & ANSI/NACE MR0175/ISO 15156:2015

Instrument:

DuraScan 667

SMAW

Laboratory Test No.: C20-061.1

Date: January 31, 2020

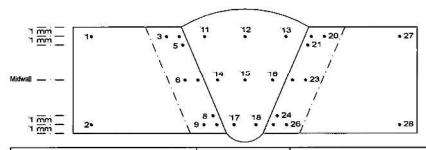
Calibration Date:

Material Heat No.:

Welding Process:

November 22, 2019

367999 - 14829-01



Pare	ent Metal		HAZ	Wei	d Metal		HAZ	Pare	nt Metal
1	161	3	167	11	181	19	180	27	163
2	166	4	188	12	185	20	167	28	162
		5	187	13	186	21	196		
		6	175	14	181	22	193		
		7	187	15	188	23	183		
		8	182	16	177	24	171		
		9	166	17	175	25	168	1	
		10	183	18	167	26	178		

Test Conducted By: Ibrahim Mohamoud (Calgary)

Certified By:

Jamiu (Jide) Lawal, C.E.T.

ACCREDITED ISO/IEC 17025 TESTING LABORATORY Certification # L2057 -1

This report (or certificate) is issued by the Company under its General Conditions for Inspection and Testing Services (copy available upon request). The issuance of this report (or certificate) does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report (or certificate) is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than 30 days. The information stated in this report (or certificate) is derived from the results of inspection or testing procedures carried out in accordance with the instructions of our Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should no our professional opinion be taken into account.

Erläuferungen siehe Rückseile/Explications voir au verso/See reverse for explanations (www.dilinger.de/oerlificate)

DILLINGER HÜTTE

A02 INSPECTION CE	INSPECTION CERTIFICATE 3.1 AS PER EN 10204 2004	A10 Advice of dispatch No.	A08/ Manufacturer's order/	Sheet
INSPECTION CE	INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:11991+A1; 1995 + AS PER ISO 10474:1991		Aus: Certificate No.	
MATERIAL TEST	MATERIAL TEST REPORT (MTR)	412679-18:02:12	370687-001	1/1
A05 Established Inspecting body A08 Purchaser	A08 Purchaser EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER		B01 Product	
5	Final receiver EDMONTON STEEL, EDMON A07.2 No.		HOT ROLLED PLATES	•
802/ Steel design. SAS1	SA516-60 SA20-S5			
B03 Any suppl. ASME	ASME-II-A:10	8.4		
requirements DILL-	DIL-HUE-1:R28-2010-11-22			

	ŀ	J. Purchaser article number	CBI 375	C1C-3/3	SA 516 Gr. 60	0.375 in.	Heat No : 367999 - 14829-01	Tical No.: 30/333 - 14023-01	Received On: October 31, 2019	P.O. No.: 227456	(Int Bea : C2771)	(iiii: 1/6q.: 02171)			Received Ry: Mark Gavino	Control of the contro					men				Reviewed by: Justin Bekker
	1.708	Rolled plate No.	78708-01	93149-01	93149-02	14692-01	14692-02	14695-01	14695-02	14719-01	14719-02	14753-01	14753-02	14771-01	14771-02	14773-01	14773-02	14776-01	14776-02	14779-01	14779-02	14782-01	14782-02	14785-01	14789-01
	B07.2	Heat No.	357314	367289	367289	367999	367999	3.67.999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999.	367999	367999	367999	367999	367999
	B04	Product.delivery condition	z	Z	N	Z	N	N	N	Z	z	z	z	z	N	Z	z	×	ν,	N	z	z	Z	Z	N
	B12·	Theoretical mass	2790	27.90	27.90	2790	2790	2790	2790	2790	2790	2790	2790	2790.	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	27.90.
	.B11	Length	480,:000:00	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	4.80,00000	480,00000	480,00000	480,00000	4:80, 00000	4.80,00000	480,00000	480,00000	480,00000	480, 00000
B01-B99 Description of the product			120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 ×	120,50000 x	120,50000 x	120',50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x
99 Description	869		0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x
- B04-B	B08.	of pleces	н	п	н	н	н	н	Н	н	н	н.	-	н.	н.	-	н	-	H	Н	-1	Н	-	-	Ä
	B14	ğ	01	01	10.	10	07	10	10	01	0.1	01	01	0:1	01	<u>1</u>	01	01	.01	01	01	01	10	Į Į	0

DA H

201/202/203 We hereby certify, that the above mentioned materials, have been delivered in accordance with the terms of order.

**P** 

AHB Post

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

AO1

Date: 20.02.12

Inspector's slamp.

DR. CH. DILG Test-House Manager

QM-System: Ce	QM-System: Certification as per ISO 9001	19001	K	DIT I INCED HILTER	Ţ
Ertäuterungen siehe Rü	ckseite/Explications voir au ve	Ertäuterungen siehe Rückseite/Expications voir au verso/See reverse for explanations (www.dillinger.de/certificate)			₹
A02 INSPECTIO	N CERTIFICATE 3	INSPECTION CERTIFICATE 3.1 AS PER EN 10204 \$2004	A10 Advice of dispatch No.1	A08/ Manufacturer's order/	Sheet
INSPECTION	N CERTIFICATE 3	INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991	Cale of space	ADS: Centilidate No:	
MATERIAL	MATERIAL TEST REPORT (MTR)	R)	412679-18.02.12	370683-001	
A05 Established Inspect	A05 Established Inspecting body A06 Purchaser	EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER		801 Product	
<b>.</b>	Final receiver	EDMONTON STEEL, EDMON		HOT ROLLED PLATES	
B02/ Steel design.	3A516-60	SA20-S5			
B03 Any suppl.	ASME-11-A:10				
requirements	DIL-HUE-1:R28-2010-11-22	010-11-22			

		Purchaser article number																				
	807.1	Test No		14789-02	14801-01	1:4801-02	14802-01	14802-02	14823-01	14823-02	14828-01	14828-02	14829-01	14829-02	14845-01	14845-02	14847-01	14847-02	14852-01	14852-02		
	807.2	Heat No.		367999	367999	3.67999	367.999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999		
1000	B04	condition		N	Z	z	z	N	N.	N	Z	z	×	N.	Z	Z	z	z	z	z		
	B12	Mass	KG	2790	2790	2790	2790	2790	2790	2790	27.90	2790	2790	27.90	27.90	2790	2790	2,790	2790	2790	111600	111600
	B11	in Singa		480,000,00	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	4.80,00000	480,00000	480,00000	480,00000	480,00000	480,00000	4.80,00000	480,00000	480,00000		
	810		INCH	120,50000 x	120,50000. x																	
•	B09- Thickness			0,3750 x	×																	
	808 Number	of pieces		-	-	-	-	-	-	н	-	-	1	1	ч	1	н	-	ч	н	40	40
		No.		01	01	01	01	01	Ü,	01	01	10	0,1	.01	0,1	01	01	01	01	01	*	* * *

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

DR. CH. DILG Test House Manager

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

A01

Inspector's stamp Date 20.02.12

***	All du versurace reverse ru	explanations	www.dilling	Eritauterungen siehe RückseiterExplications voir au versa/See reverse for explanations (www.dillinger.de/certificate)			P	DILLINGEN HOLLIE	<u> </u>
TWO INSPECTION CERTIFICATE 3.1	TE 3.1 AS PE	AS PER EN 10204:2004	04:200			A10	Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03. Certificate: No.	Sheet
MATERIAL TEST REPORT (MTR)	TE 3.1.5 AS PEK EN 10204: PST; (MTR)	K EN TOT	VEL: 40:	Al:1995 + AS	PER ISO 1.0474:1991	<del>-:: .</del>	C1 C0 01.053C1%	ימיים יימיים ר	ì
A05 Established inspecting body A06 Purchaser		EDMONTON STEEL, EDMON	L, EDMON	A07.1 No.	ED10582-J1010-ER	0011	21.00.01	1801 Product	3/::
Fin	Final-receiver EDMONTON	ON STEE	STEEL, EDMON	A07.2 No.	<b>1</b> 0			MOT ROLLED PLATES	
Steel design.				SA20-85				<u> </u>	
B03 Any suppl. ASME-II-A:10	0								
requirements DIL-HUE-1;R	DIĽ-ĤUE-1;R28-2010-11-22							_	
B04 Product delivery condition	condition								
ITEM NO.: 01						St. 100			
GR.F +36 TO ATTAI	-27 GR.F N THE TARGET TEME	ERÅTURE	OVER 1	THE WHOLE SECTION		1-1,75 MIN/MM (25-45 MIN/INCH)	N/INCH)		
B06 Marking of the product	roduct								
TO - OI									8
STEEL DESIGNATION SASI6 70 MTLTV SASI6 60 MTLTV HEAT NO. / TRADEMARK / ROLLED PLATE NOTEST NO. /	5 70 MILTV SASI	6 60 MT		INSPECTOR'S STAMP					
B07-B99 Further information about the product	rmation about the	product			3				3
THICKNESS REDUCTION RATIO >=	3,0 IS	FULFILLED (CF. A/SA20	(CF. A	A/SA20 PAR. 5,3)					3
C10-C29 Tensile test									
814 B07.2 B07.1 B05 Item Heat No. Roliplate/ Referenc	B0S Reference:(Heat) treatment	C01 C02/ C03 C01 Tem	C03 C10 Temp.	£ 541	C12 C13	⋖:	C14-C15	IÓ.	
			- K	RP02	M.	FO≕BIN			
357314		Ŋ IJ	R	52, 9	74,5	26			
			RŢ	53,2	77,1	24			
26/33			Ë	52,2	75,7	2,2			
01 367999 14695		Q (	RT	53,1	76,1	25	à	12	
00000			¥	51,2	75,3	23			
367000			RI	51,9	75,7	25			
20/22			RI	52,3	75,8	24			
36 / 999		Z O	ŖŢ	52,6	76,4	25			
01 367999 14776		K1 ∳	RI	51,8	75,7	28			
A04 Z01/Z02/Z03 We here	by certify, that the above m	entioned mater	ials have be	201/202/203 We hereby certify, that the above mentioned materials thave been delivered in accordance		į.	AG der	AG der Dillinger Hittemwerke	A01
eti qim	with the terms:of:order.				and	\$	Postfach 1580, I	Postfach 1580, D-66748 Dillingen/Saar	
Manufacturer's					DR::CH: DILG				

## SPER EN 10204;:1991, #A1:1995 + AS PER, ISO 10474;:1991    EDMONTON STEEL, EDMON	Committee of the commit		
Triggerect Triggerect   Triggerect Triggerect   Triggerect   Triggerect Triggerect   Triggerec	AS PER EN 10204: 2004	A10 Advice of dispatch No./   A08//N	A08// Manufacturer's order/
MATERIALL   TREST REDORT   (MTR)   MATERIAL   TREST REDORT   MATERIAL   TREST REDORT   MATERIAL	AS PER EN 10204:1991+A1:1995		
The companies of the companies   The compani		412679-18.02.12 37	370683-001
25   Stead Gesign   SAS16 - 60   SA20 - S5   SA20 -	A07.1 No.	8	
24   201   284216-60   284216-60   28420-SS   28420-SS   284316-60   284216-	A07.2	TOH	HOT ROLLED PLATES
Active supple   Active   Act	33-0043	K	
200-C29 Tensile test	10-0300		
C10-C29 Tensile test	11-22		
1367999   14779   14810.   1			
1   1   1   1   1   1   1   1   1   1	C01: C02/ C03 C10 C11 C12	C14-C15.	
367999   14709   K1 0   RT   51,5   75,4   75,4   1367999   14785   K1 0   RT   52,2   75,1	COT Temp.		
1 367999 14779	RP02 RM	_	
1 367999 14782   14812   148	Q RT 51,5 75,4		
1 367999 14785   K1 Q RT 51, 2   75, 1   1 367999 14789   K1 Q RT 52, 3   75, 3   75, 3   1 367999 14802   K1 Q RT 52, 1   75, 4   75, 4   1 367999 14802   K1 Q RT 51, 5   75, 4   75, 4   1 367999 14845   K1 Q RT 51, 5   75, 4   75, 1   2   367999 14845   K1 Q RT 51, 5   75, 4   75, 1   367999 14845   K1 Q RT 51, 5   75, 7   2   3 67999 14845   K1 Q RT 51, 5   75, 7   2   3 67999 14845   K1 Q RT 51, 5   75, 7   2   3 67999 14845   K1 Q RT 52, 5   75, 7   2   3 67999 14845   K1 Q RT 52, 5   75, 7   2   3 67999 14845   K1 Q RT 52, 5   75, 7   2   3 67999 14845   K1 Q RT 52, 5   75, 7   2   3 67999 14845   K1 Q RT 52, 5   75, 7   2   3 67999 14845   K1 Q RT 52, 5   75, 7   2   3 67999 14852   K1 Q RT 1800 14851   K1 Q RT 1800 14951   K	Q RT 50.,6 74,7		
1 367999 14789	Q RT 51,2 75,1		
367999 14801	Q RT 52,3 75,3	**	
1 367999 14802	Q RT 52,1 75,4		
367999 14823   K1 Q   RT   52,2   75,1   2   2   2   2   2   2   2   2   2	Q RT 51,5 74,8		
1 367999 14828	Q RT 50,8 75,4		
1 367999 14829	Q RT 52,2 75,1		
1 367999 14845   K1 Q RT 52,3 75,8 2	Q: RT 51,5 75,4		
1 367999 14847	Q RT 52,3 75,8	*	
367999 14852   14852   14852   14713   1805   14852   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1805   1807.1   1807.2   1807.	Q RT 52,5 75,7		
C30-C39 Hardness test   B07.2   B08.2   B07.2   B07.2   B08.2   B07.2   B07.2   B08.2   B07.2   B08.2   B07.2   B08.2   B07.2   B08.2   B07.2   B08.2   B07.2   B08.2   B08.	Q RT 52,5 75,7		
14         B07.2 bit         B07.1 bit         B05         C01         C02/C01         C03         C30         C35           1         3573.14 bit         Roi plate/ Reference (heat) freatment         K1         0         RT         HBM         5/750         HB         1           1         367289         93.149         K1         0         RT         HBW         5/750         HB         1           1         367999         14695         K1         0         RT         HBW         5/750         HB         1           1         367999         14719         K1         0         RT         HBW         5/750         HB         1           1         367999         14771         K1         0         RT         HBW         5/750         HB         1           1         367999         14771         K1         0         RT         HBW         5/750         HB         1           1         367999         14771         K1         0         RT         HBW         5/750         HB         1           1         367999         14771         K1         0         RT         HBW         5/750         HB </td <td></td> <td></td> <td></td>			
Medit No.   Rolipite   Reference (heat) freatment   Temp.   Method of feet	C01 C02/C01 C03 C30 C35		Ċ32
1         357314         78708         K1         0         RT         HB         143           1         367289         93149         K1         0         RT         HB         5/750         HB         151           1         367999         14695         K1         0         RT         HB         5/750         HB         144           1         367999         14719         K1         0         RT         HB         5/750         HB         144           1         367999         14771         K1         0         RT         HB         5/750         HB         144           1         367999         14771         K1         0         RT         HB         5/750         HB         144           1         367999         14771         K1         0         RT         HB         5/750         HB         144           1         367999         14771         K1         0         RT         HB         5/750         HB         144           1         367999         14771         K1         0         RT         HB         5/750         HB         144           1	Temp, Method of test	dual values	Mean
1         367289         93149         K1         0         RT HBW 5/750         HB 151           1         367999         14695         K1         0         RT HBW 5/750         HB 148           1         367999         14719         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14773         K1         0         RT HBW 5/750         HB 144	O RT HBW 5/750 HB	14.3	Variue
1         367999         14692         K1         0         RT HBW 5/750         HB 145           1         367999         14719         K1         0         RT HBW 5/750         HB 144           1         367999         14753         K1         0         RT HBW 5/750         HB 145           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14773         K1         0         RT HBW 5/750         HB 144           1         367999         14773         K1         0         RT HBW 5/750         HB 144	O RT HBW 5/750 HB		151
1     367999     14719     K1     0     RT HBW 5/750     HB 148       1     367999     14753     K1     0     RT HBW 5/750     HB 144       1     367999     14771     K1     0     RT HBW 5/750     HB 144       1     367999     14771     K1     0     RT HBW 5/750     HB 144       1     367999     14773     K1     0     RT HBW 5/750     HB 144       1     367999     14773     K1     0     RT HBW 5/750     HB 147	0 RT HBW 5/750 HB		144
1         367999         14719         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14771         K1         0         RT HBW 5/750         HB 144           1         367999         14773         K1         0         RT HBW 5/750         HB 144           1         367999         14773         K1         0         RT HBW 5/750         HB 147           2017202/203-We hareby certify, that the above mentioned materials have been delivered in accordance         HB 147         HB 147	O RT HBW 5/750 HB	151 170	156
1     367999     14771     K1     0     RT HBW 5/750     HB 144       1     367999     14771     K1     0     RT HBW 5/750     HB 144       1     367999     14773     K1     0     RT HBW 5/750     HB 147       2017202/203/We hareby certify, that the above mentioned materials have been delivered in accordance	O RT HBW 5/750 HB	145 144	144
1         367999         14771         K1         O         RT HBW 5/750         HB 147           L         367999         14773         K1         O         RT HBW 5/750         HB 147           Z01/Z02/Z03 We hareby certify, that the above mentioned materials have been delivered in accordance         ACCORDANCE         ACCORDANCE         ACCORDANCE	O RT HBW 5/750 HB	145 144	1.45
K1 O RT HBW 5/750 HB 1477 TO A RT HBW 5/750 HB 147. Z01/Z02/Z03: We hereby certify, that the above mentioned malenals have been delivered in accordance	O RT HBW 5/750 HB	14.6. 143	144
201/202/203 We hereby certify, that the above mentioned materials have been	RT HBW 5/750 HB	147 148	147
	ne above mentioned materials have been delivered in accordance	AG der Dilling	AG der Dillinger Hüttenwerke
B(TA M) A)B	Chi. Die	AH)B Postfach 1580, I	Postfach 1580, D-66748 Dillingen/Saar
Manufacturer's OR. CH. DILG			

QM-System: Certification as per ISO 9001	ertification as	per ISO 90	5				•	H	NIII NGED LITTE	Արդորը
Erläuterungen siehe Rockseite/Explications voir au verso/See reverse for explanations (www.dillinger	Rockseile/Explication	S voir au verso/Se	ee reverse for explan	rations (www.dillinger.	r.de/oertificate)	ate)		9	DIEDINOEN I	3110
AUG. INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004	FON CERTIFI	CATE 3.1	AS PER EN	10204,2004	c#			A10 Advice of dispatch No./	A08/ Manufacturers order/	Sheel
INSPECT	FON CERTIFI	CATE 3.1.1	B AS PER EN	10204:1991	[+A]:1	995 + AS PER	INSPECTION CERTIFICATE 3 1.B AS PER EN 10204 1991+A1:1995 + AS PER ISO 10474 1991	Dale of disparch	AU3 Ceruicate No:	•
MATERIA	MATERIAL TEST REPORT (MTR)	RT (MTR)	*					412679-18.02.12	370683-001	, 5
A05 Established Inspecting body DH	ecting body A06	A06 Purchaser.	EDMONTON	EDMONTON STEEL, EDMON	ł .	A07,1 No. ED10582-J1010-ER	J1010 ER		B01 Product	/
		Final receiver	EDMONTON S	EDMONTON STEEL, EDMON		No.			HOT ROLLED PLATES	
.B02/. Steel design.	SA516-60					SA20-S5				
1803 'Any suppl.	ASME-II-A:10	:10				}				
requirements	DIL-HUE-1:R28-2010-11-22	:R28-2010.	-11-22							
									of O	

C30-C3	19 Ha	C30-C39 Hardness test														
B07.2		807.1	805	2	C02/C01		1000	C30	ខ	C35 C31					33	-
neat No.		roi.plate/ Test.No.	Reference (heat) treatment			<b>≓</b> 6	Temp. R GR.F	Method of test		Individual values	[.values			· æ ;	Mean	-
367999	S. 15.	14776		Κī	0			HBW. 5/750	H	145	145	74.4			AIDA	30
36.7999	W.S.	14779		₫	.0			HBW 5/750			1.44	144			777	•
367999		14782		Z	0		RT H		H H		1.43	142		7 1	144	- 10.00
367999	350.00	14785		Z	0			HBW 5/750			1.44	142			143	
367999	185	14789		¥	0			HBW 5/750		146	144	144			24.7	
367999		14801	×	Ŋ	Ö			HBW 5/750			145	14.4			77	0.000
367999		14802		₹	0			HBW 5/750			144	144		1 5	144	
367999		14823		Ā	0		RT HI	HBW 5/750			145	146			14.5	
367999		14828		Ŋ	0		RT HI	HBW 5/750			143	145	٠		1.44	
367999	500 Å	14829		KJ	0			HBW 5/750		HB 146	147	148			147	
367999		14845		Ŋ	0			HBW 5/750		147	147	146			147	
367999	500	14847		Z	0					144	142	143		1	۲ 4	
367999	110A	14852		℧	0			HBW 5/750		1.44	143	144		1 -	144	
C40-C	dimi 61	C40-C49 Impact test						30 00								
B07.2		307.1	B05	5	C02/		-	C40	240		C46	C45 C42			C#3	Γ
		Test No.	Reference (heat) treatment			GR F tee	Width of	Type of	Testing.melhod		Energy	Individual values	values		Mean	
357314	•	78708		Ŋ			4	CHP-V			10.0	AV 1.89		7,51	Vaille	
367289	S	93149		Σ	ΓΛ		4	CHP-V				AV 153	1.0.1	}	115	
367999	-	14692			ΓΛ	-51 3/	4	CHD-V					1 0	י פר	0 t t	
367999	-	14695			· 21		٠ 4	CHP-V					7 6	F 7 C L	1.34	
36.7999	-	14719			Σ		4	CHP-V					133	137	136	
367999	-	14.753		K	77		4	CHP-V					103	, L	יי קרי	-
367999	7	14771			Z.	-51 3/4	4.	CHP-V					122	148	130	
														00000000	ı, ii.	

404

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order,

DR. CH. DILG

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

AO1

Date 20.02.12

inspector's stamp

Test House Manager

ЪĐ

QM-System: Cert	QMLSystem: Certification as per ISO 9001	001	H	DIFT NGED HITTE
Erläulerungen siehe Rück	seite/Explications voir au verso/S	Erläulerungen siehe Rückseite/Explications voir au versol/Sée réverse foi explanations (www.dillinger.de/certificate)	P	DICEINOLINE INCINE
AUZ INSPECTION	CERTIFICATE 3.1	INSPECTION CERTIFICATE 3.1 AS PER EN 10204; 2004.	'A10. Advice of dispatch No:/	A08/ Manufacturer's order/ Sheet
INSPECTION	"CERTIFICATE 3.1.	INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991	Date of dispatch	AU3 Certificate No.
MATERIAL I	MATERIAL TEST REPORT (MTR)		412679-18 02.12	3.70683-001
A05 Established inspecting	A05 Established inspecting body. A08:Purchaser	EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER		B01 Product
	Final receiver	EDMONTON STEEL, EDMON A07.2 No.		HOT ROLLED PLATES
B02/ Sleel design S	SA516-60	SA20-S5		•
B03 Any suppl. A	ASME-II-A:10			
requirements.	DIL-HUE-1:R28-2010-11-22	)-11-22		

,
-
CHD-V
3/4
-51
J LV
×
14785
14
367939
010

¥04

201/202/203 We hereby cértify, that the above manioned malerials have been delivered in accordance with the terms of order.

A B DR. CH. DILG Test House Manager

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

8

Inspector's stamp Date 20, 02, 12

QNI-System: Certification as per ISO 900:1 Eriauterungen siehe Rückseite/Explications volr.au verso/See reverse.for explanations.(www.dillinger.de/certificate)	ertificatik Dokseite/Exp	on as per IS	SO 90011 verso/Sèe reve	rse for explanable	ons:(www.dillin	ger.de/certificate	اء	27					DILLINGER HÜTTE	GER F	ÜTTE
A02 INSPECTI	CON CERT	INSPECTION CERTIFICATE 3.1 INSPECTION CERTIFICATE 3.1.8	3.1 AS 3.1.B AS	AS PER EN 10204:2009 AS PER EN 10204:1991	102:04::20 102:04:19	EN 10204;;2004 EN 10204:1991;+A1:1995	+ AS	PER ISO 10	10474:1991	A10	Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate.No.	order/	Sheet
MATERIAL	TEST	MATERIAL TEST REPORT (MTR)	(TR)	30						4126	412679-18.02.12		370683-001	_	7/
AUS Established inspecting body DH	sching.body	A06 Purchaser Final receiver	Į.		STEEL, EDMON	ON A07,1 No.		ED10582-J1010-ER	ER			B01	801 Product HGT POLIED DIATES	DIATES	
		8 H	30	EDMONTON ST	SIEEL, EDMON							?	1		
B02/ Steel-design,	SA516-60	SA516-60				-1	SA20-S5								
requirements	DIL-HU	ASME-11-R:10 DIL-HUE-1:R28-2010-11-22	2010-11-	-22											
C70-C	39 Cheir	ical comp	osition %	C70-C99 Chemical composition % - Heat analysis	voie.										
6 100	47.0	ì		THE WAR	1212						3	8 8			2002
	0/0	•	Ş	Al-T											
3.573.14	×	0,0000	0,0015	0,029											
367289	¥	0,0002	0,0020	0,042											
367999.	X	0,0000	0,0021	0,035											
C94 H	leat analy	sis Carbo	on equiva	C94 Heat analysis Carbon equivalent! Alloving restrictions	ina restric	tions	.50						80		
B07.2 Heat				•	•	l									
357314		FO-02=	0,37	FO.51=	000,0	FO-55=	0,13 F	FO-78∓	0,06 F	FO÷91= '	7.2				
367289.		FO-02=	95,0	FO-51=	000,0	FO-55=			58		6,5				
56795		FO-02=	0:, 38	FO-51=	000.0	FO-55=	0,13 F	FO-78=	0,04. F	FO-91= (	6,8				
C95 L	C95 Ladle treatment	tment													
ETEM NO.: 01	1			*											
HEAT OF THE INDICATED THEM: VACOUM DEGASSED /	TUDICA	TED TIEM	: VACOUM	DECASSED	/ SULPHI	IDE SHAPI	DE SHAPE CONTROL	_							
C95 F	urther in	formation ;	about lad	C95 Further information about ladle treatment											•
ITEM NO.: 01 CALCIUM TREATED	1 ATED	888 8													
7 44.7	10.00		70	-											
1	THE CHEIL	icai compi	% uoisiso	Cru-cas chemical composition % - Product analysis	nalysis -										
BO7.2 B07.1 Heat Test No.		Ξ			<b>a</b> .				QW.	2		>	2	S	F
					0,012				0,016	0,050		0,:001	0,000	0,000	0,003
					0,010				0,017	0,037		0.00 '0	000.0	:0,001	0,002
367289 93149					0,010				0,016	0,037		000.10	000.0	0,001	0,002
36/339 1484/	Y .	0,170	0,339	9 1,13	600'0	0,0005	0,0084	0,033	0,012	950'0	0,030	0.00 '0	000'0	0,001	0,002

4

E E

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

Manufacturers

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

.A01

Date 20.02.12

Inspector's stamp

DR. CH. DILG. Testi Housei Manager

PP

QM-System: Certification as per ISO 9001	和	DIL I INGER HITTE	Ţ
Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations/(www.dillinger.da/cerùficate)			1
A02 INSPECTION CERTIFICATE 3:1 AS PER EN 10204:2004	A10 Advice of dispatchiNo./	A09/ Manufacturer's order/ Sheet	. Se
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		AUS CUTILICARE, NO.	
MATERIAL TEST REPORT (MTR)	412679-18.02.12	370683-001	•
A05 Established Inspecting, body :A06 Purchaser EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER		801 Product	
Final receiver EDMONTON STEEL, EDMON		HOT ROLLED PLATES	•
B02/ Sleel design. SA516-60 SA20-S5		,,	1
803 Any suppl. A;ME-II-A:10			
requirements DIL-HUE-1:R28-2010-11-22			

						ns			FO-55= 0,13			FO-55= 0,13	
uct analysis	AL·T	0,031	0,044	0,043	0,034	/ Alloying restrictions	NE NE					FO-51= 0,000 FO	restrictions
ition % - Produ	Š	0,0014	0,0019	0,0015	0,0019	oon equivalent	6		0,36 FO-	0,38 FÓ-		0,37 FO-	nula / Alloying
iical compos	8	1 0,0001	1 0,0000	1 0,0001	1 0,0002	nalysis Carl	501		K1 FO-02≈	1 FO-02=	K1 FO-02=	K1 FO-02=	uivalent forr
C70-C99 Chemical composition % - Product analysis	B07.1 Test No.	78708 K.	52082 K.		14847 K1	C94 Product analysis Carbon equivalent / Alloyi	807.1	Test No.		52082 K1			G94 Carbon equivalent formula / Alloying restrict
	B07,2 Heat	357314 78708	367289. 52082	367289 93149	367999 14847			Heat	357314 78708	367289 52082	367289 93149	367999 14847	

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

FO-51 = V +NB

FO-55 = CU+MO+NI+CR

FO-78 = CR+MO

FO-91 = MN/C

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

SURFACE, SHAPE AND DIMENSIONS: NO REMARKS

ITEM NO.: 01

RESULT OF MARKING,

AS PER ASME-SA20 THICKNESS SURFACE

AS PER ASME-SA20 AS PER ASME-SA20 LENGTH AND WIDTH

AS PER 1/2-ASME-SA20

FLATNESS

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

Inspector's stamp DR. CH. DILG Test House Manager

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

A01

Date, 20.02.12

	9	DIT I NOTE DITTE
Erläuteningen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.diilinger.de/oertificate)	B	
A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204: 2004	A10 Advice of dispatch No./	A08/ Manufacturer's order/
INSPECTION CERTIFICATE 3.1 B AS PER EN 10204:1991+A1:1995 + AS PER ESO 10474:1991		Aus Certificate No.
MATERIAL TEST REPORT (MTR)	412679-18.02.12	370683-001
A05 Established Inspecting body A06 Purchaser EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER		B01: Product
Final receiver EDMONTON STEEL, EDMON		HOT ROLLED PLATES
B02/ Steel design. SA516-70 SA20-S5		
B03 Any suppl. ASME-II-A:10		
requirements DIL-HUE-1:R28-2010-11-22		

_			- 22	935		-		<u></u>															i	2	
70007	807.1 A09 Rolled plate No./ Purchaser article number Teet No.		CPL-375	SA 516 Gr. 70	0 55725	Sec. 5	Heat No.: 367999 - 14829-01	Received On: October 31, 2019		100	(Int. Req.: C2771)					Neceived by. Main Gavillo						leng)			14789-01 Reviewed By: Justin Bekker
	B07.1 Rolled plate	GSI NO.	78708-01	93149-01	93149-02	14692-01	14692-02	14695-01	14695-02	14719-01	14719-02	14753-01	14753-02	14771-01	14771-02	14773-01	14773-02	14776-01	14776-02	14779-01	14779-02	14782-01	14782-02	14785-01	14789-01
	B07.2 Heat No.		357314	367289	367289	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999
	B04 Product delivery		Z	Z	Z	z	Z	z	Ż	Ż	×	Z.	N	z	z	z	z	N	z	z	N	2	z	z	z
	:B12 Theoretical mass	, KG	2790	2790	2790	2790	27.90	27.90	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	27.90	27.90	2790	2790
	911 Length		480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	4.80,00000	4:80,00000	480,00000	480,00000	4.80,00000	480,00000	480,, 00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000
B01-B99 Description of the product		INCH	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 ×	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 x	120, 50000 x	120; 50000. x	120,50000 x
99 Description	B09 Thickness		.0;3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,3750 x	0,375,0 x	0,3750 x
B01-B	B08 Nymber of pièces		н	Н.	-	н	н	Н	Н	ď	-	-1			-	н.	-1	-	-	-	<del></del> 1	Н	-	뉴	슾
	No.		נָס	10	01	0.	Ö.	10	0.1	01	1	10	10	01	10	10	10	0.	0	1 <sub>0</sub>	10	<u>6</u>	5	01	01

201/202/203 We'hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

DR. CH. DILG Test House Manager

4

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

8

Date 20.02.12 Inspector's stamp

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

DILLINGER HÜTTE

Sheet HOT ROLLED PLATES A08/ Manufacturer's order/ A03 Certificate No. 370683-001 801 Product 412679-18.02.12 A10 Advice of dispatch No. / Date of dispetch INSPECTION CERTIFICATE 3.1, B. AS PER EN 10204: 1991+A1: 1995 + AS PER ISO 10474: 1991 ED10582-J1010-ER SA20-S5 A07.1 No. A07.2 No. EDMONTON STEEL, EDMON AS PER EN 1:02:04:2004 EDMONTON STEEL, EDMON DIL-HUE-1:R28-2010-11-22 A02 INSPECTION CERTIFICATE 3.1 WATERIAL TEST REPORT (MTR) Final receiver A05 Established Inspecting body A06 Purchaser ASME-II-A:10 SA516-70 requirements B02/ Steel design. Amy suppl. HO B03

		ber																			54		
	.A09	Purchaser article number																					
	807.1	Rolled plate No./		14789-02	14.801-01	14801-02	14.802-01	14802-02	14.823-01	14823-02	14828-01	14828-02	14829-01	14829-02	14845-01	14845-02	- 14847-01	14847-02	14852-01	14852-02			
	807.2	Heat-No.		367999	367999	367.999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999	367999			
	B04	Product: delivery		Z	Z	Z	z	Z	Ž	Z	Z	z	z	N	z	z	Z	N	Z	Z	10		
8	B12	Theoretical mass	¥G	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	27.90	2790	2790	2790	111600	111600	
	B11	Length		480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	4.80,00000	4'8'0,00000	4.80,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000			
of the product	. 919	Adth	INCH.	120,50000 x	0,3750 x 120,50000 x	120,50000 x	120,50000 x	120,50000 x	120,50000 ×	120,50000 x	120,50000 x	120,50000 x											
ion	•		256		×	×	×	×	×				×			×	1000		×	×			
- B01-B99 Description of the produ	B09	Thickness		0,3750 x	0,3750 x	0,3750 x	0,3750 ×	0,3750 ×	0,3750 x	0,3750 x	0,3750 x	0,3750 ×	0,3750	0,3750 x	0,3750	0,3750							
- B01-	808	Number of,pleces	Š.	Н	-		П	-	-	н	-	[	-	-	п	Н	a	-	-	н.	40	40	
	914	No.		01	01	0.1	0.1	01	0.	Ċ.	01	2	리	10	0.1	01	01	01	01	01	*	**	

201/202/203 We hereby certify, that the above-mentioned materials have been delivered in accordance with the terms of order.

A04

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

PQ.

Date 2:0, 0:2, 1:2

Inspector's stamp

DR. CH. DILG Test House Manager

QM-System: Entaulerungen siet	: Certificatio	QM-System; Certification as per ISO 9001 Elibülenungen siehe RückseiterExplications voir av versolSee reverse.for explanations (www.dilinger.de/certificate)	everse for explanations (r	www.dillings	sr.de/cerlificale)			10	DILLINGER HÜTTE	LIE
A02 INSPECTINSPECTINSPECTIONS	TION CERT	m i		EN 10204:2004 EN 10204:1991	+A181995 + AS	PER ISO 10474:1991	2	A10 Advice of dispaich No./	Aŭ3: Çejtificate No:	Sheet
MATERI	CAL TEST R	MATERIAL TEST REPORT (MTR)						412679-18,02.12	370683-001 3/	/
-A05 Established Inspecting body		A06 Purchaser E	EDMONTON STEEL	STEEL, EDMON	A07,1 No.	ED10582-J1010-ER		N N	1801 Product	
5		Final receiver E	EDMONTON STEEL	STEEL, EDMON	N A07.2 No.				HOT ROLLED PLATES	
'802/ Steel design.	" SA516-70	70			SA20-S5					
:B03 Any suppl.		ASME-II-A:10	1							
stuewaunbau 		DID-MUE-1:R28-2010-11-22	1-22.							
BÓ 	4 Product de	B04 Product delivery condition								
ITEM NO.	01				3/4	Section 1				
N: HT: 16	70 GR.F +	N: HT: 1670 GR.F +36 -27 GR.F								
COOLING D	SOAKING TIME TO ATTA	TAIN THE TARGET	T TEMPERATURE	OVER 1	SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION; COOLING IN STILL AIR		IN/MM (25	1-1,75 MIN/MM (25-45 MIN/INCH)		
88	6 Marking of	B06 Marking of the product		34						
ITEM NO.	0.1									
STEEL DES HEAT NO.	GNATION / TRADEMA	STEEL DESIGNATION SASI6 70 MTLTV SASI6 60 MTLTV HEAT NO. / TRADEMARK / ROLLED PLATE NO TEST NO.	V SAS16 60 MT	`	INSPECTOR'S STAMP					
.08   	7-B99 Furth	807-899 Further information about the product	out the product				3			
ITEM NO.:	10							•		
THICKNESS	REDUCTION	THICKNESS REDUCTION RATIO >= 3,0	IS FULFILLED (CF. A/	(CF. A	A/SA20 PAR. 5.3)					**
ธ์	C10-C29 Tensile test	le test	0							
B14 B07,2 Item Heat No.	Rol plate	B05 Reference (heat) treatment	C01 C02	C03 C10	C11	C12 C13		C14-C15		5 - 15 - 15 - 15 - 15 - 15 - 15 - 15 -
Ğ			i	GR.F.	KSI	i	<b>:</b> %			
01 357314	787.08		KI O	RT	52.9	74.5	10=8iN			
	9314.9			RT	53,2	77,1	. 4 4			
			K1 0	RT	52,2	75,7	25	٠		
			K1 0	RT	53,1	76,1	25			\$4.5K
			K1 Q	RŢ	51,2	7.5,3	23			
			K1 Q	RT	51,9	75,7	25			
				RT	52,3	75,8	24			
				RT	52,6	76, 4	25			****
01 367999	14776		K1 0	RT	51,8	75,7	28			

A01

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

Date 20.02.12

Inspector's stamp

DR. CH. DILG Test House Manager

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

À

DILLINGER HÜTTE 9 Sheet 4/ Postfach 1580, 0-66748 Dillingen/Saar HOT ROLLED PLATES C32 Mean value 143 156 145 AG der Dillinger Hüttenwerke 151 144 144 144 147 A08/ Manufacturer's order 370683-001 801 Product Inspection department C14-C15 412679-18.02.12 Advice of dispatchillo. 150 14:3 170 144 144 143 148 Inspector's stamp 1.45 144 151 145 146 1.4.7 151 C31 :lindividual.values HB 14.8 HB 144 HB 144 HB 147 HB 151 HB 145 HB 145 HB 143 26 24 27 27 25 25 25 27 23 AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 C3S OR. ČŘ. DILG TestiHouse Manager 5 ED10582-J1010-ER 3 RM 75,4 74,7 74,8 75, 4 75,8 75,1 75,3 75,4 75,1 75,4 75,7 RT HBW 5/750 RT HBW 5/750 RT HBW 5/750 RT HBW 5/750 C30 Method of test RT HBW: 5/750 RT HBW 5/750 RT HBW 5/750 RT HBW 5/750 SA20-S5 (20.1/202/203: We hereby certify, that the above mentioned meterials have been delivered in accordance with the farms of order. A07.1 No. A07.2 No. Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate) 50,6 52,3 52,5 52,3 50,8 51,5 51,2 51,5 52,2 52,1 C10 C11 C02/C01 AS PER EN 10204:2004 EDMONTON STEEL, EDMON EDMONTON STEEL, EDMON 0 0 000 0 CO3 Temp. GR:F RT RT RT Z Z Z Z Z Z Z Z Z Z 6 6 6 KI Q K1. 0 K1 :Q Ó Ò ø o Z Z ははは 5 Z B05 Reference (heat) treatment DIL-HUE-1:R28-2010-11-22 Reference (heat) treatment INSPECTION CERTIFICATE 3.1.8 INSPECTION CERTIFICATE 3.1 MATERIAL TEST REPORT (MTR) Final receiver A06.Purchaser C30-C39 Hardness test ASME-II-A:10 C10-C29 Tensile test B07:1 Rol.plate/ Test No. 14695 14719 14753 14692 78708 93149 14771 14773 SA516-70 405 Established Inspecting body B07.1 Rol.plätė/ Test No. 367999 14785 367999 14789 01 367999 14802 01 367999 14823 367999 14801 367999 14828 01 367999 14829 01 367999 14845 367999 14847 367999 14779 367999 14782 367999 14852 367289 367999 367999 357314 367999 367999 367999 36799 Heal No. Manufacturer's mark B02/ Steel design. requirements Any suppl. Heat-No. B07.2 B14 Item No. 803 B14 Item. No. 01 01 0.1 01 10 402 10 9 AQ.

Date 20.02.12

A02 INSPECTION INSPECTION MATERIAL A05 Established inspection	AbelierExplication	Erläuferungen siehe Rückseitel Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)	erse for explanatio	ns (www.dillin	ger.de/certi	(icale)				)				100
INSPECTION MATERIAL 05 Established-linspecti	INSPECTION CERTIFICATE 3.1	CATE 3.1 A	AS: PER EN 10204:2004	0204:20	04				A10 Advit	A10. Advice of dispatch No./	A08/ Mai	A08/ Manufacturer's order/		Sheel
MATERIAL TEST A05 Established inspecting body	N CERTIFI(	INSPECTION CERTIFICATE 3.1.B AS	S PER EN 10204:1991	0204:19		+A1:1995 + 1	AS PER ISC	PER ISO 10474:1991		Prodein in	B B	integral NO.		
VOS Established Inspectin	2	RT (MTR)						2002	4126	412679-18.02.12	<u>. j</u>	370683-001	/5	5/
1		A06 Purchaser ED	EDMONTON STEEL, EDMON	SEL, EDM		A07,1 No. ED.	ED10582-J1010-ER	10-ER			801 Product	duct		
<b>5</b>		Final receiver .ED	EDMONTON ST	STEEL, EDMON	N A07.2	No.					HOT R	HOT ROLLED PLATES	VTES	
B02/ Steel design.	SA516-70					SA20-S5	25				Ī			
803 Any suppl.	ASME-II-A:10	:10					)			4		r		
requirements	DIL-HUE-1	DIL-HUE-1:R28-2010-11-22	-22	3										
30-C3	C30-C39 Hardness test	test											i	1
8	B07.1	808		63	C02/C01	C03	C30	C3S C3	3	ĺ		ن	C32	
item. Heat-No. No.	Rol.plate/ Test No.	Reference (heat) treatment	t) treatment			Temp.	Method of test		Individual values	Ø.		2.	Mean	
01 367999	14776	S*		K	ō		HBW 5/750	HR 145	145	144		<b>%</b> -	value 1 4 G	
	14779			¥	ö			HH.				1 -	144	
	14782			Ŋ	0		HBW 5/750	HB				. 4	143	
	14785			Ϋ́	ō	RT	HBW 5/750	HB 144	14 144	142		٦	143	
	14789			¥	0	RT	HBW 5/750	HB 146	144			d	145:	
	14801			¥	0	R	HBW 5/750	HB 144	145	5 144		Н	144	
	14802			¥	0		HBW 5/750	HB 144	14 144	1 144		-	144	
(6)	14823			Z	0	RT	HBW 5/750	HB 145	5 145	5 146		н	145	
	14.828			젚	0	RT	HBW 5/750	HB 143	3 143	3 145		-	144	
	14829			豆	0	RT	HBW. 5/750	HB 146	6 147	7 148	III COST COS AND	1	147	
	14845			<b>모</b>	0		HBW 5/750	HB 147	7 147	7 146		Æ	147	
	14847			¥	0	RT	HBW 5/750	HB: 144	4 142	143		ä	143	
01 367999	14852			₽	0	RT	HBW 5/750	HB 144	4 143	144		Ä	144	
C40-C4	C40-C49 Impact test	##	50						100000	THE A SECTION				
B14. B07.2-	BO7.4			CO .	COZ CO3			C44	C46	C45	33		C43	
	Test No.	versions (near) describent	h nearment		GRF	p. Width of F test plece	Type of	Testing method	Energ		Individual values AV=FT.LBF		Mean	
	78708			ŭ	LV -51		0			AV 189	168	155	171	
	93149						CHP-V			AV 153	101	91	115	
	14692				IV -51	1 3/4	CHP-V			AV 130	159	1:39	143	
	14695				IV -51	1 3/4	CHP-V			AV 97	140	134	124	
	14719			KI	LV -51	1 3/4	CHP-V			AV 139	133	137	136	
	1.4753				LV -51	1 3/4	CHP-V			AV 143	103	158	135	
01 367999	14771			KI	LV -51	3/4	CHP-V			AV 120	122	148	130	
.A04	201/Z02/203 We h	201/202/203 We hereby carity, that the above mentioned materials have been delivered in accordance	bove mentioned in	aterials have.	been deliva	ed in:accorda	nce		3	AG de	or Dillinger	AG der Dillinger Hittenwerke	ko	¥0.
×	diw.	with the terms of order;						Ch. Ord	<b>₽</b>		Postfach 1580, [	Postfach 1580, D-66748 Dillingen/Saar	ingen/Saar	
Manufactureris							ŏ	DR. CH. DILG		70				

QM-System: Certifi	QM-System: Certification as per ISO 9001	1004	K	DILL MICED LITTE	
Erläuterungen siehe Rücksei	ite/Explications voir au verso/	Edituterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)			
AUC INSPECTION	CERTIFICATE 3.1	INSPECTION CERTIFICATE 3.1 AS PER EN 10204;2004	A10 Advice of dispatch No./	A08/ Manufacturer storder/	Sheet
INSPECTION	CERTIFICATE 3.1	ENSPECTION CERTIFICATE 3.1.B AS PER EN 10204 : 1991+A1: 1995 + AS PER ISO 10474: 1991	icate or dispator	-AU3 Centificate:No.	
MATERIAL TE	MATERIAL TEST REPORT (MTR)		41/267/9-18 02 1/2	370683-001	
A05 Established Inspecting body A06 Purchaser DH	ody A06 Purchaser	EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER			
i	Final receiver	EDMONTON STEEL, EDMON A07.2 No.		HOT ROLLED PLATES	
.B02/ Steel design. SA:	SA516-70	SA20-85			
B03 Any suppl. A.S.I.	ASME-II-A:10				
requirements DII	DIL-HUE-1:R28-2010-11-22	0-11-22			7
					-

	C40-C4	C40-C49 Impact test							55								
B14	B07.2	B07.1	B05		C0-	51100	-0555	C41		<b>₹</b>	8		C45 C42			643	
£ 9	Heat No.	Rol:plate/ Test No.	Reference (ht	Reference (heat) treatment		Ş		Width of	Type of	Testing method		Energy	Individual values	l values		Mean	
01	367999	14773			Z	ΓΛ	-51	3/4	5.53			AV		161		140	
0	367999	14776			豆	Γſ	-53	3/4	CHP-V			Ā		148		154	
. 01	367999	14779			Ŋ	'n	-51	3/4	CHP-V			AV		101	106	102	
[]	367999	14782			K	Ľ	-51	3/4	CHP-V			A		1.56		136	
01	367999	14.785			KI	ľ	-51	3/4	CHP-V			A	7.142	145		127	
0.	367999	14789			X	3	-51	3/4	CHP-V			Ä	AV 152	93		11.8	
0	367999	14801			Z	Ŋ	-51	3/4	CHP-V			A	108	164		135	
0.1	3,67,999	14802			Z	្ន	-51	3./4	CHP-V			AV	14.0	134		135	
[ .	367999	14823			Z	Š	-51	3/4	CHP-V			AV		121		125	
10	367999:	14828			KI	2	-51	3/4	CHP-V			A		131		135	
2	367999	14829			K1	ľ	-51	3/4	CHP-V			AV	7 94	68		90	83
0.7	367999	14845			KI	ΓΛ	-51	3/4	CHP-V			A		112	134	127	
10	367999	14847			₹	Ľ	-51	3/4	CHP-V			Ą	135	131	137	134	
15	367999	14'852			¥	LV	-51		CHP-V			ΑV	146	103	6.8	113	5
	C70-C99	C70-C99 Chemical composition % - Heat analysis	"nosition %	6 - Heat ana	VSIS				8	200	2						V.
B07.2	C70																
Heal		ပ		ž	<b>D</b> .	ά		z	3	W	ž	2	>		Z	F	R
357314		0,162	0,363	1,16	0,011	0		0,0071	0,028	0,015	0,049	0,040	0,000		0, 001	0,003	
367289			0,363	1,17	0,01.1	0,	J	0,0062	0,032	0,015	0,037	0,027	0,000	000'0	0,001	0,002	
367999	Y 661	0,170	0,343	1,16	0,009	0,	9000'0	0,0087	0,033	0,011	0,055	0,029	0 0.0.0		0,000	0,002	

AQ4

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

DR. CH. DILG Test:House Manager

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

AG

0,002

.Date 20.02.12

Inspector's stamp

QM-System: Certification as per 1SO 9001	明	OF THE INCED DIFFEE
Erfäuterungen siehe Rückseite/Explications voir, auwerso/See, reverse for explanations; (www. dillinger, de/certificate)	9	DIFFINATION
AUZ INSPECTION CERTIFICATE 3.1 AS PER EN 10204 2004	A10 Advice of dispatch No!	A08/ Manufacturer's order! Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		Aus: Certificate No.
MATERIAL TEST REPORT (MTR)	412679-18:02.12	370683-001
A05 Established Inspecting body A06 Purchaser EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER		B01 Product
Final receiver EDMONTON STEEL, EDMON		HOT ROLLED PLATES
B02/ Steel dasign. SA516-70 SA20-S5		-
B03 Any suppl. ASME-II-A:10		
requirements DIL-BUE-1:R28-2010-11-22		
C70 C00 Chamber 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		

							E.	7,2	6,5	6,8
								FO-9.1≠	FO-91=	FO-91=
16								90'0	0,04	0,04
83								FO-78=	FO-78=	FO-78=
3								0,13	0,11	0.13
						tions		FO-55≠	FO-55=	FO-55≡
lysis						ing restric	)	000'0	000'0	0,000
- Heat ana		AL·T	0,029	0,042	0,035	ent / Alloy		FO-51=	FO-51=	FO-51=
osition %		Ç	0,0015	0,0002 0,0020 0,042	0,0000 0,0021 0,035	on equival		0,37	0,39	0,38
C70-C99 Chemical composition % - Heat analysis	N S	œ	0,0000 0,0015	0,0002	0,0000	- C94 Heat analysis Carbon equivalent / Alloving restrictions		FO-02=	FO-02=	₹0-02=
70-C99-Che	C70		¥	X	Y	4 Heat ana				
<u>ნ</u>	_	Te a	357314	367289	367999	<u>ຮ</u>	-807.2 -Heat	357314	367289	367999

C95 Ladle freatment -

ITEM NO.: 01

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

- C95 Further information about ladle treatment

ITEM NO.: 01

CALCIUM TREATED

lysis	
ana	
Product	
*	
composition	
Chemical	
C70-C99	

2	0,000	000'0	0,000	000.0	
>	0,001	000'0	0,000	00.0 0	
8	0,040	0,026.	0,026	0,030	
2	0,050	0,037	0,037	950'0	
.0	0,016	0,017	0,016	0,012	
3	0,028	0,030	0,030	0,033	
×	0,0073	0,0056	0,0063	0,.0084	
Ø	0,0008	0,0012	0,0008	0,0005	
<b>a</b>	0,012	0,010	0,010	600'0	
NE	1,16	1,14	1,20	1,13	
ឆ	0,374	0,348	0,379	0,339	
	0,150	0,175	0,165	0,170	
5	ă	Ø	Z	Σ	
Test No.	18708	52082	93149	14847	
Heat	357314	367285	367289	367995	
			-		

201/202/203 We here by certify, that the above mentioned materials have been delivered in accordance with the terms of order.

ě

各

AG der Dillinger Hütterwerke Postfach 1580; D-66748 Dillingen/Saar Inspection department

Date 20.02.12 Inspector's stamp.

Test House Manager

OR. CH. DILG

pp

A01

0,003 0,002 0,002 0,002

000 '.0 0,001 0,001

Erläuterungen siehe Rückseile/Explications vois

DILLINGER HÜTTE

A02 Taron arene nouse	HEY EAUTHURITIONS VOIL BU VEISON	Je/certificate)			
INSPECTION	CERTIFICATE 3.1	INSPECTION CERTIFICATE 3.1 AS PER EN 10204 2004	A10 Advice of dispatch No./	A08/ Manufacturer's order/	Sheet
INSPECTION	CERTIFICATE 3.1.	INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991	Date: Of Utsparing	AU3. Cerbilicale No.	<b>*</b>
MATERIAL TE	MATERIAL TEST REPORT (MTR)		412679-18.02.12	3,2,0,6,9,3,-,0,0,1	a
A05 Established!Inspecting body DH	body A06 Purchaser	EDMONTON STEEL, EDMON A07.1 No. ED10582-J1010-ER		B01 Product	
	Final receiver	EDMONTON STEEL, EDMON A07.2 No.		HOT ROLLED PLATES	
ے	SA516-70	SA20-S5			
B03 Any suppl. ASN	ASME-II-A:10				
requirements DII	DIL-HUE-1:R28-2010-11-22	)-11-22			
			30 30 30 30 30 30 30 30 30 30 30 30 30 3	20	

77.7	B07.1	500			10000000000000000000000000000000000000
at	Test No.		•		AL-T
57314	4 78708	₽	0,0001		0,031
67289	3-67289 52082	₽	0,0000		0,044
67289	931:49	Ŋ	0.,0001	0,0015	0,043
61999	367999 14847	Z	0,0002		0.034

IIS	
ng restrictio	<b>I</b>
lent / Alloy	
on equival	•
sls Carbon	
oduct analys	5
C94 Pr	B07.1
-	7:2

B07:2 Heat	B07.1 Test No.	ē					
357314	787.08	X	FO-02=	0,36	FO-51≥	0,001	FO-55=
367289	52082	4	FO-02=	0,38	FO-51=	0,000	FO-55=
367289	93:149	Ŋ	FO-02=	0,38	FO-51=	000'0	FO-55=
367999	14847	K1	FO-02=	0,37	FO-51=	000,0	FO-55=

0,13 0,11 0,11 0,13

C94 Carbon equivalent formula / Alloying restrictions

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

FO-51 = V +NB FO-55 = CU+MO+NI+CR FO-78 = CR+MO FO-91 = MN/C

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

SURFACE, SHAPE AND DIMENSIONS: NO REMARKS RESULT OF MARKING, ITEM NO.: 01

AS PER ASME-SA20 AS PER ASME-SA20

THICKNESS

SURFACE

FLATNESS

AS PER ASME-SA20 LENGTH AND WIDTH

201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. AS PER 1/2-ASME-SA20



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

A01

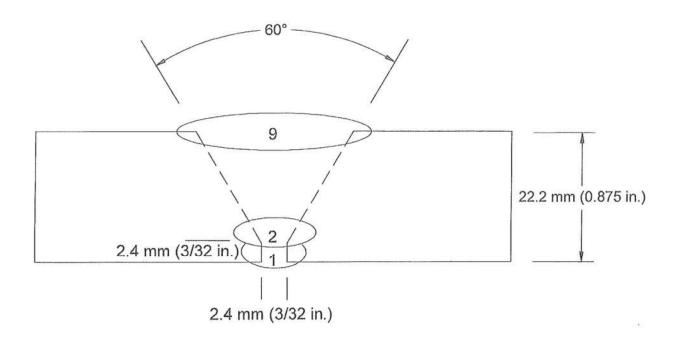
Inspector's: stamp

Test House Manager DR. CH. DILG

Date 20.02.12

### QW-483 PROCEDURE QUALIFICATION RECORD (PQR)

		Redcore Enter	prises Ltd	d.	
Procedure Qualification	on Record No.	REL-1-2		Date	December 2, 2009
Welding Procedure S	pecification No.	REL-1 (Re	v. 1)	2.50	5113 15 CO-25
Welding Process(es)		SMAW		Type(s)	Manual
					A STATE OF THE PARTY OF THE PAR
JOINTS (QW-402)					
Туре		Butt joint, sing	le vee arc	ove, see ne	xt page
// -					
BASE METALS (Q)	W-403)				
Material Spec.		516	Type or	Grade	Gr. 60N to Gr. 70N
P-No. P1 Grp. 1	To P-No.	P1 Grp. 2	Thickne	ess	22.2 mm (0.875 in.)
P-No. P1 Grp. 1 Diameter Heat Number	N/A	sianzain	Other		Plate product form
Heat Number	290117 - 1556	1	Carbon	Equivalent	0.384
Deposited Weld Meta	(Per pass)	Did not exceed	12.7 mn	n (0.500 in.)	
C.E. formula per CSA Z	662-07: C + F(N	In/6 + Si/24 + Cu	1/15 + Ni/2	0 + Cr/5 + Mc	o/5 + V/5 + Cb/5 + 5B)
FILLER METALS (	QW-404)				
Specification No. (SF	A)	SFA 5.1		SFA 5	.1
AWS No. (Class)		E6010		E7018	
Filler Metal F-No.		F3		F4	
Filler Metal A-No.		A1	Walles Walles	A1	
Size of Electrode		See attached s	sketch		
Deposited Weld Meta	Thickness	2.39 mm (0.09	4 in.)	19.8 n	nm (0.781 in.)
POSITION (QW-40!	5)				
Position of Groove _		3G			
Weld Progression		Vertical Up			
PREHEAT (QW-406	5)				
Preheat Temperature	10°C (5	50°F)	Interpas	s Temp. (Ma	ax.) <u>232°C (450°F)</u>
POSTWELD HEAT	TREATMENT	(QW-407)			
Temperature	None		Time	N/A	
The practice outside of					
ELECTRICAL CHA	RACTERISTIC	CS (QW-409)			
Current			Polarity	Revers	se, electrode positive
Amps		xt page	Volts	See ne	ext page
Maximum Heat Input		2 kJ/mm (48,7	50 J/in.)	F4: 3.52 k	J/mm (89,294 J/in.)
		-establicupu mosela -ess			
TECHNIQUE (QW-4	110)				
String or Weave		4: Both	Travel S	speed	See next page
Initial & Interpass Clea		Brushing, chips			ove slag
Method of Back Goug	· · · · · · · · · · · · · · · · · · ·	Not used			
Multiple or Single Pas		Multipass from	groove si	ide	
Multiple or Single Elec	And the second of the second o	Single			
Peening		None			



Pass	Process	Filler Metal	Diameter mm (in.)	Current & Polarity	Amperage Range	Voltage Range	Travel Speed mm/min (i.p.m.)
1	SMAW	E6010	3.2 (1/8)	DCRP	85 - 90	25 - 27	71 (2.8)
2	SMAW	E7018-1	2.4 (3/32)	DCRP	90 - 95	21 - 23	102 (4.0)
3 & 4	SMAW	E7018-1	2.4 (3/32)	DCRP	90 - 95	21 - 23	74 (2.9)
5	SMAW	E7018-1	2.4 (3/32)	DCRP	110 - 120	21 - 23	86 (3.4)
6	SMAW	E7018-1	2.4 (3/32)	DCRP	110 - 120	21 - 23	81 (3.2)
7	SMAW	E7018-1	2.4 (3/32)	DCRP	110 - 120	21 - 23	58 (2.3)
8	SMAW	E7018-1	2.4 (3/32)	DCRP	110 - 120	21 - 23	64 (2.5)
9	SMAW	E7018-1	2.4 (3/32)	DCRP	110 - 120	21 - 23	43 (1.7)

### TENSILE TEST (QW-150)

Specimen No.	Width mm (in.)	Thickness mm (in.)	Area Sq. mm (Sq. in.)	Ultimate Load N (lbs.)	Ultimate Stress MPa (psi)	Character & Fracture Location
T1	19.0	20.7	393	207 800	528	Partial cup & cone
	(0.748)	(0.815)	(0.610)	(46,700)	(76,600)	Parent metal (Gr. 70N)
T2	19.1	20.6	394	208 500	530	Partial cup & cone
	(0.752)	(0.811)	(0.610)	(46,900)	(76,900)	Parent metal (Gr. 60N)

### GUIDED BEND TEST (QW-160)

Type & Figure No.	Result	Type & Figure No.	Result
QW-462.2, TSB - S1	Pass	QW-462.2, TSB - S3	Pass
QW-462.2, TSB - S2	Pass	QW-462.2, TSB - S4	Pass

### **CHARPY IMPACT TOUGHNESS**

ype of Test Charpy V-Notch		Orientation	Transverse		
	-46°C (-50°F)	Specimen Size .	10 X 10 mm (0.394 X 0.394 in.)		
Specimen N	No.	lotch Location	Impact Values J (ft. lbs)		
Z2.1		Weld Metal	51.2 (37.8)		
Z2,2		within 1/16"	24.5 (18.1)		
Z2.3		of root	54.0 (39.8)		
Z3.1		Gr. 60N - HAZ	92.2 (68.0)		
Z3.2		Gr. 60N - HAZ	>140 (>103)		
Z3.3	The second secon		>140 (>103)		
A3.1		Gr. 70N - HAZ	69.1 (51.0)		
A3.2	0	9r. 70N - HAZ	54.0 (39.8)		
A3.3	0	Gr. 70N - HAZ	39.3 (29.0)		

### OTHER TESTS

	s Hardness - see attached lat vell Hardness - see attached l		
TOURV	reli Hardress - See attached h	aboratory test report in es	0 1000.1
Welders Name	Christopher Lachuck	Certificate File No	W-26345
Laboratory Test No.	Ludwig Associates Lt C09-1868.1	iu.	
	nents in this record are con accordance with the requirem		
Manufacturer	REDCORE ENTERP	RISES LTD.	
Date170e	209	Signed	



### LABORATORY TEST REPORT

Laboratory Test No.: C09-1868.1

Date: December 8, 2009

CUSTOMER:

Redcore Enterprises Ltd.

2 Harrigan Street Sylvan Lake, Alberta

T4S 1W6

Attention:

Jonathon Paulgaard

PQR Number:

REL-1-2

Waterial:

SA 516 Gr. 60N to SA 516 Gr. 70N (Heat No.: 290117 - 15561)

Thickness:

22.2 mm (0.875 in.)

Thermal Condition:

As Welded

### **TENSILE TEST QW-150**

SAMPLE NUMBER	T1 QW-46	62.1(a)	T2 QW-462	.1(a)
WIDTH mm (in)	19.0	(0.748)	19.1	(0.752)
THICKNESS mm (in)	20.7	(0.815)	20.6	(0.811)
AREA sq mm (sq in)	393	(0.610)	394	(0.610)
ULTIMATE LOAD N (lbs)	207 800	(46,700)	208 500	(46,900)
UTS MPa (psi)	528	(76,600)	530	(76,900)
FRACTURE TYPE	Partial Cu	ip & Cone	Partial Cup	& Cone
FRACTURE LOCATION	Parent Me	etal (SA 516 Gr. 70N)	Parent Meta	al (SA 516 Gr. 60N)

### **GUIDED-BEND TEST QW-160**

SAMPLE WIDTH: SAMPLE THICKNESS: 9.52 mm (0.375 in.) 22.2 mm (0.875 in.) (1.50 in.) YOKE SIZE: 60.3 mm (2.375 in.) PLUNGER SIZE: 38.1 mm Side Bend QW-462.2 Side Bend Side Bend Side Bend S2 S1 S3 \$4 SAMPLE NUMBER(S) RESULTS Pass Pass Pass Pass

We certify the test results in this report and that the specimen(s) were prepared and tested in accordance with the requirements of ASME Section IX, 2007 edition and latest addenda. The information regarding material identification (i.e. size, thickness, heat number, etc.) has been provided by the customer whose name appears on this report. Samples associated with this report will be discarded in 45 days.

Laboratory Test Conducted By: \_\_\_\_\_\_\_ Travis Parker, T.T. / Samuel Lu, C.Tech.





### LABORATORY TEST REPORT

CUSTOMER:

Redcore Enterprises Ltd.

2 Harrigan Street Sylvan Lake, Alberta

T4S 1W6

Laboratory Test No.: C09-1868.1

Date: December 8, 2009

Attention:

Jonathon Paulgaard

POR Number:

REL-1-2

Material:

SA 516 Gr. 60N to SA 516 Gr.70N (Heat No.: 290117 - 15561)

Thickness:

22.2 mm (0.875 in.)

Thermal Condition:

As Welded

### **NOTCH-TOUGHNESS TEST**

TYPE OF TEST:

Charpy V-Notch

ORIENTATION:

Transverse

TEST TEMPERATURE:

-46°C (-50°F)

SPECIMEN SIZE:

10 x 10 mm

(0.394 x 0.394 in.)

	Specimen Number	Notch Location	 	Values (ft.lbs)
9	Z2.1 Z2.2 Z2.3	Weld Metal within 1/16 in. of root	51.2 24.5 54.0	(37.8) (18.1) (39.8)
	Z3.1 Z3.2 Z3.3	Gr. 60N - HAZ Gr. 60N - HAZ Gr. 60N - HAZ	92.2 >140 >140	(68.0) (>103) (>103)
i.	A3.1 A3.2 A3.3	Gr. 70N - HAZ Gr. 70N - HAZ Gr. 70N - HAZ	69.1 54.0 39.3	(51.0) (39.8) .(29.0)

We certify the test results in this report and that the specimen(s) were prepared and tested in accordance with the requirements of ASME Section VIII, Div. 1, UG-84, 2007 edition and latest addenda. The information regarding material identification (i.e. size, thickness, heat number, etc.) has been provided by the customer whose name appears on this report. Samples associated with this report will be discarded in 45 days.

Laboratory Test Conducted By:\_\_\_\_\_

Claire Robinson, T.T. / Samuel Lu, C.Tech.





### LABORATORY TEST REPORT

CUSTOMER:

Redcore Enterprises Ltd.

2 Harrigan Street Sylvan Lake, Alberta

T4S 1W6

Attention:

Jonathon Paulgaard

PQR Number:

REL-1-2

Material:

SA 516 Gr. 60N to SA 516 Gr.70N (Heat No.: 290117 - 15561)

Thickness:

22.2 mm (0.875 in.)

**Thermal Condition:** 

As Welded

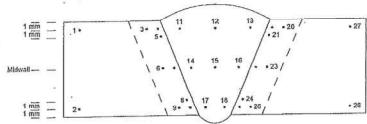
### HARDNESS TEST

Type of Test: Vickers 1000 g (HV1000)

Instrument: Mitutoyo Macrovickers 5112

Laboratory Test No.: C09-1868.1

Date: December 8, 2009



10157	SA 516	Gr. 6	0N	<b>FMI</b>		SA 516 Gr. 70N			
Pa	rent Metal	1 Charles and the second	HAZ	l VV	eld Metal		HAZ	Pa	rent Metal
1	158	3	187	11	1.85	19	206	27	161
2	164	4	196	12	202	20	214	28	167
-		5	207	13	199	21	214		Ā
		6	202	14.	189	22	203		
		7	199	15	187	23	205		
		8	203	16	198	24	214		
-		. 9	195	17	211	25	215		T
		10	211	18	200	26	215		

We certify the test results in this report and that the specimen(s) were prepared and tested in accordance with the requirements of ASTM E384-08a. The information regarding material identification (i.e. size, thickness, heat number, etc.) has been provided by the customer whose name appears on this report. Samples associated with this report will be discarded in 45 days.

Laboratory Test Conducted By: \_

Travis Parker, T.T. / Samuel Lu, C.Tech.





### LABORATORY TEST REPORT

CUSTOMER:

Redcore Enterprises Ltd.

2 Harrigan Street Sylvan Lake, Alberta

T4S 1W6

Attention:

Jonathon Paulgaard

PQR Number:

REL-1-2

Material:

SA 516 Gr. 60N to SA 516 Gr.70N (Heat No.: 290117 - 15561)

Thickness:

22.2 mm (0.875 in.)

Thermal Condition:

As Welded

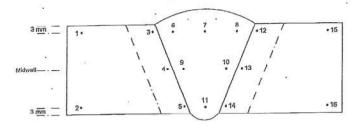
### HARDNESS TEST

Type of Test: Rockwell Scale B (HRBW\*)

Instrument: NewAge Digital Versitron

Laboratory Test No.: C09-1868.1

Date: December 8, 2009



Pa	SA 516 rent Metal		HAZ	VV	eld Metal		HAZ	Pa	rent Meta
1	80	3	88	6	87	12	90	15	.81 ·
2	80	4	86	7	84	13	87	16	80
-		5	89	8	91	14	89		. 2
		SAZE V	•	9	87			9	
				10	.87				
				11	91		e		

<sup>\*</sup> Note: HRBW indicates testing was conducted with a tungsten carbide indenter.

We certify the test results in this report and that the specimen(s) were prepared and tested in accordance with the requirements of ASTM E18 - 08a. The information regarding material identification (i.e. size, thickness, heat number, etc.) has been provided by the customer whose name appears on this report. Samples associated with this report will be discarded in 45 days.

Laboratory Test Conducted By:

04-2009 CPC-11 CPC-1261

						人などろう		14#290117	1-12261	a sale		
Grizure	rungen siehe Rüc	zkse te/Explication:	s voir au verso/See	e reverse for	Eriäuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dilinner.de/certificate)	dilinger.do/certi	ficate)				DILLINGER HÜTT	TIE
40Z	INSPECTIC	INSPECTION CERTIFICATE	CATE 3.1	AS PER EN	R EN 10204:2004	2004			A10 Advice	Advice of dispatch No./	A08/ Mamfacturer's order/	Sheet
••	INSPECTION		CATE 3.1.B	3 AS PER	R EN 10204:1991+		A1:1995 + AS P	PER ISO 10474:1991		dispatch	AD3 Certificate No.	
AORE	MATERIAL TEST		RT (MTR)			- 1	- 1		242156	242156-20.01.07	315779-002	
日	madell represent		Aus Futettasser	ARCELOR		*	No.					
			TO A STATE OF THE	EDMONTON	TON STEEL, EDMON	DMON A072	No.	E10408-J1010-1G			HOT ROLLED PLATES	
803 803	Siteel design. Any suppl. requirements	SA516-70 ASME-2A:04+A05 DIL-HUE-2:R21-	SA516-70 ASMB-22.04+A05 DIL-HUB-2:R21-2006-04-27	-04-27		,	•				Included the control of the control	Amendada Josephan Josephan Josephan Josephan Josephan Josephan
											The second secon	
	B01-B	B11-B99 Description of the product	on of the pro	oduct -			₩ •				13848	1000
EA4 item	BUS Nun	B09 Thickness	BTO Width		E41 Length	B12	804		B07.1	A09		
S 0	of pieces		NCH		,	mass	condition	HBAL NO.	Rolled plate No.	Purchaser article	number	
디	H	0,8750	× 120,50000	× 000	480,00000		Z	311000	2000			
70	н ,				480,00000		ızı	290115	T0-1/227	TURK I		
7 0	çlı				480,00000		N	290115	15580-01	TTEM		•
7 6				100	480,00000		A	290115	15585-01	TIEW 1		
_					480,00000			290115	15586-01	ITEM 1		
1 5		0,8750			480,00000	Ø		290115	15588-01	ITEM I		1
1 1		0,0700			480,00000	w		290115	15589-01	ITEM 1		
10		001010	X 420,55000	300	480,00000	10		290117	15532-01	TEM T		•
0		0 8750	190 50000	4 5	480,00000	Ω		290117	15555-01	ITEM 1		
07		0.8750			400,000,000	ρl	a i	290117	15558-01	I TEEM I		
TO		0.8750	1 ×		780 0000	<b>D</b> (		290117	1,5559-01	ITEM 1	¥	19
07		0.8750	: *		70000 7004			-290117	15561-01	ILEM 1		,
rio		0.8750	<b>4</b> }		480,00000			290117	15562-01	ITEM I		
0		0.8750	, ; ;	7 7 000	400,00000			290117	15563-01	ITEM I		
מ		0.8750	{ ×		480, 60000		<b>4</b>	290117	15565-01	ITEM I	٠	
10		0,8750	· ×				4 1	290117	15556-01	ILEM 1		
0		0,8750 x			480 0000	0700	a 2	290117	15568-01	I WELL		
디		0,8750			489,00000		3 2	250117	15569-01	LIEM 1	•	
0	:	0,8750	×		480,00000	o u	4 2	777067	15571-01	ITEM I		-
6	NI.	0,8750	×		480,00000	<i>y</i> (		290117	15572-01	I WELL		
*	27					י מיר		LTTOSY	12574-01	ITEM I	•	
05	н	1,1250	x 97,00000	× 0000	00000,084.		z	250119	15480-01	· MHTT		
AGA		201/202/203 V	We hereby certify, that	that the abov	e mentioned maleri	ils have been de	201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance	1				
	200	OM-Syste	OM-System: Certification on and the control of the	Fron John	100 Oct 100			r		AG de	AG der Dillinger Hüttenwerke	401
	5	100	יייי כפו ויוויכם	HOLI de	Tons Octuer	*		2/2	AF	B rosua	r osuacn 1350, D-55748 Dillingen/Saar Inspection department	aar
	mark				<b>*</b> R:			B. MUELLER				
						-		l est House Wanager	Inspector's stamp	Date	22.01.07 KW	-

工工
HÜI
HR
X
DIL.

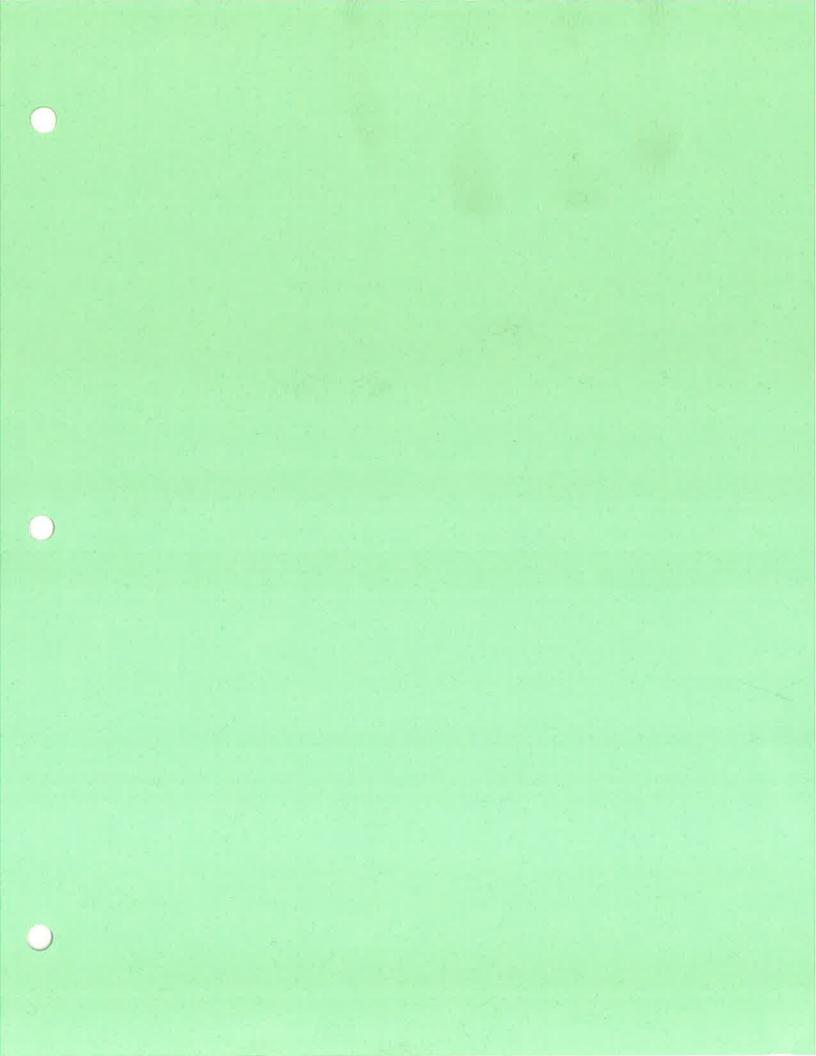
브	1			1	1																T				AOT	
DILLINGER HÜTTE	Sheet 8/5	SS			C43	Averaga value	121	138	11.9	162	151		į	200	p, cor	0,001			i						te Daen/Saar	
INGER	Aurer's order te No. 3-002	LED BLATES				;	나 r 나 r	22	126	134	156		Ş	000								•			AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar	
DILL	AOS Wanufacturer's order's Certificate No.	HOT ROLLED			and in the state of the state o		760	115	113	1 28	145		۶		00000					ě	-			0.000	r Dillinger	Inspection department
御	atch No./ ch . 01.07				S C42 findlished values		122			153			Š	6,026	0,033	0,031	*								AG de Postfa	Inspection
	A10 Advice of dispatch No./ Date of dispatch 242156-20.01.07	12			C46 C45	744	DE	AV	AV	AV	AV		N	0,023	0,071	0000									A HA	
	Att												, om	0,005	0,007	7								The state of the s		
	10474:15	Ü			C44 Testling method								3	0,016	0,047							6,7	in in	6,8	人	B. MUELLER
æjj	AS PER ISO 10474:1991	E10408-J1010-TG			C40 Type of		CHP-V	CEP-V	×-49	CHP-V	CEP-V		Ą.	0,031	0,039						135	FO-91=	FO-91=	FO-37=	( )	B. M.
	4				C45 Width of	test piece							z	0,0057	0,0048							0,03	\$0,0	0,05		
r.de/certificate	1+A1:1995	AD7.2			CO2/ CO3 CO1 Temp.			LV -51	15.		V51		Ø	0,0012	8000,0					fions		EO-78=	下0-78三	been definere		
s (www.dillnge	10204:2804A1:1995 10204:1991+A1:1995	STEEL, EDMON			CON	ğ		d t			ď	/SIS	ь.	0,010	0,010					ing restric		10,07	0,16	materials have	700	
for explanation	AS PER EN 10204:2004 AS PER EN 10204:1993 ARCHIOR CANADA PITOT	EDMONTON STE	7		reziment					•		neat anal	MAN	7,10	7,14					Carbon equivalent / Alloying restrictions		FO-55	FO-55=	bove mentioned	s per 150 9	
So/See reverse	3.1.8 AS IIIR)	· inge	906-04-2		BOS Reference (beat) treatment						10 m 25 m	- W. DOBIS			0,354		200	0,0001	1000'0	on equival		0,38	0,38	atify, that the a	s of order. Fication as	
Etiäulerungen slehe Rückceitelfscolloations voir au versolSee reverse for explanations (www.x3llinger.de/certificate) And	INSPECTION CERTIFICATE 3.1 INSPECTION CERTIFICATE 3.1 MATERIAL TEST REPORT (MTR) madished inspecting body AGS Purchaser	Final receiver	SA516-70 ASWE-2A:04+AOS DIL-HUB-2:R21-2006-04-27	C40-C49 Impact test		15572	15574	15480	15482	15483	C70-C90 Chemical communities by 11-	אופיווויםו כחווויי	0 0			*	H 0	0,003	0,003	C94 Heat analysis Carbo		FO-02=	FO-02=	201/202/203 We hareby certify, that the above mentioned materials have been defined of managed in annual managed in annu	with the terms of order.  QM-System: Certification as per ISO 9001	
Wickseiter	TON CI TON CI TES!		SAS ASM DIL	C49 In		17	- 0	ח סו	o م	on a	0.000	CZO	Þ	1 >	H	070	Þ	ı þı	ы	Heat				201		
rungen slehe F	INSPECTION CER- INSPECTION CER- MATERIAL TEST A05 Established Inspecting body	DH	Steel design. Any suppl. requirements	C40-	ii ii			290119		290119	1		Heat 290115	711062		7	290115	290II7	290119	C94	Y	290115	290119		X X	Manufacturer's
Ertäut	AOSE	-	B03		B14 Ifem No.	10	3 6	0 0	02	0 0		B07.2	Heat 290	20	20	807.2	290	2	2	å	Heat 4	2 0	i N	Ap		

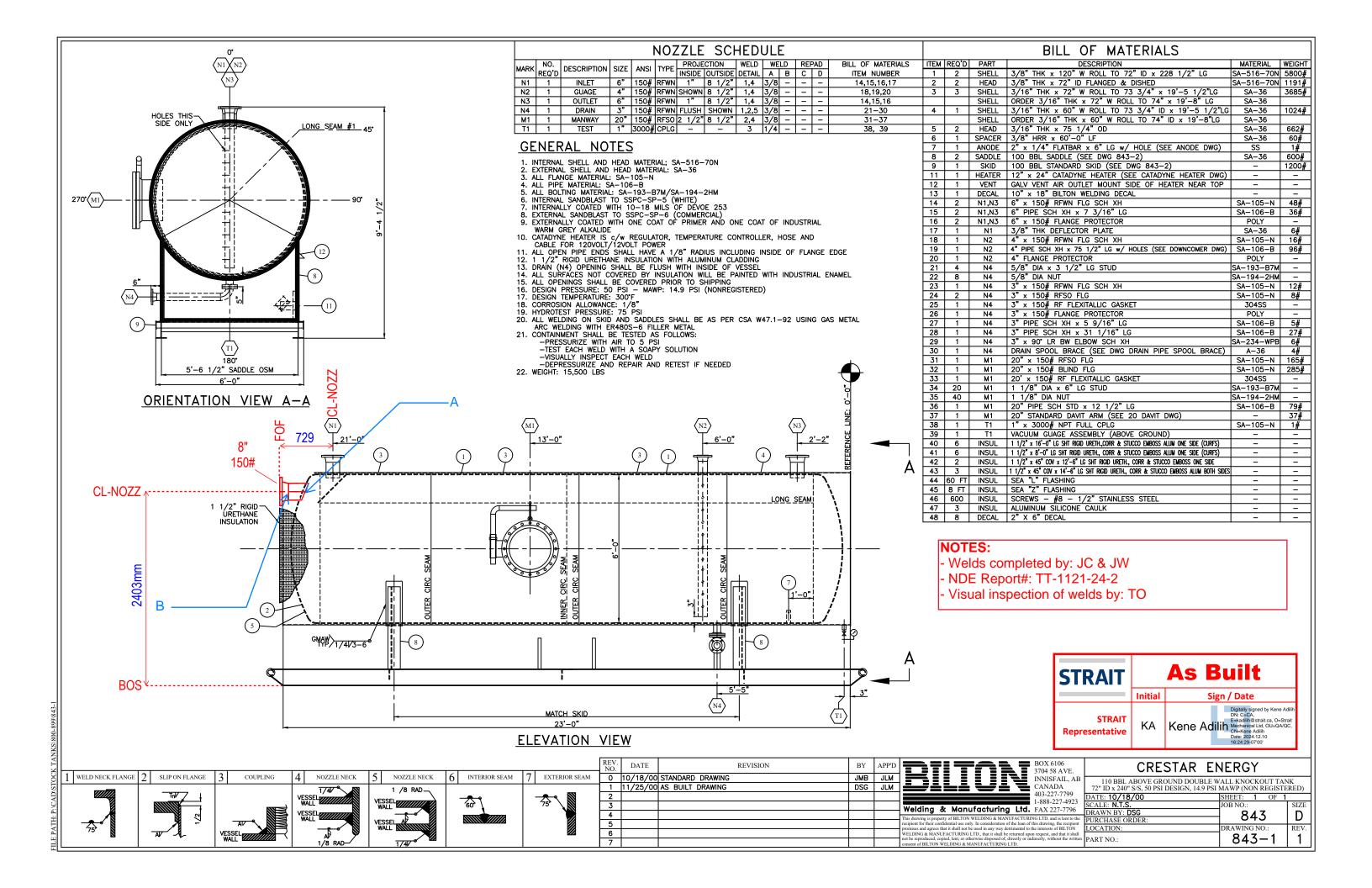
DILLINGER HÜTTE

JI.IE	Sheet		1/	19	Enteredada para canada para ca	Manager of the second s	.   "	****			.,			***		<b>S</b>					,										58	Saar	
DILLINGER H	AG8/ Manufacturer's order/ AG3 Certificate No.		315779-002 601 Product HOT DOLLIE		Samuel Marie Control of the Control	13041.		number	Ē.		•							•												•		AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar	Inspection department
	Advice of dispatch No./		747158-20.01.07				. A03	Purchaser article number	Tenesta a	T WELL	T MELL	TTEM 3	LTEM 1		ITEM 1	ITEM 1	ILLEM 1	ITEM 1	ITEM I	ITEM 1	ITEM 1	ITEM 1	ITEM 1	ITEM 1	THEM I	T WELL	LIEM 7	TEEM T	ILEM 1	ITEM 2		AG der Postfa	Inspectio
	A10		242136				507.1	Rolled plate No.! Test No.	35577-03	1010101	15580-01	15585-01	15586-01	15588-01	15589-01	15532-01	15555-01	15558-01	15559-01	15561-01	15562-01	15563-01	12565-01	15566-01	Topode of	15569-01	10-1/661	15572-01	155 /4-01	15480-01		AFI	7
		ISO 10474:1991	7	シオーカナロコ	,		B07.2		290115	45	0022	290115		230115					2 0		D10	250117		711052				250177		230119		という	COLTATION G
(0)		35 + AS PER	No. 61056 No. 910409-11010-10				B04	condition		64	L.	<b></b>		<b>.</b>		her l	٠,٠	a 2	3 2	a ke	4 2	a k	: 2		7	a	. 2			N	been delivered in accordance	٧	þ
illinger, delcertifical	10204:2004	n-::	A07.1				B12 E		6510 N	6510 N	6510 M	3.765.7	5000	5.50		93	685 - F 1215	a contra	27 7				533%	8 8						6738			
r explanations (www.d	R EN 10204;2004	Ť	OR CAMADA, BURLI				E41		480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480 00000	480 0000	480 00000	480,0000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000	480,00000		480,00000	e mentioned materials	er ISO 9001	
	E 3.1. B AS PER		Final receiver EDMONTON		05 1-2005-04-27	f the product				120,50000 x			X 00000 001		120,50000 %	120,50000 ×			120,50000 x			120,50000 x			× 00000'16	201/202/203 We hereby certify, that the above mentioned materials have	QM-System: Certification as per ISO 9001						
cseite/Explications voir	INSPECTION CERTIFICATE 3.1 INSPECTION CERTIFICATE 3.1.B	MATERIAL TEST REFORT (MTR)	A06	SA516-60	ASME-22:04+AC5 DIL-HUE-2:R21-2005-04-27	B01-B99 Description of the product	By Thickness W	=	×	×	N :	× 00/000	4 >	4 >	4 X	: X	×	H		0,8750 x	0,8750 x	0,8750 x	0,8750 x		0,8750 ×	Section 1	0,8750 ×	0,8750 x		1,1250 x	Z01/Z02/Z03 We hen	QM-System: C	
iterungen siehe Rück	INSPECTION	MATERIAL,	THE	Steel design.	Any suppl, requirements	B01-B9	BOB	n of pieces	rl r	-	4 +		TO TO								01	H		10.	-	d i	T	0.1 **	Ŋ	7		X A	Manufacturer's
E S		13	3	B02/	803	1	B14 Item	S G	5 5	2 5	5 6	0	0	0	0	0	0	0	Ċ,	0	u	١٠	_		, (		-	~ 1		5 5	(		_

	1	I	4
	C	Y.	1
	1	14	)
The State of	E	-	
Sec. 1575	-	1	
6		I	1
1	J	L	P

					TOTAL STATE OF THE PERSON OF T									
1	CENTLATICATE	3.1 38	PER EN 1	EN 10204:2004	04				A10	Advice of dispate		1087 Manufacturer	Confort	Change
INSPECTION	ON CERTIFICATE 3	.B AS	PER EN 1	0204:19	10204:1991+31:1995	+ AS	PER ISO	ISO 10474:1991		Date of dispatch		A03 Certificate No.	lights .	Sheet
MATERIAL	14	PR)								20 20 00 32 1070	5	1		
Aus Established Inspecting body DH	A06		ARCELOR CANADA, BURLI	ADA, BURI	A07.5	No. 61056				יקדפם ביקה.	1	315779-002	122	6/
	Final receiver		EDMONTON ST	STEEL, EDMON	A07.2	No. E1040	E10408-J1010-LG	D D				HOT ROLLIED PLATES	PLATES	
802/ Stoel design.	SA516-60									-				
603 Any suppl.	ASME-2A:04+A05													
requirements	DIL-HUE-2:R21-2006-04-27	2006-04-2	7.											
C40-C	C40-C49 Impact test													
B14 B07.2					١.									
Item Heat No.	Rolpiate/ Re	Reference (heat) treatment	treatment	5	COY Temp.	Midth of		C44 Testing method		C45 C45	042			C43
01 290117	15572			Ş	GRE	test piece	80	)		200	AV=FT.18F	nes	4, 1	Average
01 290117	15574						CEP-V			AV	121	129 114	-	121
02 290119	15480				10- VII		V-945							138
02 290119	1.5481						<b>&gt;-</b> 計						72 1	.511
02 290119	15482						CHE					113 126		577
	15483					٠					153	198 134		162
02 290119	15484						Carba V				121			153
C70-C	C70-C99 Chemical composition % - Heat analysis	. % notition %	Host and	O, O,						AV	151	145 156		151
01	CTG		ווכפד מוזמו	Josep -			,							•
Keat.	υ	S	MM	0.	U	*	;							
290115		0,359	1,16	0,010	0.0012	7200	150	, , 5 5 5	NO C	K	상	^	NB	SN.
230117	X 0,175	0,360	1,14	0,008	0.0009	0000	1000		0000	0,023	0,026		00000	100,0
290119	X 0,173	0,354	1,17	0,010	0,0008	0,0068	0,029	0,0%	0,007	0,071	0,033			100'0
	.020						•		1000	0	150 70	0,000	00000	T00'0
Heat		æ												
280115		0,0001												
230117	¥ 0,003	T000'0												
290119	Y 0,603	0,0001												ş
C94 F	C94 Heat analysis Carbon equivalent / Alloving restrictions	oon equiva	lent / Allov	ing restri	rione									
B07.2 Heat					970									
250115	五0-02=	86.0	TO LO	5	i c	1								
290117	FO-02=	0.38	10 CH	0 0	1001	0,03	FO-91=	6,7				•		
290119	F0-02=	0,38	FO-55=	100	101101	40,0		ล้า						
A04	Z01/Z02/Z03 We hereby cartify, that the above mentioned materials have been delineared in	cartify, that the a	bove mantioner	materials have	a hear delinary	00.0	#C-77-	8,78						et d
**	with the terms of order.	ms of order.		Die Diproprie	ב הבפוז חבוו למנ	व गा बद्धाताब्राद	,	7.			AG der	AG der Dillinger Hitterming	- Jacobson	200
I	QM-System: Certification as per ISO 9001	tification a	s per ISO	1001			7	ノー		AHB	Postfaci	Postfach 1580, D-66748 Dillingen/Saar	48 Dilling	en/Saar
Manufacturer's							B. MOI	MUBLILER		1	Inspection department	lepartnent		







# NON-DESTRUCTIVE EXAMINATION

NDE Reports
NDE Certifying Statement
NDE Technician Certifications & Eye Exams
NDE Equipment Calibration Records



### **MAGNETIC PARTICLE REPORT**

MAGNETIC PARTICLE REPORT (MPR) #	TT	-	1121	-	24	-	2
DAILY COST REPORT (DCR) #	TT	-	1121	-	24	-	2

712010A DD72A	COUNTY OF GRAND	SE DEVIDIE NO 4	ALDEDTA TOM SUS

	71201	9A RR72	A COU	NTY OF GRA	NDE PR	AIRIE N	IO. 1 AL	.BERTA	T8W 5	15																
CLIENT	NAME:	F	UELLED (	C/O STRAIT						DATE:		Novem	ber 21	, 20	024 PG	# 1 OF	2	EQUIPMENT SERI	IAL NUMBERS / BITY:	CALIBRATION VERIFICATION	TECHNIQU	JE:		TEST MEDIUM / BAT	CH #'S:	
CLIENT	REPRESENTATIVE	С	am Neal							CONTRAC	TOR:	Strait					1	HAND YOKE SERIAL #:	SENTINAL MP- A2L # 1652	PERFORMED PRIOR TO USE:	ALTERNATING CURRENT (AC):	1	WET APPL # 1		BATCH	#
LOCATION	ON:	G	rande Prai	rie						CLIENT AF	FE / PO #:						E	CALIBRATION BLOCK:	W-PT 10.1 LB/4.6 kg S/N 1076	✓	DIRECT CURRENT (DC):		WET APPL # 2		BATCH	#
JOB DE	SCRIPTION:	M	IT As Requ	uested						CLIENT CO	OST / CHARGE CODE:						\	WHITE LIGHT EQUIPMENT:	ENERGIZER - MODI	EL # TUF-4C1	CONTINUOUS	1	DRY POWDER	MAGNAFLUX - RED (#8A)	BATCH	# 21J028
PROJEC	DT:	8'	' Nozzle in	FWKO						CLIENT / C	CONTRACTOR JOB #:	22-2056					1	WHITE LIGHT INTENSITY:	MINIMUM 100FT CA	NDLES (1076	RESIDUAL		FLUORESCENT		BATCH	#
AREA:		G	rande Prai	rie						START TIM	ME:	12PM					1	AMBIENT LIGHT INTENSITY:	MINIMUM 100FT CA	NDLES (1076	ADDITIONAL INFO	ORMATIO	ON:			
SURFAC			✓ V	VELDMENT/ I.A.Z.		BASE MET	TAL		GROUND		MACHINED	PAIN	red	SAND- BLASTED	MA	TERIAL INSPECTE	D:	BLACK LIGHT EQUIPMENT:			20/20 NDT PROCE	DURE:		MT-01 REV 08 ASME V, A	IRT. 1 & 7	
INSPEC TEMPER	TION SURFACE RATURE:		E	BELOW 41°F / 5°C		<b>1</b>	BETWEEN 48°C	N 41°F / 5°C	& 118°F/		ABOVE 118°F / 48°C	PRE-	HEAT TMENT	POST-HEAT TREATMENT	т .	CARBON STEEL	8	BLACK LIGHT INTENSITY:			20/20 NDT TECHN	IIQUE:		ASME MT 1 - DRY MAGN	ETIC PARTICLE	E METHOD
ITEM #	MT # / ID	DESCRIF	PTION	NDE REF. # (if applicable)	SIZE	SCH.	WELDER ID	ACCEPT	REJECT	FIELD WELD#	CONTROL #		DRAWIN	IG#	SP	OOL ID		ONAL INFORMATION	CURRENT EDITION				OBSE	RVATIONS / REMARKS		
1	MT-1	NOZZL SHE			8"	хн	JC	1		А	INSIDE		843-1 R	EV 1					ASME SECT V			NO R	ELEVANT INDIC	CATIONS AT TIME OF INSP	PECTION.	
2	MT-2	NOZZL SHE	E TO		8"	хн	JC	1		А	OUSITDE		843-1 R	EV 1					ASME SECT V			NO R	ELEVANT INDIC	CATIONS AT TIME OF INSP	PECTION.	
3	MT-3	NOZZ	LE		8"	XH	JC	1		В	8" FLANGE		843-1 R	EV 1					ASME SECT V	III, DIV 1, -23		NO R	ELEVANT INDIC	CATIONS AT TIME OF INSP	PECTION.	
4																										
5																										
6																										
7																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
		In	terpretati	on is in accorda	nce with the	he above	mention	ed standa	ards. The	final interp	pretation is the responsibili	ty of the client.			The abo	ve Magnetic Yol	ke pas	ssed a load test wh standards and r	nich 20/20 ND Te meets ASTM E70	echnology Inc. 09-15, ASTM-	assures the abo E 144-14, ASME	ove ins E Secti	trument has be ion V, Article 7	en calibrated by referen T-762, I-753.	ce to N.I.S.T t	traceable
					-	_	_ }	- (L											4	cow B	au Ko					
							~	<del>//</del>	$\overline{}$		Tasie Oko	ro				Tyson S		r	$\mathcal{L}$	-0				CGSB LEVEL	20/20 UN	
																Todd T		3)		SCOTT BOYK			LE	VEL 2 - 3156	40	
																7.00.017	(3	•								



### **PHOTO REPORT**

PHOTO REPORT (PR) #	тт	-	1121	-	24	-	2
DAILY COST REPORT (DCR) #	TT		1121		24	-	2

712019A RR72A COUNTY OF GRANDE PRAIRIE NO. 1 ALBERTA T8W 5H5

### SECURITION OF THE PROPERTY						
Company   Comp	LIENT NAME:	FUELLED C/O STRAIT	PROJECT:	8* Nozzle in FWKO	DATE:	November 21 , 2024 PG # 2 OF 2
3 ATT-3	LIENT REPRESENTATIVE:	Cam Neal	AREA:	Grande Prairie	CLIENT COST / CHARGE CODE:	
1	OCATION:	Grande Prairie	CONTRACTOR:	Strait	CLIENT / CONTRACTOR JOB #:	22-2056
MT-2  MT-2  4  MT-3	OB DESCRIPTION:		CLIENT AFE / PO #:		START TIME:	12PM
	3 WT-3			MT-2		

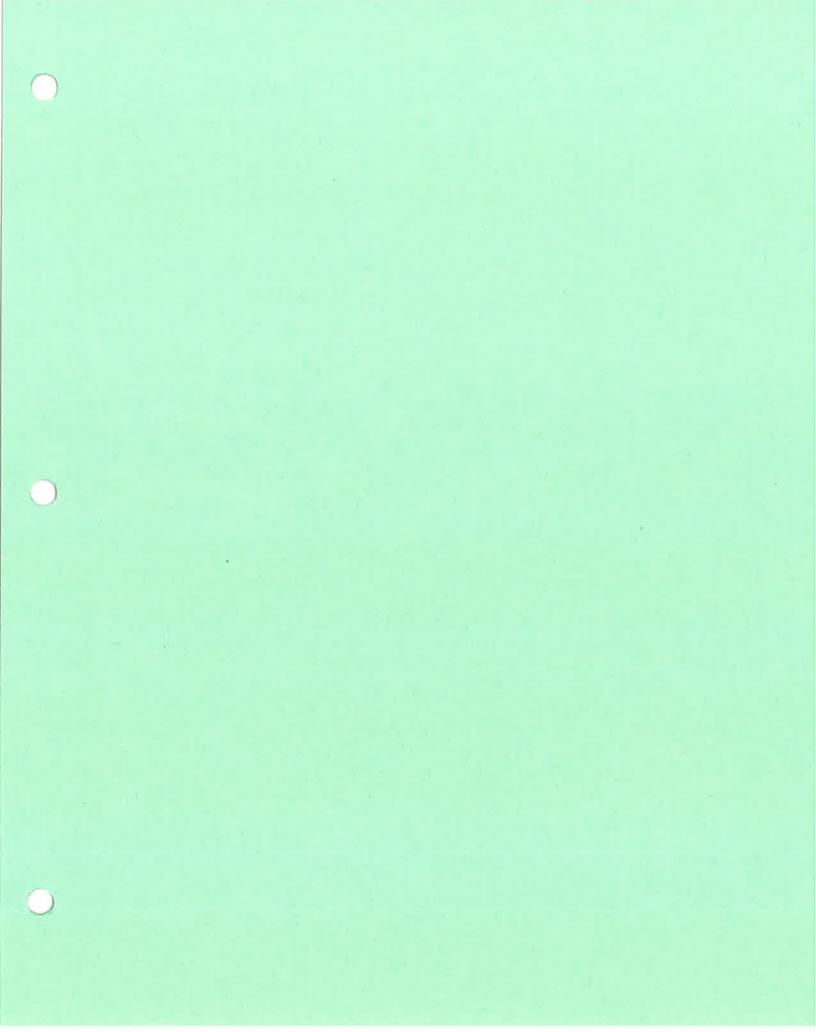


### **MAGNETIC PARTICLE REPORT**

MAGNETIC PARTICLE REPORT (MPR) #	CL	-	1125	-	24	-	2
DAILY COST REPORT (DCR) #	CL	-	1125	-	24	-	2

712019A RR72A COUNTY OF GRANDE PRAIRIE NO. 1 ALBERTA T8W 5H5 EQUIPMENT SERIAL NUMBERS / CLIENT NAME: FUELLED C/O STRAIT NOVEMBER 2024 CALIBRATION TECHNIQUE: TEST MEDIUM / BATCH #'S: PG# INTENSITY: VERIFICATION PERFORMED MAGNAFLUX WCP-2 CONTRAST PAINT (CII OIL VEHICLE) HAND YOKE SERIAL #: SENTINAL MP-ALTERNATING WET APPL # 1 CLIENT REPRESENTATIVE: Cam Neal CONTRACTOR: STRAIT BATCH # 21D17K PRIOR TO USE A2I # 5007 CURRENT (AC): CALIBRATION BLOCK: DIRECT CURRENT (DC): WET APPL#2 W-PT 10.1 LB/4. MAGNAFLUX 7HF BLACK INK OIL LOCATION: STRAIT G.P YARD CLIENT AFE / PO #: 18H16K kg S/N 1986 WHITE LIGHT EQUIPMENT: DRY POWDER JOB DESCRIPTION: MT AS REQUESTED CLIENT COST / CHARGE CODE: ENERGIZER - MODEL # TUF-4C1 ONTINUOUS AGNAFLUX - YELLOW (#2) BATCH 21C070 WHITE LIGHT MINIMUM 100FT CANDLES (1076 FLUORESCEN PROJECT: 8" Nozzle in FWKO CLIENT / CONTRACTOR JOB #-22-2056 RESIDITAL BATCH INTENSITY: AMBIENT LIGHT AREA: Grande Prairie START TIME: 7:00 A.M ADDITIONAL INFORMATION: INTENSITY: SURFACE CONDITION: SAND-BLASTED BLACK LIGHT EQUIPMENT: GROUND MACHINED MATERIAL INSPECTED: 20/20 NDT PROCEDURE: INSPECTION SURFACE TEMPERATURE: BETWEEN 41°F / 5°C & 118°F / 48°C PRE-HEAT TREATMENT POST-HEAT TREATMENT BLACK LIGHT INTENSITY: ASME MT 2 - WET VISIBLE MAGNETIC PARTICLE BELOW 41°F / 5°C ABOVE 118°F / 48°C CARBON STEEL MINIMUM 1000 µW/CM2 20/20 NDT TECHNIQUE ITEM # NDE REF.# CURRENT EDITION ACCEPTANCE WELDER ID DESCRIPTION SCH. OBSERVATIONS / REMARKS MT # / ID ACCEPT REJECT PIPE SPEC WELDING SPOOL ID ADDITIONAL INFORMATION ALL FILLET WELDS TO ASME SECT VIII. DIV 1, 23 TANK FILLET MT-4 NO RELEVANT INDICATIONS AT TIME OF INSPECTION. JW WELDS NOZZLE MT-4 The above Magnetic Yoke passed a load test which 20/20 ND Technology Inc. assures the above instrument has been calibrated by reference to N.I.S.T traceable Interpretation is in accordance with the above mentioned standards. The final interpretation is the responsibility of the client. standards and meets ASTM E709-15, ASTM-E 144-14, ASME Section V, Article 7, T-762, I-753. Tasie Okoro SNT / CGSB LEVEL 20/20 UNIT #: CORY LOCKHART SCOTT BOYKO LEVEL 2 - 3156 27

ASSISTANT (S)



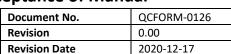


### NDE Certifying Statement – Acceptance of Manual

**NDE Certifying Statement** 

QC

Form





Page 1 of 2

### SECTION 1.0 - NDE Certifying Statement

Department

Label/Project No.

**Document Type** 

SECTION 1.0 – NDE Certifying Statement				
I have reviewed the:				
QA Procedures Manual Revision 3				
PC 1.0 Qualification & Certification Written Practice Rev. 9				
2.1 RT 01 Rev 10 Radiographic Inspection (2023 ASME V Art 1 2)				
2.2 RT-02 Rev 01 Radiographic Inspection (CSA W59)				
2.3 RT 03 Rev 02 Radiographic Inspection (2023 CSA Z662)				
2.5 RT 05 Rev 02 Radiographic Inspection (2023 CSA Z662) (TC				
Energy)				
3.1 UT 01 Rev 08 Ultrasonic Inspection (2023 ASME V Art 1 4)				
3.2 UT-02 Rev 02 Ultrasonic Inspection (CSA W59)				
3.3 UT 03 Rev 02 Ultrasonic Inspection (2023 CSA Z662)				
3.4 UT 04 Rev 05 Ultrasonic 0 Degree (2023 ASME)				
4.1 MT-01 Rev 08 Magnetic Particle Inspection (2023 ASME V Art 1				
7)				
4.2 MT-02 Rev 02 Magnetic Particle Inspection (CSA W59)				
4.3 MT-03 Rev 02 Magnetic Particle Inspection (2023 CSA Z662)				
5.1 PT-01 Rev 08 Liquid Penetrant Inspection (2023 ASME V Art 1				
6)				
5.2 PT-02 Rev 01 Liquid Penetrant Inspection (CSA W59)				
5.3 PT-03 Rev 02 Liquid Penetrant Inspection (2023 CSA Z662)				
6.1 HT-01 Rev 04 Hardness Testing (General Usage)				
6.3 FT-01 Rev 01 Ferrite Testing (General Usage)				
6.5 PM-01 Rev 00 Positive Material Identification				
20/20 NDT Technology Inc.				
712019 RR, 72a Unit A				
County of Grande Prairie No. 1, AB T8W 5H5				

It is my opinion that the specified NDE procedures are in accordance with ASME Section V requirements as referenced by the applicable construction code and that the written practice complies in all respects with the requirements of the construction code accepted Edition of SNT-TC-1A.

Based upon my review of the above referenced documents, I hereby certify that personnel performing and evaluating NDE have been qualified and certified in accordance with their employers written practice and that the demonstration of procedure(s) to the satisfaction of the A1. As required by the ASME Code, Section V, paragraph T-150, has been completed as specified within the STRAIT Mechanical Ltd. Written quality system.

Therefore:	20/20 NDT Technology Inc.	Is hereby appointed to perform:		
		RT. PT. MT. UT.HT. FT. PMI		
For:	STRAIT Mechanical Ltd.			

SECTION 2.0 – Appointment of Level III Examiner	
Derek Billard	Is by this appointed to act as the Level III Examiner
(Name of RT. UT. MT. PT. Level III Examiner)	for:
STRAIT Mechanical LTD.	In the following methods: RT. PT. MT. UT.HT. FT. PMI









Department

Label/Project No.

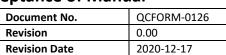
**Document Type** 

### NDE Certifying Statement – Acceptance of Manual

NDE Certifying Statement

QC

Form

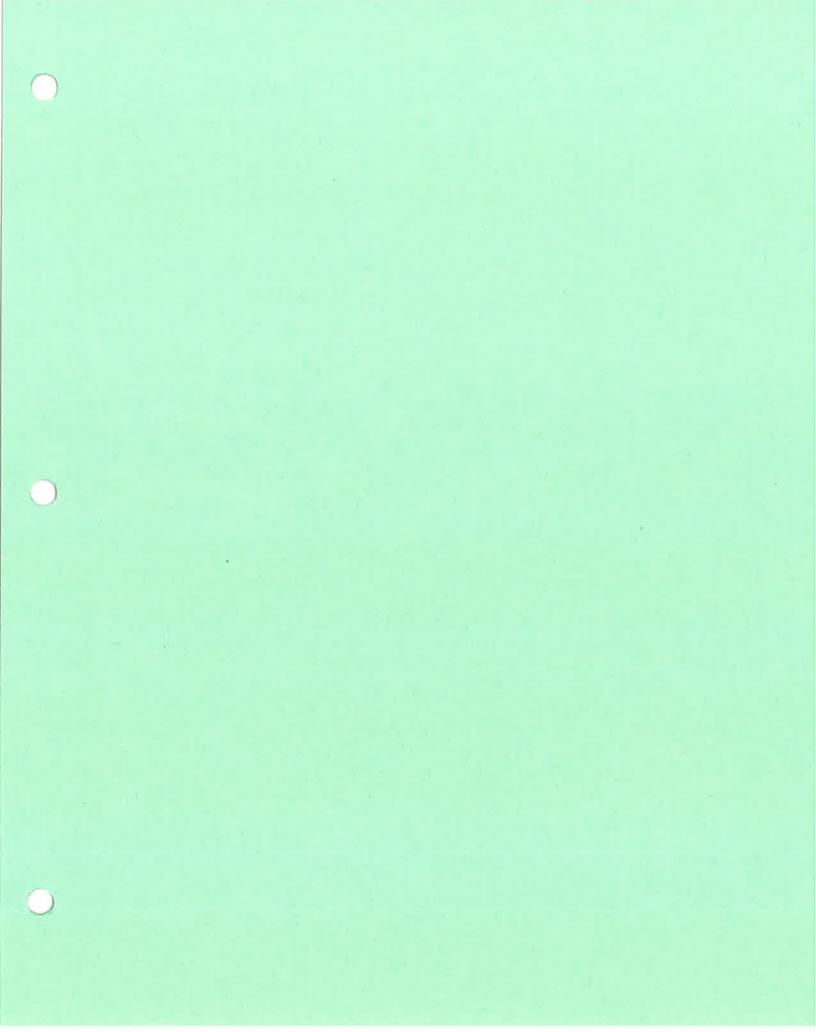




Page **2** of **2** 

SECTION 3.0 – QC Signature					
QC Manager Signature	Date	Appointment Expiry Date			
N. Francour	June 24, 2024	June 24, 2025			

SECTION 4.0 - Level III Examiner Acceptance of Appointment				
I hereby accept the appointment indicated above.				
Level III Examiner Name Signature Date				
Derek Billard		July 18, 2024		





### **EMPLOYEE CERTIFICATIONS**

PO BOX 765 Grande Prairie, AB 780-513-6222

**SCOTT BOYKO** 

3156

**CGSB** 

**SNT** 

**LEVEL II** 

**LEVEL II** 

RT, MT, XF, PT

RT, MT, PT, UT







### 20/20 NDT

Certifications as per SNT-TC-1A Date of Issue: <u>Dec 20, 2022</u>

<u>Scott Boyko</u> has met the requirements set forth by the 20/20 NDT Ltd. Written Practice PC 1.0 and is hereby certified to perform the following Non-Destructive Examinations at the Levels Indicated.

METHOD	LEVE	L	<b>EXPIRY</b>
Radiography	Н		Dec 20, 2027
Ultrasonics (Thickness)	П		Dec 20, 2027
Magnetic Particle	11		Dec 20, 2027
Liquid Penetrant	H		Dec 20, 2027
Derek Billard Level III RT, UT,	, MT, PT	Derek	Belland

### Scott Boyko 3156

Registration Number Numéro de matricule

is certified by the Canadian Nuclear Safety Commission as an Exposure Device Operator.

est accrédité par la Commission canadienne de sûreté nucléaire à titre d'opérateur d'appareil d'exposition.

2023/07/01 Issue Date Date d'émission 2028/07/01 Expiry Date Date d'expiration

Designated Officer Fonctionnaire désigné



Canadian Nuclear Safety Commission

Commission canadienne de sûrete nucleaire Canada



### **TECHNICIAN CERTIFICATIONS**

PO BOX 765 Stn. Main Grande Prairie, AB T8V 3R5 780-513-6222

### **SCOTT BOYKO**

3156



### NDT PERSONELL CERTIFICATION TO THE STANDARD CAN/CGSB 48.9712 & ASNT SNT-TC-1A 2006 & 2011 ANNUAL EYE EXAMINATION REPORT

In accordance with the standard CA/CGSB 48.9712 "Non-destructive Testing – Qualification and Certification of Personnel and ANST recommended practice SNT-TC-1A, this Eye Examination Report, consisting of three vision requirements: Near Vision, Distance Vision, and Colour Vision for examination in any of the NDT Methods

APPLICANT'S NAME: Scott Boyko	REGISTRATION NUMBER: 3156		
I am submitting for the following: (Please chec	ek)		
	7		
EXAMINATION RENEWAL	RE-CERTIFICATION		
<b>NEAR VISION ACUITY:</b> shall permit reading of a Jaeger number 1 or equivalent letters at not less than 30.5 cm with one or both eyes, either corrected or uncorrected.	<b>DISTANCE VISION ACUITY:</b> shall be equal to or better than Snellen Fraction 20/30 with one or both eyes, either corrected or uncorrected.		
I CONFIRM THAT THE CANDIDATE:  ☐ Meets without correction  Meets with correction	I CONFIRM THAT THE CANDIDATE:  ☐ Meets without correction  Meets with correction		
□ Does not meet	□ Does not meet		
VICTOR EVAIL  Examiners Name	Valer		
Examiners Name	Examiners Signature		
Office Manager	Sept 6, 2024		
Appointment/Title	Date of Eye Examination		
The following tests must be completed:  1) Colours using the HHR 4th Edition 24 to method concerned.	ATTRAST DIFFERENTIATION  ablet test for colour blindness for the NDT  rated step tablet, density strip, 1-10 for the		
I CONFIRM THAT THE CADIDATE CAN DISC CONTRASTS OF THE ABOVE TESTS IN THE			
Victoria Evrall Examiners Name	Examiners Signature		
Examiners Name	Examiners Signature		
Office manager	Sept 6, 2024		
Appointment/Title 0	Date of Eye Examination		



Certified Level 2 welding inspector in accordance with the

requirements of CSA W178.2 "Certification of Welding Inspectors".

Valid until

June 30, 2027

This certification includes endorsements for the following code(s) and standard(s):
API 1104, ASME VIII/IX-2013

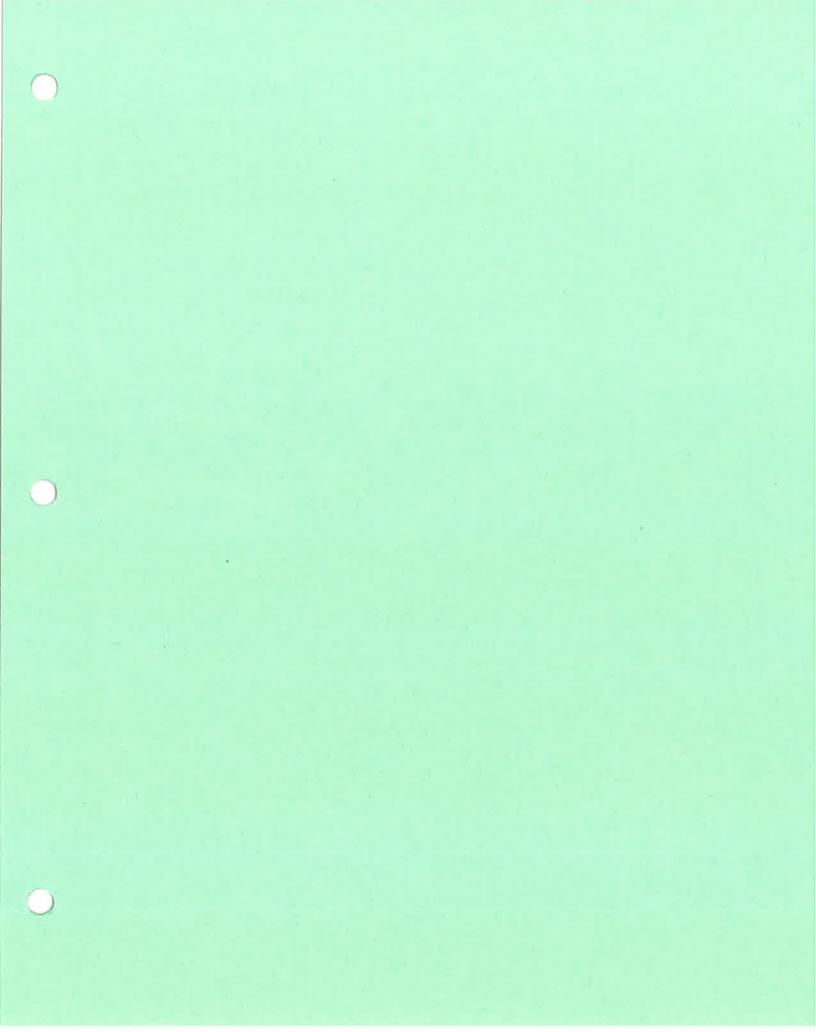
Six-year Recertification Expiry

June 30, 2027



## cwbgroup Welding Inspector Visual Acuity Record

SECTION 1: IDENTIFICATION OF APPLICANT (Please print):
Applicant's Name: Tasie Okoro Registration #: 15826
Application for Certification  *Email: TASONTASIE@GMAIL.COM
*I understand that all official communication moving forward will be sent to me via electronic mail (email) and it is my responsibility to advise the CWB Group of any changes in my email address.  T.O  initials
SECTION 2: VISION REQUIREMENTS:
Evidence of satisfactory vision, as determined by a medical professional, must be provided by all new applicants and certified inspectors who are renewing their certification. The vision examination must have been performed no more than 12 months from the date of receipt of this form by the CWB.
Near vision acuity shall permit reading a minimum of Jaeger number 1 or Times Roman N 4.5 or equivalent letters (having a height of 1.6 mm) at not less than 30 cm with one or both eyes, either corrected or uncorrected.
Submission of a prescription for corrective lenses in lieu of this form is not acceptable.
SECTION 3: DECLARATION OF EXAMINER:  This is to certify that I, ALDRIN M SANTAMARIA administered a test of visual acuity  Examiner's Name (please print)  to TASIE OLORO Applicant's Name (please print)  I also certify that the applicant: (check applicable box)  Meets the vision requirements in Section 2 without correction  Meets the vision requirements in Section 2 with correction  Does not meet the vision requirements in Section 2  Check one of the following:    Ophthalmologist   Medical Doctor   Registered Nurse  Address: 990   116 St.
Grande Prairie, AB T8V 5W3 (inside Costco)  Signature of Examiner: 1 M. Tel. #: (780) 876-5377
FOR CWB USE ONLY:
Reviewed by: Date:



## Western Instruments

Established 1965

26509 Township Road 543 Sturgeon County, Alberta T8T 1M1 Canada

Phone: (780) 459-6720 Fax: (780) 459-7837

E-mail: info@westerninstruments.com

Web: www.westerninstruments.com

### W- PT Certificate of Compliance

Date:	
То:	
Description: W-PT	
Serial Number: 1986	Nominal Weight: 10.1 Pounds / 4.6 kg

This is to certify that the above referenced W-PT's (10 Pound Pull Test Bar) is manufactured to comply with the following Specifications:

- •ASTM-E709-95
- •ASTM-E1444-01
- •ISO 9934-2: 2002
- •NAVSEA 271-97
- •ASME Section V, Article 7; T-762; I-753

Note: MIL-STD-1949A, and 6868E, may have been applicable at one time, but have been cancelled by the issuer. This document may also be applicable to other Reference Specifications, where similar lifting tests, or field measurements are required.

This Pull Test Bar may be applicable to other Reference Specifications, where a 10 Pound Pull Test is required.

This Pull Test Bar was weighed on the following scale;

Manufacturer: O Haus Corporation Model: CD11 S/N: 0024420-6KC Calibration Date: April 4, 2016

Traceability: UL E 203458; USA NETP CC 99-100; AM53 40

The calibration of this "For Trade" Scale is Traceable to; *Measurement Canada*, with reciprocal agreements between; SI (France); and NIST (USA). Re-calibration is not required unless physical damage has occurred to the Pull Test Bar that may implied its use.

Western Instruments I

## Western Instruments

26509 Township Road 543 Sturgeon County, Alberta T8T 1M1 Canada Phone: (780) 459-6720 Fax: (780) 459-7837

E-mail: info@westerninstruments.com

Web: www.westerninstruments.com

### W-PT Certificate of Compliance

Date:	Date: October 09, 2015			
To:				
Descri	iption: Pull Test Bar			

Part Number: W-PT

Serial Number: 1076 Nominal Weight: 10 Pounds / 4.6 kg (min)

This is to certify that the above referenced 10 Pound Pull Test Bar complies with the following Specifications:

- •ASTM-E709-95
- •ASTM-E1444-01
- •ISO 9934-2: 2002
- •NAVSEA 271-97
- •ASME Section V, Article 7: T-762: I-753

Note: MIL-STD-1949A and 6868E may have been applicable at one time but have been cancelled by the issuer. This document may also be applicable to other Reference Specifications where similar lifting tests or field measurements are required.

This Pull Test Bar may be applicable to other Reference Specifications, where a 10 Pound Pull Test is required.

This Pull Test Bar was weighed on the following scale:

Manufacturer: O Haus Corporation Model: CD11 S/N: 0024420-6KC Calibration Date: March 2, 2014

Traceability: UL E 203458; USA NETP CC 99-100; AM53 40

The calibration of this "For Trade" Scale is Traceable to Measurement Canada, with reciprocal agreements between SI (France) and NIST (USA). Re-calibration is not required unless physical damage has occurred to the Pull Test Bar that may imply its misuse.

Per:

Western Instruments Inc.

## STRAIT

### PRESSURE TESTS

Pressure Test Report
Pressure Test Examination Guide
Test Chart
Pressure Test Mapping
Equipment Calibration Records



### Page 1 of 1 **Pressure Test Report** Department Document No. QCFORM-0130 Label/Project No. **Pressure Test Report** Revision 3.00 **Document Type** Form **Revision Date** 2024-10-11



SECTION 1.0 – General Information					
Job No.	22-02056W	Test No.	GP-S-001		
Date of Test	November 21, 2024	Tag/Equip. No	Refer to attached drawing		
<b>Construction Code</b>	N/A	Test Fluid	Water		
Location of Test	STRAIT FAB. SHOP GP	Design Pressure	50PSI		
Min Test Pressure	75psig (517kpag)	Max Test Pressure	100psig (690kpag)		
Test Gauges No.	DD-5K-04	Hold Time	15 minutes		
Chart Recorder No.	10K 501-0997 (Seria #: 707097)				

SECTION 2.0 – Pressure Test/Time				
Pressure On / Time		Pressure Off / Time		
Chart On	03:33PM	Pressure off (Strength Test)	04:26PM	
Chart Oil	U3.33FIVI	80 psig	U4.20PIVI	
Pressure on (1st Step up)	03:46PM	Pressure off (1st Step down)	04:30PM	
20 psig	U3.46PIVI	40 psig	U4.5UPIVI	
Pressure on (2 <sup>nd</sup> Step up)	03:57PM	Pressure off (2 <sup>nd</sup> Step down)	04:42PM	
40 psig	U3.57PIVI	20 psig	U4.42PIVI	
Pressure on (Strength Test)	04.10004	Chart Off	OE OCDNA	
80 psig	04:10PM	Chart Oil	05:06PM	

SECTION 3.0 – Equipment and/or Piping Included in Test					
Line / Equipment No. Isometric (If Applicable) Drawing No.					
Refer to attached drawing					

### **SE24CCTION 4.0 – Comments**

After the test has been accepted, pressure is to be lowered in the increments specified above, held for a minimum of 10 minutes at each increment.

Crystal nVision Module temperature probe malfunctioned during hydrotest.

Calibrated thermometer (serial #: 53601659MV) was used for verification and recording of test medium temperature.

SECTION 5.0 – Acceptance Signatures				
STRAIT Representative	Signature	Date		
Tasie Okoro	JAN	November 22, 2024		
Authorized Inspector/Owner Inspector	Signature	Date		









### Page 1 of 1 **Deadweight Log** QC Department Document No. QCFORM-0042 Label/Project No. Deadweight Log 2.00 Revision 2020-06-04 **Document Type** Form **Revision Date**



SECTION 1.0 – Project Details					
Client	Fuelled	Project No.	22-02056W	Date	November 21, 2024
Test Number	GP-S-01	Location/LSD			
Deadweight No.	DD-5K-04	<b>Calibration Date</b>	2024-08-20		

SECTION 2	.0 – Data		
Time	Deadweight Pressure	Ambient Temperature	Comments
03:30PM	0	9.2	Test start; Zero chart
03:45PM	0	8.2	
03:46PM	20	9.0	1 <sup>st</sup> step up
03:56PM	20	8.9	
03:57PM	41	8.8	2 <sup>nd</sup> step up
04:07PM	40	8.9	
04:10PM	80	8.9	On target test pressure
04:20PM	80	8.9	
04:25PM	80	8.6	End target test pressure
04:30PM	42	8.9	1 <sup>st</sup> step down
04:40PM	42	9.4	
04:42PM	20	9.0	2 <sup>nd</sup> step down
04:52PM	20	9.3	
04:56PM	0	9.3	Zero cart
05:06PM	0	9.3	Test End
	PSIG	$^{\circ}$ C	

SECTION 3.0 – Signatures		
Client Rep	Client Signature	Date
STRAIT Rep	STRAIT Signature	Date
Tasie Okoro	JAN	November 22, 2024





### Page ${\bf 1}$ of ${\bf 1}$ **Pressure Test Examination Guide** Department Document No. QCFORM-0129 Label/Project No. Pressure Test Exam Guide Revision 1.00 **Document Type** Form **Revision Date** 2021-07-27



### **SECTION 1.0 – General Information Job No.** 22-02056 November 21, 2024

SEC	SECTION 2.0 – Pressure Test Examination Guide					
	Pressure Test Preparation					
	Representative					
1.	All punch list items corrected.	ТО				
2.	Test blinds correct thickness.	ТО				
3.	All items which could be damaged by test isolated or removed (control valves, safety valves,	N/A				
	instruments, expansion joints, etc.)					
4.	Equipment with internals (i.e., filters) that could be damaged are isolated as required.	N/A				
5.	Vents and drains correctly installed.	ТО				
6.	Open and Closed position of all valves verified.	ТО				
7.	Shipping bars in place - bellows.	N/A				
8.	8. Hanger stops in place.					
	Droccure Test Completion	STRAIT				
	Pressure Test Completion	STRAIT Representative				
1.	Pressure Test Completion  All temporary blinds (blanks) removed.					
1.	·	Representative				
	All temporary blinds (blanks) removed.	<b>Representative</b> TO				
2.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.	Representative TO N/A				
2. 3.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.	Representative TO N/A N/A				
<ul><li>2.</li><li>3.</li><li>4.</li></ul>	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.  Shipping bars removed from bellows.	Representative TO N/A N/A N/A				
2. 3. 4. 5.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.  Shipping bars removed from bellows.  Spring hanger stops removed - cold setting checked.	Representative TO N/A N/A N/A N/A N/A				
2. 3. 4. 5.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.  Shipping bars removed from bellows.  Spring hanger stops removed - cold setting checked.  Pressure relief valves – correct ASME Code Symbol and correct set pressure and capacity	Representative TO N/A N/A N/A N/A N/A				
2. 3. 4. 5. 6.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.  Shipping bars removed from bellows.  Spring hanger stops removed - cold setting checked.  Pressure relief valves – correct ASME Code Symbol and correct set pressure and capacity installed.	Representative TO N/A N/A N/A N/A N/A N/A N/A				

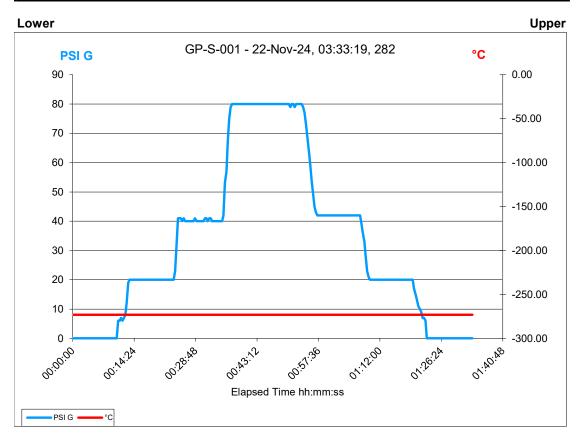
SECTION 3.0 – Signature					
STRAIT Representative Name	STRAIT Representative Signature	Date			
Tasie Okoro	JAN	November 22, 2024			





### **Data Collection Report**

	Chassis	Left Scale	Right Scale
Serial Number	706563	707097	703954
Datatype		Lower	Upper
Units		PSI G	°C



Client:	Fuelled						
Project #							
Location of T	est: STRAIT FAB. SHOP, GP						
Test # GP-	S-001 Date: Nov. 22, 2024						
Recorder #	03: 33PM End Time: 05:06 PM me: 517 Kpag Max: 690 Kpag e Min: 75 Psig Max: 100 Psig 10K-501-0997Calibration Due 2025-05-14 Tasie Okoro						
Control #	N/A						
Client Rep:							

		Lower	Upper	BARO		
	Chassis	Module	Module	Module	Left Scale	Right Scale
Serial Number	706563	707097	703954		707097	703954
Model	NV	10KPSI	RTD100			
Message Store	Unit# 501-0997					
Userspan		1.00000	1.00000			
Offset						
Datatype					Lower	Upper
Units		PSI G	°C		PSI G	°C
Tare						
Average						
User Factor						
User Offset						
User Resolution						
Firmware Version	R080016	R090009	R100006			
Calibration Due		14-May-25	14-May-25			
Run Index	33					
Run Start Time			22-Nov-24-15	:33:19		
Run Duration			1 hour 33 minutes 4	40 seconds		
Run Tag			GP-S-00	1		
Logging Interval	20.0					

		Data Points		
Point #	Time	Left - PSI G	Right - °C	
1	0.00:00.0	0	-273.15	<del></del>
2	00:00:20.0	0	-273.15	Total III
3	00:00:40.0	0	-273.15	Client: Fuelled
4	00:01:00.0	0	-273.15	Project # 22-02056W
5	00:01:20.0	0	-273.15	22-02030VV
6	00:01:40.0	0	-273.15	Location of Test: STRAIT FAB. SHOP, GP
7	00:02:00.0	0	-273.15	Test # GP-S-001 Date: Nov. 22, 2024
8	00:02:20.0	0	-273.15	
9	00:02:40.0	0	-273.15	03: 33PM End Time: 05:06 PM
10	00:03:00.0	0	-273.15	Test Start Time: 517 Kpag Max: 690 Kpag
11	00:03:20.0	0	-273.15	The last the livida:
12	00:03:40.0	0	-273.15	Min: 75 Psig Max: 100 Psig
13	00:04:00.0	0	-273.15	Recorder # 10K-501-0997Calibration_Due 2025-05-14
14	00:04:20.0	0	-273.15	
15	00:04:40.0	0	-273.15	Strait Rep: Tasie Okoro
16	00:05:00.0	0	-273.15	W1 arrays
17	00:05:20.0	0	-273.15	Control # N/A
18	00:05:40.0	0	-273.15	10,0(1)
19	0.06:00.0	0	-273.15	Client Rep:
20	00:06:20.0	0	-273.15	X ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (
21	00:06:40.0	0	-273.15	

00	00.07.00.0	0	070.45
22	00:07:00.0	0	-273.15
23	00:07:20.0	0	-273.15
24	00:07:40.0	0	-273.15
25	0.00:80:00	0	-273.15
26	00:08:20.0	0	-273.15
27	00:08:40.0	0	-273.15
28	00:09:00.0	0	-273.15
29	00:09:20.0	0	-273.15
30	00:09:40.0	0	-273.15
31	00:10:00.0	0	-273.15
32	00:10:20.0	0	-273.15
33	00:10:40.0	6	-273.15
33 34		6	-273.15 -273.15
	00:11:00.0		
35	00:11:20.0	7	-273.15
36	00:11:40.0	6	-273.15
37	00:12:00.0	7	-273.15
38	00:12:20.0	8	-273.15
39	00:12:40.0	12	-273.15
40	00:13:00.0	19	-273.15
41	00:13:20.0	20	-273.15
42	00:13:40.0	20	-273.15
43	00:14:00.0	20	-273.15
44	00:14:20.0	20	-273.15
45	00:14:40.0	20	-273.15
46	00:15:00.0	20	-273.15
47	00:15:20.0	20	-273.15
48	00:15:40.0	20	-273.15
49	00:16:00.0	20	-273.15
50	00:16:20.0	20	-273.15
51	00:16:40.0	20	-273.15
52	00:17:00.0	20	-273.15
53	00:17:20.0	20	-273.15
54	00:17:40.0	20	-273.15
55	00:17:40.0	20	-273.15 -273.15
	00:18:20.0		
56 57		20	-273.15
57	00:18:40.0	20	-273.15
58	00:19:00.0	20	-273.15
59	00:19:20.0	20	-273.15
60	00:19:40.0	20	-273.15
61	00:20:00.0	20	-273.15
62	00:20:20.0	20	-273.15
63	00:20:40.0	20	-273.15
64	00:21:00.0	20	-273.15
65	00:21:20.0	20	-273.15
66	00:21:40.0	20	-273.15
67	00:22:00.0	20	-273.15
68	00:22:20.0	20	-273.15
69	00:22:40.0	20	-273.15

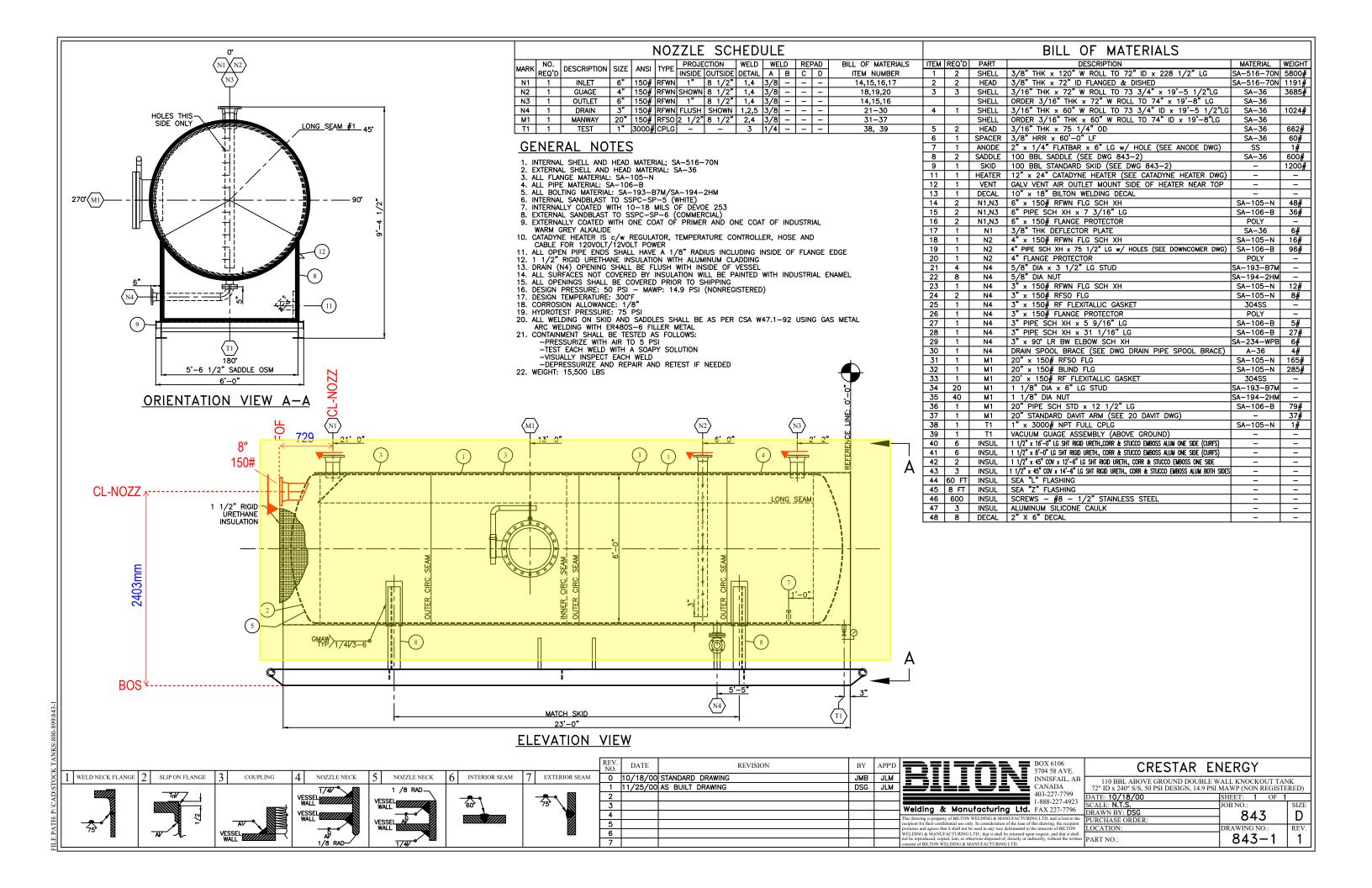
70	00 00 00 0	00	070.45
70	00:23:00.0	20	-273.15
71	00:23:20.0	20	-273.15
72	00:23:40.0	20	-273.15
73	00:24:00.0	23	-273.15
74	00:24:20.0	32	-273.15
75	00:24:40.0	41	-273.15
76	00:25:00.0	41	-273.15
77	00:25:20.0	41	-273.15
78	00:25:40.0	40	-273.15
79	00:26:00.0	41	-273.15
80	00:26:20.0	40	-273.15
81	00:26:40.0	40	-273.15
82	00:27:00.0	40	-273.15
83	00:27:20.0	40	-273.15
84	00:27:40.0	40	-273.15
85	00:28:00.0	40	-273.15
86	00:28:20.0	40	-273.15
87	00:28:40.0	41	-273.15
88	00:29:00.0	40	-273.15
89	00:29:20.0	40	-273.15
90	00:29:40.0	40	-273.15
91	00:30:00.0	40	-273.15
92	00:30:20.0	40	-273.15
93	00:30:40.0	40	-273.15
94	00:31:00.0	41	-273.15
95	00:31:20.0	41	-273.15
96	00:31:40.0	40	-273.15
97	00:32:00.0	41	-273.15
98	00:32:20.0	41	-273.15
99	00:32:40.0	40	-273.15
100	00:33:00.0	40	-273.15
101	00:33:20.0	40	-273.15
102	00:33:40.0	40	-273.15
103	00:34:00.0	40	-273.15
104	00:34:20.0	40	-273.15
105	00:34:40.0	40	-273.15
106	00:35:00.0	40	-273.15
107	00:35:20.0	42	-273.15
108	00:35:40.0	53	-273.15
109	00:36:00.0	57	-273.15
110	00:36:20.0	67	-273.15
111	00:36:40.0	75	-273.15
112	00:37:00.0	79	-273.15
113	00:37:20.0	80	-273.15
114	00:37:40.0	80	-273.15
115	00:38:00.0	80	-273.15
116	00:38:20.0	80	-273.15
117	00:38:40.0	80	-273.15
	00.00.10.0	33	270.10

440	00 00 00 0	20	070 45
118	00:39:00.0	80	-273.15
119	00:39:20.0	80	-273.15
120	00:39:40.0	80	-273.15
121	00:40:00.0	80	-273.15
122	00:40:20.0	80	-273.15
123	00:40:40.0	80	-273.15
124	00:41:00.0	80	-273.15
125	00:41:20.0	80	-273.15
126	00:41:40.0	80	-273.15
127	00:42:00.0	80	-273.15
128	00:42:20.0	80	-273.15
129	00:42:40.0	80	-273.15
130	00:43:00.0	80	-273.15
131	00:43:20.0	80	-273.15
132	00:43:40.0	80	-273.15
133	00:44:00.0	80	-273.15
134	00:44:20.0	80	-273.15 -273.15
135	00:44:40.0	80	-273.15
136	00:45:00.0	80	-273.15
137	00:45:20.0	80	-273.15
138	00:45:40.0	80	-273.15
139	00:46:00.0	80	-273.15
140	00:46:20.0	80	-273.15
141	00:46:40.0	80	-273.15
142	00:47:00.0	80	-273.15
143	00:47:20.0	80	-273.15
144	00:47:40.0	80	-273.15
145	00:48:00.0	80	-273.15
146	00:48:20.0	80	-273.15
147	00:48:40.0	80	-273.15
148	00:49:00.0	80	-273.15
149	00:49:20.0	80	-273.15
150	00:49:40.0	80	-273.15
151	00:50:00.0	80	-273.15
152	00:50:20.0	80	-273.15
153	00:50:40.0	80	-273.15
154	00:51:00.0	79	-273.15
155	00:51:20.0	80	-273.15
156	00:51:40.0	80	-273.15 -273.15
157	00:52:00.0	79	-273.15
158	00:52:20.0	80	-273.15
159	00:52:40.0	80	-273.15
160	00:53:00.0	80	-273.15
161	00:53:20.0	80	-273.15
162	00:53:40.0	80	-273.15
163	00:54:00.0	79	-273.15
164	00:54:20.0	77	-273.15
165	00:54:40.0	73	-273.15

166	00:55:00.0	69	272.45
			-273.15
167	00:55:20.0	64	-273.15
168	00:55:40.0	59	-273.15
169	00:56:00.0	54	-273.15
170	00:56:20.0	49	-273.15
171	00:56:40.0	45	-273.15
172	00:57:00.0	43	-273.15
173	00:57:20.0	42	-273.15
174	00:57:40.0	42	-273.15
175	00:58:00.0	42	-273.15
176	00:58:20.0	42	-273.15
177	00:58:40.0	42	-273.15
178	00:59:00.0	42	-273.15
179	00:59:20.0	42	-273.15
180	00:59:40.0	42	-273.15 -273.15
181	01:00:00.0	42	-273.15
182	01:00:20.0	42	-273.15
183	01:00:40.0	42	-273.15
184	01:01:00.0	42	-273.15
185	01:01:20.0	42	-273.15
186	01:01:40.0	42	-273.15
187	01:02:00.0	42	-273.15
188	01:02:20.0	42	-273.15
189	01:02:40.0	42	-273.15
190	01:03:00.0	42	-273.15
191	01:03:20.0	42	-273.15
192	01:03:40.0	42	-273.15
193	01:04:00.0	42	-273.15
194	01:04:20.0	42	-273.15
195	01:04:40.0	42	-273.15
196	01:05:00.0	42	-273.15
197	01:05:20.0	42	-273.15
198	01:05:40.0	42	-273.15
199	01:06:00.0	42	-273.15
200	01:06:20.0	42	-273.15
200	01:06:40.0	42	-273.15 -273.15
	01:07:00.0	42	-273.15 -273.15
202		42 42	-273.15 -273.15
203	01:07:20.0		
204	01:07:40.0	39	-273.15
205	01:08:00.0	36	-273.15
206	01:08:20.0	33	-273.15
207	01:08:40.0	28	-273.15
208	01:09:00.0	23	-273.15
209	01:09:20.0	21	-273.15
210	01:09:40.0	20	-273.15
211	01:10:00.0	20	-273.15
212	01:10:20.0	20	-273.15
213	01:10:40.0	20	-273.15

214	01:11:00.0	20	-273.15
215	01:11:20.0	20	-273.15
216	01:11:40.0	20	-273.15
217	01:12:00.0	20	-273.15
218	01:12:20.0	20	-273.15
219	01:12:40.0	20	-273.15
220	01:13:00.0	20	-273.15
221	01:13:20.0	20	-273.15
222	01:13:40.0	20	-273.15
223	01:14:00.0	20	-273.15
224	01:14:20.0	20	-273.15
225	01:14:40.0	20	-273.15
226	01:15:00.0	20	-273.15
227	01:15:20.0	20	-273.15
228	01:15:40.0	20	-273.15
229	01:16:00.0	20	-273.15
230	01:16:20.0	20	-273.15
231	01:16:40.0	20	-273.15
232	01:17:00.0	20	-273.15
233	01:17:20.0	20	-273.15
234	01:17:40.0	20	-273.15
235	01:18:00.0	20	-273.15
236	01:18:20.0	20	-273.15
237	01:18:40.0	20	-273.15
238	01:19:00.0	20	-273.15
239	01:19:20.0	20	-273.15
240	01:19:40.0	20	-273.15
240	01:20:00.0	17	-273.15
242	01:20:20.0	15	-273.15
243	01:20:40.0	13	-273.15
244	01:21:00.0	11	-273.15
245	01:21:20.0	10	-273.15
246	01:21:40.0	9	-273.15
247	01:22:00.0	7	-273.15
248	01:22:20.0	7	-273.15
249	01:22:40.0	6	-273.15
250	01:23:00.0	0	-273.15
251	01:23:20.0	0	-273.15
252	01:23:40.0	0	-273.15
	01:24:00.0		
253		0	-273.15
254	01:24:20.0	0	-273.15
255	01:24:40.0	0	-273.15
256	01:25:00.0	0	-273.15
257	01:25:20.0	0	-273.15
258	01:25:40.0	0	-273.15
259	01:26:00.0	0	-273.15
260	01:26:20.0	0	-273.15
261	01:26:40.0	0	-273.15
		<del>-</del>	

262	01:27:00.0	0	-273.15
263	01:27:20.0	0	-273.15
264	01:27:40.0	0	-273.15
265	01:28:00.0	0	-273.15
266	01:28:20.0	0	-273.15
267	01:28:40.0	0	-273.15
268	01:29:00.0	0	-273.15
269	01:29:20.0	0	-273.15
270	01:29:40.0	0	-273.15
271	01:30:00.0	0	-273.15
272	01:30:20.0	0	-273.15
273	01:30:40.0	0	-273.15
274	01:31:00.0	0	-273.15
275	01:31:20.0	0	-273.15
276	01:31:40.0	0	-273.15
277	01:32:00.0	0	-273.15
278	01:32:20.0	0	-273.15
279	01:32:40.0	0	-273.15
280	01:33:00.0	0	-273.15
281	01:33:20.0	0	-273.15
282	01:33:40.0	0	-273.15





### BURKE CALIBRATION LTD.

8013 110th St Grande Prairie, Alberta T8W 6T2

> Ph. (780) 897-5869 www.burkecalibration.com

### **CERTIFICATE OF CALIBRATION**

10K 501-0997

Report No.: BCL2024-C15340

Nodel/Gauge Uncertainty: +/- ASME 4A of span (0.1%)

Manufacturer	Model	Serial Number	Calibration Date	Expiration Date
CRYSTAL	nVision	707097	2024-05-14	2025-05-14

As Received Condition:

In tolerance

As Left Condition:

In tolerance

AS RECEIVED TEST RESULTS

10000 PSI

Condition		Diff. % of Reading	Difference	Allowable Tolerance	Gauge Reading	Reference Reading
. Pass			0	10	0	0
Pass		0.05%	1	10	2000	1999
Pass		0.00%	0	10	4000	4000
Pass		-0.05%	-3	10	6000	6003
Pass		0.01%	1	10	8000	7999
Pass		-0.01%	-1	10	10000	10001
	1					

### AS LEFT TEST RESULTS

10000 PSI

10000101						
Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Diff. % of Reading		Condition
0	0	10	0			Pass
1999	2000	10	1	0.05%		Pass
4000	4000	10	0	0.00%		Pass
6003	6000	10	-3	-0.05%		Pass
7999	8000	10	. 1	0.01%		Pass
10001	10000	10	-1	-0.01%		Pass
and the second second						
					*	

Laboratory ambient conditions throughout this

calibration were: Tempurature:

20 to 24° C

**Humidity:** 

30 to 35% RH

Pressure:

100 to 103 kPa

Calibration Performed by:

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

an ough the following report framboto.						
Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty	
Crystal Engineering	15KPSIXP2I	475526	94864:167387420	2025-01-09	0-20% of FS: ±(0.02% of FS); 20%-100% of FS: ±(0.1% of Rdg)	

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50



# **BURKE CALIBRATION LTD.**

8013 110th St Grande Prairie, Alberta T8W 6T2

> Ph. (780) 897-5869 www.burkecalibration.com

# **TEMPERATURE CERTIFICATE OF CALIBRATION**

**Nvision** 

Report No: A-75477:202400860

Model/Gauge Uncertainty: ±0.25 °C

Manufacturer	Model	Gauge Number	Serial Number	Calibration Date	Expiration Date
Crystal	Nvision	501-0997	BC20240111	2024-05-14	2025-05-14

As Left Condition:

In Tolerance

AS LEFT TEST RESULTS

140 °F

Reference Reading	Gauge Reading	Allowable Tollerance	Difference	Difference (% of Reading)	Test Results
-0.1	0	2.5%	-0.1	-0.10%	Pass
50	50.6	2.5%	-0.6	-0.60%	Pass
100	100.5	2.5%	-0.5	-0.50%	Pass

Laboratory ambient conditions throughout this calibration were:

Temperature:

20 to 24° C

**Humidity:** 

30 to 35% FH

Pressure:

100 to 103 kPa

Calibration Performed By:

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
FLUKE	9103	A21306	A-75477:202400860	Jan 11/2025	±0.25 °C

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation.



# **BURKE CALIBRATION LTD.**

8013 110th St Grande Prairie, Alberta T8W 6T2

> Ph. (780) 897-5869 www.burkecalibration.com

# **CERTIFICATE OF CALIBRATION**

DD-5K-04

Report No.: BCL2024R-C16248

Model/Gauge Uncertainty: +/- ASME 4A of span (0.1%)

Manufacturer	Model	Serial Number	Calibration Date	Expiration Date
DRUCK	5000 PSI .1%	70517013	2024-08-20	2025-08-20

As Received Condition:

In tolerance

As Left Condition:

In tolerance

AS RECEIVED TEST RESULTS

5000 PSI

		3000	1 01		
Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Diff. % of Reading	Condition
0	0	5	0		Pass
997	1000	5	3	0.30%	Pass
1996	2000	5	4	0.20%	Pass
2996	3000	5	4	0.13%	Pass
3996	4000	5	4	0.10%	Pass
4997	5000	5	3	0.06%	Pass
4					

## AS LEFT TEST RESULTS

5000 PSI

O LLI I ILOI NESOLIS		5000	P31		
Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Diff. % of Reading	Condition
0	0	5	0		Pass
997	1000	5	3	0.30%	Pass
1996	2000	5	4	0.20%	Pass
2996	3000	5	4	0.13%	Pass
3996	4000	5	4	0.10%	Pass
4997	5000	5	3	0.06%	Pass

Laboratory ambient conditions throughout this

calibration were:

Tempurature:

20 to 24° C

**Humidity:** 

30 to 35% RH

Pressure:

100 to 103 kPa

Calibration Performed by

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	10KPSIXP2I	545487	69253	2025-01-02	0-20% of FS: ±(0.02% of FS); 20%-100% of FS: ±(0.1% of Rdg)

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50



# **Certificate of Calibration**

Kingsway Instruments Inc. 4319 Roper Road, Edmonton, AB T6B 3S5 PHONE: (780) 463-5264



Unit Under Test Description

Fluke 62 Max IR Thermometer

Asset Number

A-86776

Serial Number Unit Number

53601659MV 802-0083 Mat Bridgens

Technician

Procedure Name Fluke 62 Max:(1 Year) CAL VER/4181

Customer:

Burke Calibration Ltd.

8013 110 St

Grande Prairie AB T8W 6T2

Test Results Service Date

Pass

October 15, 2024 October 15, 2025

Due Date Temperature Humidity Work Order#

21-23°C 30-65% J-24919

Certificate #: 2024022003

Kingsway Instruments Inc. certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the National Institute of Standards and Technology (NIST), or to NIST accepted intrinsic standards of measurement, or derived by the ratio type of self-calibration techniques.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

Any Test Uncertainty Ratio (TUR) that is less than four to one will appear under the "TUR" heading on the data record. If the TUR meets or exceeds four to one, the field is left blank.

This report may not be reproduced, except in full, unless permission for the publication of an approved abstract is obtained in writing from the organization issuing this report.

Remarks: Calibrated and certified.

		STAND	ARDS USED FOR	R CALIBRATION			
Serial Number		Description			Service Date	Due Da	<u>te</u>
B33878		Fluke 4181 Infrared Calibrator			March 14, 2024	March 1	14, 2025
TEST RESULTS	Pass		Data Ty	pe: FOUND_LEF	T		
Test Description		Nominal Value	Test Result	Lower Limit	Upper Limit	Status	TUR
TEMPERATURE TE	ST						
50.0 °C		50.00	50.6	48.5	51.5	Pass	3.00
150.0 °C		150.00	149.6	147.8	152.2	Pass	3.75
300.0 °C		300.00	299.0	295.5	304.5	Pass	
450.0 °C		450.00	449.5	443.2	456.8	Pass	

\*\*\*\*\*END OF CERTIFICATE\*\*\*\*

Technician:

Certificate #: 2024022003

ASSET #: A-86776

Page 1 of 1

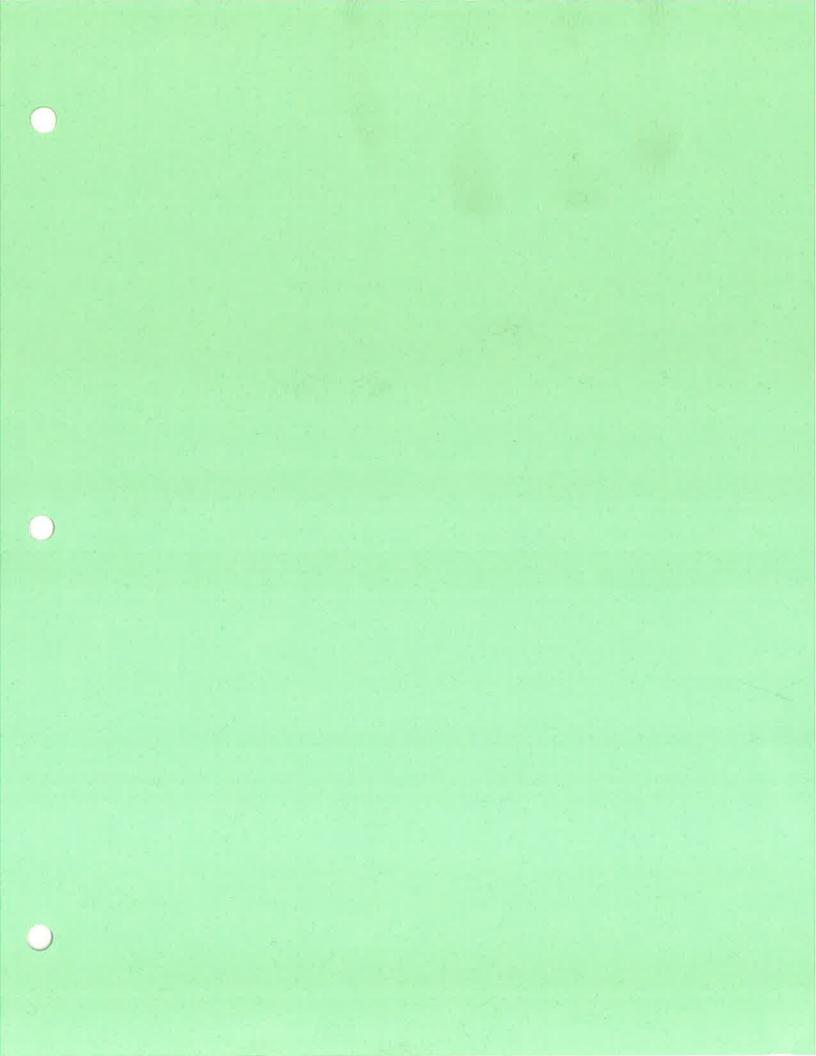














	Page 1 of 1		
Department	QC	Document No.	QCFORM-0130
Label/Project No.	Pressure Test Report	Revision	3.00
Document Type	Form	Revision Date	2024-10-11



SECTION 1.0 – General Information					
Job No.	22-02056W	Test No.	GP-S-002		
Date of Test	November 21, 2024	Tag/Equip. No	N/A		
<b>Construction Code</b>	N/A	Test Fluid	Air		
Location of Test	STRAIT FAB. SHOP GP	Design Pressure	14.5 Psig		
Min Test Pressure	5psig (34.4kpag)	Max Test Pressure	N/A		
Test Gauges No.	E230015700348	Hold Time	60 Seconds		
Chart Recorder No.	N/A		_		

SECTION 2.0 – Pressure Test/Time					
Pressure On / Time		Pressure Off / Time			
Chart On	NI/A	Pressure off (Strength Test)	Encia / 6,26nm		
Chart On	N/A	5psig	5psig / 6:26pm		
Pressure on (1st Step up)	NI/A	Pressure off (1st Step down)	NI / A		
1.2psig	N/A	2.5psig	N/A		
Pressure on (2 <sup>nd</sup> Step up)	NI/A	Pressure off (2 <sup>nd</sup> Step down)	NI / A		
2.5psig	N/A	1.5psig	N/A		
Pressure on (Strength Test)	Ensial C.2Enm	Chart Off	NI / A		
5psig	5psig/ 6:25pm	Chart Off	N/A		

SECTION 3.0 – Equipment and/or Piping Included in Test					
Line / Equipment No.	Isometric (If Applicable)	Drawing No.			
Refer to attached drawing					

# **SE24CCTION 4.0 – Comments**

Air slowly introduced to vessel being tested, once 5psig is achieved hold for 60 seconds, once 60 seconds has elapsed slowly bleed the air from vessel. External shell air test is complete.

SECTION 5.0 – Acceptance Signatures							
STRAIT Representative	Signature	Date					
Tammy Bowe	Tammy Bowe	November 26, 2024					
Authorized Inspector/Owner Inspector	Signature	Date					







## Page ${\bf 1}$ of ${\bf 1}$ **Pressure Test Examination Guide** Document No. Department QCFORM-0129 Label/Project No. Revision Pressure Test Exam Guide 1.00 **Document Type Revision Date** 2021-07-27 Form



# SECTION 1.0 – General Information

22-02056 Job No. November 26, 2024

SEC	CTION 2.0 – Pressure Test Examination Guide						
	Droccure Test Drenaration	STRAIT					
	Pressure Test Preparation	Representative					
1.	All punch list items corrected.	N/A					
2.	Test blinds correct thickness.	N/A					
3.	All items which could be damaged by test isolated or removed (control valves, safety valves,	ТВ					
	instruments, expansion joints, etc.)						
4.	Equipment with internals (i.e., filters) that could be damaged are isolated as required.	ТВ					
5.	Vents and drains correctly installed.	ТВ					
6.	Open and Closed position of all valves verified.	ТВ					
7.	Shipping bars in place - bellows.	N/A					
8.	Hanger stops in place.	N/A					
	David and Table Complete or						
	Prossure Test Completion	STRAIT					
	Pressure Test Completion	STRAIT Representative					
1.	All temporary blinds (blanks) removed.	0110111					
1.	·	Representative					
	All temporary blinds (blanks) removed.	Representative N/A					
2.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.	Representative N/A N/A					
2.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.	Representative N/A N/A N/A					
<ul><li>2.</li><li>3.</li><li>4.</li></ul>	All temporary blinds (blanks) removed. Temporary gaskets changed for correct gaskets. Temporary supports removed. Shipping bars removed from bellows.	Representative N/A N/A N/A N/A N/A					
2. 3. 4. 5.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.  Shipping bars removed from bellows.  Spring hanger stops removed - cold setting checked.	Representative N/A N/A N/A N/A N/A N/A N/A					
2. 3. 4. 5.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.  Shipping bars removed from bellows.  Spring hanger stops removed - cold setting checked.  Pressure relief valves – correct ASME Code Symbol and correct set pressure and capacity	Representative N/A N/A N/A N/A N/A N/A N/A					
2. 3. 4. 5. 6.	All temporary blinds (blanks) removed.  Temporary gaskets changed for correct gaskets.  Temporary supports removed.  Shipping bars removed from bellows.  Spring hanger stops removed - cold setting checked.  Pressure relief valves – correct ASME Code Symbol and correct set pressure and capacity installed.	Representative N/A N/A N/A N/A N/A N/A TB					

SECTION 3.0 – Signature							
STRAIT Representative Name	STRAIT Representative Signature	Date					
Tammy Bowe	Tammy Bowe	November 26, 2024					







### Page 1 of 1 **Deadweight Log** QC Document No. QCFORM-0042 Department Label/Project No. Deadweight Log Revision 2.00 **Document Type** Form **Revision Date** 2020-06-04



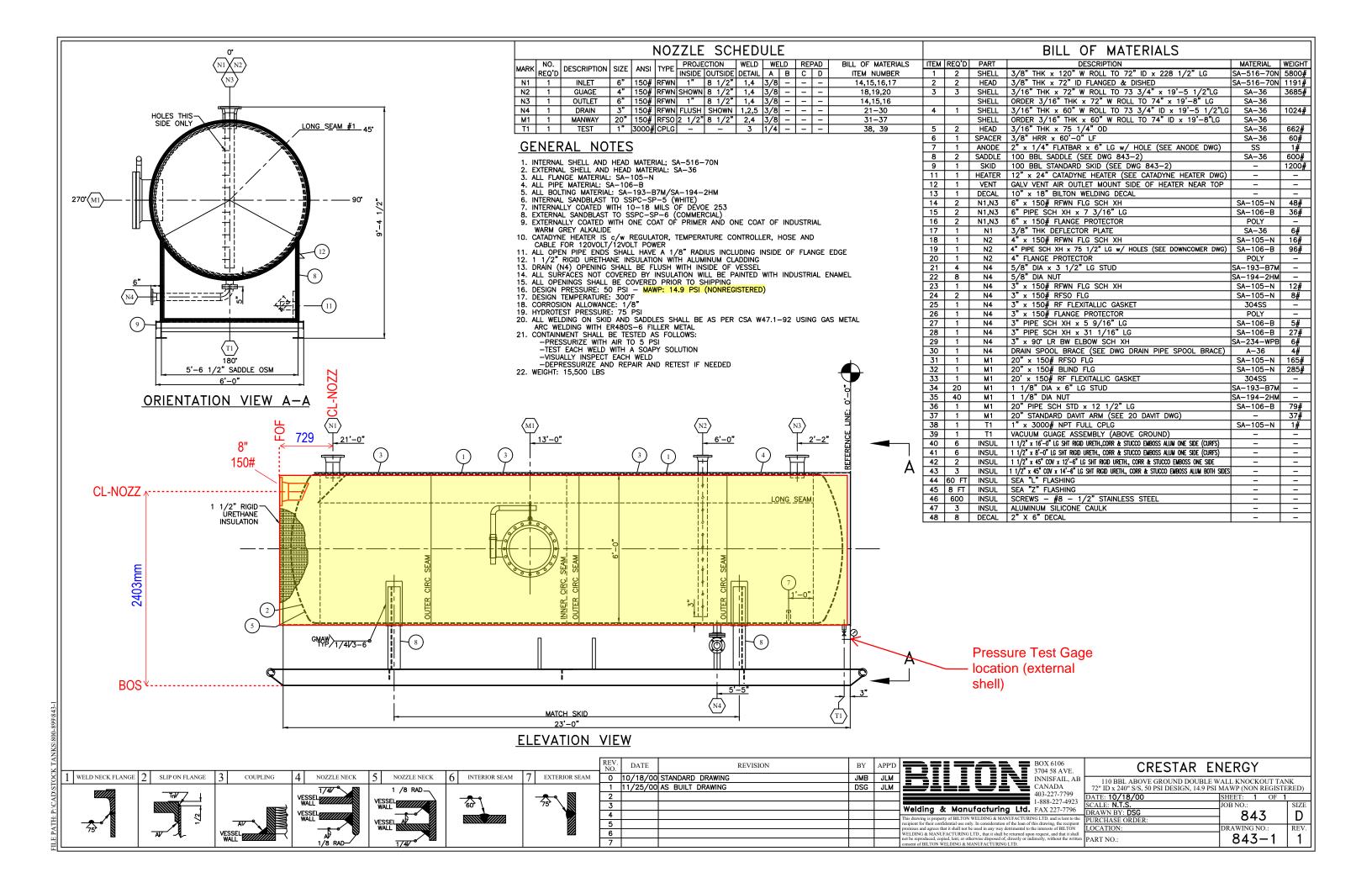
SECTION 1.0 – Project Details							
Client	Fuelled	Project No.	22-02056W	Date	November 26, 2024		
Test Number	GP-S-02	Location/LSD	FNO vessel external shell				
Deadweight No.	N/A	<b>Calibration Date</b>	N/A				

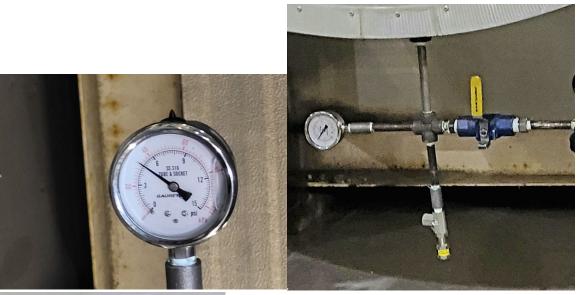
SECTION 2	SECTION 2.0 – Data							
Time	Deadweight Pressure	Ambient Temperature	Comments					
6:20pm	0-5psig	16°C	Air introduced to vessel external shell					
6:25pm	5psig	16°C	Hold at 5psig for 60seconds (1 minute)					
6:26pm	5psig	16°C	60 second hold complete					
6:27pm	5psig – Opsig	16°C	Slowly Air released to decline to Opsig					

SECTION 3.0 – Signatures		
Client Rep	Client Signature	Date
STRAIT Rep	STRAIT Signature	Date
Tammy Bowe	Tammy Bowe	November 26, 2024













Job# 22-02056W/ GP-S-002



# **BURKE CALIBRATION LTD.**

8013 110th St Grande Prairie, Alberta T8W 6T2

> Ph. (780) 897-5869 www.burkecalibration.com

# **CERTIFICATE OF CALIBRATION**

E230015700348

Report No.: BCL2024L1-C15759

Model/Gauge Uncertainty: +/- ASME 1A of span (1%)

Manufacturer	Model	Serial Number	Calibration Date	Expiration Date
GAUGETECH	15 psi 5 point	E230015700348	2024-11-28	2025-11-28

As Received Condition:

In tolerance

As Left Condition:

In tolerance

# AS RECEIVED TEST RESULTS

15 PSI

Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Diff. % of Reading	Condition
0.000	0	0.150	0.000		Pass
3.107	3	0.150	-0.107	-3.57%	Pass
6.133	6	0.150	-0.133	-2.22%	Pass
9.126	9	0.150	-0.126	-1.40%	Pass
12.067	12	0.150	-0.067	-0.56%	Pass
15.144	15	0.150	-0.144	-0.96%	Pass
	,				

# AS LEFT TEST RESULTS

15 PSI

Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Diff. % of Reading	Condition
0.000	0	0.150	0.000		Pass
3.107	3	0.150	-0.107	-3.57%	Pass
6.133	6	0.150	-0.133	-2.22%	Pass
9.126	9	0.150	-0.126	-1.40%	Pass
12.067	12	0.150	-0.067	-0.56%	Pass
15.144	15	0.150	-0.144	-0.96%	Pass

Laboratory ambient conditions throughout this

calibration were: Tempurature:

20 to 24° C

**Humidity:** 

30 to 35% RH

Pressure:

100 to 103 kPa

Calibration Performed by: B 5000 H

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

	The state of the s	0 0 1			
Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	33-36/5000PSI*	4530-246676	BCL2022-C14547	2025-03-12	±(0.05% of Rdg + 0.005% of FS); Vacuum: ±(0.25% of Rdg + 0.004

# STRAIT

# **HEAT TREATMENT**

PWHT Procedure
Heat Treatment Instruction Sheet
Heat Treatment Report & Charts
Equipment Calibration Records



	Not Applicable F	Page 1 of 1	
Department	QC	Document No.	QCFORM-0051
Label/Project No.	Not Applicable Page	Revision	1.00
Document Type	Form	<b>Revision Date</b>	2020-06-04



# NOT APPLICABLE THIS SECTION INTENTIONALLY LEFT EMPTY







# STRAIT

# MATERIAL CONTROL

Material Receiving Reports & Packing Slips
MTRs



## Page **1** of **2 Receiving & Inspection Report** QC Department Document No. QCFORM-0122 Label/Project No. Receiving & Inspection Report 0.00 Revision **Document Type Revision Date** 2020-12-16



SECTIO	SECTION 1.0 – General Information										
Note: T	his form is	applicable for all STRAIT Mechanical Ltd. Qual	ity Prograi	ns							
S.	TRAIT Job	<b>o.</b> 22-02056W		С	ustomer	Fuell	led Energy Marketin	g	<b>End User</b>		
						Inc.					
Mate	rials Suppl				Vendor	Para	gon				
	Commod	ty ⊠ PVF □ Steel □ Goods		Bill of Lading No.							
	terials/Go		3 <sup>rd</sup> Pa	-	ransport						
	Delivered	'ia ☐ Collect ⊠ Prepaid			Provider						
MTR's Provided &					⊠ Yes □	J No	□ N/A				
Complete							•				
	All Code Material must be identified by appropriate colour code.										
B31.1								1E Sec.			
	B31.3							IE Sec. I			
B31.5								Sec. VI			$\boxtimes$
CSA Z662							Non-Co		terial		
		CSA W47.1					(	Other			
SECTIO	N 2.0 – Ma	erials									
Qty	Size	Description & Spec.	Ratin	g	Schedu	ıle	Heat No.	PC	) No.	Packing Slip NO.	
1	8"				XH		2075	22-020	056W-	GPPO0013816	
								000-00	02		
SECTIO	N 3.0 - Con	ments									
SECTION	14 3.0 - COII	ments									
		-Conformance	•		- 1						
Any no	oted non-c	nformances? (If yes, attach copy of non-con	formance	repo	rt)			Yes	⊠ No		





	Receiving & Inspection Re	port	Page <b>2</b> of <b>2</b>
Department	QC	Document No.	QCFORM-0122
Label/Project No.	Receiving & Inspection Report	Revision	0.00
Document Type	Form	Revision Date	2020-12-16



SECTION 5.0 – Signatures			
	Received/I	nspected By	
Name	Signature	Date	Time
KATHLYN MACHAN	KATHLYN MACHAN	2024-11-13	
	Reviewed/	Released By	
Name	Signature	Date	Time
KATHLYN MACHAN	KATHLYN MACHAN	2024-11-13	





Company:

Paragon Oilfield Supply L.P.

User:

Patrick Thompson

SOLD TO:

Strait Pipeline & Integrity Ltd.

INSPECTOR:

ORDERED BY: Cam Neal

PHONE:

EMAIL:

cneal@strait.ca

SHIP TO: Strait Pipeline & Integrity Ltd. 1200, 645 - 7 Avenue SW

Calgary AB T2P 4G8

SHIP TERMS:

CONTRACTOR

CUSTOMER P.O. NO.

PO22-02056W-000-002

**CUSTOMER AFE NO.** 

JOB#

22-02056W

**DAILY CONTINUATION SHEET** 

**DELIVERY TICKET** 

ORDER DATE:

**PICKED BY** 

LOCATION

ORDER:

PREPARED BY

pthompson

GPPO0013816

**CHECKED BY** 

11/8/2024 8:54 AM

DATE **STAGING AREA** 11/8/2024 8:54 AM

Line 1

Suggestion bees

Haar Normones

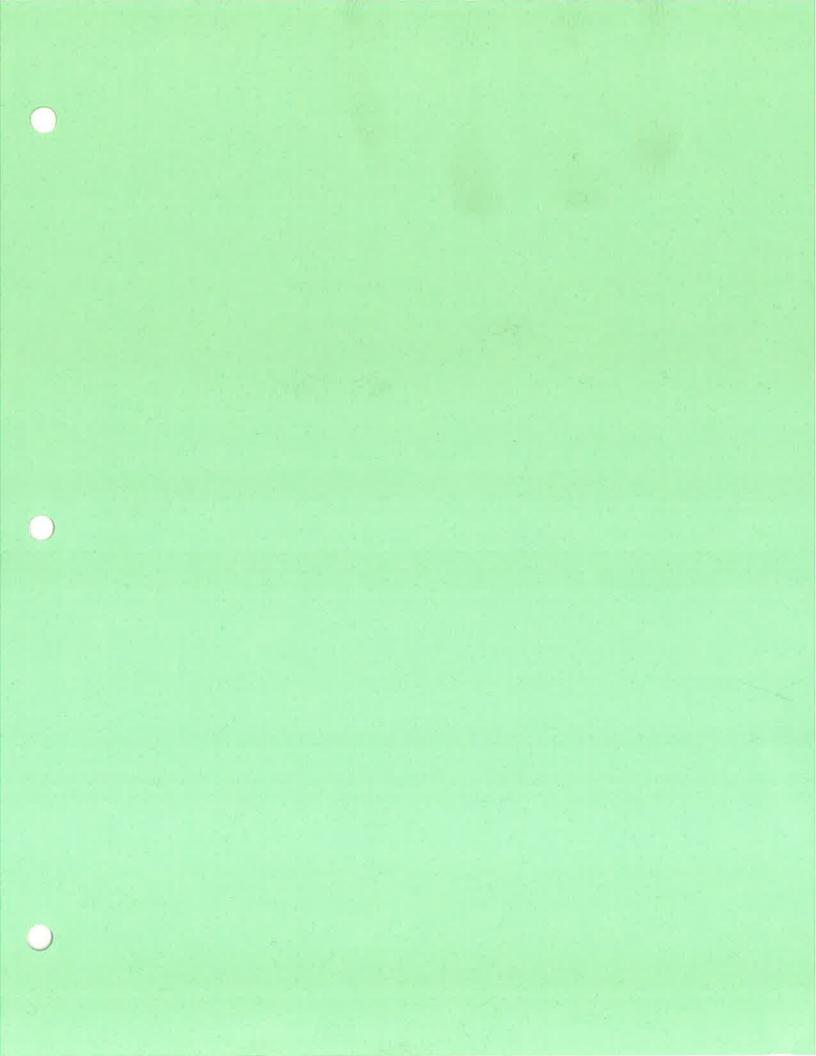
2075

Part Description

8" 150# RFWN XH A350-LF2

17.6 mm

		4.
SIGN	PRINT	DATE - DD/MM/YY





## Page **1** of **2 Receiving & Inspection Report** QC Department Document No. QCFORM-0122 Label/Project No. Receiving & Inspection Report 0.00 Revision **Document Type Revision Date** 2020-12-16



SECTIO	N 1.0 – Gen	eral Information								
Note: T	his form is a	pplicable for all STRAIT Mechanical Ltd. Quali	ty Programs							
S	TRAIT Job N	o. 22-02056W		Customer	Fuelled Energy Marketin	ng End User				
					Inc.					
Mate	rials Suppli			Vendor	STRAIT					
	Commod			ading No.						
	terials/Goo		3 <sup>rd</sup> Party	Transport						
	Delivered \	ia □ Collect □ Prepaid		Provider						
MTR	s Provided	&		⊠ Voc □	No □ N/A					
	Comple				<u> </u>					
			must be iden	tified by ap	propriate colour code.					
		B31.1			ASI	ME Sec. 1				
		B31.3				ЛЕ Sec. IV				
		B31.5				E Sec. VIII-1		$\boxtimes$		
		CSA Z662	□ Non-Code Material							
		CSA W47.1				Other				
SECTIO	N 2.0 – Mat	Prials								
Qty	Size	Description & Spec.	Rating	Schedu	le Heat No.	PO No.	Packing Slip NO.			
2.88		Pipe, SMLS	N/A	\$80	200142	11-01823	22-02056W			
	1 - 1	, p. 1, 5	1 7	1 2 2 2		1				
SECTIO	N 3.0 - Com	ments								
SECTIO	N 4.0 – Non	Conformance								
		Conformance nformances? (If yes, attach copy of non-conf	ormance repo	ort)		□ Yes ⊠ No				
			ormance repo	ort)		□ Yes ⊠ No				



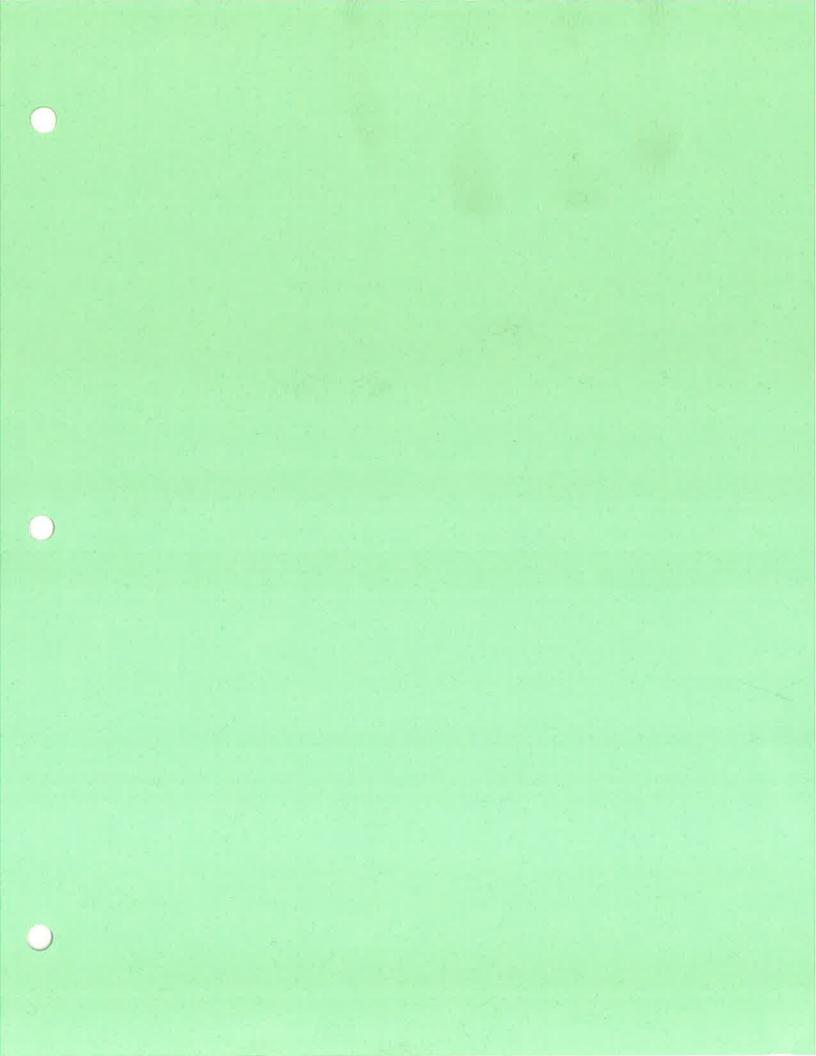


	Receiving & Inspection Re	port	Page 2 of 2
Department	QC	Document No.	QCFORM-0122
Label/Project No.	Receiving & Inspection Report	Revision	0.00
Document Type	Form	<b>Revision Date</b>	2020-12-16



SECTION 5.0 – Signatures								
	Received/I	nspected By						
Name Signature Date Time								
KATHLYN MACHAN	KATHLYN MACHAN	2024-11-21						
	Reviewed/	Released By						
Name	Signature	Date	Time					
KATHLYN MACHAN	KATHLYN MACHAN	2024-11-21						







## Page **1** of **2 Receiving & Inspection Report** QC Department Document No. QCFORM-0122 Label/Project No. Receiving & Inspection Report 0.00 Revision **Document Type Revision Date** 2020-12-16



SECTION	N 1.0 – Ge	eral Information						
Note: The	nis form is	applicable for all STRAIT Mechanical Ltd. Qual	ity Programs					
S1	RAIT Job	lo. 22-02056W		Customer	Fuelled Energy Marketin	ng End User		
					Inc.			
Mate	rials Supp	ed ⊠ STRAIT □ Customer □ End User		Vendor	STRAIT			
	Commo	ity □ PVF ⊠ Steel □ Goods		ading No.				
	erials/Go		3 <sup>rd</sup> Party	Transport				
l	Delivered	/ia ☐ Collect ☐ Prepaid		Provider				
MTR	's Provide			⊠ Vac □	l No □ N/A			
	Comp				·			
			must be iden	tified by ap	propriate colour code.			
		B31.1				ME Sec. 1		
		B31.3				ЛЕ Sec. IV		
		B31.5				Sec. VIII-1		×
		CSA Z662				ode Material		
		CSA W47.1				Other		
SECTION	N 2.0 – Ma	erials						
Qty	Size	Description & Spec.	Rating	Schedu	le Heat No.	PO No.	Packing Slip NO.	
1	1/4"	HOT ROLL PLATE	N/A	N/A	220947	22-01948	22-02056W PLATE	
							TRANSFER	
SECTION	N 3.0 - Cor	monts						
SECTION	V 3.0 - COI	ments						
		-Conformance						
Any no	ted non-	onformances? (If yes, attach copy of non-con	formance rep	ort)		☐ Yes      No		



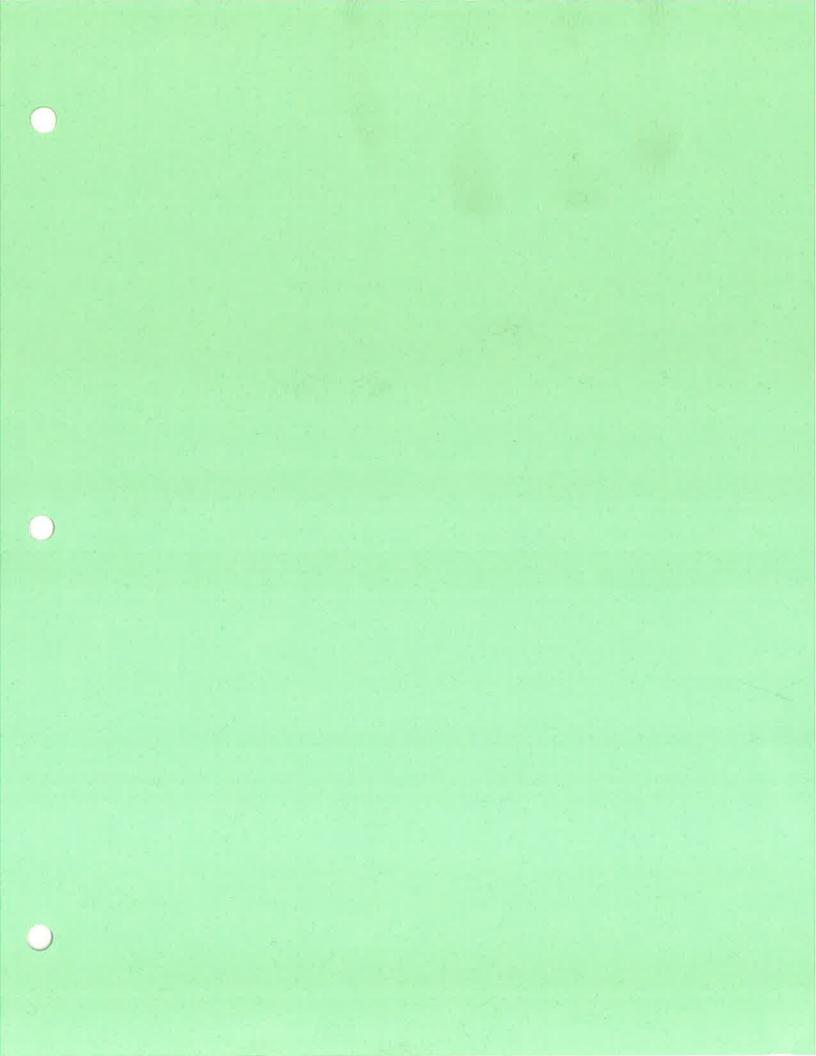


Receiving & Inspection Report  Department QC Document No. QCFORM-0122  Label/Project No. Receiving & Jamestian Report Report 0.00				
Department	QC	Document No.	QCFORM-0122	
Label/Project No.	Receiving & Inspection Report	Revision	0.00	
Document Type	Form	Revision Date	2020-12-16	



SECTION 5.0 – Signatures			
	Received/I	nspected By	
Name	Signature	Date	Time
KATHLYN MACHAN	KATHLIGN MACHAN	2024-11-25	
	Reviewed/	Released By	
Name	Signature	Date	Time
KATHLYN MACHAN	KATHLYN MACHAN	2024-11-25	





# NORMA (INDIA) LIMITED

48, Site IV industrial Area, Sahibabad, Ghaziabad-201010 (U.P) INDIA. Tel: 91-120-2896091, 2895404 Fax: 91-120-2895930 E-mail:normaindia@gmail.com

# **Works Test Certificate**

(AS PER EN 10204:3.1) Doc No: OF/I B/07

	161. 91-120-2890091, 2893404 Fax: 91-120-2893930 E-mail:normaindia@gmail.com						Doc. No: QF/LB/07					
	3 NO- 2463/2023-24		/	INVOICE NO. 1	E 5112		DATE: 26.05.2023					
P. Order. No: Item Code Component	omponent 8"-150# WNRF XH/S80 LF2 FLG.		Customer:	EDMO	S LIMITED ONTON	E& Forgi		ASTM 350 LF2-2018 ASME 350 LF2-2021				
Drawing No.	12.0	92.			CANADA 08 Nos.		el Supplier	P.G.I. Pvt. Ltd.				
Machining STD	ANSI B16.5- 2020 ASME B16.5- 2020		Quantity: -	08 N	os.	M	ill Heat No.	K3/02				
	TEST RESU	LTS			TILLING		NORMA HEAT NO- 2075					
	CHEMICAL COM	POSITION		MECHANIC.	AL PROPE							
Elements %	Specified	Act	ual	PROPERTIES	SPECIFIED	OBTAINEI						
	Composition	NORMA LAB	MILL T.C.					s per MSS-SP-6 With in limits				
Carbon	0.30max.	0.206	0.21	Yield Strength	250.00	367.38	of 125-250AARH  Supply Condition: Fully Finished.					
Manganese	0.60-1.35	1.21	1.20	(mpa)	min.							
Silicon	0.15-0.30	0.281	0.27	Tensile Strength (mpa)	485-655	573.29		Heat-Treatment: Normalized at temp. 920° for 3.20hrs & Air Cooled.				
Sulphur	0.040max.	0.004	0.006	%Elongation in	22.00		101 3.20ms & An Cooled,					
Phosphorous	0.035max.	0.017	0.023	50mm / 4D	min	34.90		CARBON EQUIVALENT (CE)				
Chromium	0.30max.	0.070	0.050	% Reduction of Area	30.00 min.	65.30	CE = C + Mn - 6	+ Cr+Mo+V + Ni+Cu 5 15				
Nickel	0.40max.	0.008	0.020	Hardness	197.	149-157	MADVINGA	S PER MSS-SP-25-2008				
Copper	0.40max.	0.013	0.020	HB.	max.			50 LF2 CL1 2075 B16.5 NORMA				
Molybdenum	0.12max.	0.008	0.020	Impact Value	20 (J) min at (-46°C)	40,38,42 =40.00J Av	INDIA.01/2023	INDIA.01/2023 -46°C				
Vanadium	0.080max.	0.002	0.006	Remarks: As per AS			Checked by:	· n o h				
Columbium	0.020max	0.002	ane .	maximum(0.35%).an i			and					
Aluminum	0.020min.	0.031	0.028	above the specified ma up to maximum 1.65%			Kuldeep Singh Metallurgist					
Carbon Equivalent (C	0.470max.	0.425	0.428					\&\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				

Declaration: We here by certify that the material described here in has been tested in accordance with the applicable specifications referred above and meets the requirements as per EN10204/3.1, NACEMR0175-15, NACE MR0103-15 & ISO15156-2. All Material Supplied is Certified to be free of Mercury Contamination and no Mercury bearing equipment was used during Manufacturing. No Weld Repair Performed.

Raw material used is fully killed and fine grain practice. Country of Origin/Melt: INDIA.

Kathu Quality Control Manager





Vallourec Soluções Tubulares do Brasil SIA Vallourec Distrito Industrial, s/n - Jeceaba - MC - ZIP: 35498-000 - Drasil



Inspection Certificate

(According to DIN EN 10204,3.1)

Nº:: 0030060809 / 00

Sheet 1 / 5

Customer: VALLOUREC CANADA INC

Destination Country: Canada

Material Number: 706947

Work Order: 639789 / 60

Customer Order: 5672- S 759 377935

Material Supply Autorization: S 759 377935

Inspection Company: Vallouree Soluções Tubulares do Brasil S.A.

DESCRIPTION OF REQUICTS: SEAMLESS STEEL PIPE, HOT FINISHED, QUENCHED+ TEMPERD, BEVELED ENDS 30 DEG., (Bevel Angle Min: 30.0 deg, Bevel Angle Min: 35.0 deg, Bevel Angle Min: 35.0 deg, Bevel Angle Min: 35.0 deg, Bevel Angle Min: 36.0 deg, min, Root Face Max - Bevel 2,40 mm)

SIZE (O.D. X W.T.): 219,10 mm X 12,70 mm GRADE: GRADE 359 # 6 # B # B

STANDARD: CSA-Z245.1-18 - CATEGORY II

IN ACCORDANCE ALSO TO THE STANDARDS: ASIM A 333M - 18 # ASIM A 999M - 18 # ASIM EDITION 2021 # ASIM EDITION 2021 # ASIM EDITION 2021 # ASIM A 106M - 19 # A # ASIM A 530M 18 ₹ ASTM A 53M - 20

CUSTOMER SPECIFICATION: MRC GrB, 6, 359 Cattless. R4, 20.05.2022 - Rev. 04;

SURFACE PROTECTION: EXTERNAL: UV-VARNISH INTERNAL: BARE PIPE ENDS PROTECTOR: POLYETHYLENE CAP WITH HOLE

TOLERANCES: OUTSIDE DIAMETER (PIPE BODY): -0.80 mm / -1.60 mm WALL THICKNESS: -1.59 mm / +1.90 mm

TOLERANCES(PIPE ENDS): OUTSIDE DIAMETER: -0.40 mm / +1,60 mm

LENCTH: RANDOM 5486,00 mm - 6706,00 mm

STANDARD MARKING: PAINT STENCILED: MANUFACTURER CSA-Z245 I-18 219,10 X 12,70 359 CAT II M49C S\$ 8 HQ LENGTH HEAT NUMBER ASTM/ASME A/SA-353M 6 HE 9CH 080 LT -45C WEIGHT ASTM/ASME A/SA-106M B 20,7 MPA/NDE ASTM A 53M VSB LOGO NPS 8 X SCH XH 639789/60

SHIPPING MARKING: MRC P.O S S 759 377935 - VANCOUVER/CANADA - MADE IN BRAZIL

Weight (kg)		Lengths(m)	Pieces	Heat Treatment Lot	Heat
9594	â.	147,24	23	B	200142
40080		619,47	96		
49674		766,71	119	Total	

THE PRODUCT IS SATISFACTORY IN THE FOLLOWING TESTS / INSPECTIONS: DIMENSIONAL # VISUAL # FLATTENING TEST # HYDROSTATIC TEST: 20.7 MPA 5 S # MAXIMUM RESIDUAL MAGNETISM: 30 GAUSS # L'LTRASONIC TEST : ISO10893-10-LON/TRA/OU-IN,UNC # ULTRASONIC TEST FOR LAMINAR-DEFECTS. ACC... CSA Z245.1-SOUR SERVICE #

REQUIREMENTS VERIFIED





(According to DIN EN 10204.3 1)

Nº.: 0030060809 / 00

Sheet:2 / 5

Chemica	I Compo	sitio	n (%)					Proces	ss: Electr	ric Arc	Furnace	(EAF).	beats f	ally kill	ed							
Ceq: CSA-	Z245.1-CE	11				Ceg: 1	C+ Mn/6	i+ (Cr+ )	Mo+ V)/5	i ∓ (N:-	Cuy15	DI:									CE1: 0	Cr + Cu + Mo + Ni + V
				C	Mn	P	s	Si	Ni	Cr	Mo	Al	Cu	V	Nb	В	Ti	Ñ	Ca	Ceq		CE1
Ladle Ana	lysis		Min		0,29			0,10													4	-
			Max	0,250	1,20	0,025	0,0250	0,50	0,40	0,30	0,120		0,40	0,080	0,020	0,0010	0,110			0,40	0,40	1,00
Product A	nalysis		Min		0,29			0.10													17	
		N. C.	Max	0,250	1,20	0,025	0,0250	0,50	0,40	0,30	0,120		0,40	0.080	0.020	0,0010	0,110			0.40	0,40	1,00
Heat			IPPN																			
200142			Ladle	0,123	1,16	0,010	0.0030	0,30	0,05	0,08	0,032	0,031	0,08	0,038	0.016	0,0002	0,000	0,0052	0.0011	0.36	0.31	0,28
	Check 1		106023	0,128	1,17	0,010	0,0028	0,30	0,05	0,08	0,032	0,032	0,09	0,040	0,017	0,0000	0,000	0,0045	0,0014	0,36	0,32	0,29
	Check 1		206011	0,133	1,17	0,009	0.0029	0.30	G,05	0.08	0,032	0,032	0,09	0,040	0.016	0,0000	0,000	0,0058	0.0013	0,37	0,33	0,29
	Check 2		305023	0,123	1,15	0,009	0.0026	0,30	0.05	0.08	0,032	0,033	0,09	0,039	0.016	0,0000	0,000	0.0044	0.0016	0,35	0,31	0,29
	Check 2		306011	0,123	1,16	0,009	0,0034	0,30	0,05	0,08	0,032	0,033	0,09	0.040	0:016	0,0000	0,000	0.0047	0.0015	0,36	0,31	0,29
Ceq: Car	ban Equiv	aknt:	Ceq: Çar	bon Equi	válent;	CE: C	ombined	Lieme	rite:													
Tensile	Test																					
S. Directio	n: Longitus	dinal				Тетро	ersture:	Room T	Гетретаци	пе		Туре о	f Specia	men STI	RIP 38,1	MM W	TDTH				Wall T	Thickness: \$2,70 mm
Gauge Lei	ngth: L0= 5	MMO				Metho	id:Elong.	.Total C	Inder Lo	ad 0,50	%											1.2
					'n	YS	TS	E														
		à			(M	IPA) (	(MPA)	(%)													143	
		77	Rec	quired: M	lin 3	59	455	30														
				M	ax 5	30	625															
Heat	Heat	112	PN P	osition																		
	Treatment																					
****	Lot						60.5	20														
200142	В			op(leading)		.80 -80	575 576	30														
	В			ton(u ailing				39														
	В			op(leading)		193 193	586 580	40														
	FA C			ton(trailing			589	37														
	c c			op(leading) op(leading)		187	590	42														
	C			op(renaing) ton(trailing			560	41														
	c			nilies)no:			578	39														
	c			ton(trailing	-		582	41														
	c			m(leading)			578	42														





(According to DIN EN 10204 3.1)

Nº.: 0030060809 / 00

Sheet:3 / 5

# Hardness Test Through Wall

	Scale:	HV10
--	--------	------

	D	5 A NAT	Individu	BM.		7-7.84	rage													
	кеди	rired: Min																		
		Mai	246.0				16,0													
					OW1	OW2	OW3	OW4	Avg	MW1	MW2	MW3	MW4	Avg	LALI	TW2	TVV3	IW4	Avg	Avg
Heat	Heat	1PPN	Position																	
	Treatment																			
	Lot															The State of the S		0200		- COVIC
200142	В	105021	Top(leading)	Q1	173.0	175,0	175,0	178,0	175,0	178.0	179.0	179,0	179.0	179.0	191.0	187,0	187,0	190,0	189,0	181,0
	2	106023	Botton(trailing)	Q1	189,0	189.0	191,0	185,0	188.0	184,0	187.0	183,0	188,6	186.0	187,0	184,0	189.0	185,0	186,0	187,0
	Ð	406013	Botton(trailing)	Q1 💝	190,0	190,0	189,0	135.0	188,0	195,0	197,0	195,0	195,0	196,0	206,0	306.0	203,0	204,0	205.0	196,0
	C	306023	Botton(trailing)	Q1	180,0	0,081	186,8	185.0	181,0	187,0	187,0	188.0	190,0	188,0	190_0	138,0	187,0	188,0	188,6	186,0
W Ou	ter Wall; 3	dW - Midd	le Wall: IW - Im	ner Wall	:													_	_	
		dW - Midd	le Wall: IW - Im	ner Wall	*															
mpact	Test		ie Walt: IW - Im		: ection: Lo	ngitudinal			Тещр	eračute:										
mpact lest Speci	Test	RPY 10X55				ngitudinal			Тещр	erature::-	≟45°C									
mpact est Speci	Test	RPY 10X55				ngitudinal	AE Avg	SAE	Temp	erature:	45°C SA <b>Avg</b>	LE1	1.E2	LE3	LE Avg				8	
mpact est Speci	Test	RPY 10X55		Dire	ection: Lo		AE Avg					LE1 (Mils)	LE2 (Mils)	LE3 (Mils)	LE Avg				8	
mpact est Speci	Test	RPY 10X55	X10 V NOTCH	Dire AE1 (J)	ection: Lo	AE3		(%)	SA2	SA3	SA Avg				-					
mpact lest Speci	Test	RPY 10X55	X10 V NOTCH Required: Min	Dire AE1 (J)	AE2	AE3	(I)	(%)	SA2 . (%)	SA3 (%)	SA Avg				-		,			
mpact lest Speci triker ra	Test Imen: CHAI dius: 8 mm	RPY 10XSS	X10 V NOTCH  Required: Min Max	Dire AE1 (J)	AE2	AE3	(I)	(%)	SA2 . (%)	SA3 (%)	SA Avg				-					
mpact lest Speci	Test Imen: CHAI dius: 8 mm	RPY 10XSS	X10 V NOTCH Required: Min	Dire AE1 (J)	AE2	AE3	(I)	(%)	SA2 . (%)	SA3 (%)	SA Avg				_					
mpact lest Speci triker ra	Test Imen: CHAI dius: 8 mm	RPY 10XSS	X10 V NOTCH  Required: Min Max	Dire AE1 (J)	AE2	AE3	(I)	(%)	SA2 . (%)	SA3 (%)	SA Avg				_		,		8	
mpact Cest Speci triker ra  Heat	Test limen: CHAl djus: 8 mm  Heat Treatment	RPY 10XSS	X10 V NOTCH  Required: Min Max	Dire AE1 (J)	AE2	AE3	(I)	(%)	SA2 . (%)	SA3 (%)	SA Avg				_		,		5	
mpact lest Speci triker ra	Test linen: CHAl dius: 8 mm  Heat Treatment Lot	RPY 10X55	X19 V NOTCH  Required: Min  Max  Position	Dire AE1 (J) 27	AE2 (J) 27	AE3 (J) 27	(J <sub>)</sub>	<b>8</b> 5	SA2 . (%) %- 85	\$ <b>43</b> (%) 85	SA Avg (%) 85	(Mils)	(Mils)	(Müs)	_				8	





(According to DIN EN 10204 3.1)

Nº.: 0030060809 / 00

Sheeti4 / 5

-		Otto .
Lynn	nact	net

Test Specimen: CHARPY 10X55X10 V NOTCH Direction: Transverse Temperature: -45°C Striker radius: 8 mm SA Avg LEI LE3 (J) (Mils) (%) (Mils) (Mils) 85 Required: Min Max Heat Position Treatment Lot 76 200142 404011 Sotton(trailing) 350 377 =62 100 AE - Absorbed Energy: SA - Shear Area: LE - Lateral Expansion;

Remarks:

MATERIAL IN ACCORDANCE WITH NACE MR0175 / ISO 15156 2 ANNEX A 2.1 2 & NACE MR0103 / ISO 17945-1 \$13 1, LATEST EDITION \*

"STEEL FULLY KILLED AND FINE GRAIN PRACTICE."

"FREE OF MERCURY CONTAMINATION, NO WELD REPAIR, NO RADIOACTIVE CONTAMINATION."

AUSTENITIZATION

TEMPERATURE 920 ± \_000 FURNACE TIME: 56 MINUTES COOLING METHOD: Water

TEMPERING

TEMPERATURE 690 = LPC FURNACE TIME: 564MINUTES COOLING METHOD, AU





(According to DIN EN 10204.3.1)

Nº: 0030060809 / 00

Sheet:5 7

We bereby certify that this product has been manufactured and examined in necondance with all requirements of the standards and specifications and all the results are found to be satisfactory. This restimonial and certificate respectively is recorded by a computer system and is valid without signature. Alteration or use for others products are regarded as falsification of documents and will be subject to criminal jurisdiction.

QUALITY CONTROL DEPARTMENT FAX: (55-31) 2141 5365

e-mail:carlos.horta@vstubos.com

DATE 01.11,2023

TECHNICAL RESPONSIBLE

Page 1 of 1

ArcelorMittal Dofasco G.P.

P.O. Box 2460

Hamilton, Ontario CANADA

L8N 3J5



Test Report Rapport D'assai Attention:

Fax:

Date: 04/09/2024

References

Purchase Order / Bon de Commande

51061870 06

Customer/Client 243000

Sales Order/Bon de Commande PCS 414789018

Vendor/Vendeur

Bill of Lading / Connaissement 417774

Packing Slip/Bordereau de Charge

Vehicle or Carrier/Vehicule ou Transporteur

Sold To / Vendu A

RUSSEL METALS INC. P.O. BOX 39

WINNIPEG, MB.

R3C 2G3

Ship To / Expedier A

RUSSEL METALS INC. 1359 ST. JAMES ST. WINNIPEG, MB.

R3H OK9



Spec / Norm et Spec

DOF G40.21 44W/50W FOR CONV TO PLATE (01/11)

STD ASTM THICKNESS TOLERANCE

**TEST REPORTS REQUIRED** Code: QID 49549, 26484

Material Description / Description du Material

PLATE-IN-COIL FOR CONVERSION

STRUCTURAL STEEL

COILS

PLAIN DRY MILL EDGE

.2360 MIN .2480 X 60 X COIL

WEIGHT: 55730 LBS

Test Methods / Methods d'Essal

ASTM A370, E1019, E415

Heat / Coulee: 220947

C Mn Si Cu Ni Cr Mo Sn Als Alt Cb .05 .67 .01 006 .01 .03 .01 .05 .001 .005 .036 .038 .035 .002 001 .0000 .0044 В CE= 12010 0000

Mechanical Properties / Proprietes Mecaniques

Test Units: KSI

Gauge Length: 2 INCH

Serial Number Nombre De Serie Life# Fardeau **Yield Strength** Resistance a la **Ultimate Strength** Resistance a la

%Elong Allong

D'elasticite Traction

28 (\*)

W78490/00 3766392 T 65 74 (\*) - Method of elongation calculation: at fracture. / Methode de calcul de l'allongement: au point de fracture.

Mechanical testing results are provided for information only. Coils are excluded from qualification to the applicable plate grade.

Melted In: CANADA

Tap Year: 2024 Country Of Origin:

CANADA

Harmonization Code:

7208370060

REQUIREMENTS VERIFIED

Harrison 2023 Signature Kothung

Date 2004-11-25

As Shipped From ArcelorMittal Dofasco G.P.

The Results Relate Only To The Items Tested. This Report Shall Not Be Reproduced Except In Full Without The Expressed Written Approval of the CMTL Supervisor.

Lesley Taggart - CMTL Supervisor - 905-548-7200 x 3477

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

# STRAIT

# **NON-CONFORMANCE**

NCRs Hold Tags



	Not Applicable Page					
Department	QC	Document No.	QCFORM-0051			
Label/Project No.	Not Applicable Page	Revision	1.00			
Document Type	Form	<b>Revision Date</b>	2020-06-04			



# NOT APPLICABLE THIS SECTION INTENTIONALLY LEFT EMPTY









# PROJECT COMPLETION

AB-83 Pressure Piping Construction and Test Data Report

AB-40 Pressure Vessels Repair/Alteration Report



	Page 1 of 1		
Department	QC	Document No.	QCFORM-0051
Label/Project No.	Not Applicable Page	Revision	1.00
Document Type	Form	<b>Revision Date</b>	2020-06-04



# NOT APPLICABLE THIS SECTION INTENTIONALLY LEFT EMPTY

Printed copy is uncontrolled. Refer to STRAIT's SharePoint for most recent version.









# **MISCELLANEOUS**

Coating Records
Torque Reports, Mapping & Calibration Records
Miscellaneous Project Information /
Requirements

# FIELD INSPECTION REPORT

# REPORT # 22-50393-20241212-1, SUBMITTED 22-50393, GRANDE PRAIRIE, ALBERTA, CANADA



Started: 12/12/2024, 6:48 AM MST - Location: 55.1172,-118.7929 Submitted: 12/12/2024, 7:03 AM MST - Location: 55.1172,-118.7929

Approved: N/A

# **GENERAL**

Report Date: 12/10/2024, MST

Description of Items and/or Areas of Work: Newly welded

nozzle, inlet nozzle and minor patch repairs

# **PRE-WORK SURFACE CONDITIONS**

Substrate: Steel Primed for Subsequent Coats: No

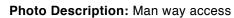
General Description: Previously coated, abrasive blast

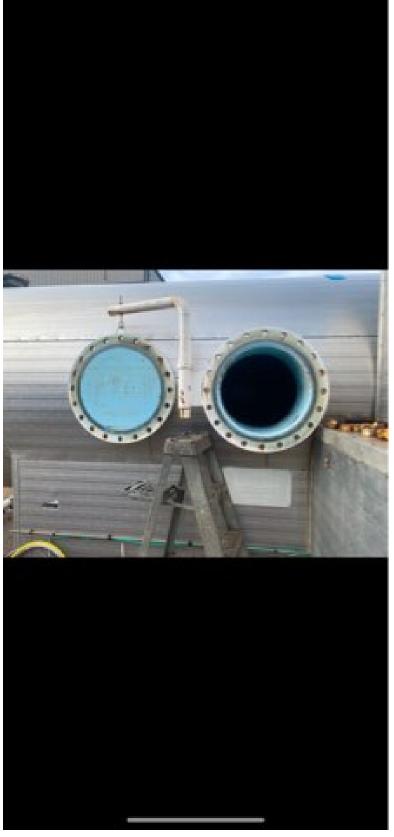
nozzles and patches

Previously Painted-Degree of Corrosion: N/A





















# CONTRACT REQUIREMENTS / APPLICABLE STANDARDS SPECIFIED

Job Specifications Only: N/A SSPC: Yes: SSPC-SP 5 White Metal Blast Cleaning

Specified Surface Profile: 2.50 - 4.00 Microns NACE: N/A

Average Surface Profile: 0.00 Microns ASTM: N/A

Profile Accomplished By: Testex Tape ISO: N/A

**Specified Coating Thickness Range Required:** AWWA: N/A

Other: N/A

Thickness: 16.00 - 30.00 Microns, N/A

### **OBSERVED DEFECTS**

Oil and Grease: No Weld Spatter: No Contamination Tested: No SO4 (Sulfate): N/A

Moisture: No Sharp Edges: No CL: N/A CSN: N/A

Nitrates: N/A

### **SURFACE PREPARATION**

Start Date/Time: 11/27/2024, Abrasive Blast: Yes Nozzle Size: 5 Low Pressure Wash: No

8:30 AM MST

Abrasive Used: Black magic **Compressed Air** Degree Cleanliness: N/A

Cleanliness: N/A

Stop Date/Time: 11/27/2024, 30/60

12:00 PM MST

HP Water Wash: No Blast Hose Size: 1.75 Hand Tool: Yes

Area Prepared: N/A

Hand Tool Types: Sand Air Supply: 375

DFT gage calibrated on: Paper 80 Grit

Prep within 10-20 Ft. Shim

**Blast Nozzle Pressure: 110** Power Tool: No Candles: N/A PSI

Solvent Clean: Yes

Multiple Compressors Used: Power Tool Types: N/A BMR: N/A

Solvent Used: Mel N/A # of Candles: N/A

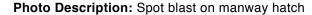
Blasters: Blanny Aranton

Substrate Exposed: N/A

**Lighting Conditions Surface** 









# **PRODUCT / MIXING**

### PRODUCT / MIXING 1

Coating P	roduct T	ype: Epoxy	Batch #	Part D: N/A
-----------	----------	------------	---------	-------------

Manufacturer: International Material Temperature: 22 °C

Catalog No. / Name: Date / Time Mixed:

Enviroline 2405 11/27/2024, 1:00 PM MST

Color: Green Kit Size: 4.5 gallons

Batch # Part A: 4024135009 Caulk Applied (tubes): N/A

Batch # Part B: 4024026018 Type of Thinner Added: N/A

Batch # Part C: N/A Thinner Batch #: N/A

Percentage Thinner Added:

N/A

Mixing Method: Low Speed

Power Agitated

Sweat-In Time: No

**Duration of Sweat-In Time:** 

N/A

Pot Life: 3 hours at 20c

Start Application:

11/27/2024, 1:10 PM MST

Stop Application:

11/27/2024, 4:00 PM MST

Application Equipment Used: Brush and Roll

**Quantity Mixed / Applied: 2.5** 

Gallons

**Spray Tip Size:** N/A

Approximate Coverage by

Coating Applied: N/A

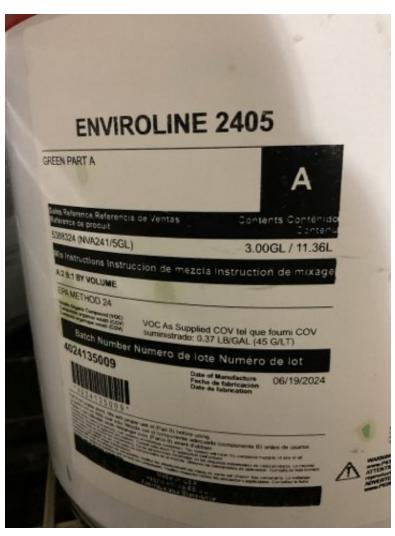
**Lighting Conditions During** 

Application 20-50 Ft.

Candles: N/A

Number of Ft. Candles: N/A









# **WET / DRY FILM THICKNESS**

MIX 1

Coating: Enviroline 2405 Application Date: Specified (Mils): 16.00 -

11/27/2024, MST 30.00

Location: N/A

Application Time: 1:10 PM Desc

 $\mathsf{MST}$ 

**Description:** Newly welded

nozzle and patches

**Approximate Area:** N/A **Range Achieved (Mils):** 

16.50 - 29.80

Area	Spot Reading 1	Spot Reading 2	Spot Reading 3	Total	Average
Area 1	22.40	20.10	26.40	68.9	22.97
	28.60	22.70	29.80	81.1	27.03
	21.90	20.20	18.30	60.4	20.13
	16.50	23.80	26.70	67	22.33
	20.50	21.70	22.00	64.2	21.4
			Total	341.6	22.77
Total				341.6	22.77

Applicators: Blanny Aranton

# **INSPECTOR REMARKS AND SIGNATURES**

Name: Andrew Coates
Type: Supervisor

adw &

Date: 12/12/2024, 7:03 AM

**MST** 



Certificate Number:

EJB2023-1220-009

Date of Certification:

20-Dec-23

Equipment:

Test Method:

PosiTector 6000

Serial Number:

361283

Unit As Left:

Probe

Unit condition found:

in tolerance

Temperature: 23° + 5° in tolerance

up to 95%

**Testing Environment:** 

Humidity: This Coating Thickness Gauge was tested according to Manufacturer's specifications following procedure MP 2530 Rev. F, using a set of Ferrous Certified Calibration Standards traceable to NIST or PTB, having an

uncertainty of measurement + 0 25 µm with 95% confidence level.

FRS

Standards Used For Calibration:

Description	Serial #	Cal Date	Due Date
DeFelsko S1 Ferrous Coating Thickness Standards	1004896	2-Sep-21	2-Sep-26

Nominal Thickness	Plate Identity Number	Reference Standard (mils)	Min. Reading Allowed	Gauge Measurement (mils)	Max. Reading Allowed
3 mils	36929	3.095	2.96	3.2	3.23
10 mils	36922	9.512	9.32	9.5	9.71
60 mils	36933	59.191	58.50	59.4	59.88

This document certifies that using the specified test method, the instrument met Manufacturer's Specifications of:

0 - 2 mils:

+ (0.05 mils + 1% of reading)

> 2 mils:

+ (0.1 mils + 1% of reading)

Calibration Interval is dependent upon usage, handling, and storage, as well as site Quality Standards.

Unit Tested by:

David J Daigle





Certificate Number:

EEB2023-1220-006

Date of Certification:

20-Dec-23

PosiTector DPM Probe

Equipment:

Test Method:

369069

Serial Number: Unit condition found:

out of tolerance

Unit As Left:

in tolerance

23° ± 5°

up to 95% Humidity:

**Testing Environment:** 

This PosiTector Dew Point Meter Probe was calibrated to manufacturer's specifications using the standards noted below. All test equipment was calibrated by an accredited laboratory and traceable to

NIST.

Standards Used For Calibration:

NOT.	Serial #	Cal Date	<b>Due Date</b>
Description	KCI I-1077		n/a
Kaymont KPPRHT-A-1/S Indicator	KCI P-20558313	8-Jan-20 11-Jan-23	11-Jan-24
Kaymont KPPRHT-A-1PCC Relative Humidity Probe	PRI-1004	22-Mar-21	N/A
Practi-Cal Industrial Temperature Calibrator	K24638	9-Nov-23	9-Nov-24
FLUKE 80PK-22 probe	PD4679	9-Nov-23	9-Nov-24
EDL Pocket-Probe Digital Pyrometer	STS1062	21-May-21	N/A
EDL STS-Cool-1-DRL Surface Sensor Calibrator EDL Pocket-Probe Digital Pyrometer	PD4369	24-May-23	24-May-24
EDL POCKEL-PIODE DIGITATION			

Air Temperature

As Found:

As Left:

Equip Set Point	Control Value	Min (°C)	Gauge Reading (°C)	Max (°C)	Pass/Fail
	02.10	22.69	23.5	23.69	Pass
23	23.19		23.7	23.76	Pass
23 23.26	22.76	23.7	Manuscript Commission of the C		

As found:

As left:

Set Point (%)	y @ 23 degrees C Control Value (%)	Min (%)	Gauge Reading (%)	Max (%)	Pass/Fail
		32.20	42.4	38.20	Fail
35	35.20	61.99	66.5	67.99	Pass
65	64.99	MARKET MAY AND THE PROPERTY OF THE PERSON NAMED AND ADDRESS OF	36.1	37.94	Pass
35	34.94	31.94		67.93	Pass
65	64.93	61.93	62.6	67.93	1 000

Surface Temperature

Surface Temperat	ture			And the Printers of the Parish	
Equip Set Point (°C)		Min (°C)	Gauge Reading (°C)	Max (°C)	Pass/Fail
	40.10	39.60	40.0	40.60	Pass
40		98.50	99.5	101.50	Pass
100	100.00	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO I		40.60	Pass
40	40.10	39.60	40.0	Mark Control of the C	Pass
100	100.00	98.50	99.5	101.50	F d 33

As left:

As found:

This document certifies that using the specified test method, the instrument met Manufacturer's

Specifications of:

Temperature:

Surface or Air

+/- 0.5 degrees C -40 to 80 Degree C

Surface Temperature

+/- 1.5 degrees C 80 to 190 Degrees C

Relative Humidity

+/- 3% @ 23 degrees C

Calibration Interval is dependant upon usage, handling, and storage, as well as site Quality Standards.

Robert Sandford Unit Tested by:



Certificate Number:

EJB2023-1220-022

Date of Certification:

20-Dec-23

Equipment:

Tinker & Rasor M1 holiday detector

Serial Number:

24926

Unit condition found:

In tolerance

Unit As Left:

In tolerance

Testing Environment:

Temperature:

 $23^{\circ} + 5^{\circ}$ 

Humidity:

up to 95%

Test Method:

This Tinker & Rasor M1 Low Voltage Holiday Detector was tested according to Stone

Tucker Instruments procedure DOC # 015 in accordance with the manufacturer's

specifications using the standards noted below, traceable to NIST.

Standards Used For

Calibration:

Description	Serial #	Cal Date	Due Date
Fluke 87V Multimeter	62630269	8-Sep-23	8-Sep-24

Reference Voltage (V)	Minimum Voltage Permitted	Unit Under Test	Maximum Voltage Permitted	Alarm Test Pass / Fail
67.5	60.75	68.2	74.25	PASS
67.5	60.75	68.2	74.25	PASS

As found:

As left:

This document certifies that using the specified test method, the instrument met Manufacturer's Specifications of + 10% of the specific voltage.

Calibration Interval is dependant upon usage, handling, and storage, as well as site Quality Standards.

Linit T	ested hy	

David J Daigle





Ce	rtif	icate	Nu	mh	er:

EJB2023-1220-019

Date of Certification:

20-Dec-23

Equipment:

Mitutoyo Testex Dial Thickness Gauge

Serial Number:

**PNT649** 

Unit condition found:

in tolerance

Unit As Left:

in tolerance

**Testing Environment:** 

Temperature:

 $23^{\circ} + 5^{\circ}$ 

Humidity:

up to 95%

Test Method:

The Mitutoyo Testex Dial Thickness Gauge was tested using a set of Thickness Standards

certified against NIST traceable standards, with a margin of error of + 0.0002"

Standards Used For Calibration:

Description	Serial #	Cal Date	Due Date
Starrett .002" Thickness Gauge	22329584	6-Oct-23	6-Oct-24
Starrett .004" Thickness Gauge	22184729	6-Oct-23	6-Oct-24
Starrett .006" Thickness Gauge	22174581	6-Oct-23	6-Oct-24

0 Aux Zero Value as left: Aux Zero Value as found:

Reference Standard (in)	As Found Micrometer Reading	As Found Pass / Fail	As Left Micrometer Reading	As Left Pass / Fail
0.002	0.0020	Pass	0.0020	Pass
0.004	0.0040	Pass	0.0040	Pass
0.006	0.0060	Pass	0.0060	Pass

This document certifies that using the specified test method, the instrument met Manufacturer's Specifications of:

# 0.0002" for the range specified

Calibration Interval is dependant upon usage, handling, and storage, as well as site Quality Standards.

Unit Tested by:	David J Daigle	



# **Hybrid Epoxy**

PRODUCT DESCRIPTION

An ultra high solids, two component polycyclamine cured lining system utilising advanced epoxy technology, designed for single-leg application.

### **INTENDED USES**

Intended to provide high corrosion protection, with a rapid cure in a single coat scheme, for the internals of steel storage tanks, pipes and vessels for service in crude oil up to 149°C (300°F). Its low surface energy of 36 Dynes/cm allows enhanced cargo release properties.

For use under other aggressive service conditions, including high temperature produced water, consult the Product Characteristics.

Enviroline 2405 is compliant with the requirements of United States' FDA regulations and is suitable for use in rail cars intended to store and transport liquid and dry foodstuffs.

# PRACTICAL INFORMATION FOR ENVIROLINE 2405

Green, Light Grey
Not applicable
96% ± 2% (measured according to ISO 3233 and ICF Method)
400-750 microns (16-30 mils) dry equivalent to 417-781 microns (16.7-31.2 mils) wet
1.96 m²/litre at 500 microns d.f.t. and stated volume solids 80 sq.ft./US gallon at 20 mils d.f.t. and stated volume solids
Allow appropriate loss factors
Airless Spray, Plural Component Airless Spray

Overcoating interval with self

Temperature	Touch Dry	Hard Dry	Minimum	Maximum
10°C (50°F)	7 hours	17 hours <sup>2</sup>	22 hours	14 days¹
25°C (77°F)	2.5 hours	5 hours <sup>2</sup>	6 hours	14 days¹
40°C (104°F)	1.5 hours	3 hours <sup>2</sup>	5 hours	7 days¹

<sup>&</sup>lt;sup>1</sup> If the maximum overcoating interval is exceeded it will be necessary to thoroughly abrade the surface of the lining with coarse emery paper.

### REGULATORY DATA

Flash Point (Typical)	Part A >101°C (>214°F); Part B >1	01°C (>214°F); Mixed >101°C (>214°F)
Product Weight	1.57 kg/l (13.1 lb/gal)	
VOC	0.37 lb/gal (45 g/lt)	EPA Method 24
See Product Characte	ristics section for further details	

<sup>&</sup>lt;sup>2</sup> Sufficient coating film strength has developed to permit the handling and movement of coated steelwork. A Shore D hardness reading of 75-80 is a recommended guideline to indicate suitability for return to service.

# **XInternational**

# **Hybrid Epoxy**

SURFACE **PREPARATION**  All surfaces to be coated should be clean, dry and free from contamination. Prior to application all surfaces should be assessed and treated in accordance with ISO 8504:2000

Where necessary, remove weld spatter and where required smooth weld seams and sharp edges.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

### Steel

Best performance will always be achieved when Enviroline 2405 is applied to surfaces prepared by abrasive blast cleaning to Sa3 (ISO 8501-1:2007) or SSPC-SP5. Where Enviroline 2405 is not to be used in high heat and/or aggressive service, preparation to an absolute minimum of Sa21/2 (ISO 8501-1:2007) or SSPC-SP10 at time of coating application may be acceptable. Contact International Protective Coatings for further information.

A sharp, angular surface profile of 75-125 microns (3-5 mils) is recommended.

Enviroline 2405 must be applied before oxidation of the steel occurs. If oxidation does occur the entire oxidised area should be reblasted to the standard specified above. Surface defects revealed by the blast cleaning process should be ground, filled or treated in the appropriate manner.

The preferred method of holding the blast standard is by dehumidification. Alternatively, an approved holding primer may be used.

AP	DI	10 4	TI	$\sim$	N.
AP	ᆫ	ILA	ш	UI	v

Mixing

Material is supplied in two containers as a unit. Complete units should be

stored, mixed and applied in accordance with the Enviroline Application

Guidelines.

Always mix a complete unit in the proportions supplied. Once the unit has

been mixed it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.

(2) Agitate Curing Agent (Part B) with a power agitator.

(3) Combine entire contents of the Curing Agent (Part B) with the Base

(Part A) and mix thoroughly with the power agitator.

Mix Ratio 2 part(s): 1 part(s) by volume

**Working Pot Life** 10°C (50°F) 25°C (77°F) 40°C (104°F)

> 2 hours 60 minutes 30 minutes

**Plural Component Airless Spray** 

Recommended Use suitable proprietary equipment

**Airless Spray** Recommended Tip Range 0.48-0.73 mm (19-29 thou)

Total output fluid pressure at spray tip not less

than 211 kg/cm<sup>2</sup> (3000 p.s.i.)

Brush Suitable - small areas Typically 150-200 microns (6.0-8.0 mils) can be

> only achieved

Roller Suitable - small areas Typically 150-200 microns (6.0-8.0 mils) can be

> achieved only

Thinner DO NOT THIN

Enviroline 71C (or International GTA203) Cleaner

Work Stoppages Thoroughly clean all equipment with Enviroline 71C. Once units of paint

have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

Clean Up Clean all equipment immediately after use with Enviroline 71C.

> All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.



# **Hybrid Epoxy**

### PRODUCT CHARACTERISTICS

The detailed Enviroline Application Guidelines should be consulted prior to use.

Enviroline 2405 may be suitable for use in storage tanks and pressure vessels with continuous operating up to 135°C (275°F), subject to approval by an International Paint Technical Representative.

Enviroline 2405 may also be used under continuous dry temperatures of up to 200°C (392°F).

This datasheet provides general guidance on the use of Enviroline 2405. Specific project requirements will be dependent upon the service end use and operating conditions of the tank or vessel. Always consult International Protective Coatings to confirm that Enviroline 2405 is suitable for contact with the product to be stored.

The detailed project coating specification provided by International Protective Coatings must be followed at all times.

Stripe coating is an essential part of good working practice and as such should form part of any lining specification.

For heavily pitted or porous steel, spray apply approximately 50% of the required film thickness and follow immediately with a short nap roller or squeegee to work material into the bottom of pitted areas.

Surface temperature must always be a minimum of 3°C (5°F) above dew point. The minimum mixed paint temperature for airless spray application is 20°C (68°F).

Use the following chart for preferred temperature conditions. These conditions plus adequate ventilation must be maintained throughout the curing cycle.

 
 Preferred
 Substrate Temperature 21-49°C (70-120°F)
 Air Temperature 21-38°C (70-100°F)

 Minimum
 10°C (50°F)
 10°C (50°F)

After the coating system has cured hard, the dry film thickness should be measured using a suitable non-destructive magnetic gauge to verify the minimum applied system thickness. The coating system should be free of all pinholes or other holidays. The cured film should be essentially free of runs, sags, drips, inclusions or other defects. All deficiencies and defects should be corrected. The repaired areas shall be retested and allowed to cure as specified before placing the finished lining into service.

For post cure conditions specific to rail car application, see the relevant Enviroline 2405 Application Guidelines.

Enviroline 2405 is compliant with the requirements of United States' FDA regulations and is suitable for use in rail cars intended to store and transport liquid and dry foodstuffs. Consult International Protective Coatings for further details.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in colour and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

### SYSTEMS COMPATIBILITY

This product is normally applied directly to correctly prepared steel substrates and is not normally topcoated.



# **Hybrid Epoxy**

ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- · Definitions & Abbreviations
- · Surface Preparation
- · Paint Application
- · Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

# SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations. All work involving the application and use of this product should be performed in compliance with all relevant national Health, Safety and Environmental standards, regulations and legislation.

Proper ventilation must be provided during application and afterwards during curing (refer to product datasheets for typical curing times) to ensure safe limits and prevent fires and explosions. Forced extraction will be required in confined spaces. Ventilation and/or respiratory personal protective equipment (airfed hoods or appropriate cartridge masks) must be provided during application and curing. Take precautions to avoid skin and eye contact (overalls, gloves, goggles, masks, barrier cream, etc).

Before use, obtain, read and then follow the advice given on the Material Safety Data Sheets (Parts A and B if two-pack) and the Health and Safety section of the Coatings Applications Procedures for this product.

In the event that welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

The detailed safety measures are dependent on application methods and the work environment. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product and consult International Protective Coatings.

Warning: This product contains liquid epoxies and modified polyamines and may cause skin sensitisation if not used correctly.

PACK SIZE	Unit Size	Part A Vol Pack	Part B Vol Pack	
	4.5 US gal	3 US gal 5 US gal	1.5 US gal 2 US gal	
			allons supplied in a 55 US International Protective Co	
SHIPPING WEIGHT	Unit Size	Part A	Part B	
(TYPICAL)	4.5 US gal	60.9 lb	26.2 lb	
STORAGE	Shelf Life		F). Subject to re-inspection nditions away from source	

### **Important Note**

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local representative that this data sheet is current prior to using the product.

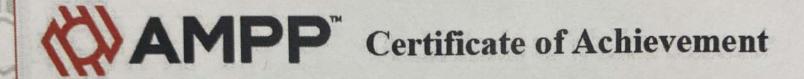
This Technical Data Sheet is available on our website at www.international-marine.com or www.international-pc.com, and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.

Copyright © AkzoNobel, 21/08/2017

All trademarks mentioned in this publication are owned by, or licensed to, the AkzoNobel group of companies.

www.international-pc.com

9496398



The Association for Materials Protection and Performance Recognizes

**Andrew Coates** 

As a Certified

**Certified Coatings Inspector** 

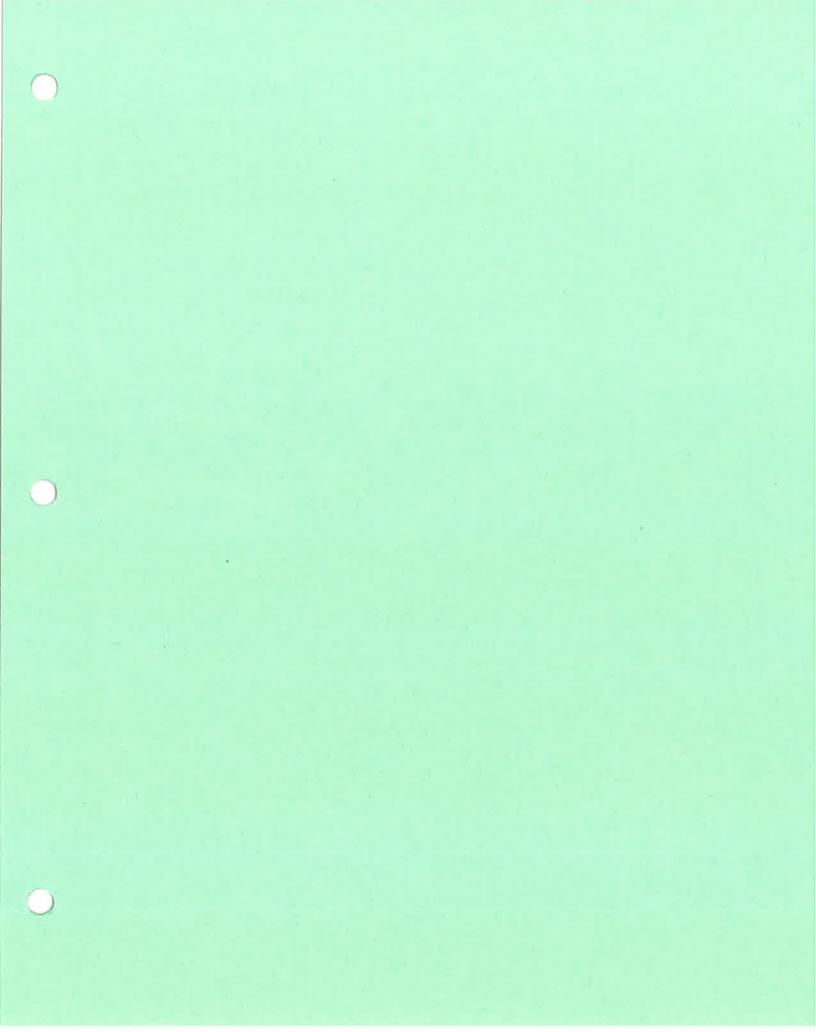
Welma Sulinger
Executive Director
AMPP



**Expires** 

July 17, 2025

Cert No.N-74417



# **HOLIDAY REPORT**

# **REPORT # 22-50393-20241212-2, SUBMITTED 22-50393, GRANDE PRAIRIE, ALBERTA, CANADA**



Started: 12/12/2024, 7:03 AM MST - Location: 55.1172,-118.7929 Submitted: 12/12/2024, 7:07 AM MST - Location: 55.1172,-118.7929 Approved: N/A

# **GENERAL**

Report Date: 12/10/2024, MST

Description of Items and/or Areas of Work: Coated nozzles

and patches

# **HOLIDAY TEST**

Standard: SPO88 Voltage: 67.5 Volts

Electrode Type: Internal Sponge

# Holidays: 4

Project inspected and accepted?: Yes

# Holidays Remaining: N/A

**Area Tested:** 

Holidays Marked With: Marker

Photo Description: Manway



Photo Description: Manway

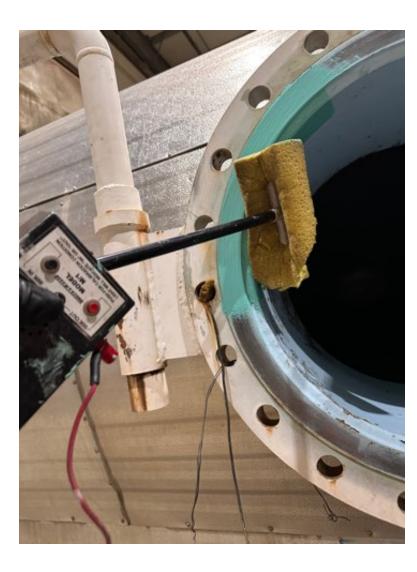


Photo Description: Manway







Photo Description: Manway

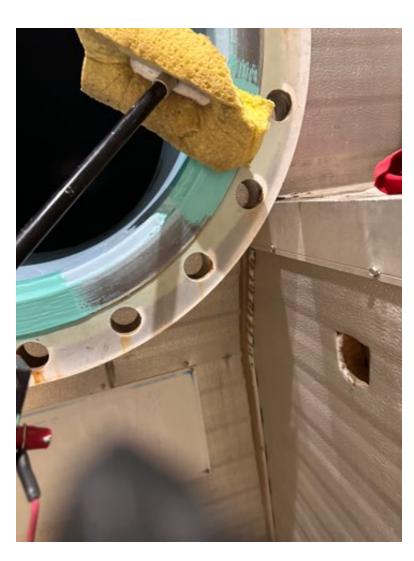


Photo Description: Manway hatch





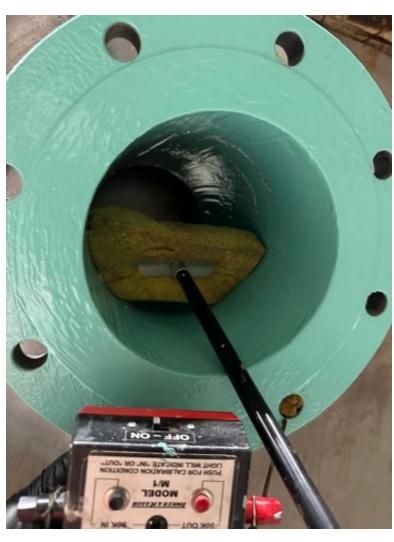






Photo Description: Holidays marked out

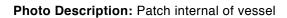


Photo Description: Inside vessel



Photo Description: Patch inside vessel







# **REMARKS AND SIGNATURE**

Name: Andrew Coates
Type: Supervisor

**Date:** 12/12/2024, 7:07 AM

MST



Certificate Number:

EEB2023-1220-006

Date of Certification:

20-Dec-23

PosiTector DPM Probe

Equipment:

Test Method:

369069

Serial Number: Unit condition found:

out of tolerance

Unit As Left:

in tolerance

23° ± 5°

up to 95% Humidity:

**Testing Environment:** 

This PosiTector Dew Point Meter Probe was calibrated to manufacturer's specifications using the standards noted below. All test equipment was calibrated by an accredited laboratory and traceable to

NIST.

Standards Used For Calibration:

NOT.	Serial #	Cal Date	<b>Due Date</b>
Description	KCI I-1077	8-Jan-20	n/a
Kaymont KPPRHT-A-1/S Indicator	KCI P-20558313	11-Jan-23	11-Jan-24
Kaymont KPPRHT-A-1PCC Relative Humidity Probe	PRI-1004	22-Mar-21	N/A
Practi-Cal Industrial Temperature Calibrator	K24638	9-Nov-23	9-Nov-24
FLUKE 80PK-22 probe	PD4679	9-Nov-23	9-Nov-24
EDL Pocket-Probe Digital Pyrometer	STS1062	21-May-21	N/A
EDL STS-Cool-1-DRL Surface Sensor Calibrator EDL Pocket-Probe Digital Pyrometer	PD4369	24-May-23	24-May-24
EDL POCKEL-PIODE DIGITATION			

Air Temperature

As Found:

As Left:

Equip Set Point	Control Value	Min (°C)	Gauge Reading (°C)	Max (°C)	Pass/Fail
	02.10	22.69	23.5	23.69	Pass
23	23.19		23.7	23.76	Pass
23 23.26		22.76	23.7	Manuscript Commission of the C	

As found:

As left:

Set Point (%)	y @ 23 degrees C Control Value (%)	Min (%)	Gauge Reading (%)	Max (%)	Pass/Fail
		32.20	42.4	38.20	Fail
35	35.20	61.99	66.5	67.99	Pass
65	64.99	MARKET MATERIAL PROPERTY OF THE PROPERTY OF TH	36.1	37.94	Pass
35	34.94	31.94		67.93	Pass
65	64.93	61.93	62.6	67.93	1 000

Surface Temperature

Surface Temperat	ture			And the Printers of the Parish	
Equip Set Point (°C)		Min (°C)	Gauge Reading (°C)	Max (°C)	Pass/Fail
	40.10	39.60	40.0	40.60	Pass
40		98.50	99.5	101.50	Pass
100	100.00			40.60	Pass
40	40.10	39.60	40.0	Mark Control of the C	Pass
100	100.00	98.50	99.5	101.50	F d 33

As left:

As found:

This document certifies that using the specified test method, the instrument met Manufacturer's

Specifications of:

Temperature:

Surface or Air

+/- 0.5 degrees C -40 to 80 Degree C

Surface Temperature

+/- 1.5 degrees C 80 to 190 Degrees C

Relative Humidity

+/- 3% @ 23 degrees C

Calibration Interval is dependant upon usage, handling, and storage, as well as site Quality Standards.

Robert Sandford Unit Tested by:



Certificate Number:

EJB2023-1220-009

Date of Certification:

20-Dec-23

Equipment:

Test Method:

PosiTector 6000

Serial Number:

361283

Unit As Left:

Probe

Unit condition found:

in tolerance

Temperature: 23° + 5° in tolerance

up to 95%

**Testing Environment:** 

Humidity: This Coating Thickness Gauge was tested according to Manufacturer's specifications following procedure MP 2530 Rev. F, using a set of Ferrous Certified Calibration Standards traceable to NIST or PTB, having an

uncertainty of measurement + 0 25 µm with 95% confidence level.

FRS

Standards Used For Calibration:

Description	Serial #	Cal Date	Due Date
DeFelsko S1 Ferrous Coating Thickness Standards	1004896	2-Sep-21	2-Sep-26

Nominal Thickness	Plate Identity Number	Reference Standard (mils)	Min. Reading Allowed	Gauge Measurement (mils)	Max. Reading Allowed
3 mils	36929	3.095	2.96	3.2	3.23
10 mils	36922	9.512	9.32	9.5	9.71
60 mils	36933	59.191	58.50	59.4	59.88

This document certifies that using the specified test method, the instrument met Manufacturer's Specifications of:

0 - 2 mils:

+ (0.05 mils + 1% of reading)

> 2 mils:

+ (0.1 mils + 1% of reading)

Calibration Interval is dependent upon usage, handling, and storage, as well as site Quality Standards.

Unit Tested by:

David J Daigle





Certificate Number:

EJB2023-1220-022

Date of Certification:

20-Dec-23

Equipment:

Tinker & Rasor M1 holiday detector

Serial Number:

24926

Unit condition found:

In tolerance

Unit As Left:

In tolerance

Testing Environment:

Temperature:

 $23^{\circ} + 5^{\circ}$ 

Humidity:

up to 95%

Test Method:

This Tinker & Rasor M1 Low Voltage Holiday Detector was tested according to Stone

Tucker Instruments procedure DOC # 015 in accordance with the manufacturer's

specifications using the standards noted below, traceable to NIST.

Standards Used For

Calibration:

Description	Serial #	Cal Date	Due Date
Fluke 87V Multimeter	62630269	8-Sep-23	8-Sep-24

Reference Voltage (V)	Minimum Voltage Permitted	Unit Under Test	Maximum Voltage Permitted	Alarm Test Pass / Fail
67.5	60.75	68.2	74.25	PASS
67.5	60.75	68.2	74.25	PASS

As found:

As left:

This document certifies that using the specified test method, the instrument met Manufacturer's Specifications of + 10% of the specific voltage.

Calibration Interval is dependant upon usage, handling, and storage, as well as site Quality Standards.

Linit T	ested hy	

David J Daigle





### **Hybrid Epoxy**

PRODUCT DESCRIPTION

An ultra high solids, two component polycyclamine cured lining system utilising advanced epoxy technology, designed for single-leg application.

#### **INTENDED USES**

Intended to provide high corrosion protection, with a rapid cure in a single coat scheme, for the internals of steel storage tanks, pipes and vessels for service in crude oil up to 149°C (300°F). Its low surface energy of 36 Dynes/cm allows enhanced cargo release properties.

For use under other aggressive service conditions, including high temperature produced water, consult the Product Characteristics.

Enviroline 2405 is compliant with the requirements of United States' FDA regulations and is suitable for use in rail cars intended to store and transport liquid and dry foodstuffs.

# PRACTICAL INFORMATION FOR ENVIROLINE 2405

Green, Light Grey
Not applicable
96% ± 2% (measured according to ISO 3233 and ICF Method)
400-750 microns (16-30 mils) dry equivalent to 417-781 microns (16.7-31.2 mils) wet
1.96 m²/litre at 500 microns d.f.t. and stated volume solids 80 sq.ft./US gallon at 20 mils d.f.t. and stated volume solids
Allow appropriate loss factors
Airless Spray, Plural Component Airless Spray

Overcoating interval with self

Temperature	<b>Touch Dry</b>	Hard Dry	Minimum	Maximum
10°C (50°F)	7 hours	17 hours <sup>2</sup>	22 hours	14 days¹
25°C (77°F)	2.5 hours	5 hours <sup>2</sup>	6 hours	14 days¹
40°C (104°F)	1.5 hours	3 hours <sup>2</sup>	5 hours	7 days¹

<sup>&</sup>lt;sup>1</sup> If the maximum overcoating interval is exceeded it will be necessary to thoroughly abrade the surface of the lining with coarse emery paper.

### REGULATORY DATA

>101°C (>214°F);	°C (>214°F); Mixed >101°C (>214°F)
g/l (13.1 lb/gal)	
/gal (45 g/lt)	PA Method 24
	g/l (13.1 lb/gal)

See Product Characteristics section for further details

<sup>&</sup>lt;sup>2</sup> Sufficient coating film strength has developed to permit the handling and movement of coated steelwork. A Shore D hardness reading of 75-80 is a recommended guideline to indicate suitability for return to service.

# **XInternational**

### **Hybrid Epoxy**

SURFACE **PREPARATION**  All surfaces to be coated should be clean, dry and free from contamination. Prior to application all surfaces should be assessed and treated in accordance with ISO 8504:2000

Where necessary, remove weld spatter and where required smooth weld seams and sharp edges.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

#### Steel

Best performance will always be achieved when Enviroline 2405 is applied to surfaces prepared by abrasive blast cleaning to Sa3 (ISO 8501-1:2007) or SSPC-SP5. Where Enviroline 2405 is not to be used in high heat and/or aggressive service, preparation to an absolute minimum of Sa21/2 (ISO 8501-1:2007) or SSPC-SP10 at time of coating application may be acceptable. Contact International Protective Coatings for further information.

A sharp, angular surface profile of 75-125 microns (3-5 mils) is recommended.

Enviroline 2405 must be applied before oxidation of the steel occurs. If oxidation does occur the entire oxidised area should be reblasted to the standard specified above. Surface defects revealed by the blast cleaning process should be ground, filled or treated in the appropriate manner.

The preferred method of holding the blast standard is by dehumidification. Alternatively, an approved holding primer may be used.

AP	DI	10 4	TI	$\sim$	N.
AP	ᆫ	ILA	ш	UI	v

Mixing

Material is supplied in two containers as a unit. Complete units should be

stored, mixed and applied in accordance with the Enviroline Application

Guidelines.

Always mix a complete unit in the proportions supplied. Once the unit has

been mixed it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.

(2) Agitate Curing Agent (Part B) with a power agitator.

(3) Combine entire contents of the Curing Agent (Part B) with the Base

(Part A) and mix thoroughly with the power agitator.

Mix Ratio 2 part(s): 1 part(s) by volume

Working Pot Life 10°C (50°F) 25°C (77°F) 40°C (104°F)

> 2 hours 60 minutes 30 minutes

**Plural Component Airless Spray** 

Recommended Use suitable proprietary equipment

**Airless Spray** Recommended Tip Range 0.48-0.73 mm (19-29 thou)

Total output fluid pressure at spray tip not less

than 211 kg/cm<sup>2</sup> (3000 p.s.i.)

Brush Suitable - small areas Typically 150-200 microns (6.0-8.0 mils) can be

> only achieved

Roller Suitable - small areas Typically 150-200 microns (6.0-8.0 mils) can be

> achieved only

Thinner DO NOT THIN

Enviroline 71C (or International GTA203) Cleaner

Work Stoppages Thoroughly clean all equipment with Enviroline 71C. Once units of paint

have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

Clean Up Clean all equipment immediately after use with Enviroline 71C.

> All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.



### **Hybrid Epoxy**

#### PRODUCT CHARACTERISTICS

The detailed Enviroline Application Guidelines should be consulted prior to use.

Enviroline 2405 may be suitable for use in storage tanks and pressure vessels with continuous operating up to 135°C (275°F), subject to approval by an International Paint Technical Representative.

Enviroline 2405 may also be used under continuous dry temperatures of up to 200°C (392°F).

This datasheet provides general guidance on the use of Enviroline 2405. Specific project requirements will be dependent upon the service end use and operating conditions of the tank or vessel. Always consult International Protective Coatings to confirm that Enviroline 2405 is suitable for contact with the product to be stored.

The detailed project coating specification provided by International Protective Coatings must be followed at all times.

Stripe coating is an essential part of good working practice and as such should form part of any lining specification.

For heavily pitted or porous steel, spray apply approximately 50% of the required film thickness and follow immediately with a short nap roller or squeegee to work material into the bottom of pitted areas.

Surface temperature must always be a minimum of 3°C (5°F) above dew point. The minimum mixed paint temperature for airless spray application is 20°C (68°F).

Use the following chart for preferred temperature conditions. These conditions plus adequate ventilation must be maintained throughout the curing cycle.

 
 Preferred
 Substrate Temperature 21-49°C (70-120°F)
 Air Temperature 21-38°C (70-100°F)

 Minimum
 10°C (50°F)
 10°C (50°F)

After the coating system has cured hard, the dry film thickness should be measured using a suitable non-destructive magnetic gauge to verify the minimum applied system thickness. The coating system should be free of all pinholes or other holidays. The cured film should be essentially free of runs, sags, drips, inclusions or other defects. All deficiencies and defects should be corrected. The repaired areas shall be retested and allowed to cure as specified before placing the finished lining into service.

For post cure conditions specific to rail car application, see the relevant Enviroline 2405 Application Guidelines.

Enviroline 2405 is compliant with the requirements of United States' FDA regulations and is suitable for use in rail cars intended to store and transport liquid and dry foodstuffs. Consult International Protective Coatings for further details.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in colour and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

#### SYSTEMS COMPATIBILITY

This product is normally applied directly to correctly prepared steel substrates and is not normally topcoated.



### **Hybrid Epoxy**

ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- · Definitions & Abbreviations
- · Surface Preparation
- · Paint Application
- · Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

# SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations. All work involving the application and use of this product should be performed in compliance with all relevant national Health, Safety and Environmental standards, regulations and legislation.

Proper ventilation must be provided during application and afterwards during curing (refer to product datasheets for typical curing times) to ensure safe limits and prevent fires and explosions. Forced extraction will be required in confined spaces. Ventilation and/or respiratory personal protective equipment (airfed hoods or appropriate cartridge masks) must be provided during application and curing. Take precautions to avoid skin and eye contact (overalls, gloves, goggles, masks, barrier cream, etc).

Before use, obtain, read and then follow the advice given on the Material Safety Data Sheets (Parts A and B if two-pack) and the Health and Safety section of the Coatings Applications Procedures for this product.

In the event that welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

The detailed safety measures are dependent on application methods and the work environment. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product and consult International Protective Coatings.

Warning: This product contains liquid epoxies and modified polyamines and may cause skin sensitisation if not used correctly.

PACK SIZE	Unit Size	Part A Vol Pack	Part B Vol Pack	
	4.5 US gal	3 US gal 5 US gal	1.5 US gal 2 US gal	
			Sallons supplied in a 55 US International Protective Co	
SHIPPING WEIGHT	Unit Size	Part A	Part B	
(TYPICAL)	4.5 US gal	60.9 lb	26.2 lb	
STORAGE	Shelf Life		°F). Subject to re-inspection nditions away from source	

#### **Important Note**

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local representative that this data sheet is current prior to using the product.

This Technical Data Sheet is available on our website at www.international-marine.com or www.international-pc.com, and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.

Copyright © AkzoNobel, 21/08/2017

All trademarks mentioned in this publication are owned by, or licensed to, the AkzoNobel group of companies.

www.international-pc.com



Ce	rtif	icate	Nu	mber:

EJB2023-1220-019

Date of Certification:

20-Dec-23

Equipment:

Mitutoyo Testex Dial Thickness Gauge

Serial Number:

**PNT649** 

Unit condition found:

in tolerance

Unit As Left:

in tolerance

**Testing Environment:** 

Temperature:

 $23^{\circ} + 5^{\circ}$ 

Humidity:

up to 95%

Test Method:

The Mitutoyo Testex Dial Thickness Gauge was tested using a set of Thickness Standards

certified against NIST traceable standards, with a margin of error of + 0.0002"

Standards Used For Calibration:

Description	Serial #	Cal Date	Due Date
Starrett .002" Thickness Gauge	22329584	6-Oct-23	6-Oct-24
Starrett .004" Thickness Gauge	22184729	6-Oct-23	6-Oct-24
Starrett .006" Thickness Gauge	22174581	6-Oct-23	6-Oct-24

0 Aux Zero Value as left: Aux Zero Value as found:

Reference Standard (in)	As Found Micrometer Reading	As Found Pass / Fail	As Left Micrometer Reading	As Left Pass / Fail
0.002	0.0020	Pass	0.0020	Pass
0.004	0.0040	Pass	0.0040	Pass
0.006	0.0060	Pass	0.0060	Pass

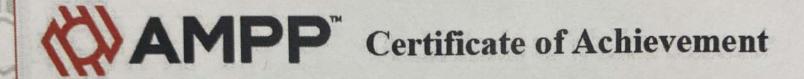
This document certifies that using the specified test method, the instrument met Manufacturer's Specifications of:

### 0.0002" for the range specified

Calibration Interval is dependant upon usage, handling, and storage, as well as site Quality Standards.

Unit Tested by:	David J Daigle	

9496398



The Association for Materials Protection and Performance Recognizes

**Andrew Coates** 

As a Certified

**Certified Coatings Inspector** 

Welma Sulinger
Executive Director
AMPP



**Expires** 

July 17, 2025

Cert No.N-74417