



CERTIFICATE OF TESTING

ALBERTA TUBULAR PRODUCTS LTD

Diameter: 323.9 mm

Gage: 9.500 mm

Grade: GR.414-2SG

Ref. No:

Certificate ID:

192247

Mill Order No: WA 054693

Friday, August 31, 2018, 14:08:50

Customer PO: 4111

Specification: CSA Z245.1-18 GRADE 414 CAT II M45C SS, Keyera Specification 03-501 Rev.A, TSR 175538 Rev.1 and Related Agreements

All of the information in the '.... Report' sections is locked for editing and cannot be modified.

And the '.... Data' sections are added as modifiable information and have NO direct link to the report sections.

Comment: Hydrotest pressure to 90% SMYS and held for 10 secs. Acceptable as per included spec deviations.

STANTEC DOCUMENT PROCESSING STAMP	
☒ A - PROCEED	☐ I/O - DATA ACCEPTED FOR INFORMATION ONLY
☐ B - PROCEED, CHANGE AS NOTED AND RESUBMIT BY:	☐ C - DO NOT PROCEED, CHANGE AS NOTED AND RESUBMIT BY:
RESUBMITTAL DATE FOR STATUS B	RESUBMITTAL DATE FOR STATUS C
SIGN:	DATE SIGNED: Sept 5, 2018
VDDR CODE(S):	RM13
AUTHORIZATION TO PROCEED DOES NOT WAIVE SUPPLIER'S RESPONSIBILITY OR LIABILITY UNDER THE CONTRACT/PURCHASE ORDER FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS	



Camrose ERW

EVRAZ Camrose
CERTIFICATE OF TESTING
Charpy

Friday, August 31, 2018, 14:08:50

Certificate ID: 192247-1

Customer PO: 4111

Mat Order No: WA 054693

Customer: ALBERTA TUBULAR PRODUCTS LTD

Diameter: 323.9 mm Wall Thickness: 9.500 mm Grade: GR.414-25G
Specification: CSA Z245.1-18 GRADE 414 CAT II M45C SS, Keyera Specification 03-501 Rev.A, T8R 175538 Rev.1 and Related Agreements

Supplier - Heat	Product ID	Test Type	Orientation	Temp C	Energy (Joules)				Percent Shear				Test Position	Size	Flat
					#1	#2	#3	Avg	#1	#2	#3	Avg			
EVRAZ Regina - 410356	AE-138A	CL617 50043-V	MILL CONTROL	PIPE TPA	-45	151	146	145	147	100	100	100	100	90	2/3
	AE-138A	CL617 50043-V	MILL CONTROL	PIPE TWA	-45	170	182	177	176	100	100	100	100	WMZ	2/3
EVRAZ Regina - 410357	AE-138A	CL629 50218-F	MILL CONTROL	PIPE TPA	-45	102	115	120	112	100	100	100	100	90	2/3
	AE-138A	CL629 50218-F	MILL CONTROL	PIPE TWA	-45	63	67	65	62	25	25	25	25	WMZ	2/3
EVRAZ Regina - 410419	AE-138A	CL636 50324-V	MILL CONTROL	PIPE TPA	-45	156	154	166	159	100	100	100	100	90	2/3
	AE-138A	CL636 50324-V	MILL CONTROL	PIPE TWA	-45	127	134	85	115	70	80	30	60	WMZ	2/3
EVRAZ Regina - 529573	AE-138A	CL642 50413-T	MILL CONTROL	PIPE TPA	-45	170	196	220	195	100	100	100	100	90	2/3
	AE-138A	CL642 50413-T	MILL CONTROL	PIPE TWA	-45	130	134	104	123	70	75	45	63	WMZ	2/3
EVRAZ Regina - 529574	AE-138A	CL635 50309-F	MILL CONTROL	PIPE TPA	-45	166	124	136	142	100	100	100	100	90	2/3
	AE-138A	CL635 50309-F	MILL CONTROL	PIPE TWA	-45	204	117	152	158	100	50	100	83	WMZ	2/3
EVRAZ Regina - 529645	AE-138A	CL615 50010-F	MILL CONTROL	PIPE TPA	-45	129	107	131	122	100	100	100	100	90	2/3
	AE-138A	CL615 50010-F	MILL CONTROL	PIPE TWA	-45	87	75	66	76	45	45	40	43	WMZ	2/3

TPA - Transverse Pipe Axis
LPA - Longitudinal Pipe Axis
TWA - Transverse Weld Axis
PST - Full Section Testing
FBH - Full Body Homologized
QAT - Quenched and Tempered
SR - Stress Relieve
AQ - As Quenched
FS - Full Size
HAZ - Heat Affected Zone
WMZ - Weld Metal Zone
FLZ - Fusion Line Zone

Flattening Test Acceptable
Ultrasonic Weld Line Inspection Acceptable
High Frequency Electric Welded
Deoxidization Practice: Aluminum Fully Killed
UT Cut: to 18" Drilled Hole and/or H10 IDGD Notches
Rock Guided Bend Test Acceptable
FLV1 - Full length Visual
Metred & Manufactured in Canada
Yield Strength: 0.5% ELA
21700 KPA for 10 secs

FSE Acceptance Criteria: Body: 27 WMZ: 27 FLZ: 0 HAZ: 0
Minimum Weld Seam Heat Treatment Temperature: 500 (C)

We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.

form ctr3004XL

[illegible]

Supplier - Heat
EVRAS Regpa - 410356
EVRAS Regpa - 410356
EVRAS Regpa - 410356
EVRAS Regpa - 410357
EVRAS Regpa - 410357
EVRAS Regpa - 410357
EVRAS Regpa - 410419
EVRAS Regpa - 410419
EVRAS Regpa - 525573
EVRAS Regpa - 525573
EVRAS Regpa - 525574
EVRAS Regpa - 525574
EVRAS Regpa - 525574
EVRAS Regpa - 525574
EVRAS Regpa - 525574
EVRAS Regpa - 525574
EVRAS Regpa - 525574

Chng	Prod ID	Type	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	V	Co	N2	Ti	B	CEQ	Ca	Co	O	Co	Zr	So4I
AE-135A	V0005	Heat	0.05	1.28	0.012	0.003	0.15	0.24	0.09	0.12	0.034	0.009	0.047	0.003	0.063	0.008	0.02	0.0002	0.2	0.0021	0	0.0028	0.0019	0.047	
AE-135A	V0005	Product	0.05	1.3	0.012	0.003	0.15	0.25	0.09	0.12	0.033	0.01	0.05	0.004	0.065	0.008	0.02	0.0002	0.2	0.0022	0	0.0078	0.0026	0.049	
AE-135A	W0005	Product	0.05	1.27	0.011	0.003	0.15	0.24	0.09	0.12	0.032	0.009	0.05	0.003	0.063	0.008	0.02	0.0002	0.2	0.0024	0	0.0078	0.0026	0.049	
AE-135A	V0012	Heat	0.05	1.28	0.013	0.002	0.15	0.25	0.09	0.13	0.029	0.009	0.043	0.003	0.063	0.008	0.02	0.0002	0.2	0.0024	0	0.0078	0.0026	0.049	
AE-135A	W0012	Product	0.05	1.3	0.013	0.002	0.15	0.26	0.09	0.14	0.029	0.01	0.046	0.004	0.067	0.009	0.02	0.0002	0.2	0.0024	0	0.008	0.0024	0.045	
AE-135A	V0002	Heat	0.05	1.28	0.013	0.002	0.15	0.25	0.09	0.13	0.028	0.01	0.046	0.003	0.064	0.009	0.02	0.0002	0.2	0.0022	0	0.0079	0.0024	0.045	
AE-135A	W0002	Product	0.05	1.25	0.01	0.003	0.17	0.26	0.09	0.06	0.03	0.01	0.036	0.003	0.066	0.008	0.02	0.0002	0.2	0.0028	0	0.0094	0.0021	0.035	
AE-135A	V0002	Heat	0.05	1.23	0.01	0.003	0.18	0.26	0.09	0.06	0.03	0.01	0.041	0.003	0.066	0.008	0.02	0.0002	0.19	0.0024	0	0	0	0.039	
AE-135A	W0002	Product	0.05	1.23	0.01	0.003	0.18	0.26	0.09	0.06	0.03	0.01	0.041	0.003	0.066	0.009	0.02	0.0002	0.19	0.0021	0	0	0	0.039	
AE-135A	V0002	Heat	0.04	1.26	0.009	0.002	0.12	0.25	0.13	0.11	0.059	0.009	0.038	0.002	0.06	0.007	0.02	0.0002	0.2	0.0028	0	0.003	0.0018	0.032	
AE-135A	W0002	Product	0.04	1.25	0.009	0.002	0.12	0.25	0.13	0.11	0.059	0.009	0.038	0.002	0.06	0.007	0.02	0.0002	0.2	0.0028	0	0	0	0.038	
AE-135A	V0008	Heat	0.05	1.25	0.009	0.002	0.12	0.21	0.09	0.12	0.03	0.007	0.043	0.002	0.062	0.009	0.02	0.0001	0.19	0.0022	0	0.0056	0.0019	0.036	
AE-135A	W0008	Product	0.05	1.25	0.009	0.002	0.13	0.2	0.09	0.12	0.03	0.007	0.043	0.002	0.062	0.009	0.02	0.0001	0.19	0.0023	0	0	0	0.041	
AE-135A	V0008	Heat	0.05	1.24	0.009	0.003	0.13	0.2	0.09	0.12	0.03	0.007	0.043	0.002	0.064	0.012	0.02	0.0002	0.19	0.003	0	0.0034	0.0053	0.034	
AE-135A	W0008	Product	0.05	1.25	0.009	0.004	0.11	0.31	0.09	0.07	0.034	0.009	0.039	0.003	0.063	0.011	0.02	0.0002	0.19	0.0021	0	0	0	0.035	
AE-135A	V0005	Heat	0.05	1.23	0.009	0.004	0.11	0.31	0.09	0.07	0.034	0.01	0.039	0.003	0.063	0.011	0.02	0.0002	0.19	0.0022	0	0	0	0	
AE-135A	W0005	Product	0.05	1.23	0.009	0.004	0.11	0.31	0.09	0.07	0.034	0.01	0.039	0.003	0.063	0.011	0.02	0.0002	0.19	0.0021	0	0	0	0	

Supplier - Heat
EVRAZ Regina - 410356
EVRAZ Regina - 410356
EVRAZ Regina - 410357
EVRAZ Regina - 410357
EVRAZ Regina - 410419
EVRAZ Regina - 410419
EVRAZ Regina - 529573
EVRAZ Regina - 529573
EVRAZ Regina - 529574
EVRAZ Regina - 529574
EVRAZ Regina - 529645
EVRAZ Regina - 529645

Chng	Prod ID	Test Type	Orientation	Width (mm)	YS (MPa)	UTS (MPa)	Elong% (50mm)	Y/T	Temperi
AE-138A	50043-V	MILL CONTROL	PIPE TPA	38.13	536	608	33.3	0.88	-18
AE-138A	50043-V	MILL CONTROL	PIPE TWA	38.13	0	604	0	0	-18
AE-138A	50218-F	MILL CONTROL	PIPE TPA	38.13	531	627	33.8	0.85	-18
AE-138A	50218-F	MILL CONTROL	PIPE TWA	38.13	0	600	0	0	-18
AE-138A	50324	MILL CONTROL	PIPE TPA	38.141	516	588	34.2	0.88	-18
AE-138A	50324	MILL CONTROL	PIPE TWA	38.13	0	590	0	0	-18
AE-138A	50413	MILL CONTROL	PIPE TPA	38.13	485	589	34	0.82	-18
AE-138A	50413	MILL CONTROL	PIPE TWA	38.13	0	600	0	0	-18
AE-138A	50309	MILL CONTROL	PIPE TPA	38.12	496	578	36.3	0.86	-18
AE-138A	50309	MILL CONTROL	PIPE TWA	38.12	0	586	0	0	-18
AE-138A	50010	MILL CONTROL	PIPE TWA	38.12	0	581	0	0	-18
AE-138A	50010-F	MILL CONTROL	PIPE TPA	38.12	487	577	35	0.84	-18

Supplier - Heat
EVRaz Regina - 410356
EVRaz Regina - 410356
EVRaz Regina - 410356
EVRaz Regina - 410357
EVRaz Regina - 410357
EVRaz Regina - 410357
EVRaz Regina - 410418
EVRaz Regina - 410419
EVRaz Regina - 410419
EVRaz Regina - 529573
EVRaz Regina - 529573
EVRaz Regina - 529574
EVRaz Regina - 529574
EVRaz Regina - 529645
EVRaz Regina - 529645
EVRaz Regina - 529645

Ching	Prod ID	Test Type	Scale	MS	Location	PM	HAZ	WNZ	HAZ	PM	PMA'HAZJ
AE-138A	CL617 50i	MILL CONTROL	Vickers HV 50i OK	OK	OD	212	0	0	0	0	0
AE-138A	CL617 50i	MILL CONTROL	Vickers HV 50i OK	OK	MID_ID	220	0	0	0	0	0
AE-138A	CL617 50i	MILL CONTROL	Vickers HV 50i OK	OK	ID	234	0	0	0	0	0
AE-138A	CL629 50i	MILL CONTROL	Vickers HV 50i OK	OK	OD	212	0	0	0	0	0
AE-138A	CL629 50i	MILL CONTROL	Vickers HV 50i OK	OK	MID_ID	224	0	0	0	0	0
AE-138A	CL629 50i	MILL CONTROL	Vickers HV 50i OK	OK	ID	217	0	0	0	0	0
AE-138A	CL636 50i	MILL CONTROL	Vickers HV 50i OK	OK	OD	212	0	0	0	0	0
AE-138A	CL636 50i	MILL CONTROL	Vickers HV 50i OK	OK	MID_ID	210	0	0	0	0	0
AE-138A	CL636 50i	MILL CONTROL	Vickers HV 50i OK	OK	ID	208	0	0	0	0	0
AE-138A	CL642 50i	MILL CONTROL	Vickers HV 50i OK	OK	OD	208	0	0	0	0	0
AE-138A	CL642 50i	MILL CONTROL	Vickers HV 50i OK	OK	MID_ID	195	0	0	0	0	0
AE-138A	CL642 50i	MILL CONTROL	Vickers HV 50i OK	OK	ID	209	0	0	0	0	0
AE-138A	CL635 50i	MILL CONTROL	Vickers HV 50i OK	OK	OD	204	0	0	0	0	0
AE-138A	CL635 50i	MILL CONTROL	Vickers HV 50i OK	OK	MID_ID	198	0	0	0	0	0
AE-138A	CL635 50i	MILL CONTROL	Vickers HV 50i OK	OK	ID	205	0	0	0	0	0
AE-138A	CL815 50i	MILL CONTROL	Vickers HV 50i OK	OK	OD	214	0	0	0	0	0
AE-138A	CL815 50i	MILL CONTROL	Vickers HV 50i OK	OK	MID_ID	214	0	0	0	0	0
AE-138A	CL815 50i	MILL CONTROL	Vickers HV 50i OK	OK	ID	208	0	0	0	0	0