



JSW STEEL (USA) INC.
5200 E. McKinney Rd
Baytown, TX 77520
Phone: (281) 383-3300
Fax: (281) 303-0473

Metallurgical and Pipe Test Report

MTR No.: 28079801-8993

Sample No.: J14052205

PO Number: 28079801
Diameter (in): 42 Wall (in): 0.888
Plate Source: JSW Steel (USA) Inc., USA
Comments:

PO Date: 12/10/15 JSW #: JPM0871 Date: 12/10/15
Grade: X70M PSL2 Heat No: S18993
Slab Source: ARCELOR MITTAL, Mexico

Pipe Manufactured in USA
API 5L July 2013 45th Ed

SAWL MATERIAL
THERMO MECHANICAL
ROLLED

INSPECTION CERTIFICATE: 3.1 IN ACCORDANCE WITH EN 10204:2004.
100% Weld seam inspection by ultrasonic testing method;
Calibration standard: N5 notches inside and outside (Longitudinal and Transverse)

END X-RAY: 8" (ASTM - B PENETRAMEETER)

Customer
AMERICAN PIPING PRODUCTS, INC.
825 MARYVILLE CENTRE DRIVE, STE., 310
CHESTERFIELD, MO 63017

Ship To
AMERICAN PIPING PRODUCTS, INC.
18333 Wings Corporate Drive
CHESTERFIELD, MO 63005

Type	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Ti	Al	N	V	B	Nb	Ca	Zr	CE	PCM	V+Nb+Ti	
Min. Req.	0.00	0.00	0.000	0.000	0.20	0.000	0.000	0.000	0.000	0.000	0.020	0.0000	0.000	0.0000	0.040						
Max. Req.	0.10	1.65	0.025	0.015	0.45	0.150	0.250	0.180	0.100	0.025	0.060	0.0000	0.080	0.0005	0.060						
Ladle	0.08	1.52	0.012	0.001	0.29	0.010	0.020	0.010	0.002	0.015	0.036	0.0040	0.066	0.0000	0.049	0.0040	0.000	0.35	0.17	0.13	
Product1	0.08	1.46	0.012	0.001	0.30	0.010	0.020	0.010	0.000	0.013	0.036	0.0030	0.063	0.0002	0.047	0.0010	0.000	0.34	0.17	0.12	
Product2	0.09	1.49	0.013	0.003	0.30	0.010	0.020	0.010	0.002	0.014	0.037	0.0020	0.064	0.0003	0.052	0.0010	0.000	0.36	0.18	0.13	

Mechanical Testing

N/O/L	Specimen Type	Width/Dia (inch)	Thick (inch)	Yield (PSI)	Tensile (PSI)	Elong (%)	Y/T Ratio	Remarks
1T180	RECT	1.45	0.904	70700	89100	42	0.79	
1W	RECT	1.45	0.892		93800	0		BROKEN FROM BASE METAL

Guided Bend

N/O/L	Root	Face
2W	OK	OK

Hydrostatic Test

TEST PRESS. PSI	HOLDING TIME (sec)
2850	20

Hardness Tests

Orientation: 1W

(HV10 - Scale)

1:207	8:205	15:198
2:205	9:197	16:199
3:205	10:189	17:197
4:216	11:206	18:210
5:217	12:213	19:193
6:206	13:216	
7:199	14:199	

MACRO OK



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N/O/L	Spec Size	Temp	Acc. Criteria (Avg/Min)	Charpy Impact Test				Ft lb avg	Shear Acc. Criteria (Avg/Min)	Shear1 (%)	Shear2 (%)	Shear3 (%)	Shear Avg (%)
				Ft lb1	Ft lb2	Ft lb3	Ft lb						
3T90	10x10 mm	32 F	91/68	239	210	200	216	85/80	100	99	99	99	
3W	10x10 mm	32 F	40/30	102	100	80	94	0	-	-	-	-	
3FL	10x10 mm	32 F	40/30	128	140	134	134	0	-	-	-	-	

Pipes Certified For This HEAT

J14052507

The material has been manufactured, sampled, tested, and inspected in accordance with this spec(API5L) and has been found to meet the requirements. These pipes are also made in accordance with ISO 9001:2008/API Q1 and JSW Steel Quality requirements. I/We certify the above to be correct as obtained in the records of the company.

QA ENGINEER