



JINDAL SAW LTD.

WORK / MILL TEST CERTIFICATE

D / QLY / 24 R 00

T.C.NO: JSL / Q / 4111000742 / L DATE: 02.11.2013
 P.O.NO: P12725 DATE: 14.06.2013
 S.O.NO: 4111000742 DATE: 21.06.2013
 INV.NO: 9111003530 DATE: 02.11.2013

CUSTOMER : AMERICAN PIPING PRODUCTS, INC. PAGE 1 OF 1
 PRODUCT : COLD FINISHED & NORMALIZED CARBON STEEL SEAMLESS PIPES
 PIPE SPECIFICATION : ASTM A 333 GR. 6 EDN. 2010 / ASME SA 333 GR. 6 EDN. 2010 SEC II PART A ADD. 2011 / ASTM A 53 GR. B / ASME SA 53 GR. B /
 ASTM A 106 GR. B / C EDN. 2010 / ASME SA 106 GR. B / C EDN. 2010 SEC II PART A ADDENDA 2011 / API 5L GR. B, X42 PSL 1
 44TH EDN. 2007 / NACE MR 0175 / NACE MR 0103

PIPE DIMENSIONS		LENGTH (FEET)	END CONDITIONS	STRAIGHTNESS	HEAT NO.	QUANTITY	
1.660" OD	0.191" WT					NOS.	FEET
1.25 "	SCH 80	21.00	Plain Ends	Satisfactory	2302322	246	5165.386
TOTAL						246	5165.386

CHEMICAL COMPOSITION :

Heat No.	Analysis	% C	% Mn*	% Si	% S	% P	% Cr	% Ni	% Cu	% Mo	% V	% CE
	Reqd.	0.23	0.29 - 1.06	0.10	0.010	0.020	0.40	0.40	0.40	0.15	0.08	0.43
	Max.			Min.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
2302322	Heat	0.22	1.13	0.31	0.003	0.013	0.007	0.008	0.006	0.004	0.0010	0.408
	Product	0.20	1.12	0.29	0.004	0.011	0.006	0.007	0.004	0.003	0.0009	0.387
	Product	0.21	1.11	0.30	0.003	0.012	0.007	0.008	0.005	0.004	0.0008	0.395

* Mn. is acceptable upto 1.65 % as per Clause specified in ASTM / ASME / API 5L Specification.

MECHANICAL TESTS :

Heat No.		TENSILE TEST			OTHER TESTS				
		Y.S.	U.T.S.	% E G.L. - 50.80 mm	HARDNESS TEST	FLATTENING TEST	HYDROSTATIC TEST (100%)	Impact Test	BEND TEST
2302322	Reqd.	42100 PSI Min.	70000 PSI Min.	19.00% Min.	200 BHN Max.	As Per Spec.	3000 PSI for 5 Seconds Minimum	L - 3.33 - 7 J at (-45°C)	As Per Spec.
	Obtained	55215.82 54957.67	84591.65 82561.23	25.59 24.64	169 - 171 167 - 169	Satisfactory	Satisfactory	28, 32, 28 - Avg. 29.33 J	Satisfactory

Remarks :

- Steel Making Process : EAF-LRF-VD-CCM, Fully Killed.
- Visual Inspection : Satisfactory
- Heat Treatment : Normalized at 880°C.
- Product is free from Mercury.
- No Repairs Made By Welding.
- Eddy Current Test : Satisfactory.

I, CAS PER EN10204 - 3.1

We hereby certify that the material herein described has been manufactured, sampled, tested & inspected in accordance with above standard and specification & satisfy the requirements.

Authorized Signatory

Check For Original Water Mark