



JINDAL SAW LTD.

WORK / MILL TEST CERTIFICATE

D / Q / Y / 24 R 00

T.C.NO: JSL / Q / 4111000845 / G
 P.O.NO: P12892
 S.O.NO: 4111000845
 INV.NO: 9111003787

DATE: 21.12.2013
 DATE: 24.09.2013
 DATE: 30.09.2013
 DATE: 21.12.2013

CUSTOMER: AMERICAN PIPING PRODUCTS, INC. PAGE: 01
 PRODUCT: HOT FINISHED & NORMALIZED CARBON STEEL SEAMLESS PIPES
 PIPE SPECIFICATION: ASTM A 333 GR. 6 EDN. 2013 / ASME SA 333 GR. 6 EDN. 2013 SEC II / ASTM A 53 GR. B / ASME SA 53 GR. B / ASTM A 106 GR. B / C EDN. 2013 / ASME SA 106 GR. B / C EDN. 2013 SEC II / API 5L GR. B, X42 FSL 1 45TH EDN. 2012 / NACE MR 0175 / NACE MR 0103 / ISO 15156

PIPE DIMENSIONS	LENGTH (FEET)	END CONDITIONS	STRAIGHTNESS	HEAT NO.	QUANTITY		
					NOS.	FEET	
2.375" OD	0.218" WT	40 - 42	Bevelled Ends	Satisfactory	3303885	84	3462.895
TOTAL						84	3462.895

CHEMICAL COMPOSITION:

Heat No.	Analysis	% C	% Mn*	% Si	% S	% P	% Cr	% Ni	% Cu	% Mo	% V	% Nb	% Ti	% CE
		Reqd.	Min.	0.29 - 1.06	Min.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
3303885	Heat	0.21	1.10	0.30	0.005	0.015	0.007	0.009	0.005	0.003	0.0010	0.0070	0.004	0.393
	Product	0.19	1.11	0.28	0.004	0.013	0.005	0.007	0.005	0.002	0.0003	0.0069	0.003	0.375
	Product	0.20	1.10	0.29	0.005	0.014	0.005	0.008	0.005	0.003	0.0009	0.0068	0.004	0.383

* Mn. is acceptable upto 1.65 % at 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	
	Reqd.	42100 PSI Min.	70000 PSI Min.	21.50% Min.	200 BHN Max.	As Per Spec.	3000 PSI for 5 Seconds Minimum	1 - 3.33 - 7 J at (-45°C)
3303885	Obtained	54086.04	78217.58	31.10	153 - 154	Satisfactory	Satisfactory	28, 32, 32 - Avg. 30.67 J

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.
- NDT Test : Satisfactory.

J.C.ASHERENIORM-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