

**JINDAL SAW LTD.****WORK / MILL TEST CERTIFICATE**

D / QLY / 24 R 00

T.C.NO: JSL / Q / 4111001393 / E

DATE: 12.12.2014

P.O.NO: P13995

DATE: 03.12.2014

S.O.NO: 4111001393

DATE: 04.12.2014

INV.NO: 9111009964

DATE: 12.12.2014

**CUSTOMER** : AMERICAN PIPING PRODUCTS, INC.  
**PRODUCT** : HOT FINISHED CARBON STEEL SEAMLESS PIPES  
**PIPE SPECIFICATION** : ASTM A 106 GR. B & C EDN 2014 / ASME SA 106 GR. B & C EDN 2013 SEC II / ASTM A 53 GR. B EDN. 2014 / ASME SA 53 GR. B EDN. 2013 SEC II / API 5L GR. B / X 42 PSL 1 45TH EDN. 2012 / NACE MR 0175 / NACE MR 0103 / ISO 15156

PIPE DIMENSIONS		LENGTH (FEET)	END CONDITIONS	STRAIGHTNESS	HEAT NO.	QUANTITY	
OD	WT					NOS.	FEET
4.500*	0.438*	40 - 42	Bevelled Ends	Satisfactory	3405441	39	1626.247
4	SCH 120						
<b>TOTAL</b>						<b>39</b>	<b>1626.247</b>

**CHEMICAL COMPOSITION :**

Heat No.	Analysis	% C	% Mn*	% Si	% S	% P	% Cr	% Ni	% Cu	% Mo	% V	% Nb	% Ti	% CE
	Reqd.	0.23 Max.	0.29 - 1.06	0.10 Min.	0.010 Max.	0.020 Max.	0.30 Max.	0.20 Max.	0.20 Max.	0.15 Max.	0.06 Max.	0.04 Max.	0.04 Max.	0.43 Max.
3405441	Heat	0.20	1.15	0.26	0.002	0.013	0.013	0.008	0.005	0.003	0.0060	0.0030	0.003	0.392
	Product	0.18	1.14	0.25	0.003	0.011	0.012	0.007	0.004	0.003	0.0058	0.0028	0.003	0.370
	Product	0.19	1.13	0.26	0.002	0.012	0.013	0.008	0.005	0.002	0.0059	0.0029	0.002	0.378

\* 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%)
	Reqd.	42100 PSI Min.	70000 PSI Min.	30.00% Min.	200 BHN Max.	As Per Spec.	3000 PSI for 5 Seconds Minimum
3405441	Obtained	51137.58	77509.83	38.00	151 - 152	Satisfactory	Satisfactory

**Remarks :**

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

*T.C.A.S PER EN10204 - 3.1*

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

Authorized Signatory

Check For Original Water Mark