MAHARASHTRA SEAMLESS LIMITED

WORKS (MILL) TEST CERTIFICATE

EN 10204 : 3.1

QCF 20A

Test Certificate No: MSL-6/QC/0001G/2022

Date: 18 June 2022

Customer :

P.O.No : 42456 Dtd. 04-03-2022

DC/Loading slip no. : 66210080 (Item No. 08)

Specification : ASTM A106 GR.B / API 5L GR.B / X42 PSL-1

Process/Type of Pipe : Hot Finished seamless carbon steel pipes

OD X WT : 60.30 mm X 3.91 mm (2.375" X 0.154")

Length Range : 20 - 20 Feet

Total Length : 24440 Feet (1222 Pcs)

Material Code : .....

A) CHEMICAL COMPOSITION (%) - Reference standard ASTM A-751 & ASTM E-415

Sl No	Heat No	Test Unit	Analysis	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V	Nb	Ti	Nb+V	Nb+V+Ti	B	Ca	Al	N	Mn/C	Cu+Ni	CE Pcm	CE IIW	D) Special / supplementary Reqts.
Req.	Min.	%			0.290	0.100												0.001								
	Max.	%		0.260	1.060	0.500	0.030	0.010	0.400	0.150	0.400	0.400	0.080	0.110	0.110											
1	AB691		II	0.170	1.040	0.230	0.020	0.005	0.011	0.0020	0.005	0.005	0.0020	0.0019	0.0017	0.0039	0.0056	0.0003		0.037		6.118	0.010		0.347	
			P1	0.180	1.030	0.220	0.019	0.005	0.012	0.0030	0.006	0.006	0.0018	0.0020	0.0017	0.0038	0.0055	0.0004		0.038		5.722	0.012		0.356	
			P2	0.160	1.050	0.230	0.020	0.004	0.011	0.0020	0.004	0.004	0.0021	0.0019	0.0018	0.0040	0.0058	0.0003		0.036		6.563	0.008		0.339	

C) MECHANICAL PROPERTIES

Sl No.	Heat No.	Test Unit	Quantity Pcs	Quantity Feet	Name of the Steel Maker and Address/Supplier Heat No.		Tensile Testing (Loc: Pipe Body) Orientn.	YST (Mpa)	UTS (Mpa)	YST/UTS Ratio	El (%)
							G.L.=50 mm Nom. Width= 19.05 mm				
Req.	Min.							290	415		30
	Max.										
1	AB691		1222	24440	JSPL, Chhattisgarh/ 3215443	L		446.39	536.74	0.83	38.02
								440.25	529.68	0.83	37.48
								443.26	533.64	0.83	37.65

Reference standard ASTM 370 & E-8

Reference standard ASTM E-23 — CVN Impact Test (Pipe Body)

Heat No	Absorbed Energy (J) Size & Orientation: Temperature°C: 1	2	3	Avg	% Shear Area 1	2	3	Avg
AB691								

Reference standard ASTM E-18 — Through Wall Hardness (Pipe Body) — Hardness (HRB) — Transverse Direction

Heat No	OD 1	2	3	4	Avg.	Mid 1	2	3	4	Avg.	ID 1	2	3	4	Avg.
AB691	74	75	75	75	75										

Raw Material	Fully killed & Fine Grain Practice	Dimension	Good	NDE Method	Ultrasonic Testing - GOOD
Steel Route	EAF-LRF-VD-CCM	Weight	Good	Location & Orientation	Longitudinal & Transverse Notch at OD
Hot Rolling Temp. °C	880-940	End Finish	Bevel	Type & Size of Ref.Indicator	10% Notch X 50mm Length X 1.0mm Width
Heat Treatment	NA	Straightness	OK	Residual Magnetism	10 Gauss Max
Delivery Condition	R	Visual	OK	Field Weldability	NA
Norm./Temp. Temp(°C)	NA	Bend Test	OK	Flattening Test	NA
HIC	NA	SSC	NA	Micro Structure/Grain Size	Reveals fine Ferrite and pearlite /ASTM No. 7-8
Inclusion Rating	NA	Hot Straight. Temp.°C	NA	Colour Coding	NA

End Area Inspection	OK
Hydro Test Pressure	2970 Psi
Holding Time	5 Sec.
End Protection	Plastic end cap
External Coating	Black Varnished
Flaring Test	NA
CTOD	NA

D) Marking/Stenciling : MAHA ((M) MSL API 5L X-42 PSL-1 / ASTM A106 GR.B / NACE MR0175/MR0103(% S HARDNESS CONTROLLED) BE SMLS SRL OD 2.375 INCH X WT 0.154 INCH HFS HEATNO.... + 2970 PSI + LENGTH...IN FEET + MADE IN INDIA + WEIGHT - 3.66 LB/FT + PO/SHIPPING MARK : "PO # 25.436" + B.NO....

E) Remarks : 1) Matl Confirms to API 5L GR.BPSL-1 / X42 (EDN.2018)/ ASTM/ASME A106 B (EDN.2019a)/SA106 B (EDN.2021). 2) "Country of melt and pour : INDIA". 3) REVISED TC Rev.01 Dtd. 21-09-2022.

Legends : T-Transverse, L-Longitudinal, YST-Yield Strength, UTS-Ultimate Tensile Strength, EL-Elongation, GL-Gauge Length, H-Heat , P1-Product 1, P2-Product 2, R-As Rolled, Q-Quenched & Tempered, N-Normalised, N&T-Normalised & Tempered, PE-Plain-end, BC-Buttress Thread Casing, LC-Long Round Thread Casing, SC-Short Round Thread Casing, NU-Non-upset tubing, EU-External Upset tubing, NA- Not Applicable

Maharashtra Seamless Ltd. Vile Bhagad Mangaon

Doc. No. Date: 31.01.2020

The material has been manufatured, sampled,tested and inspected and has been found conforming to the specification and PO

FOR MAHARASHTRA SEAMLESS LTD

SOURABH KATIYAR - Engineer

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Warning : Modification or unauthorized use of this certification is strictly prohibited. Violation calls for criminal prosecution. For authenticity verification, you can contact us at : mslic@mahaseam.com.