# MAHARASHTRA SEAMLESS LIMITED

**WORKS (MILL) TEST CERTIFICATE**

**EN 10204 : 3.1**

**QCF 20A**

Customer :

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

OC/Loading slip no. : 66210080 ( Item No. 07 )

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 : 48.30 mm X 5.08 mm ( 1.900" X 0.200" )

Length Range : 20 - 20 Feet

Total Length : 1740 Feet ( 87 Pcs )

Material Code : .....

Test Certificate No: MSL-6/QC/00012ZZ/2022

Date: 13-Sep-22



**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 | B) Special / supplementary Reqts. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Req. | Min. | % | | | 0. 29 | 0.100 | | | | | | | | | | | | | | | | | | | | |
| | 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 | | | 0.001 | | | | | | | | |
| 1 | AB304 | | H | 0.170 | 1.030 | 0.250 | 0.010 | 0.004 | 0.009 | 0.0020 | 0.008 | 0.006 | 0.0020 | 0.0011 | 0.0020 | 0.0031 | 0.0051 | 0.0002 | | 0.033 | | 6.059 | 0.014 | | 0.345 | |
| | | | P1 | 0.170 | 1.030 | 0.240 | 0.010 | 0.003 | 0.010 | 0.0010 | 0.007 | 0.007 | 0.0019 | 0.0012 | 0.0021 | 0.0031 | 0.0052 | 0.0003 | | 0.034 | | 6.059 | 0.014 | | 0.345 | |
| | | | P2 | 0.180 | 1.020 | 0.260 | 0.011 | 0.005 | 0.009 | 0.0030 | 0.009 | 0.005 | 0.0021 | 0.0011 | 0.0022 | 0.0032 | 0.0054 | 0.0002 | | 0.032 | | 5.667 | 0.014 | | 0.354 | |

**C) MECHANICAL PROPERTIES**

| Sl No. | Heat No. | Test Unit | Quantity Pcs | Quantity Feet | Name of the Steel Maker and Address/Supplier Heat No. | Reference standard ASTM 370 & E-8 | | | | Reference standard ASTM E-23 | | | | | | | | Reference standard ASTM E-18 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tensile Testing [ Loc: Pipe Body) | | | | CVN Impact Test ( Pipe Body) | | | | | | | | Through Wall Hardness (Pipe Body) | | | | | | | | | | | | | | | | | |
| | | | | | | Orienta. | YST (Mpa) | UTS (Mpa) | YST/ UTS Ratio | El (%) | Absorbed Energy (J) | | | | % Shear Area | | | | Hardness (HRB) | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | Size & Orientation: | | | | | | | | Transverse Direction | | | | | | | | | | | | | | | | | |
| | | | | | | G.L.=50 mm Nom. Width= 19.05 mm | | | | | Temperature°C : | | | | | | | | OD | | | | | Mid | | | | | ID | | | | | | | |
| | | | | | | | | | | | 1 | 2 | 3 | Avg | 1 | 2 | 3 | Avg | 1 | 2 | 3 | 4 | Avg | 1 | 2 | 3 | 4 | Avg | 1 | 2 | 3 | 4 | Avg | | |
| Req. | Min. | | | | | | 290 | 415 | | 30 | | | | | | | | | | | | | | | | | | | | | | | | |
| | Max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | AB304 | | 87 | 1740 | JSPL, Chhattisgarh/ 3120018 | L | 402.02 | 521.66 | 0.77 | 34.68 | | | | | | | | | 77 | 78 | 78 | 78 | 78 | | | | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Raw Material | Fully killed & Fine Grain Practice | Dimension | Good | NDE Method | Ultrasonic Testing - GOOD | End Area inspection | OK |
| Steel Route | EAF-LRF-VD-CCM | Weight | Good | Location & Orientation | Longitudinal & Transverse Notch at OD | Hydro Test Pressure | 2970 PSI |
| Hot Rolling Temp. °C | 880-940 | End Finish | SQUARE CUT | Type & Size of Ref.indicator | 10% Notch X 50mm Length X 1.0mm Width | Holding Time | 5 Sec. |
| Heat Treatment | NA | Straightness | OK | Residual Magnetism | 10 Gauss Max | End Protection | Plastic end cap |
| Delivery Condition | R | Visual | OK | Field Weldability | NA | External Coating | Black Varnished |
| Norm./Temp. Temp(°C) | NA | Bend Test | OK | Flattening Test | NA | Flaring Test | NA |
| HIC | NA | SSC | NA | Micro Structure/Grain Size | Reveals fine Ferrite and pearlite /ASTM No. 7-8 | CTOD | NA |
| Inclusion Rating | NA | Hot Straight. Temp.°C | NA | Colour Coding | NA | | |

**D) Marking/Stencilling :** MAHA ((M) MSL API 5L X-42 PSL-1 / ASTM A106 GR.B / NACE MR0175/ MR0103(% S HARDNESS CONTROLLED) BE SMLS SRL OD 1.900 INCH X WT 0.200 INCH HFS HEATNO.... + 2970 PSI + LENGTH...IN FEET + MADE IN INDIA + WEIGHT - 3.63 LB/FT + PO/SHIPPING MARK : "PO # 25.436" + S.NO....

**E) Remarks :** 1) Matl Confirms to API 5L GR.B PSL-1 / X42 (EDN. 2018)/ ASTM/ASME A106 B (EDN. 2019a)/ SA106 B (EDN. 2021). 2) "Country of melt and pour : INDIA".

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 Maryoon SEAL

Rev. 01 Date: 21.01.2020

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

FOR MAHARASHTRA SEAMLESS LTD

DEBTANU PAL - Asst. 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.