



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2515 Product Size: NPS 36 STD Production Date: Sep 08, 2015
 Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 001934
 Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade X42 PSL1, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012
 Product Markings: <API & L/C No.> API SPEC 5L NPS 36 STD 0.375 INCHWT GR X42 PSL1 SMLS 2015/09 NDE 790PSI
 HEAT BSM-2515 (PIPE # LENGTH MASS) 142.7lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

| Product: Details | | | | Non-Destructive Testing | | | | | | | | | | |
|------------------|-----------|------------------------|--------|-------------------------|------------|-------------------|-----------------|--------------|------|-------|--------------|--------------|------------------------|---------------|
| Heat | Test Type | Product Size | Pieces | Length | Mass lb/ft | Geiger μ R/hr | Res. Mag. Gauss | Visual Insp. | OD | UT WT | UT ASTM E213 | ET ASTM E309 | HydroTest 790 PSI/ 5 s | End Condition |
| BSM-2515 | Heat | NPS 36 STD 0.375in. WT | 6 | DRL | 142.7 | <5 | <10 | Pass | Pass | Pass | Pass | Pass | Pass | Plain End |

| Heat | Steelmaking Method | Test Type | Chemical Analysis (wt%) | | | | | | | | | | | | | | | |
|----------|---|-----------|-------------------------|------|-------|-------|-------|------|------|------|------|-------|-------|-------|--------|---------|---------|------|
| | | | C | Mn | P | S | Si | Cr | Cu | Mo | Ni | V | Ti | Nb | B | CE(IIW) | CE(CSA) | |
| | | | Heat | 0.19 | 1.26 | 0.011 | 0.001 | 0.29 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 | 0.050 | 0.001 | 0.001 | 0.0005 | 0.42 |
| BSM-2515 | Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed | Heat | 0.17 | 1.24 | 0.013 | 0.004 | 0.29 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 | 0.054 | 0.003 | 0.001 | 0.0001 | 0.40 | 0.40 |
| | | Product | 0.17 | 1.22 | 0.012 | 0.005 | 0.35 | 0.02 | 0.01 | 0.01 | 0.01 | 0.052 | 0.003 | 0.001 | 0.0004 | 0.39 | 0.39 | |

| Mechanical Properties | | | | | | | | | |
|-----------------------|-----------|--------------------|----------|-----------------|----------------------------|-------------------|------------------|----------------|------------------|
| Heat | Test Type | Microstructure | Hardness | Flattening Test | Tension Test 2 in. GL | Yield (RT0.5) psi | Tensile (Rm) psi | V/T (Rt0.5/Rm) | Elongation (A) % |
| BSM-2515 | Heat | Ferrite & Pearlite | 79 HRBW | Pass | Longitudinal; 1.5 in. x WT | 51,000 | 73,500 | 0.69 | 47 |

| Heat | Test Standard | Impact Test Sample Details | Temp °C | Impact Energy | | | % Shear | | | Lateral Expansion | | | | |
|----------|---------------|----------------------------|---------|---------------|---|---|---------|---|---|-------------------|----|----|----|-----|
| | | | | J | J | J | % | % | % | mm | mm | mm | mm | AVG |
| BSM-2515 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

- Additional Details:
- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API 5L-45th Ed., ASTM/ASME A106-2014/SA106-2013, A53-2012/SA53-2013, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 and API Q1.
 - ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2012 Section 2.1
 - ✓ No weld repairs have been performed on this product.
 - ✓ This product has not come into contact with mercury during the Bri-Steel Manufacturing processes.
 - ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by: *T. Lam* *Sept 10/2015*

Tonya Lam, C.E.T.
 Assistant QA Manager