



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1627 Product Size: 18XS Production Date: Feb 11, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000863
Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 PSL1, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings



<API> 5L-0898 API SPEC 5L NPS 18 XS 0.500 INCHWT GR B/X42 PSL1 SMLS 2014/02 NDE 1990PSI
HEAT BSM-1627 (PIPE # LENGTH MASS) 93.45lb/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 | HydroTest 1990 PSI/ 5 s | End Condition |
| BSM-1627 | Heat | NPS 18 XS 0.500in. WT | 5 | DRL | 93.45 | <5 | <10 | Pass | Pass | Pass | Pass | Pass | Pass | 34° Bevel |

| Chemical Analysis (wt%) | | | | | | | | | | | | | | |
|-------------------------|---|-----------|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|
| Heat | Steelmaking Method | Test Type | C | Mn | P | S | Si | Cr | Cu | Mo | Ni | V | Ti | Nb |
| BSM-1627 | Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed | Heat | 0.20 | 0.85 | 0.020 | 0.006 | 0.29 | 0.07 | 0.01 | | 0.04 | | | |
| | | Product | 0.23 | 0.92 | 0.024 | 0.008 | 0.30 | 0.07 | 0.01 | 0.00 | 0.04 | 0.003 | 0.003 | 0.001 |

| Mechanical Properties | | | | | | | | | |
|-----------------------|-----------|--------------------|----------|-----------------|----------------------------|-------------------|------------------|----------------|------------------|
| Heat | Test Type | Microstructure | Hardness | Flattening Test | Tension Test 50mm GL | Yield (Rt0.5) psi | Tensile (Rm) psi | Y/T (Rt0.5/Rm) | Elongation (A) % |
| BSM-1627 | Heat | Ferrite & Pearlite | 75 HRBW | Pass | Longitudinal; 38.1 mm x WT | 44,200 | 74,000 | 0.60 | 46 |

| Heat | Test Standard | Impact Test Sample Details | Temp °C | Impact Energy J | | | | % Shear | | | | Lateral Expansion mm | | | |
|----------|---------------|----------------------------|---------|-----------------|---|---|---|---------|---|---|---|----------------------|---|---|---|
| BSM-1627 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-45th Ed., ASTM/ASME A/SA106-2013 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2010 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:

Paul Sowden
2014 FEB 13

Paul Sowden, T.T.
Assistant QA Manager