




Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2126 Production Date: Nov 13, 2014
Production Method: Hot Expansion Product Heat Treatment: As Rolled Certificate No.: MTR- 001456
Product Standards: ASME B36.10M-2015, API 5L-45th Ed. GradeB/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 24 STD 0.375 INCHWT GRB/X42 PSL1 SMLS 2014/11 NDE 1180PSI
HEAT BSM-2126 (PIPE # LENGTH MASS) 94.62lb/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 | UT | ET | HydroTest 1180PSI/ 5 s | End Condition |
| BSM-2126 | Heat | NPS 24 STD 0.375in. WT | 16 | DRL | 94.62 | <5 | <10 | Pass | Pass | Pass | Pass | - | Pass | 33° Bevel |

| Chemical Analysis (wt%) | | | | | | | | | | | | | | | | | |
|-------------------------|---|-----------|------|------|-------|-------|-------|------|------|------|------|-------|-------|-------|--------|---------|---------|
| Heat | Steelmaking Method | Test Type | C | Mn | P | S | Si | Cr | Cu | Mo | Ni | V | Ti | Nb | B | CE(IIW) | CE(CSA) |
| | | | Heat | 0.19 | 0.97 | 0.011 | 0.006 | 0.20 | 0.08 | 0.03 | 0.01 | 0.04 | 0.001 | - | - | - | 0.37 |
| | | Product | 0.23 | 0.97 | 0.010 | 0.006 | 0.21 | 0.07 | 0.03 | 0.02 | 0.03 | 0.003 | 0.002 | 0.001 | 0.0006 | 0.41 | 0.42 |
| | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| BSM-2126 | Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed | | | | | | | | | | | | | | | | |

| Mechanical Properties | | | | | | | | | | Yield (RT0.5) psi | | | Tensile (Rm) psi | | Y/T (RT0.5/Rm) | | Elongation (A) % | |
|-----------------------|-----------|--------------------|----------|-----------------|-----------------------|--|----------------------------|--|-------------------|-------------------|------------------|--|------------------|--|------------------|--|------------------|--|
| Heat | Test Type | Microstructure | Hardness | Flattening Test | Tension Test 2 in. GL | | Longitudinal; 1.5 in. x WT | | Yield (RT0.5) psi | | Tensile (Rm) psi | | Y/T (RT0.5/Rm) | | Elongation (A) % | | | |
| BSM-2126 | Heat | Ferrite & Pearlite | 78 HRBW | Pass | | | | | 43,200 | | 74,000 | | 0.58 | | 38 | | | |

| Heat | Test Standard | Impact Test Sample Details | Temp °C | Impact Energy | | | | | % Shear | | | | | Lateral Expansion | | | |
|----------|---------------|----------------------------|---------|---------------|---|---|-----|---|---------|---|-----|----|----|-------------------|----|----|-----|
| | | | | J | J | J | AVG | % | % | % | AVG | mm | mm | mm | mm | mm | AVG |
| BSM-2126 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with GRX42 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, API Q1, and PED 97/23/EC.


✓ 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:


2016 Feb 8

Kenton Dechant, P.Eng.
Manager of Quality and R&D