



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1281 Product Size: 36 X 0.425 Production Date: Oct 01, 2013
 Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001346
 Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B/C A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010
 Product Markings: NPS 36 X 0.425 INCHWT SMLS 2013/10 NDE
 HEAT BSM-1281 (PIPE # LENGTH MASS) 161.5lb/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 | Gelger HR/hr | Res. Mag. Gauss | Visual Insp. | OD | UT WT | UT ASTM E213 | ET ASTM | HydroTest | End Condition | |
| BSM-1281 | Heat | NPS 36 X 0.425in. WT | 5 | DRL | 161.5 | <5 | <10 | Pass | Pass | Pass | Pass | Pass | - | Plain End | |

| 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) |
| | | | | | | | | | | | | | | | | | |
| BSM-1281 | Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed | Heat | 0.20 | 0.86 | 0.009 | 0.019 | 0.02 | 0.03 | 0.01 | 0.01 | 0.04 | 0.002 | 0.001 | 0.001 | 0.0002 | - | - |
| | | Product | 0.22 | 0.93 | 0.021 | 0.014 | 0.23 | 0.03 | 0.08 | 0.01 | 0.03 | 0.003 | 0.001 | 0.001 | 0.0001 | 0.39 | 0.39 |

| 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-1281 | Heat | Ferrite & Pearlite | 77 HRBW | Pass | Longitudinal; 38.1 mm x WT | 48,600 | 75,000 | 0.65 | 43 |

| Heat | Test Standard | Impact Test Sample Details | Temp °C | Impact Energy | | | % Shear | | | Lateral Expansion | | | |
|----------|---------------|----------------------------|---------|---------------|---|---|---------|---|---|-------------------|----|----|-----|
| | | | | J | J | J | % | % | % | mm | mm | mm | AVG |
| BSM-1281 | - | - | - | - | - | - | - | - | - | - | - | - | - |

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SA106-2013 Grade B/C A/SA53-2012, 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-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:

T. Lam Sept 19 / 2014

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