



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2907 Production Date: Oct 04, 2016
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 002992
 Product Standards: ASME B36.10M-2015, API SL-45th Ed. Grade X42 PSL1, ASTM/ASME A106-2014/SA106-2015 Grade B/C NDE, A53-2012/SA53-2015 Grade B Type S,
 Product Markings
 <API & L/C No. > API SPEC 5L NPS 20 STD 0.375 INCHWT GR X42 PSL1 SMLS 2016/10 NDE 1420PSI
 HEAT BSM-2907 (PIPE # LENGTH MASS) 78.6lb/ft ASTM/ASME A/SA106 GR B/C/SA53 GR B MADE IN CANADA



Product: Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	Hydrotest	End Condition
BSM-2907	Heat	NPS 20 STD 0.375in. WT	6	DRL	78.6	<5	~27	Pass	Pass	Pass	N12.5 Pass	-	Pass	30° Bevel

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)																
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)	
			0.21	0.93	0.009	0.004	0.23	0.04	0.01	0.01	0.01	0.01	0.003	0.001	0.001	0.0001	0.38	-	0.38
BSM-2907	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed (at TPCO China)	Heat	0.23 <td>0.94 <td>0.009 <td>0.004 <td>0.24 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td></td></td></td></td>	0.94 <td>0.009 <td>0.004 <td>0.24 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td></td></td></td>	0.009 <td>0.004 <td>0.24 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td></td></td>	0.004 <td>0.24 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td></td>	0.24 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td>	0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td>	0.01 <td>0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td>	0.01 <td>0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td>	0.01 <td>0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td>	0.01 <td>0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td>	0.004 <td>0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td>	0.002 <td>0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td>	0.001 <td>0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td></td>	0.0002 <td>0.40 <td>-</td> <td>0.41</td> </td>	0.40 <td>-</td> <td>0.41</td>	-	0.41
		Product	0.23 <td>0.93 <td>0.011 <td>0.005 <td>0.25 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td></td></td></td>	0.93 <td>0.011 <td>0.005 <td>0.25 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td></td></td>	0.011 <td>0.005 <td>0.25 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td></td>	0.005 <td>0.25 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td></td>	0.25 <td>0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td></td>	0.05 <td>0.01 <td>0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td></td>	0.01 <td>0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td></td>	0.01 <td>0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td></td>	0.01 <td>0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td></td>	0.003 <td>0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td></td>	0.002 <td>0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td></td>	0.001 <td>0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td></td>	0.0001 <td>0.40 <td>-</td> <td>0.41</td> </td>	0.40 <td>-</td> <td>0.41</td>	-	0.41	

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-2907	Heat	Ferrite & Pearlite	0	Pass	Longitudinal; 1.5 in. x WT	46 600	75 500	0.62	44

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-2907	-	-	-	-	(3 Tests) AVG	(3 Tests) AVG	-	(3 Tests) AVG

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API SL-45th Ed. X42 ASTM/ASME A106-2014/SA106-2015, A53-2012/SA53-2015, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 (APIQR-1584), API Q1, and PED 2014/68/EU.

Mill Test Certificate approved by:

Tony Lam Oct 10 2016

- ✓ 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.

Tonya Lam, P. Tech (Eng.)
 Assistant QA Manager