



**TO OUR VALUED CUSTOMERS**

**MATERIAL CERTIFICATE**

J.B. Smith Mfg. Co. certifies that the material used to manufacture line pipe sizes of swage nipples and bull plugs has been processed and heat treated to comply with all requirements of ASTM A234-04 WPB and the chemical and physical properties of the raw material fall within the ranges listed below. J.B. Smith Mfg. also certifies that this product meets the requirements of NACE MR0175-2001 revision and MSS-SP95 specifications.

<b>A234-04 WPB Chemical Composition Requirements</b>									
<b>C</b>	<b>MN</b>	<b>P</b>	<b>S</b>	<b>SI</b>	<b>CR</b>	<b>MO</b>	<b>NI</b>	<b>CU</b>	<b>V</b>
<b>.30</b>	<b>.29-</b>	<b>.05</b>	<b>.058</b>	<b>.10</b>	<b>.40</b>	<b>.15</b>	<b>.40</b>	<b>.40</b>	<b>.08</b>
<b>Max</b>	<b>1.06</b>	<b>Max</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>	<b>Max</b>	<b>Max</b>	<b>Max</b>	<b>Max</b>

1. Fittings made from bar or plate may have 0.35 Max Carbon
2. Fittings made from forgings may have a 0.35 Max Carbon and 0.35 Max Silicon.
3. For each reduction of 0.01% below the specified carbon maximum, an increase of 0.06% manganese above the specified maximum will be permitted, up to a maximum of 1.35%.
4. The Sum of Copper, Nickel, chromium, and Molybdenum shall not exceed 1.00%.
5. The Sum of Chromium and Molybdenum shall not exceed .32%.
6. The carbon equivalent (CE) does not exceed the level of 0.50 max. carbon equivalent , as per ASTM A 234-04 WPB.

<b>Marking</b>	<b>A234-04 WPB Physical Requirements</b>		
<b>Symbol</b>	<b>TENSILE</b>	<b>YIELD</b>	<b>HBN</b>
<b>WPB</b>	<b>60,000 – 85000</b>	<b>35,000</b>	<b>197</b>
	<b>PSI</b>	<b>PSI Min</b>	<b>Max</b>

1. ELONGATION: As stated in A234-04 WPB, Table 2.

All fittings are manufactured in the U.S.A.