



tube forgings
OF AMERICA, INC.

5200 NW Front Avenue
Portland, OR 97210



Certificate #: 30248

TFA Heat:	S430	Mill:	SUMITOMO
TFA Grade:	WPB	Mill Heat:	J6K3269
Product:	18" STD 45 LR ELBOW		

Chemical Properties

C: 0.2	CU: 0.02
MN: 0.93	V: 0
P: 0.015	CB: 0
S: 0.006	B: 0
SI: 0.18	TI: 0.001
MO: 0	AL: 0.035
CR: 0.05	
NI: 0.02	CE: 0.3677

Physical Properties

Yield PSI:	43800
Tensile PSI:	70500
Test Bar Type:	STRIP
Tensile Orientation:	LONG
% Elongation in 2":	46
Brinnell Hardness:	126

Coupon Size:

Charpy V Notch Text @: °

Charpy Orientation:

% Shear

1:	2:	3:	Avg:
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Joules

1:	2:	3:	Avg:
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Lateral Expansion (Mils)

1:	2:	3:
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1. THESE FITTINGS WERE HOT FORMED BETWEEN 1150F AND 1800F AND AIR COOLED. 2. THE HARDNESS DOES NOT EXCEED 197 BHN PART TO PART. 3. STARTING MATERIAL IS SEAMLESS PIPE WHICH MEETS THE MELTING, CHEMICAL AND PHYSICAL REQUIREMENTS OF ASTM A 106 GR B. 4. THIS PRODUCT IS SEAMLESS.

THE MATERIAL IS MANUFACTURED TO ASTM A 234 GR WPB REV: 05. ALSO PER ASME SEC II SA 234 GR WPB, 2004 EDITION THRU ALL ADDENDAS AT TIME OF ORDER. 2. DESIGN AND DIMENSIONS TO ASME B16.9-2003 OR MSS-SP-75-04 AS APPLICABLE BY DESIGN. 3. PER NACE MR-01-75, 2003 REVISION. OUR QUALITY SYSTEM HAS BEEN REGISTERED BY (ABS) TO (ISO-9001, REV: 2000). CERTIFICATE #: 30248. OUR ORGANIZATIONAL STRUCTURE AND CERTIFICATION COMPLIES WITH (EN 10204-3.1.B). OUR FITTINGS SATISFY THE MATERIAL REQUIREMENT OF (PED 97/23-EC ANNEX 1-4.3).

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