

**CERTIFIED MATERIAL TEST REPORT**

**Tube Forgings of America, Inc.**  
 5200 NW Front Avenue  
 Portland, OR 97210  
 ISO 9001-2000 Certified  
 9/8/2005

**Sold To:** PLESA ANÁHUAC y CÍAS, S.A. de C.V.  
 AV. VALLE DE LAS ALAMEDAS NO. 66-A  
 TULTITLAN, EDO., MEX. C. P.54940

**TFA Sales Order :** 133086-1  
**Customer ID:** 38350  
**Customer PO Reference:** 103  
**Attention To:**

**Ship To:** SPECIALISTS IN TRANSIT FORWARDING  
 1801 MARKLEY MODERN INDUSTRIAL P/ A  
 LAREDO, TX 78041

**TFA Heat Code:** 465NO  
**Grade:** WPB  
**TFA Part ID:** C24050  
**Description:** 8 X 4 STD ECC  
**Quantity:**  
**Mill:** SIDERCA  
**Mill Heat :** 62972  
**Process:** WPB-HMIW  
**Customer Part ID:**

**Test Bar Type:** RECTANGULAR  
**Yield (PSI):** 45800  
**Tensile (PSI):** 68400  
**% Elong In 2"** 44.30  
**B.H.N. :** 176  
**Tensile Orientation:** TRANSVERSE

C	MN	P	S	SI	MO	CR	NI	CU	V	CB	B	TI	AL	C.E.
0.130	1.120	0.013	0.001	0.240	0.020	0.050	0.033	0.076	0.001	0.001	0.0001	0.0030		0.34

Coupon Size:	<u>Ft. Lbs</u>	<u>% Shear</u>	<u>Lateral Expansion (Mils)</u>
Charpy V notch test at degrees F:	1:	1:	1:
Charpy Orientation:	2:	2:	2:
	3:	3:	3:
	Avg:	Avg:	

1.THESE FITTINGS WERE HOT FORMED BETWEEN 1150FAND1800F AND AIR COOLED. 2.THE HARDNESS DOES NOT EXCEED 197 BHN PART TO PART. 3. STARTING MATERIAL IS ASTM A 106 GRB SEAMLESS PIPE. 4. THIS PRODUCT IS SEAMLESS. THIS PRODUCT WAS MANUFACTURED BY (MILLS IRON WORKS INC) IN ACCORDANCE WITH THE QUALITY PROGRAM REQUIREMENTS OF (TUBE FORGINGS OF AMERICA INC).

THE MATERIAL IS MANUFACTURED TO ASTM A 234 GR WPB REV: 03. ,ALSO PER ASME SEC II SA 234 GR WPB,2001 EDITION THRU ALL ADDENDAS AT TIME OF ORDER. 2. DESIGN AND DIMENSIONS TO ASME B16.9-2003 OR MSS-SP-75-98 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).



*John Peachey*  
 John Peachey, Mgr. Quality Assurance