CERTIFIED MATERIAL TEST REPORT

Tube Forgings of America, Inc. 5200 NW Front Avenue Portland, OR 97210 ISO 9001-2000 Certified

8/30/2005

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:

Customer ID:

38350

Customer PO Reference:

Attention To:

TFA Heat Code:

483NO

WPB C24059

TFA Part ID:

Grade:

Description:

Quantity:

Mill:

Mill Heat:

18479 Process:

12 X 8 STD ECC 1

TAMSA

WPB-HMIW

Test Bar Type: Yield (PSI):

Tensile (PSI): % Elong In 2"

B.H.N.: Tensile Orientation: RECTANGULAR

58019

77691 42.00

LONG

Customer Part ID:

С	MN	Р	S	SI	МО	CR	NI	CU	V	СВ	В	TI	AL	C.E.
0.160	1.080	0.010	0.016	0.250	0.031	0.050	0.030	0.056	0.036	0.010	0.0000	0.0100		0.37

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

Heat Code: 483NO Grade WPB

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Certificate: 30248



John Peachey, Mgr. Quality Assurance