CERTIFIED MATERIAL TEST REPORT

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

8/18/2005

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

Customer ID:
Customer PO Reference:

38350 103

Attention To:

Ship To:

SPECIALISTS IN TRANSIT FORWARDING

1801 MARKLEY MODERN INDUSTRIAL PA

LAREDO, TX 78041

TFA Heat Code:

311WN WPB

Grade: TFA Part ID:

C22090

Description:

24 X 16 STD CONC

Quantity:

1

Mill: USS

Mill Heat:

B45771

Process:

WPB-CN1MIW

Customer Part ID:

Test Bar Type:

Yield (PSI): Tensile (PSI): ROUND 52340 74170 33.00

% Elong In 4D B.H.N.:

Tensile Orientation:

LONGITUDINAL

С	MN	P	S	SI	МО	CR	NI	CU	V	СВ	В	TI	AL	C.E.
0.190	1.040	0.006	0.008	0.240	0.020	0.080	0.050	0.020	0.001	0.001				0.39

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

1. THESE FITTINGS WERE NORMALIZED AT 1650F AND AIR COOLED. 2. THESE FITTINGS WERE S2 TENSILE TESTED TO VERIFY PHYSICAL PROPERTIES AFTER THE HEAT TREAT PROCEDURE. 3. THE STARTING MATERIAL IS SEAMLESS PIPE. 4. THE HARDNESS DOES NOT EXCEED 197BHN PART TO PART.

5. THIS PRODUCT IS SEAMLESS. 6. 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).

Heat Code: 311WN Grade WPB

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John Peachey, Mgr. Quality Assurance