



CERTIFIED MATERIAL TEST REPORT
CERTIFICATE OF COMPLIANCE
CERTIFICATE # 180240

Tube Forgings of America, Inc.
5200 N.W. Front Avenue
Portland, OR 97210
ISO 9001:2015 Certified
7/6/2022

Sold To	Dodson Global, Inc 2750 Holmes Rd. Houston, TX 77051	Ship To	Dodson Global, Inc 2750 Holmes Rd. Houston, TX 77051
Customer ID	9401		
TFA Sales Order	318293\38-1		
Purchase Order	322134-00		

TFA Part ID	22258	Heat Code	545Ln
Description	12 X 10 XH CONC	Grade	WPB
Quantity	9	Raw Material Heat	87012
Customer Part ID		Process	WPB-CN1MIW
		Mill	TAMSA

Austenitized @:	1650°	Tempered @:	°	Stress Relieved @:		Medium:
Held For:	60 mins/min	Held For:	mins.	Held For:	mins.	

Heat Analysis Chemistry

C	Mn	P	S	Si	Mo	Cr	Ni	Cu	V	Cb	B	Ti	Al	N	Co	Ca	C.E.
0.19	0.83	0.009	0.003	0.17	0.03	0.06	0.05	0.14	0.00								0.36

Physical Results

ID	Type	Yield	Tensile	% Elong	R/A %	Gage Length	HBW	In-Process Test 1 Test 2		Tensile Orientation	Test Bar Type & Size
1	PSI	47,600	70,500	37.60		2"	139	139	139	LONGITUDINAL	RECTANGULAR

Charpy Test Results

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

Notes/Comments

1. THESE FITTINGS WERE NORMALIZED AT 1650F AND AIR COOLED. 2. THESE FITTINGS WERE 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).

1: MATERIAL IS MANUFACTURED TO ASTM A234-19 GR WPB, ALSO PER ASME SEC II SA234 GR WPB-2019 EDITION. 2: DESIGN AND DIMENSIONS TO ASME B16.9-2018 3: PER NACE MR0175/ISO15156-2-2015 EDITION, AND NACE MR-0103 2015 EDITION. 4: MANUFACTURED IN AN ISO 9001 REGISTERED FACILITY, CERTIFICATE #: 30248. 5: TFA, INC. ORGANIZATIONAL STRUCTURE AND CERTIFICATION COMPLIES WITH EN 10204-2004 TYPE 3.1 AND 3.2. 6: TFA INC. FITTINGS SATISFY THE MATERIAL REQUIREMENT OF (PED) 2014/68/EU ANNEX I , PARA 4.3 7: FITTINGS ARE MANUFACTURED IN THE USA. RAW MATERIAL IS FROM DOMESTIC AND GLOBAL SOURCES. 8: FITTINGS WERE MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE ORDER AND SPECIFICATIONS AND WERE FOUND TO MEET THE REQUIREMENTS.

Heat: 545Ln Grade: WPB

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Scot Marshall, Manager Quality Assurance

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