



Forge Limited

Previously known as

TIRUPATI FORGE PVT. LTD.

WORKS &amp; Regd. Office.

Survey No.92/1, Plot No.1-5

Hadamtala Industrial Area, Nr.Shan Cen

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CIN No.: L27320GJ2012PLC071594

<b>INSPECTION CERTIFICATE</b>		Doc.No.: R QC 08	
In accordance with EN 10204 3.1		Rev.No/Dt.: 00/01.05.2018	
<b>CUSTOMER</b> : SERVICE METAL 2320 TOOMEY AVE CHARLOTTE, NC 28203 - USA	<b>T.C. No.</b> : 005/21-22	<b>T.C. DATE</b> : 12/Apr/2021	
	<b>INVOICE No.</b> :	E-005/21-22 12/Apr/2021	
	<b>ORDER No.</b> :	P1025773	
<b>PRODUCT</b> : Carbon Steel Forged Flanges	<b>MACHINED STD</b> :	ANSI B-16.5/17	
<b>FORGING SPECIFICATION</b> : ASTM A105-18/ASME SA105-19	<b>MARKED LOGO</b> :	<b>Tirupati</b>	
<b>SERRATED FACE STD</b> : MSS-SP-6	<b>MARKING</b> :	MSS-SP-25-2013	

## PRODUCT DETAILS &amp; TEST RESULTS

ITEM		2" 150# SOFF		2½" 150# SOFF		3" 150# SOFF		4" 150# SOFF	
PCS		25		25		50		50	
CASE No.		2		2		2		3	
ELEMENTS	Specified	Actual Results		Actual Results		Actual Results		Actual Results	
	Composition %	TFPL Lab	Steel Mill T.C	TFPL Lab	Steel Mill T.C	TFPL Lab	Steel Mill T.C	TFPL Lab	Steel Mill T.C
<b>Heat No.:</b>		<b>G275</b>	101440	<b>G091</b>	03-21-02	<b>G108</b>	58	<b>G091</b>	03-21-02
<b>Chemical Composition</b>									
Carbon	0.35 Max	0.211	0.190	0.176	0.180	0.213	0.230	0.176	0.180
Manganese	0.60-1.05	1.050	1.050	0.690	0.860	0.750	0.760	0.690	0.860
Sulfur	0.040 Max	0.012	0.018	0.022	0.020	0.021	0.028	0.022	0.020
Phosphorus	0.035 Max	0.021	0.018	0.025	0.022	0.029	0.030	0.025	0.022
Silicon	0.10-0.35	0.215	0.210	0.238	0.260	0.240	0.270	0.238	0.260
Copper	0.40 Max	0.005	0.001	0.083	0.050	0.063	0.064	0.083	0.050
Nickel	0.40 Max	0.014	0.001	0.066	0.060	0.030	0.052	0.066	0.060
Chromium	0.30 Max	0.005	0.012	0.089	0.050	0.074	0.110	0.089	0.050
Molybdenum	0.12 Max	0.001	0.001	0.008	0.010	0.020	0.025	0.008	0.010
Vanadium	0.08 Max	0.001	0.001	0.003	0.001	0.001	0.006	0.003	0.001
Carbon Equi. (CE)	0.470 Max	0.389	0.368	0.321	0.343	0.363	0.393	0.321	0.343
<b>Mechanical Properties</b>									
<b>Properties</b>	<b>Specified</b>	<b>Obtained</b>		<b>Obtained</b>		<b>Obtained</b>		<b>Obtained</b>	
Y.S. (MPA)	250 Min.	369.58		351.88		367.15		351.88	
UTS (MPA)	485 Min.	526.84		517.26		559.49		517.26	
Elongation %	22 Min.	27.80		29.00		31.20		29.00	
Reduct. Area %	30 Min.	63.15		65.07		65.94		65.07	
Hardness HB	137-187	161		160		163		160	

## DECLARATION :

- \* Products are "Made in India".
- \* Material are "As Forged condition WITHOUT NORMALIZING".
- \* The product are fully machined as per ANSI B16.5 (MM Dimensions)
- \* We here by certified that the material have been tested and inspected in our and all test results are in compliance with above referred specifications.
- \* Our Quality System registered to ISO 9001-2015 by TUV NORD CERT GmbH.



**QUALITY CONTROL  
IN-CHARGE**