

# NORMA (INDIA) LIMITED

(AN ISO 9001:2015 CERTIFIED COMPANY)  
 48 Site IV industrial Area, Sahibabad, Ghaziabad-201010 (U.P) INDIA.  
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# Works Test Certificate

(AS PER EN 10204:3.1)

NORMA/LAB NO-7885/21-22	INVOICE NO. E 2597	DATE: 03.11.2021
P. Order No: 285960-00	Customer: -	Forging specification
Component 18"-150# SORF FLG	DODSON GLOBAL, INC.	ASTM A105-2021
Drawing No.	STONE MOUNTAIN, U.S.A.	ASME SA105-2019
Machining STD	Quantity: -	Steel Supplier P.G.I. Pvt. Ltd.
	70 Nos.	Mill Heat No. F5/26
		NORMA HEAT NO: 4148

## TEST RESULTS

### CHEMICAL COMPOSITION

Elements %	Specified Composition	Actual	
		NORMA LAB	MILL T.C.
Carbon	0.35max.	0.20	0.20
Manganese	0.60-1.05	1.19	1.18
Silicon	0.10-0.35	0.258	0.25
Sulphur	0.040max.	0.002	0.005
Phosphorous	0.035max.	0.021	0.024
Chromium	0.30max.	0.092	0.090
Nickel	0.40max.	0.020	0.020
Copper	0.40max.	0.013	0.020
Molybdenum	0.12max.	0.010	0.010
Vanadium	0.080max.	0.005	0.005
Carbon Equivalent (CE)	0.470max.	0.422	0.420

### MECHANICAL PROPERTIES.

PROPERTIES	SPECIFIED	OBTAINED
Yield Strength (mpa)	250.00 min.	301.62
Tensile Strength (mpa)	485.00 min.	504.25
%Elongation in 50mm / 4D	22.00 min	34.50
Hardness HB.	197. max.	149-156
% Reduction of Area	30.00 min.	70.35

“As per ASTM A105 Table 1 Note: For each reduction of 0.01% below the specified carbon maximum(0.35%),an increase of 0.06% manganese above the specified maximum (1.05%) will be permitted up to maximum 1.65%.


Serrated face as per MSS-SP-6 With in limits of 125-250AARH

Supply Condition: Fully Finished.


CARBON EQUIVALENT (CE)

CE = C + Mn + Cr+Mo+V + Ni+Cu  
 6 5 15

MARKING AS PER MSS-SP-25-2008  
 18"-150 SA/A105 4148 B16.5 NORMA  
 INDIA.10/2021

Checked by: 

Metallurgist

Certified by: 



Quality Control Manager

**Remarks:** We here by certify that the material described here in has been tested in accordance with the applicable specifications referred above and meets the requirements as per EN10204:3.1-2004, NACE MR0103-15,NACE MR0175-15/ISO15156-2. All material supplied is certified to be free of mercury contamination, No weld repair performed. Raw material used is **fully killed** and fine grain practice. **Country of Origin/Melt: INDIA.**