

**TEST CERTIFICATE**




RNS-SLRM

CUSTOMER NAME	PROCESS ROUTE			BLOOM SIZE (mm)	SUPPLY CONDITION		TC NO.	INVOICE NO.	DATE
M/S SSB ENGINEERS PVT.LTD.	MBF-BOF-LRF-VD-CCM-EMS-AMLC-RMS			200x200	As Rolled		25031212	SE24Y-17541	25-Mar-2025
CUSTOMER SPECIFICATION	HEAT NO.	GRADE	SIZE (mm)	REDUCTION RATIO	LENGTH (mm)	COLOUR CODE	QUANTITY (MT)	BUNDLE	VEHICLE NO.
Refer Remarks	54936	16MnCr5	60 DIA	14.15:1	5500 TO 6000	1/2 Pink 1/2 Green	5.590	03	JH05DU3269

1. CHEMICAL COMPOSITION																												
%	C	Si	Mn	P	S	Cr	Mo	Ni	Al	V	Ti	Cu	B	Nb	Ca	As	Sb	Sn	Pb	W	Bi	Co	Zr	H <sub>2</sub> (ppm)	N <sub>2</sub> (ppm)	O <sub>2</sub> (ppm)		
Min	0.130	0.150	1.000	-	0.015	0.800	-	-	0.020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.0	-	-	
Max	0.180	0.400	1.300	0.020	0.030	1.100	0.100	0.300	0.050	-	-	0.300	0.0005	-	0.0020	-	-	-	-	-	-	-	-	-	2.50	120.0	20.0	-
Actual	0.169	0.275	1.260	0.013	0.024	1.055	0.008	0.019	0.028	0.006	0.0027	0.015	0.0004	0.0006	0.0006	0.0020	0.0001	0.0012	0.0010	0.0001	0.0001	0.0046	0.001	1.13	68.2	15.4	-	-

2. PHYSICAL PROPERTIES										3. JOMINY HARDENABILITY (in HRC)									
TENSILE PROPERTIES (Quenched & Tempered) ASTM E8					IMPACT TEST (Charpy) (RT) keJ/cm <sup>2</sup> IS 1787					HARDNESS					JOMINY DISTANCE UNIT: mm (STANDARD: IS 3848)				
YS N/mm <sup>2</sup>	UTS N/mm <sup>2</sup>	% EL	-	-	(Charpy) (RT) keJ/cm <sup>2</sup>	Min	Max	Actual	As Rolled (BHN)	J1.5	J5	J10	J15	J20	J25	J30	-	-	-
Min	735	1030	8	-	25	-	-	-	-	39.0	34.5	29.0	25.0	22.5	21.0	20.0	-	-	-
Max	-	1370	-	-	-	Max	240	-	-	44.0	40.5	35.5	31.5	29.0	27.5	26.5	-	-	-
Actual	940	1053	18.2	-	38.6	Actual	160-165	-	-	42.6	38.0	31.1	25.4	23.5	21.0	20.4	-	-	-

4. METALLOGRAPHY										5. OTHER TESTS											
INCLUSION RATING (ASTM E45)								DIN RATING (As Per DIN 50602)			GRAIN SIZE	TOTAL DECARB (mm)	MAGRO- STRUCTURE	STEP DOWN	UPSET						
A		B		C		D		DS		S		O		S+O		(ASTM E112)	ASTM E-1077	(ASTM E-381)	(IS 4075)	-	
T	H	T	H	T	H	T	H														
Spec	2.0	1.5	2.0	1.0	0.5	0.5	1.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Actual	1.5	0.5	0.5	0.0	0.0	0.0	0.5	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-

6. REMARKS							
1. Cust Spec Grazianno Specifications QF1001, Rev No.03, Dtd: 14.06.2024				6. Material is conforming to the customer specification.			
2.Dimension tolerance: as per IS 3739 Grade - 1				7.Inspection Certificate as per EN10204:2004, type 3.1			
3. Microstructure: Uniform Ferrite + Pearlite				-			
4.Banching Ok As per UNI-8449 Grade IV				-			
5.The material is comply with ROHS (Pb,Cd,Hg,Cr+6) permissible limits.				-			
Dr Diwaker H Prepared By		Mallesh Naik M Reviewed & Issued By				Pradeep Angadi Authorised Signatory	

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