

MUKAND SUMI SPECIAL STEEL LIMITED.
Hospet Road, Kanakapura Village, Koppal, Karnataka, 583228
Tel : 91-08539-286603-08 (6 lines)
TEST CERTIFICATE



CUSTOMER : SSB ENGINEERS PVT.LTD			Invoice No: 9023153838		PROCESS ROUTE EOF-LRF-VD-CCM(EMS + AMLC)-R MILL			TC NO. K201030 DATE 24.02.2025 TRUCK NO: RJ02GU5242		
CUSTOMER SPECIFICATION NO		HEAT NO	GRADE	SECTION (IN mm)	COLOR CODE	SUPPLY CONDITION	LENGTH (IN Mtrs.)	OVALITY (IN mm)	NO OF PIECES	QUANTITY (MTR)
MET-W-04 Issue No 17 Dt: 01.09.2015		M201030	16MNCR5ALN	60 ROUND	Half White + Gray	AS ROLLED	5.00 TO 6.00	AS PER IS 3739	91	11.220

CHEMICAL COMPOSITION

	%C	%Si	%Mn	%P	%S	%Ni	%Mo	%Cr	%Cu	%Al	%Sn	%V	N ₂ ppm	O ₂ ppm	H ₂ ppm	%Ti	CaPPM	Bppm	%As	%Sb	%Pb
REQ	0.140/0.190	0.150/0.400	1.000/1.300	0.035Max	0.035Max	0.250Max		0.800/1.100	0.300Max	0.020Min		0.010Max	80.0/110.0	20.0Max	2.00Max	0.003Max	20.000Max	5.000Max			
ACT	0.1820	0.2380	1.2330	0.0140	0.0180	0.0230	0.0090	1.0180	0.0140	0.0220		0.0040	98.000	16.000	1.480	0.0020	11.0000	1.0000			

MECHANICAL PROPERTIES

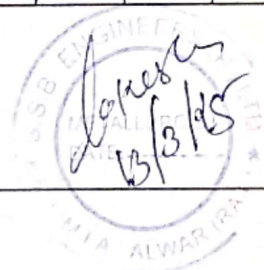
	TENSILE VALUES				IMPACT STRENGTH (IZOD/CHARPY)	HARDNESS (BHN)	JOMINY VALUES (HRC)										D.I VALUE
	YS	UTS	%EL	%RA			J13mm										
REQ						240 BHN MX	24/31										
ACT						161	28.0										

METALLURGICAL PROPERTIES

	SPARK/ SPECTRAL TEST	STEP DOWN TEST	MACRO ETCH RESULTS(ASTM E-381)	INCLUSION RATING (ASTM - E - 45) Method 'A' Plate II(Worst Fields)								GRAIN SIZE (ASTM E-112)	SURFACE DEFECT LEVEL (mm)	CORE HARDNESS (OILQUENCH (HRC)	UPSET TEST RESULTS	TOTAL DEPTH OF DECARBURIZATION IN mm
				A		B		C		D						
				T	H	T	H	T	H	T	H					
REQ	OK	OK	C2R2S2Max	2.0	2.0	1.0	1.0	1.0	1.0	1.5	1.5	6 to 8	OK	NA	NA	0.40 mm Max
ACT	OK	OK	<C2/R2/S2	1.5	0.5	0.5	0.0	0.0	0.0	1.0	0.5	7.0	OK	NA	NA	0.37

REMARKS 1 BLOOM SIZE 240X280MM2 REDUCTION RATIO 1.23.76
2 MPI TEST 100% DONE & FOUND OK.
3 STEP DOWN TEST OK AS PER JIS G0556-1977.
4 MICROSTRUCTURE OK

5 REQ AL/N2 2.0/3.0, ACT 2.24.
6 "MATERIAL IS FREE FROM RADIO ACTIVE ELIMENTS"



K. Pomesi

PREPARED BY

QF.NO.HS / QA/ 10.01 DG.Rev.01 Dtd : 23.02.2015

AUTHORISED SIGNATORY

K.POMESH(Sr.GM-QAD)