



KALYANI
STEELS DIVISION

KALYANI STEELS LTD - HOSPET DIVISION
Hospet Road, Ginigera - 583228 Taluka & Dist : Koppal, Karnataka.
Telephone : 08539 - 286603-08 (6lines) Telefax : 08539 -286611
TEST CERTIFICATE



CUSTOMER : S S B ENGINEERS PVT LIMITED		Invoice.No: 9043035696		PROCESS ROUTE		TC NO. K199296 DATE:04.01.2025	
CUSTOMER SPECIFICATION NO		GRADE		SECTION (IN mm)		EOF-LRF-VD-CCM(EMS + AMLC)-R MILL	
Q.F 1001,Rev 03, Date : 14.06.2024		20MNCRS		70 ROUND		COLOR CODE	
		K199296		HALF(RED+WHITE)		SUPPLY CONDITION	
				AS ROLLED		LENGTH (IN Mtrs.)	
				5 TO 6 METER		OVALITY (IN mm)	
						AS PER IS	
						PIECES	
						65	
						3739	
						QUANTITY (MTS)	
						11.350	

CHEMICAL COMPOSITION

	%C	%Si	%Mn	%P	%S	%Ni	%Mo	%Cr	%Cu	%Al	%Sn	%V	N2ppm	O2ppm	H2ppm	%Ti	CaPPM	Bppm	%As	%Sb	%Pb
REQ	0.150/0.200	0.150/0.400	1.000/1.300	0.020/0.030	0.015/0.030	0.300/0.500	0.100/0.150	1.000/1.300	0.300/0.500	0.020/0.050			60.0/120.0	20.0/30.0	2.50/Max		10.000/Max	5.000/Max			
ACT	0.1950	0.2710	1.2200	0.0160	0.0180	0.0260	0.0050	1.2800	0.0140	0.0300			92.000	12.000	1.570		9.0000	1.0000			

MECHANICAL PROPERTIES

	TENSILE VALUES			IMPACT STRENGTH (IZOD/CHARPY)	HARDNESS (BHN)	JOMINY VALUES (HRC)						D.I.	
	YS (NMM)	UTS (NMM)	%EL			J1.5mm	J5mm	J10mm	J15mm	J20mm	J25mm	J30mm	VALUE
REQ	930.00Min	1230.00/1570	7.00Min	25.00Min J	240 BHN MX	41/46	38/44	32/38.5	29/35.5	27/33.5	25.5/32	24.5/31	
ACT	1035.00	1280.00	16.3	78.00 J	184	46.0	43.0	37.0	32.0	30.0	29.0	28.0	

METALLURGICAL PROPERTIES

	SPARK/ SPECTRAL TEST	STEP DOWN TEST	MACRO ETCH RESULTS(ASTM E-381)	INCLUSION RATING (ASTM - E - 45) Method 'A' Plate I(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	NA	C2R3S3Max	2.0	1.5	2.0	1.0	1.0	0.5	0.5	1.0	1.0	1.0	5 to 8	OK	NA	NA	0.60mm Mx		
ACT	OK	NA	<C2/R3/S3	1.5	0.5	0.5	0.0	0.0	0.0	0.0	1.0	1.0	0.5	7.0	OK	NA	NA	0.41		

REMARKS: 1.BLOOM SIZE:200X200MM2 REDUCTION RATIO:1:10.39.

2.MPI TEST:100% DONE & FOUND OK.

3.BANDING: OK AS PER UNI 8449(A MAX OF GR-4 IS ACCEPTABLE)

4.ULTRASONIC TEST : OK AS PER ASTM A388,4MM FBH.

5.REQ AL/N2 RATIO : 2.1 MIN ,ACT:3.26.

6.REQ %C E:0.65MX, ACT : 0.0.65.

7.TENSILE/CHARPY TEST:AS PER UNI EN10002-1 UNI EN 10045-1,

8.JOMINY TEST: ASPER ISO642,DECARB TEST:AS PER ASTM E1077.

9."MATERIAL FREE FROM RADIO ACTIVE ELIMENTS".

PREPARED BY

AUTHORISED SIGNATORY

K. Pannu