



KALYANI
STEELS LTD

KALYANI STEELS LTD - HOSPET DIVISION
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TEST CERTIFICATE

CUSTOMER : S S B ENGINEERS PVT LIMITED			Invoice.No: 9043035692			PROCESS ROUTE			TC NO. K199297 DATE:05.01.2025		
CUSTOMER SPECIFICATION NO			GRADE			COLOR CODE			TRUCK NO: KA35C6620		
Q F 1001, Rev 03, Date : 14.06.2024			HEAT NO			SECTION (IN mm)			SUPPLY LENGHT (IN Mtrs.)		
			K199297			80 ROUND			AS ROLLED		
			20MNCR5			HALF(RED+WHITE)			5 TO 6 METER		
									AS PER IS 3739		
									40		
									8.300		

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	0.150/0.200	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	0.1900	0.2870	1.2510	0.0160	0.0160	0.0180	0.0070	1.2600	0.0130	0.0240			77.000	13.000	1.520		8.0000	1.0000			

MECHANICAL PROPERTIES

	TENSILE VALUES				IMPACT STRENGTH (IZOD/CHARPY)	HARDNESS (BHN)	JOMINY VALUES (HRC)								D.I.	
	YS (NMM)	UTS (NMM)	%EL	%RA			J1.5mm	J5mm	J10mm	J15mm	J20mm	J25mm	J30mm			VALUE
REQ	930.00Min	1230.00/1570	7.00Min		25.00Min J	240BHN MX	41/46	38/44	32/38.5	29/35.5	27/33.5	25.5/32	24.5/31			
ACT	1009.00	1276.00	14.9		78.00 J	182	45.5	42.5	38.0	35.0	32.0	31.0	28.5			

METALLURGICAL PROPERTIES

	SPARK/ SPECTRAL TEST	STEP DOWN TEST	MACRO ETCH RESULTS(ASTM E-381)	INCLUSION RATING (ASTM - E - 45) Method 'A' Plate If 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	T	H	T	H	T	H	T	H							
REQ	OK	NA	C2R3S3Max	2.0	1.5	2.0	1.0	0.5	0.5	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	1.0	0.5	7.0	OK	NA	NA	0.38				

REMARKS: 1.BLOOM SIZE:200X200MM2 REDUCTION RATIO:1:7.96.

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:3.11.

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



Swati

K. Panna

PREPARED BY

AUTHORISED SIGNATORY