

Web Site : www.sunflagsteel.com
E-mail : admin@sunflagsteel.com
Regd. Off. : (0712) 2524661
Works : (07184) 285551
CIN : L27100MH1984PLC034003

SUNFLAG IRON & STEEL CO. LTD.

Regd. Office : 33, Mount Road, Sadar, Nagpur - 440 001 India

Works : Bhandara Road, Bhandara - 441 905 (Maharashtra)

TEST CERTIFICATE



CUSTOMER : RAMKRISHNA FORGINGS LTD

PROCESS ROUTE

MBF-EAF-LRF-VD-CCM-RM

TC NO. : 0010460
INVOICE NO. : 172716818
DELIVERY ORDER NO.: 81049823
DATE : 15.01.2018
DATE : 15.01.2018
TRUCK NO. : CG07BG1513

CUSTOMER SPECIFICATION No.	HEAT No.	GRADE	SECTION IN (mm)	GRADE COLOUR CODE	BLT/BLM SIZE (mm)	SUPPLY CONDITION	LENGTH (Mtrs)	NO.OF PIECES	QTY (MT)
RF/14/D-401/150 R-05	/28.10.2017	07878	SCR420H	RND-75	PURPLE+BLUE	210x232 AS ROLLED	5.500	21.310	

CHEMICAL COMPOSITION

	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Ni	%Mo	%V	%Al	%Pb	%Ti	%B	%Sn	%W	%As	%Ca	%Sb	%Co	%Nb	O2	N2	H2
SP-MIN	0.17	0.55	-	-	0.15	0.85	-	-	-	-	0.020	-	-	-	-	-	-	-	-	-	-	-	-	-
-MAX	0.23	0.90	0.030	0.030	0.35	1.05	0.25	0.25	0.06	0.02	0.050	-	0.020	0.0006	0.02	-	0.01	-	0.010	-	0.0100	15	90	2.0
ACTUAL	0.18	0.84	0.0090	0.0100	0.2200	0.9700	0.0150	0.1000	0.0350	0.0050	0.0290	-	0.0027	0.0002	0.0011	-	0.0050	-	0.0007	-	0.0020	14	76	1.10

MECHANICAL PROPERTIES

JOMINY VALUE (MM - HRC)

	As Rolled / H.T.	IMPACT	HARDNESS	DI	CE	J1.5	J3	J5	J6	J7	J9	J10	J11	J13	J15	J20	J25	J30
	PS/YS ()	UTS ()	%EL ()	%RA ()	(IZOD/CHARPY) ()	(BHN)	VALUE	VALUE										
SPEC-MIN	-	-	-	-	-	-	-	-	40.0	37.0	32.0	-	29.0	-	-	21.0	-	-
-MAX	-	-	-	-	-	240	-	-	48.0	48.0	37.0	-	34.0	-	-	32.0	-	-
ACTUAL	-	-	-	-	-	163	-	-	41.0	38.0	34.0	-	30.0	26.0	-	24.0	22.0	20.0

METALLURGICAL PROPERTIES

	INCLUSION RATING (ASTM-E-45 /IS:4163)								GRAIN SIZE (ASTM - E- 112)	SURFACE QUALITY	QUENCH HARDNESS ()	JISG0555			DECARBURIZATION (MM)			MACRO ETCH RESULTS ASTM-E-381	REDUCTION RATIO		
	A T	A H	B T	B H	C T	C H	D T	D H				dA	+	dB+dC	=	D	Full			Partial	Total
SPEC-MIN	-	-	-	-	-	-	-	-	6	OK	-	-	-	-	-	-	-	-	-	6:1	
-MAX	2.00	1.00	2.00	0.50	0.50	0.50	2.00	1.00	8	-	-	-	-	-	-	-	-	-	C2R2S2	-	
ACTUAL	1.00	-	0.50	-	0.00	-	1.50	-	7/7.5	OK	-	-	-	0.000	-	0.36	0.36	C2R2S1	11.03		
REMARKS																					

REMARKS : 100% SPARK/SPECTRAL:OK.STEP DOWN TEST:OK.U.S.T. (100%):OK.M.P.T. (100%):OK.

MTRL IS FREE FM RADIOACTIVE ELEMENTS

SURFAC COND. SATISFACTORY

We certify that the material described above conforms to the specs.

For Sunflag Iron & Steel Co. Ltd.

SPW

[Signature]
DSM QA & CS