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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



F031504

CUSTOMER : RAMKRISHNA FORGINGS LTD

PROCESS ROUTE

TC NO. : 0010468

DATE : 15.01.2018

INVOICE NO. : 172716826

DATE : 15.01.2018

MBF-EAF-LRF-VD-CCM-RM

DELIVERY ORDER NO.: 81050203

TRUCK NO. : CG07BB4090

CUSTOMER SPECIFICATION No.		HEAT	GRADE	SECTION	GRADE	BLT/BLM	SUPPLY CONDITION	LENGTH	NO.OF	QTY
		No.		IN (mm)	COLOUR CODE	SIZE (mm)		(Mtrs)	PIECES	(MT)
RF/14/D-401/150 R-05	/28.10.2017	07877	SCR420H	RND-75	PURPLE+BLUE	210x232	AS ROLLED	5.500		26.505

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	0.85	0.0100	0.0100	0.2100	0.9700	0.0160	0.0170	0.0050	0.0060	0.0300	-	0.0026	0.0002	0.0011	-	0.0056	-	0.0007	-	0.0020	13	78	1.00

MECHANICAL PROPERTIES

JOMINY VALUE (MM - HRC)

	As Rolled / H.T.				IMPACT	HARDNESS	DI	CE													
	PS/YS	UTS	%EL	%RA	(IZOD/CHARPY)	(BHN)	VALUE	VALUE	J1.5	J3	J5	J6	J7	J9	J10	J11	J13	J15	J20	J25	J30
	()	()			()																
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	-	-	-	-	-	161	-	-	42.0	38.0	33.0	-	29.0	27.0	-	25.0	24.0	21.0	20.0	17.0	15.0

METALLURGICAL PROPERTIES

	INCLUSION RATING (ASTM-E-45 /IS:4163)								GRAIN SIZE (ASTM - E- 112)	SURFACE QUALITY	QUENCH HARDNESS ()	JISG0555			DECARBURIZATION (MM)			MACRO ETCH RESULTS	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	-	0.38	0.38	C2R2S1	11.03		
REMARKS	100% SPARK/SPECTRAL OK STEP-DOWN TEST OK U.S.T. (100%)																				

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.

Q PX

(X) H
DGM QA &