

CUSTOMER : DHAR AUTOMOTIVES PRIVATE LIMITED

PROCESS ROUTE

TC NO.

0023068

DATE

20.05.2018

INVOICE NO.

182703454

DATE

20.05.2018

DELIVERY ORDER NO.

81065494

TRUCK NO.

MH26AD1873

MBF-EAF-LRF-VD-CCM-RM

CUSTOMER SPECIFICATION NO.

HEAT No.

SECTION IN (mm)

GRADE COLOUR CODE

BLT/BLM SIZE (mm)

SUPPLY CONDITION

LENGTH NO. OF

QTY

DHAR:20MNCR5 R-00 (J4/L6=36-40)/01.01.2016

10167

RCS-63

RED

160x160 AS ROLLED

5.250

17.360

**CHEMICAL COMPOSITION**

%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Ni	%Mo	%V	%Al	%Pb	%Ti	%B	%Sn	%W	%As	%Ca	%Sb	%Co	%Nb	O2 ppm	N2 ppm	H2 ppm
SP-MIN	0.17	1.10	-	0.15	1.00	-	-	-	-	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-
-MAX	0.22	1.40	0.035	0.035	0.40	1.30	0.10	0.05	-	0.050	-	-	-	-	-	-	-	-	-	-	20	90	2.0
ACTUAL	0.18	1.21	0.0160	0.0150	0.2200	1.0900	0.0180	0.0200	0.0040	0.0320	0.0002	0.0026	0.0002	0.0009	-	0.0063	0.0012	0.0009	-	0.0029	16	81	1.10

**MECHANICAL PROPERTIES**

As Rolled / H.T.		IMPACT		HARDNESS		DI		CE		JOMINY VALUE (INCH - HRC)																
PS/YS (KG/MM2)	UTS (KG/MM2)	%EL	%RA	(IZOD/CHARPY)	(BHN)	VALUE	VALUE	VALUE	VALUE	J1/16	J2/16	J3/16	J4/16	J5/16	J6/16	J7/16	J8/16	J9/16	J10/16	J12/16	J14/16	J16/16	J16/16	J16/16	J16/16	J16/16
				( )																						
SPEC-MIN	55.00	8.00	35.00	-	-	-	-	-	-	-	-	-	36.0	-	-	-	-	-	-	-	-	-	-	-	-	-
-MAX	-	-	-	-	240	-	-	-	-	-	-	-	40.0	-	-	-	-	-	-	-	-	-	-	-	-	-
ACTUAL	79.36	11.90	47.90	-	188	-	-	-	-	44.0	43.0	39.0	37.0	34.0	31.0	30.0	28.0	27.0	26.0	25.0	23.0	22.0				

**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	ASTM-E-381	RESULTS	RATIO											
SPEC-MIN													-			-		-		-		-		-		-		8:1									
-MAX													2.00			1.50			2.00			1.50			2.00			1.50			0.50		C2R2S2		-		
ACTUAL													2.00			0.50			0.50			-			0.00			-			0.36		0.36		C2R2S1		6.45

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

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

For Sunflag Iron & Steel Co. Ltd.

MTRL IS FREE FROM RADIOACTIVE ELEMENTS

*[Signature]*

0203 0564