

TEST CERTIFICATE

CUSTOMER NAME										PROCESS ROUTE					BLOOM SIZE (mm)		SUPPLY CONDITION										TC NO.		DATE								
PART ENGINEERING										MBF-EOF-LRF-VD-CCM(EMS/AMLC)-RM					200x200		As Rolled										24090223		08.09.2024								
CUSTOMER SPECIFICATION										HEAT NO.		GRADE		SIZE (mm)		REDUCTION RATIO		LENGTH (mm)				COLOUR CODE				INVOICE NO.		QTY (MT)/ BUNDLE		VEHICLE NO.							
EN 10084, April 2008 & Supersedes EN 10084:1998										50090		20MOCR4		70 DIA		10.39:1		5910+40				White Base One Green & One Yellow strip.				SE24Y-07329		6.710/4		RJ02GC4380							
I. CHEMICAL COMPOSITION																																					
%	C	Si	Mn	P	S	Cr	Mo	Ni	Al	Cu	N2 (ppm)	AIN2R atio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Min	0.180	0.150	0.600	-	0.020	0.400	0.400	-	0.020	-	90.0	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Max	0.220	0.400	0.950	0.035	0.035	0.550	0.500	0.250	0.050	0.250	170.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Actual	0.205	0.232	0.930	0.013	0.025	0.520	0.490	0.016	0.029	0.018	109.2	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
II. PHYSICAL PROPERTIES															III. JOMINY HARDENABILITY (in HRC)																						
Tensile Properties (Quenched & Tempered) (ASTM E8)										Impact Test (-)					Hardness					(Distance Unit: mm) (Standard : ASTM A255)																	
YS (N/mm^2)		UTS (N/mm^2)		% EL								As Rolled (BHN)						J1.5		J3	J5	J7	J11	J13	J15	J20	-	-	-	-	-	-	-	-			
Min	630	900		9								Min	-			Min	43.0	40.0	36.0	31.0	26.0	24.0	23.0	20.0	-	-	-	-	-	-	-	-	-				
Max	-	1200										Max	255			Max	49.0	48.0	44.0	41.0	34.0	31.0	30.0	27.0	-	-	-	-	-	-	-	-	-				
Actual	904.5	988.2		18.9								Actual	203-210			Actual	45.3	44.1	41.2	33.2	30.4	28.1	26.1	24.2	-	-	-	-	-	-	-	-	-				
IV. METALLOGRAPHY															V. OTHER TESTS																						
Inclusion Rating (ASTM E45)										Inclusion Rating (As per DIN 50602)				Grain Size		Total Decarb (mm)		Macrostructure		Step Down		Upset		100% Bars Checked by Manual UT - Found OK													
A		B		C		D		DS		S		O		S + O		(ASTM E112)		ASTM E-1077		(ASTM E-381)								100% Bars Checked by MPI - Found OK & Material is free from surface defects									
T	H	T	H	T	H	T	H	T	H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Spec	2.0	1.5	2.0	1.0	0.5	0.5	1.0	1.0	-	-	-	-	-	-	-	-	5 or finer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Actual	1.5	0.5	0.5	0	0	0	1	0	0	-	-	-	-	-	-	-	7.5	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
VI. REMARKS:																																					
1. Dimension tolerance: as per IS 3739 Grade - 1																																					
2. Microstructure: Uniform Ferrite + Pearlite																																					
3. The material is comply with ROHS (Pb,Cd,Hg,Cr+6) permissible limits.																																					
4. Material is conforming to the customer specification.																																					
5. Inspection Certificate as per EN10204:2004, type 3.1																																					
Arshad Khan Prepared By										MALLESH Reviewed & Issued By										Ranjan Das Authorised Signatory																	