

TEST CERTIFICATE



HN-SLR

CUSTOMER NAME				PROCESS ROUTE				BLOOM SIZE				SUPPLY CONDITION				TG NO.				INVOICE NO.				DATE																																			
M/S SSB ENGINEERS PVT LTD				NIBE-EOF-LRF-VD-CGM-EIMS-AMLC-RMS				200x200				As Rolled				2301225				SF24V-15612				21-Feb-2023																																			
CUSTOMER SPECIFICATION				HEAT NO.				GRADE				SIZE				REDUCTION				LENGTH				COLOUR CODE				QUANTITY (MT)				BUISDALE				VEHICLE NO.																							
				54217				16MnCr5				60 DIA				14.15:1				5.50 - 6.00				PINK + GREEN				32 940				17				JH05DK0559																							
1. CHEMICAL COMPOSITION																																																											
%	C	Si	Mn	P	S	Cr	Mo	Ni	Al	Absol	V	Ti	Cu	B	Nb	Ca	As	Sb	Sn	Pb	W	Bi	Co	Zr	AIN ₂	H ₂	N ₂	O ₂																															
Min	0.130	0.150	1.000	-	0.015	0.300	-	-	0.020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.100	-	60.0	-																														
Max	0.180	0.400	1.300	0.020	0.030	1.100	0.100	0.300	0.050	-	-	-	0.300	0.0005	-	0.0010	-	-	-	-	-	-	-	-	-	-	2.50	120.0	20.0																														
Actual	0.16S	0.250	1.250	0.011	0.023	1.045	0.010	0.021	0.028	0.026	0.007	0.0029	0.01S	0.0004	0.000S	0.00006	0.0010	0.0001	0.0001	0.0010	0.0001	0.0001	0.0052	0.001	1.540	1.37	79.1	15.2																															
2. PHYSICAL PROPERTIES																																																											
TENSILE PROPERTIES (Quenched & Tempered) ASTM A370										IMPACT TEST (Quenched & Tempered) ASTM E23										HARDNESS								JOMINY DISTANCE UNIT: mm (STANDARD IS J848)																															
YS MPa UTS MPa % EL % RA										(Charpy) (V-Notch 2mm) (RT) Joules										As Rolled (BH1)																																							
Min 735 1030 S - -										25										Min - -								Min 39.0 35.0 29.0 25.0 22.5 21.0 20.0 - - - -																															
Max - 1370 - -										-										Max 260 - -								Max 44.0 39.0 35.5 31.5 29.0 27.5 26.5 - - - -																															
Actual 1042 1162 15.2 53.2										36.9										Actual 165-171								Actual 42.3 37.9 30.5 27.4 25.0 21.8 20.6 - - - -																															
4. METALLOGRAPHY																												5. OTHER TESTS																															
INCLUSION RATING (ASTM E45)										DIN RATING (As Per DIN 50602)										GRAIN SIZE								TOTAL DECARB (mm)								MACRO-STRUCTURE								STEP DOWN								UPSET							
A B C D DS										S O S+O										(ASTM E112)								ASTM E-1077								(ASTM E-381)								(IS 4075)								-							
Spec 2.0 1.5 2.0 1.0 0.5 0.5 1.0 1.0										-										5-8								0.60mm Max								C2.S3.R3 Max								-								-							
Actual 1.0 0.5 0.5 0.0 0.0 0.0 0.5 0.0										-										7								0.23								Better Than C2.R2S2								OK								-							
6. REMARKS																																																											
1. Dimension tolerance: as per IS 3739 Grade - 1																												6. The material is comply with ROHS (Pb,Cd,Hg,Cr+6) permissible limits.																															
2. Microstructure: Uniform Ferrite + Pearlite																												7. Material is conforming to the customer specification.																															
3. Banding is Ok As per UNI S449:1983 Grade IV.																												8. Inspection Certificate as per EN10204:2004, type 3.1																															
4. 100% MPI done as per ASTM E1444-12 & found OK.																																																											
5. 100% UT done as per ASTM A335 & found Ok.																																																											
<div>Prakash Angadi Authorized Signatory</div>																												<div>Prakash Angadi Authorized Signatory</div>																															