



Hospet Road, Ginigera - 583228 Taluka & Dist : Koppal, Karnataka.

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TEST CERTIFICATE

CUSTOMER : S S B ENGINEERS PVT LIMITED

Invoice.No: 9033080791

PROCESS ROUTE

TC NO. K198780 DATE.23.12.2024

EOF-LRF-VD-CCM(EMS + AMLC)-R MILL

EOF-LRF-VD-CCM(EMS + AMLC)-R MILL

TRUCK NO.

J47GA

3307

CUSTOMER

ZF 7B Issue 2024-08

K198780

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65 ROUND

HALF(RED+YELLO

AS ROLLED	5 TO 6 METE
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AS PER IS

175

CHEMICAL COMPOSITION

	%C	%Si	%Mn	%P	%S	%Ni	%Mo	%Cr	%Cu	%Al	%Sn	%V	N ₂ ppm	O ₂ ppm	H ₂ ppm	%Ti	CaPPM	Bppm	%As	%Sb	%Pb
REQ	0.140/0.190	0.300Max	1.200/1.500	0.025Max	0.010/0.025	0.300Max	0.080Max	1.100/1.400	0.300Max	0.020/0.050	0.030Max		90.0Min	25.0Max		0.005Max	30.000Max	10.000/30.0		0.005Max	
ACT	0.1610	0.2360	1.2000	0.0150	0.0200	0.1860	0.0560	1.2060	0.1040	0.0310	0.0010	0.0041	122.000	15.000		0.0030	8.0000	15.0000	0.0010	0.0030	0.0001

MECHANICAL PROPERTIES

	TENSILE VALUES				IMPACT STRENGTH (IZOD/CHARPY)	HARDNESS (BHN)	JOMINY VALUES (HRC)						D.I. VALUE	
	YS	UTS	%EL	%RA			J5mm	J10mm	J25mm	J50mm				
REQ							39/44	35/40	27/32	24Min				
ACT							41.6	35.5	27.6	24.5				

METALLURGICAL PROPERTIES

	SPARK/ SPECTRAL TEST	STEP DOWN TEST	MACRO ETCH RESULTS(ASTM E-381)	INCLUSION RATING (ASTM - E - 45) Method 'A' Plate 1(Worst Fields)								GRAIN SIZE (ASTM E-112)	SURFACE DEFECT LEVEL (mm)	CORE HARDNESS (OILQUENCH (HRC)	UPSET TEST RESULTS	TOTAL DEPTH OF DECARBURIZATION IN mm
				A		B		C		D						
				T	H	T	H	T	H	T	H					
REQ	OK	NA	C2R2S2Max			2.0	1.0	0.5	0.5	1.0	1.0	NA	NA	NA		
ACT	OK	NA	<C2/R2/S2			0.5	0.0	0.0	0.0	1.0	0.5	NA	NA	NA		

REMARKS: 1.BLOOM SIZE:240X280MM2.REDUCTION RATIO:1:20.25

2.MPI TEST:100% DONE & FOUND OK.

3 GRAIN SIZE: PREPARATION ACCORDING TO ZF15-53, TESTING ACCORDING TO ZFN 5016.

100% 5& FINER FINER 4.ACT %NB · 0.0017.

5. JOMINY TEST: PERFORMED ACCORDING TO ZF 15-53; TESTING AS PER ISO 642

5. INCLUSION RATING AS PER ISO 4967, REQ DS: 2MX, ACT: 0.5

6. ULTRASONIC TEST: 100% CHECKED, OK AS PER ASTM A388 4MM FBH

7. "MATERIAL IS FREE FROM RADIOACTIVE ELEMENTS".

8. "TEST CERTIFICATE: ACCORDING TO DIN EN 10204_3.1"

9. "THE HEAT IS RELEASED BY ZF"

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PREPARED BY

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AUTHORISED SIGNATORY

K.POMESH(Sr.GM-QAD)