JAYASWAL NECO INDUSTRIES LIMITED

(STEEL PLANT DIVISION)

SILTARA INDUSTRIAL GROWTH CENTRE, RAIPUR (C.G.)

Ph.: +91-7721-264241/263, Fax No. : +91-7721-264279/264240

Rs:GM/1302

TEST CERTIFICATE

QA/RM/F10

CUSTOMER	:HAPPY FORGINGS LTD. ELS) PO.JUGIANA, LUDHIANA		
SPECIFICATION	:	INVOICE NO	264445
REV No / REF NO	:	TRUCK NO	:MP20HB 0054
HEAT NO	:MB05532	DATE	:13/03/2018
GRADE	:EN353	NO OF PCS / BNDL	:60PCS/12BNDLS
SECTION(MM)	:95 DIA	QUANTITY (MT)	: 26.050
REDUCTION RATIO	:8.82	COLOUR CODE	~~[illegible]~~ White + Blue Str
INPUT SIZE (MM)	:250 X 250	SUPPLY CONDITION	:AS ROLLED
PROCESS ROUTE	:BF/EOF/LRF/VD/CCM/SEN/M'EMS/AMLC	MULTIPLE LENGTH	:XL=5-6 MTR

1. CHEMICAL COMPOSITION % (Ladle/Product)

	%C	%Mn	%P	%S	%Si	%Cr	%Ni	%Mo	%Pb	%Cu	%Sn	%V	%Ti	%B	%Al	%C
CUST. MIN	--	0.500	--	--	--	0.750	1.000	0.080	--	--	--	--	--	--	0.020	--
SPEC. MAX	0.200	1.000	0.050	0.050	0.350	1.250	1.500	0.150	--	--	--	--	--	--	0.040	--
ACTUAL	0.160	0.900	0.012	0.025	0.180	1.150	1.000	0.100	--	0.012	0.006	0.007	0.0020	0.0003	0.025	0.[illegible]

2. MECHANICAL PROPERTIES		SPECIFIED	ACTUAL
YS	:	--	-
UTS	:	--	-
ELONGATIONS(5.65Sq.rt.A) %	:	--	
REDUCTION AREA %	:	--	
IMPACT VALUE	:	--	-
HARDNESS(BHN/HRB/HRC)	:	--	180/200 BHN

3. METALLURGICAL PROPERTIES			
MICRO STRUCTURE	:	P+F	PEARLITE+FERRITE
GRAIN SIZE(ASTM E112/IS:4748)	:	5/8	6.5/7.5
TOTAL DECARB (MM) SAEJ419	:	--	-

INCL RATINGS(ASTM E-45/IS:4163)

	THIN	THICK	THIN	THICK	THIN	THICK	THIN	THICK
SPECIFIC REQUIRMENT	A-2.0/-		B-2.0/-		C-2.0/-		D-2.0/-	
ACTUAL	1.5	0.0	0.5	0.0	0.0	0.0	1.5	0.0

MACRO ETCH TEST (ASTM E - 381)	:	C2R2S2 MAX.	BETTER THAN C2R2S2
4. D. I. VALUE (J406)	:	--	
JOMINY REQUIREMENT	:	11MM=30/35HRC	
HARDENABILITY IS:3848/A255-02	:		

DIST-INCH/MM				11MM										
VALUES(HRC)				33.50										

5. GAS LEVEL(PPM) SPECIFIED MAX	:	O2: 20.0	N2: 70-100	H2: 2.0
GAS LEVEL(PPM) ACHIEVED	:	O2: 16.8	N2: 85.0	H2: 1.9

6. REMARKS : 100% SPARK/SPECTRAL/MOBILE SPECTRO TEST :OK
STEP DOWN TEST :OK
UPSET TEST :NA
100% MPI & UT TEST OK

AUTHORISED SIGNATORY

THE MATERIAL IS FREE FROM RADIO ACTIVE CONTAMINATION & HAZARDOUS CHEMICAL UNDER ROHS