



(STEEL PLANT DIVISION)

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

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

TEST CERTIFICATE

No: SM 20

CUSTOMER : HAPPY FORGINGS LTD. ELS) PO. JUGHANA, LUDHIANA
SPECIFICATION :
REV No / REF NO :
HEAT NO : M805751
GRADE : EN353
SECTION(MM) : 75RCS
REDUCTION RATIO : 11:1
INPUT SIZE (MM) : 250 X 250
PROCESS ROUTE : BF/EOF/LRF/VD/CCM/SEN/M'EMS/AMLC

QA/RM/F10
: 45
: PB06J/2737
: 04/01/2018
: 30PCS/05 BNDLS
: 11.280
: RED+YELLOW
: AS ROLLED
: XL=5-6MTR

INVOICE NO
TRUCK NO
DATE
NO OF PCS / BNDL
QUANTITY (MT)
COLOUR CODE
SUPPLY CONDITION
MULTIPLE LENGTH

1. CHEMICAL COMPOSITION % (Ladle/Product)

	%C	%Mn	%P	%S	%Si	%Cr	%Ni	%Mo	%Pb	%Cu	%Sn	%V	%Ti	%B	%Al	%Ca
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	0.170	0.910	0.017	0.025	0.210	1.070	1.020	0.100	--	0.009	0.006	0.006	0.0030	0.0004	0.031	0.0014

2. MECHANICAL PROPERTIES

	SPECIFIED	ACTUAL
YS	--	--
UTS	--	--
ELONGATIONS(5.65Sg.r.t.A) %	--	--
REDUCTION AREA %	--	--
IMPACT VALUE	--	--
HARDNESS(BHN/HRB/HRC)	--	180/200 BHN

3. METALLURGICAL PROPERTIES

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

INCL RATINGS(ASM E-45/IS-4163)

* THIN : THICK; THIN : THICK; THIN : THICK; THIN : THICK;

SPECIFIC REQUIREMENT

A-2.0/-	B-2.0/-	C-2.0/-	D-2.0/-
---------	---------	---------	---------

ACTUAL

1.5	0.5	0.0	0.0	0.0	1.5	0.5
-----	-----	-----	-----	-----	-----	-----

MACRO ETCH TEST (ASTM E - 381)
4. D. I. VALUE (J406)
JOMINY REQUIREMENT
HARDENABILITY IS:3848/A255-02

BETTER THAN C2R2S2

5/16"=36/40 HRC

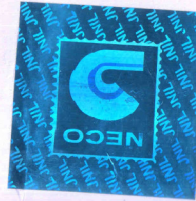
DIST-INCH/MM;

VALUES(HRC);

5. GAS LEVEL(PPM) SPECIFIED MAX : 02: 20.0 N2: 70-100 H2: 2.0
GAS LEVEL(PPM) ACHIEVED : 02: 15.5 N2: 77.0 H2: 1.6

6. REMARKS

: 100% SPARK/SPECTRAL/MOBILE SPECTRO TEST :OK
STEP DOWN TEST :OK
UPSET TEST :NA
100% BAR MPI & UST:OK



INSPECTED SIGNATURE