



## 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

## TEST CERTIFICATE

No: BM36142

CUSTOMER : FORGE INDIA PVT.LTD. DISTT-SOLAN (HP)  
 SPECIFICATION : F1/TDC/S-002, ISSUE NO.1  
 REV No / REF NO : 00,  
 HEAT NO : D 58168  
 GRADE : 20MNCRS  
 SECTION(MM) : 63RCS  
 REDUCTION RATIO : 8.2  
 INPUT SIZE (MM) : 180 X 180  
 PROCESS ROUTE : BF/EDF/LRF/VD/CCM/SEN/M'EMS/AMLC

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

: 200285 GA/RM/F10  
 : SAMPLE TC  
 : 05/02/2018  
 : 7.870  
 : RED+BLUE DOT  
 : AS ROLLED  
 : XL=5-6 MTR

## 1. CHEMICAL COMPOSITION % (Ladle/Product)

	%C	%Mn	%P	%S	%Si	%Cr	%Ni	%Mo	%Pb	%Cu	%Sn	%V	%Ti	%B	%Al	%Ca
CUST. MIN	0.170	1.100	--	--	0.150	1.000	--	--	--	--	--	--	--	--	0.020	--
SPEC. MAX	0.220	1.400	0.025	0.035	0.400	1.300	--	--	--	--	--	--	--	--	0.040	--
ACTUAL	0.170	1.130	0.017	0.025	0.210	1.000	0.017	0.003	--	0.010	0.006	0.006	0.0020	0.0003	0.023	0.0019

## 2. MECHANICAL PROPERTIES

## SPECIFIED

## ACTUAL

YS : --  
 UTS : --  
 ELONGATIONS(5.65Sq.rt.A) % : --  
 REDUCTION AREA % : --  
 IMPACT VALUE : --  
 HARDNESS(BHN/HRB/HRC) : 220BHN MAX. 170/190 BHN

## 3. METALLURGICAL PROPERTIES

MICRO STRUCTURE : P+F PEARLITE+FERRITE  
 GRAIN SIZE(ASM E112/IS:4748) : 6/8 6.5/7.5  
 TOTAL DECARB (MM) SAEJ419 : 1.0%OF DIA 0.38 MM PARTIAL  
 INCL RATINGS(ASM E-45/IS:4163)

**SAMPLE TC**

## SPECIFIC REQUIREMENT

	THIN	THICK	THIN	THICK	THIN	THICK	THIN	THICK
A-2.0/1.5			B-2.0/1.5		C-2.0/1.0		D-2.0/1.0	
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 : 4/16"=33/37HRC  
 HARDENABILITY IS:3848/A255-02 :

Material has been sold to M/s. **FORGE INDIA PVT LTD PARWANOO**  
 200285 Dt. 5/2/18 Qty. 7.870  
 vide Invoice No. **PR-65 AR-8388**  
 Truck No. **PR-65 AR-8388**

DIST-INCH/MM : 4/16"  
 VALUES(HRC) : 33.50

For Jayaswal Neco Industries Ltd. (Ldh.)

5. GAS LEVEL (PPM) SPECIFIED MAX : O2: 20.0 N2: 70-80 H2: 2.0  
 GAS LEVEL (PPM) ACHIEVED : O2: 14.9 N2: 73.0 H2: 1.8

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



**Sham Lal**  
 AUTHORIZED SIGNATORY