



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

NG:BM 3105

CUSTOMER	:FORGE INDIA PVT.LTD. DISTT-SOLAN (HP)	INVOICE NO	:	QA/RM/F10
SPECIFICATION	:FI/TDC/S-002.ISSUE NO.1	TRUCK NO	:	TS08UB-0212
REV No / REF NO	:00.	DATE	:	28/04/2018
HEAT NO	:D 59216	NO OF PCS / BNDL	:	90 PCS/06 BNDLS
GRADE	:20MNCR5	QUANTITY (MT)	:	12.230
SECTION(MM)	:65 DIA	COLOUR CODE	:	RED+BLUE DOT
REDUCTION RATIO	:9.8	SUPPLY CONDITION	:	AS ROLLED
INPUT SIZE (MM)	:180 X 180	MULTIPLE LENGTH	:	5-6 MTR
PROCESS ROUTE	:BF/EOF/LRF/VD/CCM/SEN/M'EMS/AMLC			

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	1.280	0.018	0.023	0.210	1.090	0.020	0.003	—	0.007	0.004	0.005	0.0020	0.0004	0.021	0.0005

2. MECHANICAL PROPERTIES

	SPECIFIED	ACTUAL
YS	—	—
UTS	—	—
ELONGATIONS(5.65S ₀ .rt.A) %	—	—
REDUCTION AREA %	—	—
IMPACT VALUE	—	—
HARDNESS(BHN/HRB/HRC)	220BHN MAX.	180/200 BHN

3. METALLURGICAL PROPERTIES

MICRO STRUCTURE	: P+F	PEARLITE+FERRITE
GRAIN SIZE(ASM E112/IS:4748)	: 6/8	6.5/7.5
TOTAL DEARB (MM) SAEJ419	: 1.0%OF DIA	0.32MM PARTIAL
INCL RATINGS(ASM E-45/IS:4163)		

SPECIFIC REQUIREMENT

ACTUAL

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				
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)	: —	
COMINITY REQUIREMENT	: 4/16"=33/37	
HARDENABILITY IS:3848/A255-02		

DIST-INCH/MM:	:	4/16"	:	:	:	:	:	:	:	:	:	:	:	:	:	:
VALUES(HRC):	:	35.50	:	:	:	:	:	:	:	:	:	:	:	:	:	:

5. GAS LEVEL (PPM) SPECIFIED MAX	:	O2: 20.0	N2: 70-80	H2: 2.0
GAS LEVEL (PPM) ACHIEVED	:	O2: 17.1	N2: 73.0	H2: 1.9

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

