



An ISO/TS 16949:2009 COMPANY

**AARTI STEELS LIMITED**  
 Registered Office : G.T.Road, Miller Ganj, Ludhiana.  
 Works : Focal Point, LUDHIANA - 141010. (INDIA)  
 Phone no. :- 0161-3006200 Fax :- 0161-3006250  
 MANUFACTURER'S OF :- CARBON ALLOYS & SPECIAL STEELS  
**- : TEST CERTIFICATE : -**



-: Original :-

M/S.- FORGE INDIA (PVT.) LIMITED.  
 PLOT.NO.60, SEC-5,  
 PARWANOO. (H.P)

T.C.NO. 8625 Date :- 15/02/2018 18:10:15  
 Invoice No. 21383  
 Truck No. HR38M-6006

GRADE	SIZE	HEAT NO.	MANUFACTURING ROUTE	COLOUR CODE	SUPPLY COND.N.	QTY. (MT)	NO. OF PCS.
SAE 8620	65 RCS	6078	E.A.F.+L.F.+V.D.+CCM+EMS	BROWN+BLUE	AS ROLLED	4.980	26

## -: CHEMICAL COMPOSITION IN PERCENTAGE :-

	C	Mn	S	P	Si	Ni	Cr	Mo	V	Al	Cu	Sn	Ti	B	Ca
Min	0.1800	0.7000	--	--	0.1500	0.4000	0.4000	0.1500	--	--	--	--	--	--	--
Max	0.2300	0.9000	0.0400	0.0350	0.3000	0.7000	0.6000	0.2500	--	--	--	--	--	--	--
Actual	0.2200	0.8900	0.0260	0.0130	0.2500	0.4800	0.5840	0.1920	0.0028	0.0280	0.1280	0.0120	0.0032	0.0004	0.0009

## -: METALLURGICAL RESULTS :-

INCLUSION RATING IS : 4163/JK CHART/ASTM E-45A									Aust.Grain Size ASTM No. (E-112)	7	Gas Content (ppm)	
	A		B		C		D					
	T	H	T	H	T	H	T	H				
STD MAX	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	Decarb. (MM)	0.11	O2	15
											N2	77
ACTUAL	1.5	0.5	0.5	0.0	0.0	0.0	1.0	0.0	Micro- Structure	P+F+B	H2	.876

MECHANICAL PROPERTIES (ASTM A-370/IS-1608) | AS ROLLED | MACRO | ULTRASONIC | MIX UP TEST  
 TEST CONDITION (N / H & T) | | | TEST

	U.T.S.	Y.S.	EL%	RA%	Impact Value	Hardness B.H.N./Rb	BETTER THAN C2,R2,S2 MAX LEVEL AS PER PLATE 1st OF ASTM-E-391	100 % DONE OK	SPARK TEST 100% DONE OK
Reqd.	-	-	-	-	-	240 MAX			
Actual	-	-	-	-	-	184-192			

## -: HARDENABILITY (HRC) AS PER IS : 3848 :-

Distance	J1/16	J2/16	J3/16	J4/16	J5/16	J6/16	J7/16	J8/16	J9/16	J10/16	J12/16
Required	-	-	-	36-40	-	-	-	-	-	-	-
Actual	-	-	-	39	-	-	-	-	-	-	-

Remarks :- REDUCTION RATIO=9.5,100% MOBILE SPECTRO DONE OK(X-RAYS)

SURFACE SATISFACTORY

Note :- TESTED FOR RADIOACTIVE CONTAMINATION *OK*

CERTIFIED THAT THE TEST FINDINGS ARE CORRECT &amp; ARE BASED ON