



--: TEST CERTIFICATE : -- Original :-

M/S.- HAPPY FORGINGS LTD. U-II, B-XXIX, 2254 T.C.NO. 968 Date :- 10/05/2018 21:10:09  
/1. OPP. HINDUSTAN TYRE. Invoice No. 1014  
KANGANWAL ROAD JUGIANA, LUDHIANA Truck No. PB11BR6406

GRADE	SIZE	HEAT NO.	MANUFACTURING ROUTE	COLOUR CODE	SUPPLY COND.N.	QTY. (MT)	NO. OF PCS.
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SAE 8625	70 DIA	9463	E.A.F.+L.F.+V.D.+CCM+EMS	BLUE+YELLOW DOT	AS ROLLED	11.370	68
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--: CHEMICAL COMPOSITION IN PERCENTAGE :--

	C	Mn	S	P	Si	Ni	Cr	Mo	V	Al	Cu	Sn	Ti	B	Ca
Min	0.2300	0.7000	--	--	0.1500	0.4000	0.4000	0.1500	--	--	--	--	--	--	--
Max	0.2800	0.9500	0.0400	0.0350	0.3000	0.7000	0.6500	0.2500	--	--	--	--	--	--	--
Actual	0.2500	0.9500	0.0250	0.0180	0.2400	0.4540	0.6480	0.2500	0.0033	0.0255	0.1700	0.0160	0.0038	0.0004	0.0004

--: METALLURGICAL RESULTS :--

INCLUSION RATING IS : 4163/JK CHART/ASTM E-45A										Aust. Grain Size ASTM No. (E-112)		Gas Content (ppm)	
A		B		C		D		E		F		G	
T	H	T	H	T	H	T	H	T	H	T	H	O2	N2
STD	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	0.12	0.17
MAX													78
ACTUAL	1.5	0.5	0.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	P+FB-	H2
													.911

MECHANICAL PROPERTIES (ASTM A-370/IS-1608)	AS ROLLED	MACRO	ULTRASONIC TEST	MIX UP TEST
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TEST CONDITION (N / H & T)	U.T.S.	Y.S.	EL%	RA%	Impact Value	Hardness B.H.N./Rb	BETTER THAN C2, R2, S2 MAX LEVEL AS PER PLATE IST OF ASTM-E-381	SPARK TEST
Reqd.	-	-	-	-	-	240 MAX	100 % DONE OK	100% DONE OK
Actual	-	-	-	-	-	216-225		

--: 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	-	-	-	-	-	-	-	-	-	-	-
Actual	-	-	-	-	-	40	-	-	-	-	-

Remarks :- REDUCTION RATIO=15.0, 100% MOBILE SPECTRO DONE OK (X-RAYS)  
T.C. HAS BEEN APPROVED BY CUSTOMER

SURFACE SATISFACTORY

Note :- TESTED FOR RADIOACTIVE CONTAMINATION

CERTIFIED THAT THE TEST FINDINGS ARE CORRECT & ARE BASED ON  
ACTUAL RESULTS CARRIED OUT ON SAMPLES DRAWN AS PER Q.A.P.

PREPARED BY

AUTHORISED SIGNATORY

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