



# M M FORGINGS LIMITED

## INCOMING METALLURGICAL INSPECTION REPORT

Lot No : 010000355545

QA 007 REV 0

No.Of.Bars:135

Mat.Des : RM - SCR420H, 60DIA REV.03

ICIN Number: 5000371719	Matl : MA044A03060.0D	Supplier : Sunflag Iron & Steel Co Ltd	Supp TC No :0022303	Heat Number : 10154
PO Number : 4500013464	Size : 60.000 DIA	Supp TC date : 13:05:2018	Qty in MT : 17.820	Batch : 0000690530

### Chemical composition in %

		C	Mn	Si	P	S	Ni	Cr	Mo	V	Cu	Nb	B	Al	Ti	Co	Sn	Fe	Sb	Pb	As	Ca	W	Zr	Ta	N2	H2	O2	CE1	CE2
As per Spec.	Min	0.1700	0.5500	0.1500				0.8500						0.0200																
	Max	0.2300	0.9000	0.3500	0.0300	0.0300	0.2500	1.0500	0.0600	0.0200	0.3000	0.0100	0.0006		0.0200		0.0200		0.0100		0.0100					0.0100	0.0002	0.0020		
Act. Analysis	1	0.1910	0.8650	0.2020	0.0120	0.0050	0.0590	1.0000	0.0050	0.0020	0.0200	0.0020	0.0001	0.0290	0.0020		0.0020				0.0050									
	2	0.1870	0.8780	0.2240	0.0140	0.0060	0.0320	1.0100	0.0060	0.0020	0.0190	0.0020	0.0001	0.0280	0.0020		0.0020				0.0050									
	3																													
	4																													
	5																													
As per Tc	1	0.1800	0.8800	0.2200	0.0170	0.0140	0.0500	0.9900	0.0100	0.0040	0.0220	0.0020	0.0002	0.0310	0.0026		0.0010		0.0008		0.0065					0.0086	0.0001	0.0016		

Visual inspection:	Size & Surface satisfactory																				Shearability	OK	Forgeability	OK
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### Mechanical properties

		UTS (Mpa)	YS (Mpa)	EI (%)	RA (%)	Izod		Charpy Impact -1		Charpy Ipmaact -2		RM	Upset	H/T
						Joule	T(° C)	Joule	T(° C)	Joule	T(° C)	Hardness(HBW)	Hardness(HBW)	Hardness(HBW)
As per Spec.	Min													143
	Max											229	229	187
Tested Value												149,149,143,149,146	149,149,149,143,143	149,149,156,156,152
As per TC														

### Micro

Inclusion rating (%)		A Thin/Thick		B Thin/Thick		C Thin/Thick		D Thin/Thick		Grain size (ASTM)		Decarb (mm)		Macro	Step Down	Bend Test
As per Spec.	Min									6.00						
	Max	2.00 /1.00		2.00 /1.00		0.50 /0.50		2.00 /1.00		8.00		0.50				
Tested Value		1.00 /-		1.00 /-		- /-		1.00 /-		7		0.14		C1S1R1		
As Per TC Value		1.00 /-		0.50 /-		- /-		1.50 /-		7-7.5		0.28		C2S1R1		
Jominy hardenability (MM)	5.0	7.0														
As per spec	min	32.0	29.0													
	max	37.0	34.0													
Tested Value		33.0	29.0													
As per TC Value		35.0	30.0													

Any other test specified :	Our RM color code: Light Brown / White
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Remarks : Material Accepted.	Heat code allocated: ZZX
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Tested By :LAB1	Lot Cleared Date:04.06.2018	Head Metallurgy
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