



M M FORGINGS LIMITED

INCOMING METALLURGICAL INSPECTION REPORT

Lot No : 010000346951

QA 007 REV 0

No. Of. Bars: 94

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

ICIN Number: 5000361794	Matl : MA044A03060.0D	Supplier : Sunflag Iron & Steel Co Ltd	Supp TC No : 0016506	Heat Number : 08682
PO Number : 4500013110	Size : 60.000 DIA	Supp TC date : 14:03:2018	Qty in MT : 11.930	Batch : 0000673065

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	0.1950	0.8550	0.2460	0.0140	0.0030	0.0110	0.9810	0.0050	0.0020	0.0230	0.0020	0.0001	0.0230	0.0020		0.0020				0.0050									
	2	0.1880	0.8460	0.2400	0.0140	0.0030	0.0170	0.9950	0.0070	0.0020	0.0240	0.0020	0.0001	0.0230	0.0020		0.0020				0.0050									
	3																													
	4																													
	5																													
As per Tc	1	0.1900	0.8200	0.2200	0.0150	0.0070	0.0180	0.9900	0.0030	0.0050	0.0280	0.0030	0.0002	0.0250	0.0034		0.0011		0.0007		0.0050					0.0092	0.0001	0.0015		

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

		UTS (Mpa)	YS (Mpa)	El (%)	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												149,149,149,156,156	156,156,149,149,156	149,149,156,156,156
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 /-		0.50 /-		- /-		1.00 /-		7		0.15		C1S1R1		
As Per TC Value		1.00 /-		0.50 /-		- /-		1.50 /-		7-7.5		0.26		C2S1R1		

Jominy hardenability (MM)	5.0	7.0																													
As per spec	min	32.0	29.0																												
	max	37.0	34.0																												
Tested Value		34.0	30.0																												
As per TC Value		34.0	30.0																												

Any other test specified :	Our RM color code: Light Brown / White																														
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Remarks : Material Accepted.	Heat code allocated: ZHN																														
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Tested By : LAB1	Lot Cleared Date: 20.03.2018																														
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Head Metallurgy