



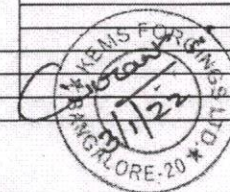
SLR METALIKS LTD

TDC SCRUTINY SHEET

Doc. No.	IMSR/QA/61
Rev No	0
Rev Date	01.01.2020
Date	24.12.2021
Sr.No	103893
Rev No.	0

Customer	KEMS FORGINGS LIMITED
Auto/Non Auto	Not Mentioned
Specification	Doc.No. QA/TDC/23, Rev No. 02, Rev Date 27.08.2021
Grade	SAE15836 Cr
Application	-

SL.No.	Parameter	Customer requirement	SLR offer / Remarks	KEMS comments dt 30/12/21	SLR offer / Remarks	KEMS comments Dt 03/01/22
	Technical Review					
1	Process route	BF-BOF/EAF-LRF-VD-INGOT/CCM-EMS	BF-EOF-LRF-VD-CCM(EMS/AMLC)-RM	OK		
2	Bloom Size	Not Mentioned	200X200 mm	OK		
3	Reduction ratio	7:1 Min	SLRM assures 7:1 Min from 16 to 85 mm Dia & upto 75 mm RCS			
4	Section	93mm Dia	For Reduction ratio of 93mm Dia: 5.89:1	OK Accepted		
5	Length	4 to 6 mtrs	OK, with 10% short length down to 1.5 m.	Multiple of 241mm	Multiple of 241mm: Acceptable plus 40/80 mm cutting tolerance.	OK
6	Dimensional tolerance	For 40mm to 50mm Dia: Tolerance +0.75, Out of Square: 1 mm, For 51mm to 80mm Dia: Tolerance +/-1.00, Out of Square: 1.2 mm, For 80mm to 100mm Dia: Tolerance +/-1.20, Out of Square: 1.3 mm	As per IS 3739 Gr-I	OK		
7	Straightness	For 40mm to 50mm Dia Tolerance Straightness: 4mm/m Max, For 51mm to 80mm Dia Tolerance Straightness: 3mm/m Max, For 80mm to 100mm Dia Tolerance Straightness: 2.5mm/m Max	OK	OK		
8	Supply Condition	As Rolled	OK			
9	Chemistry	%	Min.	Max.	%Ti: 0.020/0.050 %Al: 0.020/0.045 Rest OK	Acceptable
		C	0.32	0.36		
		Si	0.20	0.30		
		Mn	1.20	1.50		
		P	-	0.030		
		S	-	0.030		
		Cr	0.20	0.40		
		Mo	-	0.05		
		Ni	-	0.20		
		B	0.0015	0.0030		
		Ti	0.020	0.040		
		Al	0.010	0.040		
		Ni+Cu	-	0.30		
	Gas Content	O2	-	20ppm	N2: 90ppm Max	
		N2	-	80ppm		
		H2	-	2.0ppm		



10	Grain Size	5 to 8 As per ASTM E112			OK	OK		
11	Inclusion Rating (As per ASTM E45/A)		THIN	THICK	OK	Grain size - ABCD offer OK , please consider standard as ISO4967 . DS 13 Micron Max	Acceptable	OK
		A	2.0	1.0				
		B	1.0	0.5				
		C	0.5	0.5				
		D	1.0	1.0				
12	Macro Examination	C2, S2, R2 Max As per ASTM E-381			OK	OK		
13	As Rolled Hardness	241 BHN Max			250 BHN Max	OK		
14	Microstructure	Uniform distribution of ferrite and pearlite and should be free from banding[<40 microns]			OK	OK		
15	Jominy Hardenability	J1.5mm: 51 Min, J13mm: 44-50, J19mm: 34-50 HRC			OK	J13 - 44 - 55 HRC as per spec , Rest OK	Acceptable	OK
16	Decarb	Partial 0.30mm Max			1% Max of Product size	0.5mm Max	Acceptable	OK
17	Surface Condition	Free from Seams, Cracks, Laps & other kind of surface defects.			OK	OK , 100% MPI tested	Acceptable	OK
18	Stepdown Test	Minimum 10 samples will be checked by magnetic particle inspection method. 10 samples should be free from defects			As per IS 4075	OK		
19	Upset Test	A length equal to three times of diameter/Rcs should be choosen and heated to forging temperature and upset to 50 % of the original length in hot condition.Sample should free from cracks or laps. [Squares are made to round before upsetting]			As per IS 10167	OK		
20	Spark Test/Spectral	100%			100% Spark Test/PMI	OK		
21	MPI	100%			OK	OK		
22	UT	UT will be carried out as per 3mmFBH. Any indication more than 3mm is not acceptable. 3 isolated indication less than 3mm FBH is allowed per meter, minimum distance between 2 such indication should be more than 200mm. Linear defects not allowed. (As per Standard SAE J428)			As per ASTM A388, Defect Echo upto 20% when the backwall echo is set to Full screen height	Should be better than 3MM FBH as per ASTM A388	Acceptable	OK
23	Endcuts	Not Mentioned			Upto 65mm Warm Shear Above 65mm Abrasive	OK		
24	Colour Code	SKY BLUE + GOLDEN BROWN			SKY BLUE + BROWN	OK		
25	TC	As per TDC			OK			
Nataraj G			Prakash Angadi					
Prepared by			Approved by			Customer Representative		

