

SG 10403 REV:01	Product Specifications for Aluminum tubes	Drg.No.		
		Date	05.11.2016	
		Product	GSM-400	
S.NO	BHEL Specification	Vendor compliance		
		YES/NO	Remarks	
1.0	Material: high conductivity HE-30 grade Aluminium			
2.0	Compliance with National/International standards : The material shall comply with the requirements of the following national standard and also meet the requirements of this specification. INDIAN : IS : 733 : Alloy 64430 (WP), [HE 30 (WP)]			
3.0	Dimensions and Tolerances: All the components shall be within $\pm 0.5\text{mm}$			
4.0	1. Finish: a) Surface finish of the components shall be at least Ra 0.8. b) The component shall be free from dirt, grease and loose particles. c) Drawn profiles, to size, only shall be used for direct welding. No smithy is allowed for formation/ matching of profiles in view of defect inception. d) Weld splatter, if any, shall be removed by chipping or grinding on completion of the weld (if allowed in drawing). e) Any sharp corners shall be removed as per the drawing. Wherever not specified in the drawing, a radius of R1 shall be provided at the sharp corners and edges. f) Parallelism of the tube must be maintained within 0.1 degree and any deviation shall be subjected to rejection in supply.			
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5.0	Properties:				
	Parameter	Test method	Value (Minimum)		
	Chemical	IS 504	Remainder		
	a) Aluminium		0.1 max		
	b) Copper		0.4-1.2		
	c) Magnesium		0.6-1.3		
	d) Silicon		0.6 max		
	e) Iron		0.4-1.0		
	f) Manganese		0.1 max		
	g) Zinc		0.2 max		
	h) Titanium and/or other grain refining elements		0.25 max		
	Chromium				
5.2	Density, minimum	IS 5802	2.7		
5.3	Tensile strength, Minimum	IS 1816	275-300		
5.4	Brinell Hardness	IS 1500	84-91		
5.5	Elongation	IS 1608	6-9		
5.6	0.2 percent Proof-Stress	IS 1816	240-255		
5.7	Electrical Conductivity at 20°C (Minimum)	IS 5802	45		
6.0	Test Methods: Unless otherwise specified, the tests shall be conducted in accordance with relevant methods as mentioned against clause 7.				
7.0	Qualification requirements: The supplier should have the experience of supplying similar material during last two years. Supplies reference list shall be provided along with the offer.				
8.0	Manufacturer's Test Certificate The supplier shall submit copy of Manufacturer's test certificate				
9.0	Warranty Certificate: All supplied items to be provided with warranty for 12 months from date of receipt and acceptance.				
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