

		BHARAT HEAVY ELECTRICALS LIMITED BHOPAL QUALITY PLAN FOR COPPER TG ITEMS						Page 1 of 1	
QAP PLAN NO. QC/TCB/QAP/BO 14		Rev 01		Date: 25/07/2019					
SL.No.	COMPONENTS/ STAGE	CHARACTERISTICS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENTS	FORMAT OF RECORD	AGENCY		REMARKS
							S	B/T	
1) RAW MATERIAL									
1.1	Copper	Chemical Composition, Electrical & Mechanical Properties	Test	One sample/ Melt	AA12023, AA12001	TC/TR	P	V	Copper raw material Supplier/ Rolling Mill TC Verification by BHEL/TPIA
1.2	Brazing Alloy	Chemical Composition	Test	1 from each lot	AA77015	TC/TR	P	V	
2) FINAL INSPECTION									
2.1	Brazing procedure & Brazer Qualification	Only trained and qualified brazers to be deployed.	Verify	100%	ASME SEC IX/ BP0631199/ BHEL Drg.	TC/TR	P	V	BHEL Qualified/ BHEL customer qualified brazers to be deployed.
2.2	Copper sheet / Plate / Sections	Surface finish	Visual	100%	AA12023, AA12001, BHEL drawing	TC/TR	P	W	The Surface shall be clean, bright, smooth and free from defects.
		Conductivity- Hardness, Elongation, Tensile strength, Bend Test (as applicable) -Chemical Composition	Test	One Sample each lot	AA12023, AA12001	TC/TR	P	W/V	1) Copper raw material TC traceability verification. 2) Witness for conductivity & hardness test if tests performed at Suppliers Lab. 3) Record review for tests which are performed at NABL accredited lab
2.3	Finish of brazed joints	Check brazed joints for a) Adequate Filler material b) Under cuts & brazing defects	Visual	100%	BHEL drawing	TC/TR	P	W	
2.4	Silver/Tin plating (As applicable)	Coating Thickness	Measurement/ Visual	100%	BHEL drawing	TC/TR	P	W	
2.5	Dimensions check	All dimensions as per drawing (Straightness, Edge radius, machining and bending of parts (as applicable))	Measurement	100%	BHEL drawing	TC/TR	P	W	Dimensions check for 25% per lot by BHEL/ TPIA
2.6	Oil resistant red paint	Paint finish and shade (As applicable)	Visual	100%	BHEL drawing	TC/TR	P	W	
V - VISUAL, M - MEASUREMENT, T - TEST, DRG - DRAWING, TC/TR - Test certificate/ Test Report, TPIA - THIRD PARTY INSPECTION AGENCY (APPROVED BY BHEL), CHP- CUSTOMER HOLD POINT, S= SUPPLIER/ VENDOR, B/T= BHEL/TPIA, P= PERFORM, V= VERIFICATION/REVIEW, W= WITNESS NOTE: Surveillance test at BHEL Lab as per BHEL Norms shall be applicable.									

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