

Supplier's LOGO	Supplier's Name and Address		Quality Plan for SS Rolled Flats(DIN EN 10028-7:1.4550)					Project: GHAVP 1& 2 W.O : D157 to D160-001-1-93-171 P.O No: To be filled by Supplier				
			Item : Flats for Corrugated Strips(1.5 mm thick),Central Vertical Strips(2 mm thick) & U supports (3.5 mm thick) Sub-system: Steam Generator		QP No.: To be filled by Supplier Rev.No.: To be filled by Supplier Date: To be filled by Supplier Page No:1 of 4							
Sl. No	Component & Operations	Characteristics	Type of Check	Quantum Of check	Reference Document	Acceptance Norms	Format of Record		Agency			Remarks
									M	B	N	
1.	2.	3.	4.	5.	6.	7.	8.	D*	9. **			10.
1.0 Raw Material :												
1.1	Steel Melting : :To be filled by Supplier	Temperature, Blank off pressure	Record Verification	100%	PC-M-961/01 MPP: To be submitted	TC	√	P	R	R	Steel shall be fully killed.	
1.2	Ladle Analysis	Chemistry	Chemical analysis	1/Melt	PC-M-961/01 MPP: To be submitted	TC	√	P	R	R	---	
1.3	Semi Product (Slab) casting	Free from defects	Visual/Record verification	100%	MPP: To be submitted	RD	--	P	--	R	---	
2.0 In process Controls :												
2.1	Rolling Process (Cold Rolling)	MWD (Main Working Direction)	Record verification	100%	PC-M-961/01 MPP: To be submitted	TC	√	P	R	R	---	
2.2	Marking after Rolling	Identifications	Verification and Visual	100%	PC-M-961 Rev 01	RD	--	P	--	---	---	
2.3	Heat Treatment (Solution Annealing)	R.O.H , Soaking Temp & Time, R.O.C	Review of HT Chart	100%	PC-M-961 Rev 01 HT Plan:To be submitted	TC	√	P	W	R	Chart shall be signed at the start and End of Heat treatment and submitted along with TC	
						LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: SUPPLIER B: BHEL, N: NPCIL/TPI P: PERFORM R: REVIEW W: WITNESS AND H: HOLD TC:TEST CERTIFICATE RD:RECORD						
Prepared		Reviewed & Approved		Reviewed & Approved		Reviewed & Approved						
SUPPLIER'S NAME: To be filled				BHEL		NPCIL						


24/05/2018
(MITAHN O.R.)

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2.4	Identification of Test coupon and Cutting	Location and orientation	Visual & Measurement	100%	PC-M-961/01 MPP & MSTP: To be submitted	RD	√	P	H	H	---
2.5	Mechanical descaling of Rolled plates	Surface Inspection , Free from Visual Defects	Visual	100%	PC-M-961/01 Free from Visual Defects	RD	√	P	---	R	Surface Should be smooth and free of scales
2.6	Trimming of edges , Grinding , Cutting to length & width	Trimming , grinding	Visual	100%	PC-M-961/01 Drg/PO No: To be filled	RD	--	P	--	R	---
2.7	Pickling and Passivation of Plate	Completeness	Visual & passivity check	100%	PC-M-961/01 MPP: To be submitted	TC	√	P	R	R	---
2.8	Final Dimensional check of Plates	Dimensions	Measurement	100%	Drg No/P.O No: To be filled	TC	√	P	W	W	---
2.9	Surface Finish Check	Surface Finish	Measurement	100%	PC-M-961/01 Ra ≤ 0.8 microns	TC	√	P	W	W	Roughness measurement diagram shall be included in TC.
2.10	Specimens preparation	Dimensions	Measurement	100%	MSTP: To be submitted PC:M:961 Rev 01	RD	--	P	--	--	---
2.11	Dimension of Specimens	Dimensions	Measurement	100%	MSTP: To be submitted PC:M:961 Rev 01	TC	√	P	R	R	---
2.12	Mechanical and Metallurgical Tests :										
2.13	Product analysis	Chemistry	Chemical analysis	1 / Batch	PC-M-961 Rev 01 MSTP: To be submitted EN10028-7	TC	√	P	W	W	---

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Prepared	Reviewed & Approved	Reviewed & Approved	Reviewed & Approved	
SUPPLIER'S NAME: To be filled		BHEL	NPCIL	


 24/09/18
 (NITIN R.)

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2.14	Tensile at RT	Tensile Strength, Yield Strength (0.2% offset), % Elongation	Destructive Test	1/Batch	PC-M-961 Rev 01 MSTP: To be submitted EN10028-7	TC	√	P	W	W	---	
2.15	Tensile at 350° C	Tensile Strength, Yield Strength (0.2% offset)	Destructive Test	1/Batch	PC-M-961 Rev 01 MSTP: To be submitted EN10028-7	TC	√	P	W	W	---	
2.16	Corrosion Test (before sensitization)	Inter Granular Corrosion	IGC Test	1/Batch	PC-M-961 Rev 01 ASTM A 262 Practice-E MSTP: To be submitted	TC	√	P	W	W	---	
2.17	Corrosion Test (after sensitization)	Inter Granular Corrosion	IGC Test	1/Batch	PC-M-961 Rev 01 ASTM A 262 Practice-E MSTP: To be submitted	TC	√	P	W	W	Sensitization-650° x 30 Minutes	
2.18	Micrograph & grain size	Micro structure, Grain Size	Micro test , Grain size check	1/Batch	PC-M-961 Rev 01 ASTM E112 MSTP: To be submitted Grain Size to be reported EN10028-7	TC	√	P	W	R	---	
2.19	Hardness	Hardness	Brinell / Rockwell Hardness	1/Batch	PC-M-961 Rev 01 Value to be reported.	TC	√	P	W	R	---	
3.0	Final Inspection											
3.1	Visual Inspection of Rolled Flats	Free from visual defects	Verification and Visual	100%	PC-M-961 Rev 01	TC	√	P	R	R	---	

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Prepared	Reviewed & Approved	Reviewed & Approved	Reviewed & Approved	
SUPPLIER'S NAME: To be filled		BHEL	NPCIL	


 24/09/18
 (ANTHONY - OR)

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3.2	Marking	SI No, Heat Number, Material designation, Supply condition, Inspectors Seal, Manufactures name , P.O Number.	Verification and Visual	100%	PC-M-961 Rev 01	TC	√	P	R	R	---	
3.3	Mix up Test	Positive Material Identification	PMI Test	100%	PC-M-961 Rev 01	TC	√	P	R	R	---	
3.4	Certification and Documentation Control	Order compliance	Certificate compilation	100%	PC-M-961 Rev 01	TC	√	P	R	R	---	
3.5	Documents (Test Certificates) shall be sent to BHEL/Trichy prior to dispatch. Dispatch clearance will be given after Acceptance of Test Certificates by BHEL&NPCIL)					RD	--	P	H	H	---	
3.6	Packing & Shipment	Packing	Visual	100%	PC-M-961 Rev 01	---	--	P	--	---	---	

Note:

1. MSTP (Material Sampling Plan) , MPP(Manufacturing Process plan), Heat Treatment Plan shall be submitted by Supplier and the same will be subjected to both BHEL&NPCIL approval.

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 24/05/18
 (NITHIN O.R.)