TRICON POLYMERS PVT. LTD. MUMBAI

PRODUCT - EXPANSION - 3100421 (ITEM ID)

REGISTRATION ID - 68846

CLAUSE	ITEM	DESCRIPTION	AVAILABILITY	REFERENCE	SECTION REFERENCE
6.4		**FOLLOWING LABORATORY FACILITIES FOR TESTING OF EXPANSION JOINT MUST BE AVAILABLE WITH FABRICATOR/FIRM. PROVIDE QUANTITY, MAKE, MODEL NO., S.NO., CAPACITY, YEAR OF MANUFACTURE/COMMISSIONING, MACHINE NUMBER ETC. PREFERABLY IN A CHART FORM AS APPLICABLE.**			
	(I)	CYCLIC MOTION TESTING FACILITIES AS PER PARA 8.3.2.1 OF IRC:SP:69-2011	Yes		
	(II)	PONDING TESTING FACILITIES AS PER PARA 8.3.2.2 OF IRC:SP:69-2011	Yes		
	(III)	DEBRIS EXPELLING FACILITIES AS PER PARA 8.3.2.3 OF IRC:SP:69-2011	Yes		
	(IV)	PULL OUT TESTING FACILITIES AS PER PARA 8.3.2.4 OF IRC:SP:69-2011	Yes		
	(V)	OPENING MOVEMENT VIBRATION TEST FACILITIES AS PER PARA 8.3.2.5 OF IRC:SP:69-2011	Yes		
	(VI)	FATIGUE TESTING FACILITIES	Yes	ANNEX 1	
	(VII)	ABRASIVE RESISTANCE TEST FACILITIES	Yes	ANNEX 1	
	(VIII)	UNIVERSAL TENSILE STRENGTH TESTING MACHINE	Yes	ANNEX 1	
	(IX)	CALIBRATED MEASURING TAPE	Yes	Calibration certificate attached .	TESTING FACILITY SEC (36)
	(X)	CALIBRATED VERNIER CALIPER	Yes	ANNEX 1	TESTING FACILITY SEC (36)
	(XI)	CALIBRATED PARALLELISM METER	Yes	VERTICAL VERNEIR AVAILBLE	TESTING FACILITY SEC (36)
	(XII)	AGEING OVEN /CHAMBER	Yes	ANNEX 1	
	(XIII)	MINIMUM TWO NOS. SHORE HARDNESS TESTERS WITH STANDARD TEST PIECES.	Yes	ANNEX 1	
	(XIV)	VISCOMETER TO CHECK VISCOSITY OF ADHESIVE	Yes	ANNEX 1	TESTING FACILITY SEC (29)
	(XV)	SPECIFIC GRAVITY TESTING APPARATUS	Yes	ANNEX 1	
	(XVI)	BEND TEST FACILITIES	Yes	ino	
	(XVII)	IMPACT TESTING FACILITIES	Yes	ino	

TRICON POLYMERS PVT LTD., MUMBAI.

STANDARD QUALITY ASSURANCE PLAN FOR EXPANSION JOINT

1. Name of Manufacture: TRICON POLYMERS PVT. LTD.		2.	Po. No. :
3. Name of Project/Railway:		4.	Name of Contractor :
5. Doc. No. : TPPL/QAP/05082026/01-R0		6.	Drawing No.:

S. No.	Component Operation	Characteristic Checks & Tolerances	Frequency & Type of check	Reference Document	Fabriactor's quality control	Inspection details		Type of Records	Acceptance criteria	Remarks
						Inspecting Agency	Extent of Inspection			
1	2	3	4	5	6	7	8	9	10	11
1.0	**RAW MATERIAL**									
1.1	Mild Steel For Steel Plates, Angles, Splice Plates, Anchor Loops, Studs etc	**Mechanical, Chemical Test** UTS, Yield Stress, Elongation %, Bend test , Impact test at 0 degree centigrade or -20 degree for sub-zero zone, test for C, Mn, Si, P, S, CE.	As per Mill TC & test required by Authorized inspecting official of Zonal Railway from Govt. Lab ./ NABL approved lab.	Mill TC and Challan	1. Verification of reference document. 2. Complete visual inspection.	Authorized Inspecting official of Zonal Railway	One test piece per thickness per heat.	Fabricators record Co-related with Mill TC & test report.	IS: 2062-11, E250, Quality BO is generally used. However Quality C shall be used for sub zero condition. (As specified in approved Drg.).	1. Manufacturer's test certificate shall be furnished. 100% UST shall be conducted for 12mm & above thick plates as per provision of relevant specification before processing the material for manufacturing. 2. Raw Material to be cleared by nominated inspecting official of Zonal Railway in accordance to provisions specified in IRC:SP:69-2011. 3. Physical condition of raw material must be visually checked for Pitting, rusting, rolling defect etc before use.
1.2	Strip Seal and other Elastomer Components	**Physical & Chemical Test**	As per manufacturer certificate & test required by Authorized inspector of zonal Railway from Govt./ NABL approved lab	Manufacturer test certificate & Challan	Verification of reference document.	Authorized Inspecting official appointed by Zonal Railway	From batches at Random and at discretion of Inspector	Fabricators record.	IRC:SP:69-2011 & referred documents	The sealing element shall be made of Chloroprene rubber (CR). The properties of the material shall be as specified in Table 7.4.2.2.1 for CR as given in IRC:SP:69-2011
2.0	**Welding:**									

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a)	Submission of WPSS	Review of WPSS	Verification	IRS B1-2001 IS 9595-96 WBC-2001	Verification of Reference Document	Authorized Inspecting official appointed by Zonal Railway	100%	Fabricator's Record	IRS B1-2001 IS 9595-96 WBC-2001	Only approved WPSS shall be used for fabrication
b)	WPQR	Witnessing of established WPSS Witnessing of Welder Qualification test	Visual, DT & NDT at approved lab	As per code requirement	Verification of Reference Document	Authorized Inspecting official appointed by Zonal Railway	100%	Approved WPSS and certified welders	IS 7310(I)-74	Only certified welders as per extant policy to be engaged in the job.
c)	Preheating	Measurement of Temperature	Visual with thermal Chalk	As per approved WPSS	Verification of Reference Document	Authorized Inspecting official appointed by Zonal Railway	Random	Inspection Report of Inspection Official & Fabricator's Record	IRS B1-2001	Work shall be as per approved WPSS & WPQR
d)	Baking of Electrode, Flux	To have moisture free Electrode & Flux	Visual Check of Electrodes & beating	As per Manufacture's recommendations	Verification of Reference Document	Authorized Inspecting official appointed by Zonal Railway	Random	Inspection Report of Inspection Officials & Fabricator's Record	IRS B1-2001	Work shall be as per approved WPSS & WPQR
e)	Selection of correct Electrodes & Flux	Reference to WPSS, IRS Class, etc.	Visual	As per approved WPSS	Verification of Reference Document	Authorized Inspecting official appointed by Zonal Railway	100%	Inspection Report of inspection official & Fabricator's Record	Source should be RDSO approved vendors where applicable	Work shall be as per approved WPSS & WPQR
f)	Current Condition	Measurement of Amp. & Voltage	Visual with Ammeter & Voltmeter	As per approved WPSS	Verification of Reference Document	Authorized Inspecting official appointed by Zonal Railway	Random	Inspection Report of Inspection Official & Fabricator's Record	IRS B1-2001	Work shall be as per approved WPSS & WPQR
3.0	**<u>In Process Inspection</u>**	(a) Angle Profile	Size, thickness Dia , profile	Concern specific	Visual & dimensional verification	Firm & Authorized Inspecting	100% by Firm & random by	Fabrication record maintained	IRC:SP:69-2011 & referred	Random check & Rly official will record their observations & records shall be maintained

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1	2	3	4	5	6	7	8	9	10	11
				ation & drawing	w.r.t. concern specification & drawings	Official nominated by Zonal Rly	Zonal Rly	by Firm	documents/ approved drawings	by Firm
		(b) Anchorage	Size by Gauge,	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Firm & Authorized Inspecting Official nominated by Zonal Rly	100% by Firm & random by Zonal Rly	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	
		(c) Profile	Length, width, thickness As per drawing	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Firm & Authorized Inspecting Official nominated by Zonal Rly	100% by Firm & random by Zonal Rly	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	
		(d) Weld check	Size by gauge & DPT	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Firm & Authorized Inspecting Official nominated by Zonal Rly	100% by Firm & random by Zonal Rly	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	
		(e) Stud	Dia & length of stud Length,	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Firm & Authorized Inspecting Official nominated by Zonal Rly	100% by Firm & random by Zonal Rly	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	
		(f) Dimensional Check	width, thickness As per drawing	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification	Firm & Authorized Inspecting Official nominated by Zonal	100% by Firm & random by Zonal Rly	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	

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1	2	3	4	5	6	7	8	9	10	11
					& drawings	Rly				
		(g) Straightness check	By line dori	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Firm & Authorized Inspecting Official nominated by Zonal Rly	100% by Firm & random by Zonal Rly	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	
4.0	**Finished expansion joint Inspection**	(a) Dimensional check	Length, width, thickness As per drawing	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Authorized Inspecting Official	100% by Inspecting Official.	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	Quality check list (like sample Annexure-II) as per approved drawing to be maintained by Firm & same to be checked & verified by concern Rly official.
		(b) Straightness check	By line dori Size by gauge	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Authorized Inspecting Official	100% by Inspecting Official	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings	
		(c) Welding check-by gauge/DPT	Material Size, length Dia etc.	Concern specification & drawing	Visual & dimensional verification w.r.t. concern specification & drawings	Authorized Inspecting Official	100% by Inspecting Official	Fabrication record maintained by Firm	IRC:SP:69-2011 & referred documents/ approved drawings.	
5.0	**Additional acceptance tests**									
(a)	Cyclic motion test	Sign of Distress	One expansion joint per lot supply	Approved drawing and specification	Verification of reference document	Authorized Inspecting Official	One expansion joint per lot supply	Fabricaton record maintained by Firm	IRC:SP:69-2011	Expansion Joint must meet requirements given in Clause 8.3.2.1 of IRC:SP:69-2011.
(b)	Ponding Test	Leakage	One expansion joint per lot supply		Verification of reference document	Authorized Inspecting Official	One expansion joint per lot supply	Fabricaton record maintained by Firm	IRC:SP:69-2011	Expansion Joint must meet requirements given in Clause 8.3.2.2 of IRC:SP:69-2011.

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1	2	3	4	5	6	7	8	9	10	11
(c)	Debris Expelling Test	% Debris Expelling	One expansion joint per lot supply		Verification of reference document	Authorized Inspecting Official	One expansion joint per lot supply	Fabricaton record maintained by Firm	IRC:SP:69-2011	Expansion Joint must meet requirements given in Clause 8.3.2.3 of IRC:SP:69-2011.
(d)	Pull-out Test	Stretching of Joint	One expansion joint per lot supply		Verification of reference document	Authorized Inspecting Official	One expansion joint per lot supply	Fabricaton record maintained by Firm	IRC:SP:69-2011	Expansion Joint must meet requirements given in Clause 8.3.2.4 of IRC:SP:69-2011.
(e)	Opening Movement Vibration Test	Ability to withstand against the repeated movement	Discretion of inspecting officials		Verification of reference document	Authorized Inspecting Official	As per special contractual agreement	Fabricaton record maintained by Firm	IRC:SP:69-2011	Expansion Joint must meet requirements given in Clause 8.3.2.5 of IRC:SP:69-2011.
6.0	**Painting Process**	Verification of Manufacture s Test Certificate Inspection Certificate, Challan	Visual	Verification of Manufacture s Test Certificate, Challan	Verification of reference document	Authorized Inspecting Official	Each Batch	Fabricator s record	As per relevant Specification	Paint should be as per IRS: B1:2001 or as per contract conditions as applicable
7.0	**Packing &Dispatch**	(a) Marking of expansion joints (b) Clamping of joints (c) packing of expansion joint	Visual check	As per contract	Verification of reference document	Authorized Inspecting Official	Each Batch	Fabricator s record	As per relevant Specification	Packing and dispatch arrangement should be in accordance to contractual agreement.

Note :- 1.If there are any studs in the approved drawing, Annexure-II shall be referred for Quality Control

2.If there are Bolts & Nut in the approved drawing, then Annexure-III shall be referred for Quality Control.