

HEVEA RUBBER TECHNOLOGIES PRIVATE LIMITED

Details of Testing Facilities for Elastomer — Compliance to STR Para 6.1 (Table 1: Chloroprene Seal)

STR Reference: Expansion Joint — Doc. BS-S-7.5.3.1-11, Version 2.0 (per IRC:SP:69-2011), Para 6.1

Sl.	Property / Test	Standard (per STR)	Status	Equipment / Facility	Make	Model No.	Qty	Serial / M/c No.	Capacity / Range	Year	NABL Lab / MoU	Remarks
Table 1 — Chloroprene Seal (IRC:SP:69-2011)												
1	Hardness	DIN 53505 / ASTM D 2240	In-house	Shore-A Hardness Tester	Excel	Shore III (Analog)	2		25–90 Shore A	2023		
2	Tensile Strength	DIN 53504 / ASTM D 412	In-house	Universal Testing Machine	Scientific Equipment & Testing	—	1		0–500 N	1999		
3	Elongation at fracture	DIN 53504 / ASTM D 412	In-house	Universal Testing Machine	Scientific Equipment & Testing	—	1		0–500 N	1999		Same UTM as tensile.
4	Tear propagation strength (longitudinal & transverse)	DIN 53507 / ASTM D 624 (Die C)	In-house	UTM with Die-C tear dies	Scientific Equipment & Testing	—	1		0–500 N	1999		Confirm Die-C tear dies.
5	Shock elasticity (rebound resilience)	DIN 53512	Out-sourced	Rebound resilience test							Hevea–MAEON Labs MoU	Covered by MAEON MoU.
6	Abrasion	DIN 53516	Out-sourced	Abrasion resistance test							Hevea–MAEON Labs MoU	Covered by MAEON MoU.
7	Residual compression strain (22h/70°C/30% strain)	DIN 53517 / ASTM D 395 (Method B)	In-house	Compression Set apparatus	Fabricated in-house	—	1		6 nos / test	2005		
8	Ageing in hot air (14 days/70°C) — Δ hardness, tensile, elongation	DIN 53508	In-house	Hot-air ageing oven	ACE	AP-S-72	1		300 °C	2022		
9	Ageing in ozone (24h/50 pphm/25°C/20% strain)	DIN 53509	In-house	Ozone Chamber	Ozone India Technology	OZ-INDIA-OCT	1		—	2023		
10	Swelling behaviour in oil (168h/25°C, ASTM Oil No. 1 & No.3)	DIN 53521	In-house	Oil immersion + oven / balance	Scientific Equipment & Testing/Aging Oven ACE Microvision IRM 903	AP-S-72	1		300 °C	2022		Requires ASTM Oils No.1 & 3 — confirm in-house or outsource.
11	Cold hardening point	ASTM D 1043	Out-sourced	Low-temperature torsional stiffness							Hevea–MAEON Labs MoU	MAEON MoU — align standard to ASTM D 1043.

Hevea Rubber Technologies Private Limited
21, YMA Road Poovanthurathu P.O.
Kottayam 686012

HEVEA RUBBER TECHNOLOGIES PRIVATE LIMITED	
Test Facilities for Steel – Compliance to STR Clause 6.4	
Name of Firm / Fabricator:	Hevea Rubber Technologies Private Limited
Registered Address:	21, Development Plot, YMA Road, Poovanthuruthu P.O., Kottayam – 686012, Kerala
STR Reference:	Doc No. BS-S-7.5.3.1-10 Version No. 2.0 Date Effective: 01.05.2026
Clause Reference:	Clause 6.4 – Test Facilities for Steel
Submitted to:	RDSO (Research Designs and Standards Organisation)
Instructions: Cells highlighted in yellow are to be filled by the team. *NA* = not applicable for this facility type. Attach calibration certificates, earlier test certificates, the NABL-lab MoU and previous NABL test certificates as numbered annexures and quote the annexure number in the Remarks column.	

General Details			For IN-HOUSE Facilities – Equipment Details (STR Cl. 6.4)								For OUTSOURCED Facilities – NABL Lab Details (STR Cl. 6.4)					Remarks / Enclosure Annexure No.
Sl. No.	Test Facility (STR Cl. 6.4)	Status (In-house / Outsourced)	Equipment / Instrument	Make	Model No.	Qty.	Serial No.	Capacity / Range	Year of Mfg. / Commissioning	Earlier Test Cert. Ref.	NABL Lab Name	NABL Accreditation No.	MoU Ref. & Date	MoU Validity (From – To, ≥ 65 months)	Previous NABL Test Cert. Ref.	
(i)	Compressive & Tensile Strength testing	In-house & Outsourced	Universal Testing Machine (UTM)	Krystal Equipment	UTK-40E	1	2014/1087	400 kN	2014	(Attached)	Barath Metallurgical Laboratory Pvt. Ltd. (NABL Accredited)	TC-16221	Hevea–BML MoU dated 23/06/2026	23/06/2026 to 23/11/2031 (65 months)	Some reports have been attached	
(ii)	Bend Stress testing	In-house & Outsourced	Universal Testing Machine (UTM) – bend test attachment	Krystal Equipment	UTK-40E	1	2014/1087	400 kN	2014	(Attached)	Barath Metallurgical Laboratory Pvt. Ltd. (NABL Accredited)	TC-16221	Hevea–BML MoU dated 23/06/2026	23/06/2026 to 23/11/2031 (65 months)		
(iii)	Impact Strength testing	Outsourced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Barath Metallurgical Laboratory Pvt. Ltd. (NABL Accredited)	TC-16221	Hevea–BML MoU dated 23/06/2026	23/06/2026 to 23/11/2031 (65 months)		
(iv)	Hardness testing	Outsourced	N/A	Fasne testing Equipment	DHT-6	1	1553/17	Upto 500 BHN	18-01-2017	N/A	Barath Metallurgical Laboratory Pvt. Ltd. (NABL Accredited)	TC-16221	Hevea–BML MoU dated 23/06/2026	23/06/2026 to 23/11/2031 (65 months)		
(v)	Chemical testing (chemical composition)	Outsourced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Barath Metallurgical Laboratory Pvt. Ltd. (NABL Accredited)	TC-16221	Hevea–BML MoU dated 23/06/2026	23/06/2026 to 23/11/2031 (65 months)		
(vi)	Ultrasonic testing	In-house & Outsourced	N/A	Supertech scientific	UFD EINSTEIN 2 DFT	1	E4775-1116	N/A	2017	N/A	Barath Metallurgical Laboratory Pvt. Ltd. (NABL Accredited)	TC-16221	Hevea–BML MoU and Hevea-Matrix MOU	23/06/2026 to 23/11/2031 (65 months)		
(vii)	Liquid Penetration testing	In-house & Outsourced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Barath Metallurgical Laboratory Pvt. Ltd. (NABL Accredited)	TC-16221	Hevea–BML MoU and Hevea-Matrix MOU	23/06/2026 to 23/11/2031 (65 months)		

Notes – STR Clause 6.4 Requirement

Prepared by: Jacob Kurien

Verified by: Laila Kurien

Authorised Signatory:
Kurian Kurien, Managing Director

Hevea Rubber Technologies Private Limited
21, YMA Road Poovanthurathu P.O.
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HEVEA RUBBER TECHNOLOGIES PRIVATE LIMITED												
Laboratory Facilities for Testing of Expansion Joint — Compliance to STR Clause 6.4												
Name of Firm:				Hevea Rubber Technologies Private Limited								
STR Reference:				Expansion Joint — Doc. BS-S-7.5.3.1-11, Version 2.0, Cl. 6.4 (per IRC:SP:69-2011)								
Submitted to:				RDSO (Research Designs and Standards Organisation), Lucknow								
Legend: green = In-house · blue = Out-sourced (NABL lab MoU) · orange = To be arranged (EJ-specific type test). Yellow cells = firm to complete. Per STR Para 6.7, testing may be done at a NABL/NABCB-accredited lab or a lab specified by the client.												

Sl.	Test Facility Required (EJ STR Cl. 6.4)	Test Method / Reference	Status	Equipment / Facility Provided	Make	Model No.	Qty	Serial / M/c No.	Capacity / Range	Year	Out-sourced Lab / MoU	Remarks
1	Cyclic motion testing facilities	IRC:SP:69-2011, Para 8.3.2.1	In-house	Fatigue testing for Rubber	Hydropak	HEV-02-Hydropak	1	-	10,000 cycles per day	2015		EJ-specific type/performance test — dedicated test rig, or an approved / NABL lab, performance IRC:SP:69 Para 8.3.2
2	Ponding testing facilities	IRC:SP:69-2011, Para 8.3.2.2	In-house	Water Retention/Water leakage testing	Hevea	Hevea-Ponding-001	1	-	-	2015		EJ-specific — to be arranged (rig / approved lab).
3	Debris expelling facilities	IRC:SP:69-2011, Para 8.3.2.3	In-house	Debris Expulsion and Residue	Hydropak	HEV-02-Hydropak	1	-	-	2015		EJ-specific — to be arranged (rig / approved lab).
4	Pull-out testing facilities	IRC:SP:69-2011, Para 8.3.2.4	In-house	Design for the locking system	Hydropak	HEV-02-Hydropak	1	-	200 mm	2015		EJ-specific — to be arranged (rig / approved lab).
5	Fatigue testing facilities	IRC:SP:69-2011	In-house	Fatigue testing for Rubber	Hydropak	HEV-02-Hydropak	1	-	10,000 cycles per day	2015		EJ-specific — to be arranged (rig / approved lab).
6	Abrasive resistance test facilities	ISO 4649 / DIN 53516	Out-sourced	Abrasion test	—	—	—	—	—	—	Hevea-MAEON MoU	Covered by MAEON Labs MoU (abrasion resistance).
7	Universal Tensile strength testing machine	IS 1608 / IS 3400 Pt.1	In-house	Universal Testing Machine	Krystal Equipment	UTK-40E	1	-	400 kN	2014		Steel & rubber tensile — from POT-PTFE lab.
8	Calibrated measuring tape	—	In-house	Steel measuring tape	Krystal Equipment	-	1	-	Upto 1 meter	2025		Maintain valid calibration certificate.
9	Calibrated Vernier Caliper	—	In-house	Vernier caliper	Mitutoyo			-				Maintain valid calibration certificate.
10	Calibrated parallelism meter	—	In-house	Parallelism meter	Mitutoyo	2046S	1	-	10 mm	2019		From POT-PTFE Cl. 6.7.
11	Ageing oven / Chamber	—	In-house	Hot air ageing oven	ACE	AP-S-72	1	-	300 °C	2022		From POT-PTFE Cl. 6.7.
12	Minimum two (2) shore hardness testers with std. test pieces	IS 3400 Pt.2	In-house	Shore-A hardness tester	Excel	Shore III (Analog)	2	-	25–90 Shore A	2023		2 nos — meets STR minimum.
13	Viscometer to check viscosity of adhesive	—	In-house	Viscometer	Satron Meditech		1	-	30 mL	2024		From POT-PTFE Cl. 6.3.
14	Specific gravity testing apparatus	IS 3400 Pt.9	In-house	Specific gravity / density apparatus	Hallmark Mechatronics	PRACTUM 213-10IN	1	-	210 g	2022		From POT-PTFE Cl. 6.3.
15	Bend Test facilities	As per IRC:SP:69-2011	Out-sourced	Bend test	—	—	—	—	—	—	Hevea-BML MoU dtd 23.06.2026	Covered by Barath Metallurgical Lab MoU.
16	Impact testing facilities	As per IRC:SP:69-2011	Out-sourced	Impact test	—	—	—	—	—	—	Hevea-BML MoU dtd 23.06.2026	Covered by Barath Metallurgical Lab MoU.

Prepared by: **Jacob Kurien**

Authorised Signatory: **Kurien Kurien, Managing Director**

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