

TEST REPORT

No. SHL/239/2024-2025/3000042277/TA/0980

DATE 21.02.2025

1.0	NAME AND ADDRESS OF CUSTOMER		Polyhose India (Rubber) Pvt Ltd Plot No. F28 – F29, F37 - F42, F48 – F49, F50 – F55 ,F100 & F102 , SIPCOT Industrial Park, Irrungattukottai, Pennalur Post , Sriperumbudur Taluk – 602117, Kancheepuram District, Tamilnadu, India.
	Name of Contact Person		D. Prasanna
	Telephone No.		9942997032
	Email ID		prasanna.d@polyhose.com
2.0	CUSTOMERS LETTER REF.		E-mail Dated: 29.11.2024
2.1	CSP Receipt Date		23.12.2024
3.0	DESCRIPTION OF TEST COMPONENT:		
	a. Name of The Component	CNG Flexible Hose for CNG	
	b. Name of The Manufacturer	Polyhose India (Rubber) Pvt Ltd Plot No. F28 – F29, F37 - F42, F48 – F49, F50 – F55 ,F100 & F102 , SIPCOT Industrial Park, Irrungattukottai, Pennalur Post , Sriperumbudur Taluk – 602117, Kancheepuram District, Tamilnadu, India.	
	c. Part No.	PH536-04 (T2580-169872)	
	d. Working Pressure	21.5 Bar	
	e. Drawing No. with Rev. No.	PH536-04-02-25-01;REV 00	
	f. Size Of the Component (ID X OD)	6.35 mm X 12.70 mm	
	g. Class and Type	Class 1 and Type 2	
	h. Marking on Hose	POLYHOSE LOGO >>> PH536 - 1/4" >>> IS15722 CLASS-1 TYPE-2 DN06/SAE J30R6-04 >>> CNG/FUEL HOSE MAX WP 21.5 BAR <315PSI>	
	i. Cover Type	Smooth cover	
4.0	TEST OBJECTIVE:		To evaluate performance of CNG Flexible Hose as per the requirements given in IS 15722:2006.
5.0	TEST REQUIREMENTS / RESULTS:		Requirements of IS 15722:2006 for CNG Flexible Hose are given in below.
	Table-1		
Sr. No.	Test / Clause No.	Test Requirement	Test Result
1.	Burst Test (Cl. No. 5.2)	Hose shall be withstanding 4 times of working pressure.	Hose withstood 4 times of working pressure. Remark: Satisfactory
2.	Vacuum Collapse test (Cl No. 5.3)	Decrease in diameter shall not be more than 20% of the original diameter when vacuum (81 KPa Vacuum) is applied for 15 sec.	No decrease in diameter observed when Vacuum of 81 KPa Vacuum applied. Remark: Satisfactory

PREPARED BY:	VERIFIED BY:	AUTHORISED BY:
		 B.V.
S. N. LONDHE DEPUTY MANAGER	A. D. DEKATE GENERAL MANAGER	DR. B. V. SHAMSUNDARA DEPUTY DIRECTOR In-charge-Safety and Homologation Laboratory

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3.	Cold Flexibility test (CI No. 5.4)	<p>Aged sample: Hose sample immersed in Oil no. 3 for 70 hours at 100°C. The aged sample shall condition for 5 hours at -34°C and then shall be flexed in cold chamber through 180° from centreline to a diameter of 10 times the maximum OD of hose the flexing shall take place within 4 s and the hose shall not fracture or show any cracks, checks, and breaks in tube or cover</p> <p>Un-aged sample: Hose is conditioned at -40°C for 5 hours and then flexed in cold chamber through 180° from centerline to a diameter of 10 times the maximum OD of hose. Hose shall not fracture or crack.</p>		No cracks or fracture observed when hose is bent through 180°.																	
				Remark: Satisfactory																	
4.	Tensile Strength and elongation (CI No. 5.5)	<p>Original tensile strength for cover should not be less than 7 MPa.</p> <p>Original tensile strength for tube should not be less than 8 MPa</p> <p>Original elongation of tube and cover should not be less than 200 %</p>		<p>Tensile strength for cover observed = 9.48 MPa</p> <p>Tensile strength for tube observed = 16.1 MPa</p> <p>Remark: Satisfactory</p> <table border="1"> <tr> <td>Cover</td> <td>Tube</td> </tr> <tr> <td>423.4 %</td> <td>247.6 %</td> </tr> </table>		Cover	Tube	423.4 %	247.6 %												
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5.	Dry heat resistance test (CI No. 5.6)	<table border="1"> <thead> <tr> <th>COVER</th> <th>TUBE</th> </tr> </thead> <tbody> <tr> <td>Reduction in tensile strength shall not exceed -20% of the original.</td> <td>Reduction in tensile strength shall not exceed -20% of the original.</td> </tr> <tr> <td>Reduction in elongation shall not exceed -50% of the original.</td> <td>Reduction in elongation shall not exceed -50% of the original.</td> </tr> </tbody> </table>	COVER	TUBE	Reduction in tensile strength shall not exceed -20% of the original.	Reduction in tensile strength shall not exceed -20% of the original.	Reduction in elongation shall not exceed -50% of the original.	Reduction in elongation shall not exceed -50% of the original.	<table border="1"> <thead> <tr> <th>COVER</th> <th>TUBE</th> </tr> </thead> <tbody> <tr> <td>Observed tensile strength = 8.6 %</td> <td>Observed tensile strength = 3.10 %</td> </tr> <tr> <td>Remark: Satisfactory</td> <td>Remark: Satisfactory</td> </tr> <tr> <td>Change in elongation observed is = -30.5 %</td> <td>Change in elongation observed is = -20.4 %</td> </tr> <tr> <td>Remark: Satisfactory</td> <td>Remark: Satisfactory</td> </tr> </tbody> </table>	COVER	TUBE	Observed tensile strength = 8.6 %	Observed tensile strength = 3.10 %	Remark: Satisfactory	Remark: Satisfactory	Change in elongation observed is = -30.5 %	Change in elongation observed is = -20.4 %	Remark: Satisfactory	Remark: Satisfactory		
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Sr. No.	Test / Clause No.	Test Requirement		Test Result	
6.	Fuel Resistance test (Cl. No. 5.7)	Change in tensile strength of the tube specimen shall not exceed -45% of the original		Percentage volume change observed is +40.7 % Remark: Satisfactory	
		Change in elongation of the tube specimen shall not exceed - 45% of the original.		Change in tensile strength of the tube specimen observed is -39.6% Remark: Satisfactory	
		Percentage volume change the tube specimen shall be within 0 to + 50% of the original.		Percentage volume change observed is + 47.67 % Remark: Satisfactory	
7.	Oil Resistance test (Cl No. 5.8)	Change in tensile strength of the tube specimen shall not exceed -40% of the original.		Percentage volume change observed is +1.90 % Remark: Satisfactory	
		Change in Elongation of the tube specimen shall not exceed - 40% of the original.		Change in tensile strength of the tube specimen observed is -18.3% Remark: Satisfactory	
		% Volume change of the cover specimen shall be within -0 to +100%	% Volume change of the tube specimen shall be within -5 to +25%	For Cover: 7.90 % Volume change observed Remark: Satisfactory	For Tube: -3.28 % Volume change observed is Remark: Satisfactory
8.	Extractable (Cl. No. 5.9)	7.75 gms/m ² max.		1.62 gms /m ² . Remark: Satisfactory	
9.	Ozone Resistance tests. (Cl No. 5.10)	No cracks are allowed on the cover when hose is subjected to the specified ozone environment in a bent condition around a standard mandrel for 70 hours at 40° C.		No cracks observed when hose is inspected under 7X magnification. Remark: Satisfactory	
10.	Adhesion test (Cl. No. 5.11)	The minimum load required to separate a 25.4 mm width of tube and cover shall be minimum 27 N (1.06 N/mm).		Measured load for separation of tube and Reinforcement = 4.93 N/mm Measured load for separation of Reinforcement and cover = 3.04 N/mm Remark: Satisfactory	

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Sr. No.	Test / Clause No.	Test Requirement	Test Result
	11. Kink Resistance test (Cl. No. 5.12)	A ball having a diameter equal to half the nominal inside diameter of the hose shall pass freely through the hose.	A ball having diameter half the nominal inside diameter of the hose passes freely through the hose. Remark: Satisfactory
	12. Permeation (Cl. No. 5.13)	600 gm / m ² Per day max	222.70 gm / m ² per day Remark: Satisfactory
5.1	Test Duration	Start Date: - 03.01.2025	End Date: - 13.02.2025
6.0	CONCLUSION: The CNG Flexible Hose, described above in the sr. 3 of this report <u>meets</u> the test requirement when tested as per IS 15722:2006.		

Note: - All test results are extended from earlier approved test report number SHL/239/2021-2022/3000016058/TA /1848; Dated; -20.06.2021 due to the same material, except burst, vacuum, Cold Flexibility, adhesion, Kink Resistance, Permeation tests.

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Place of Issue: Kothrud, PUNE



End of Report

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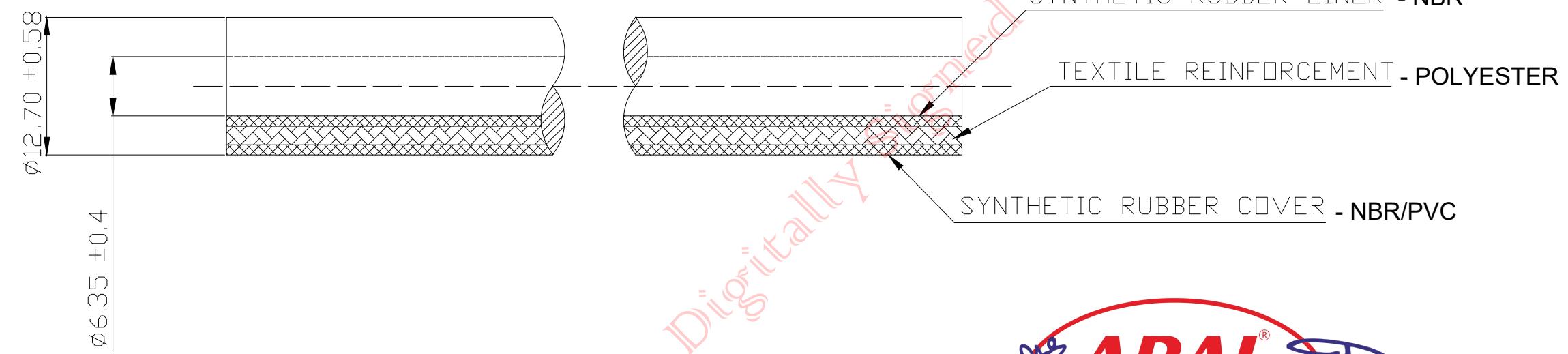
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NOTES:

- (1) HOSE CONSTRUCTION OF CNG HOSE AS PER IS15722 TYPE 2 CLASS 1 / SAEJ30R6
- (2) WORKING PRESSURE: 21.5BAR
- (3) BURST PRESSURE: 48BAR
- (4) MIN. BEND RADIUS: 65MM
- (5) MARKING : POLYHOSE LOGO >>> PH536 - 1/4" >>> IS15722 CLASS-1 TYPE-2 DN06/SAEJ30R6-04 >>>
CNG/FUEL HOSE MAX WP 21.5 BAR (315PSI)
- (6) TEMPERATURE RANGE : -40°C TO +100°C.

POLYHOSE INDIA (RUBBER) PVT. LTD.,
CHENNAI

CUSTOMER NAME : --

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REV. No.	ECN No.	ZONE	REVISION NOTE	DATE	CHD BY	APPD. BY	SCALE : N.T.S	SIGN	DATE	DWG TITLE : CNG/FUEL HOSE ID 06MM AS PER IS15722 TYPE 2 /SAEJ30 R6		
			ALL DIMENSIONS ARE IN MM		THIRD ANGLE PROJECTION		DRAWN BY	Kalai	01.02.25	PART No.: PH536-04		
							CHKD. BY	Padman	01.02.25			
							APPD. BY	Sridar	01.02.25	DWG No.: PH536-04-02-25-01	SHEET 1 OF 1	REV. No. 00