NON TRANSFERABLE

TEST REPORT

No. SHL/239/2024-2025/3000036639/TA/2228 **DATE 22.05.2024**

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: 11.03.2024
2.1	**CSP Receipt Date**		12.03.2024
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.**	PH536-08
	d.	**Working Pressure**	21.5 Bar
	e.	**Drawing No. with Rev. No.**	PH536-08-04-22-01.; REV. No. 00
	f.	**Size Of the Component (ID X OD)**	12.7 mm X 19.84 mm
	g.	**Class and Type**	Class 1 and Type 2
	h.	**Marking on Hose**	POLYHOSE>>>PH536-1/2”>>>IS 15722 CLASS-1 TYPE-2 DN12/SAE J30 R6-08

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

पंजीकृत कार्यालय : सर्वे नं. १०२, वेताल हिल, ऑफ पौड रोड, कोथरुड, पुणे – ४११०३८. डाक पता : पोस्ट बॉक्स नं. ८३२, पुणे – ४११००४ (भारत)
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Sr. No.	Test / Clause No.	Test Requirement	Test Result
3.	Cold Flexibility test (Cl No. 5.4)	**Aged sample:** Hose sample immersed in Oil no. 3 for 70 hours at –34°C. The aged sample shall condition for 5 hours at 100°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	No cracks or fracture observed when hose is bent through 180°. **Remark: Satisfactory**
		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.	No Cracks or fracture observed. **Remark: Satisfactory**
4.	Tensile Strength and elongation (Cl No. 5.5)	Original tensile strength for cover should not be less than 7 MPa.	Tensile strength for cover observed = 9.48 MPa **Remark: Satisfactory**
		Original tensile strength for tube should not be less than 8 MPa	Tensile strength for tube observed = 16.1 MPa **Remark: Satisfactory**
		Original elongation of tube and cover should not be less than 200 %	**Cover**: 423.4 % ; **Tube**: 247.6 % **Remark: Satisfactory**
5.	Dry heat resistance test (Cl No. 5.6)	**COVER** / **TUBE**	**COVER** / **TUBE**
		Reduction in tensile strength shall not exceed - 20% of the original. / Reduction in tensile strength shall not exceed -20% of the original.	Observed tensile strength = 8.6 % **Remark: Satisfactory** / Observed tensile strength = 3.10 % **Remark: Satisfactory**
		Reduction in elongation shall not exceed -50% of the original. / Reduction in elongation shall not exceed - 50% of the original.	Change in elongation observed is = -30.5 % **Remark: Satisfactory** / Change in elongation observed is = -20.4 % **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 = 4.36 N/mm Measured load for separation of Reinforcement and cover = 3.96 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	223 gm / m2 per day **Remark: Satisfactory**
5.1	**Test Duration**		**Start Date: - 28.03.2024**	**End Date: - 08.05.2024**
6.0	**CONCLUSION:** The CNG Flexible Hose, described above in the sr. 3 of this report ***meets*** the test requirement when tested as per IS 15722:2006.			

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		Digitally signed by SHAMASUNDARA VENKATRAIAH BELAVADI Date: 2024.05.28 09:28:38 +05'30'
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Place of Issue: Kothrud, PUNE

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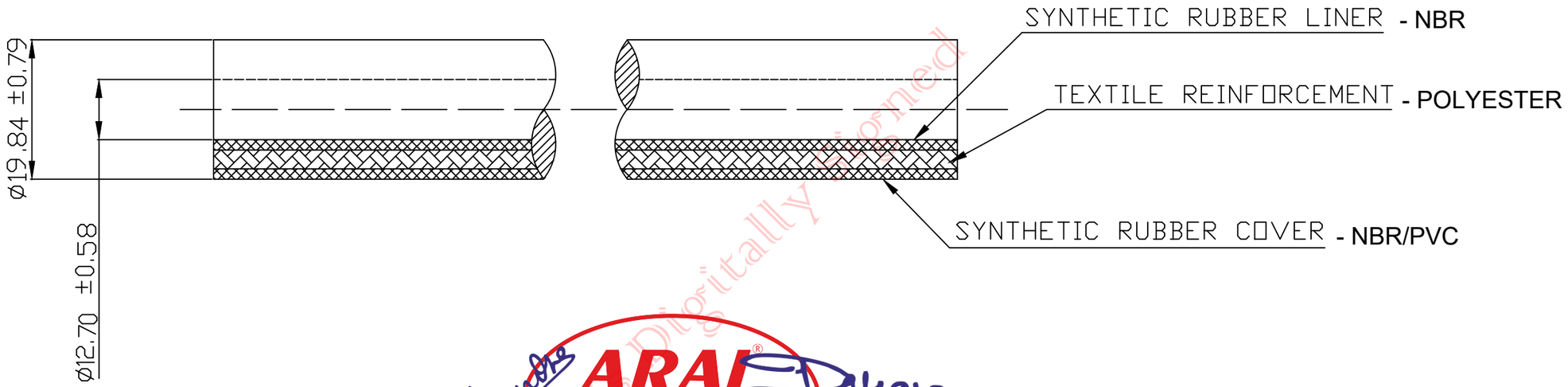
End of Report



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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: 100MM
(5) MARKING : POLYHOSE LOGO >>> PH536 - ½" >>> IS15722 CLASS-1 TYPE-2 DN12/SAEJ30R6-08>>>
CNG/FUEL HOSE MAX WP 21.5 BAR (315PSI)
(6) TEMPERATURE RANGE : -40°C TO +100°C.

Drawing 1 of 1

Polyhose®

POLYHOSE INDIA (RUBBER) PVT. LTD.,
CHENNAI

CUSTOMER NAME : --

REV. No.	ECN No.	ZONE	REVISION NOTE	DATE	CHD BY	APPD. BY

ALL DIMENSIONS ARE IN MM

THIRD ANGLE PROJECTION

SCALE : N.T.S		SIGN	DATE
DRAWN BY	Santhosh		22.04.22
CHKD. BY	Padman		22.04.22
APPD. BY	Sridar		22.04.22

DWG TITLE : CNG/FUEL HOSE ID 12MM AS PER IS15722 TYPE 2 /SAEJ30 R6

PART No.: --

DWG No.: PH536-08-04-22-01 | SHEET 1 OF 1 | REV. No. 00