Technical Datasheet

Vena® SIL FR-HL

Ref: DO 03.10 FT 317. Rev. 08
Date: 30/09/2019

Flame retardant silicone hoses according to EN 45545

Applications

It is especially recommended for use in cooling and heating systems in Railway Sector.

This reference is manufactured with textile reinforcements. The silicone rubber compound has a good behavior to fire propagation and smoke toxicity in order to meet EN45545-2 "Fire protection on railway vehicles - Part 2: Requirements for fire behavior of materials and components" Regulation in the Category R22 and R23.

Properties

- Not affected by anti-freeze or antirust liquids.
- Highly resistant to hardening with very good compression characteristics.
- Excellent flexibility during the assembly process.
- Smooth inner and outer appearance, and blue color. Upon request, it can also be supplied in other colors (red, green, black…).
- Excellent resistance to thermal aging and oxidizing agents (oxygen, ozone, UV).
- Operational temperature ranges from -60°C (-75 F) to +200°C (392 F), it may reach up to 220°C (428 F) during short periods of time.
- Manufactured with inner diameters ranging between 6mm and 100mm, in straight lengths from 1 to 4 m (13.12 ft), elbows or any required special shape.

Limitations

Respect the work pressure established values.

Gas oil and oil stains do not damage the tubes, but they should not be used to transport fuel or oil, nor be submerged in these liquids.

This type of tube is not recommended for applications with negative pressure (vacuum).

This product is not recommended for the transport of abrasive particles.

Regulations

- In the category R22 for the standard testing the material complies with all the criteria for hazard levels HL1 and HL2 for straight hoses and HL1 for shaped hoses.
- In the category R23 for the standard testing the material complies with all the criteria for hazard levels HL1 and HL2 for both, straight and shaped hoses.
- Silicone rubber used is in accordance with EU Directive 2002/95/ECC for Restriction of the use of hazardous substances (RoHS).

Technical Specifications

Straight hoses with silicone and 3 reinforcements:

Inner Diameter		Wall thickness		Working Pressure ISO 1402/2009		Bursting Pressure ISO 1402/2009	
mm	*inch*	*+1/ -0.5 mm*	*+0.04/ -0.02 inch*	*Bar at 20ºC*	*Psi at 68ºF*	*Bar at 20ºC*	*Psi at 68ºF*
8	5/16	3.70	0.15	22.1	320.5	66.4	963.1
12	0 15/32	3.70	0.15	16.5	239.3	49.6	719.3
14	9/16	3.70	0.15	13.7	198.7	41.2	597.8
18	5/7	3.70	0.15	13.4	194.3	40.3	584.4
22	7/8	3.70	0.15	10.5	152.3	31.7	459.8
25	1	3.70	0.15	8.4	121.8	25.3	366.9
35	1 3/8	3.70	0.15	5.5	79.2	16.2	237.5
38	1 1/2	3.70	0.15	4.6	66.7	13.7	198.7
48	1 7/8	3.70	0.15	4.1	59.5	12.3	178.4
60	2 3/8	3.70	0.15	3.5	51.2	10.6	153.7
65	2 9/16	3.70	0.15	3.3	47.9	9.9	143.6
70	2 3/4	3.70	0.15	3.1	44.5	9.2	133.4
75	3	3.70	0.15	2.8	40.6	8.4	121.8
80	3 1/8	3.70	0.15	2.6	37.2	7.7	111.7
90	3 1/2	3.70	0.15	2.1	30.5	6.3	91.4

Straight hoses with silicone and 4 reinforcements:

Inner Diameter		Wall thickness		Working Pressure ISO 1402/2009		Bursting Pressure ISO 1402/2009	
mm	*inch*	*+1/ -0.5 mm*	*+0.04/ -0.02 inch*	*Bar at 20ºC*	*Psi at 68ºF*	*Bar at 20ºC*	*Psi at 68ºF*
8	5/16	4.50	0.18	24.8	359.7	74.4	1079.1
12	0 15/32	4.50	0.18	18.2	263.9	54.6	791.9
14	9/16	4.50	0.18	14.9	216.5	44.7	649.6
18	5/7	4.50	0.18	14.6	211.7	43.8	635.1
22	7/8	4.50	0.18	12.2	176.9	36.6	530.8
25	1	4.50	0.18	10.4	150.8	31.3	453.9
35	1 3/8	4.50	0.18	8.4	122.2	22.7	366.8
38	1 1/2	4.50	0.18	7.8	113.1	23.5	340.8
48	1 7/8	4.50	0.18	6.1	88.5	18.3	265.4
60	2 3/8	4.50	0.18	5.4	78.3	16.1	233.5
65	2 9/16	4.50	0.18	5.0	72.5	15.0	217.5
70	2 3/4	4.50	0.18	4.7	68.2	14.1	204.5
75	3	4.50	0.18	4.4	63.8	13.4	194.3
80	3 1/8	4.50	0.18	4.2	60.9	12.6	182.7
90	3 1/2	4.50	0.18	3.7	53.7	11.2	162.4
100	4	4.50	0.18	2.2	31.9	6.5	94.3

For the five reinforcement construction (thickness of 5.30mm) and for elbows and shapes, please contact your sales office.