Hyperline SB

Hyperline SB consists of a PTFE liner that has smooth internal and external surfaces.

- Smooth internal and external surfaces
- High pressure solutions
- High quality extrusion
- Exceptionally tight tolerances
- Ultra high pressure and low permeation liner options available upon request

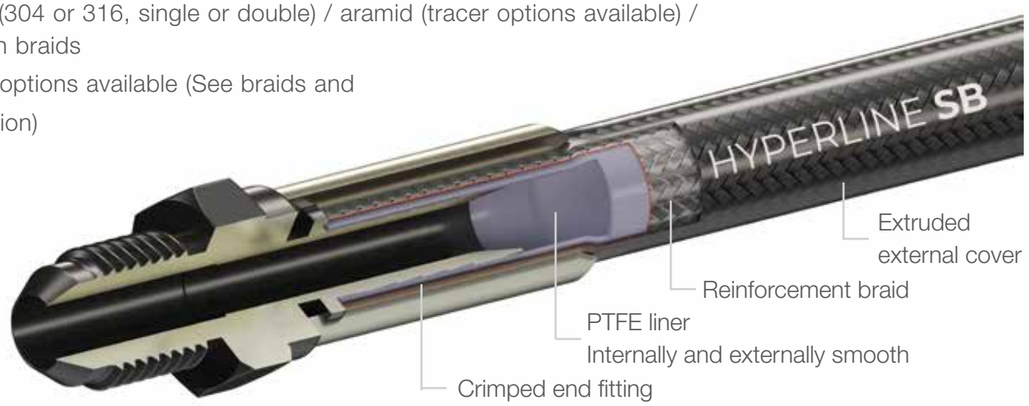
Hyperline SB construction

Design variations

Liner: AS or natural (ASTM D4895)

Braids: SS (304 or 316, single or double) / aramid (tracer options available) / combination braids

Covers: All options available (See braids and covers section)



High pressure Smoothbore hose grades

There are many different applications for PTFE lined Smoothbore hose which are subjected to high pressures in service, and each application has its own individual set of requirements.

Aflex Hose is able to provide different specifications for high pressure hoses that are custom designed for particular applications or testing procedures where pressures exceed 100 Bar (1500 psi) for gases, or the listed maximum pressures for fluids.

Aramid fibre braid - A black Aramid fibre named “Technora”, which is a high technology fibre, with tensile, abrasion and temperature properties significantly better than the older Aramid products like Kevlar.

Stainless steel braid - Braided from AISI grade 304 stainless steel wire, bright hard drawn to a minimum 1700 N/mm² tensile strength. The braiding process is closely controlled to ensure even tensions and the correct braid angle, to give minimum expansion/contraction under pressure.

The custom design will include the size, wall thickness and quality of the PTFE tube and the precise design of the braid, all optimised for the particular application. Please consult Aflex Hose for further advice.

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Hose bore size		Actual bore size		PTFE tube wall thickness		Outside diameter of the stainless steel braid		Minimum bend radius		Working pressure (MWP)		Weight per unit length		*Part number
in	Dash size	in	mm	in	mm	in	mm	in	mm	Bar	Psi	kg/m	lb/ft	
1/16 BB	2 (TW 3 Ends)	0.068 - 0.091	1.75 - 2.31	0.028	0.71	0.151 - 0.168	3.85 - 4.27	¾	20	350	5076	0.043	0.029	70-615-02-01s-02
1/16 BB	2	0.068 - 0.091	1.75 - 2.31	0.04	1.02	0.191 - 0.208	4.87 - 5.29	½	13	450	6500	0.045	0.030	70-300-02-01-02
7/64	2.5	0.096 - 0.114	2.44 - 2.90	0.04	1.02	0.209 - 0.229	5.31 - 5.82	⅔	17	375	5438	0.059	0.040	70-310-025-01-02
⅛"	3 (MW 3 Ends)	0.113 - 0.131	2.87 - 3.33	0.027	0.68	0.203 - 0.226	5.17 - 5.73	¾	20	280	4061	0.050	0.033	70-331-03-01-02
⅛"	3 (HW 3 Ends)	0.130 - 0.146	3.30 - 3.71	0.0375	0.95	0.241 - 0.260	6.14 - 6.61	¾	20	290	4206	0.060	0.040	70-300-03-01s-02
⅛"	3 (HW 4 Ends)	0.130 - 0.146	3.30 - 3.71	0.0375	0.95	0.241 - 0.263	6.14 - 6.68	¾	20	350	5076	0.070	0.050	70-300-03-01-02
⅛"	3 (TW 3 Ends)	0.130 - 0.146	3.30 - 3.71	0.026	0.66	0.217 - 0.238	5.53 - 6.05	¾	20	290	4206	0.050	0.033	70-600-03-01s-02
3/16 BB	4	0.195 - 0.213	4.95 - 5.41	0.030	0.76	0.300 - 0.324	7.62 - 8.23	1 ¾	45	290	4206	0.078	0.052	70-400-03-01-02
¼ BB	5	0.260 - 0.280	6.60 - 7.11	0.030	0.76	0.362 - 0.386	9.19 - 9.81	2 ⅜	60	240	3480	0.110	0.074	70-400-04-01-02
5/16 BB	6	0.310 - 0.345	7.87 - 8.77	0.030	0.76	0.410 - 0.445	10.41 - 11.31	2 ¾	70	220	3190	0.136	0.091	70-400-05-01-02
⅜ BB	7	0.380 - 0.401	9.67 - 10.19	0.030	0.76	0.492 - 0.522	12.49 - 13.26	3	80	190	2755	0.166	0.111	70-400-06-01-02
-8 MW	8	0.400 - 0.440	10.16 - 11.18	0.030	0.76	0.507 - 0.552	12.90 - 14.02	3	80	190	2755	0.180	0.121	70-300-08-01-02
½ BB	10	0.515 - 0.545	13.07 - 13.84	0.030	0.76	0.635 - 0.669	16.12 - 17.00	5	130	150	2175	0.210	0.141	70-400-08-01-02
⅝ BB	12	0.640 - 0.670	16.25 - 17.01	0.033	0.85	0.772 - 0.806	19.60 - 20.48	6 ½	163	130	1885	0.280	0,188	70-400-10-01-02
¾ BB	14	0.765 - 0.785	19.42 - 19.94	0.040	1.02	0.905 - 0.932	22.98 - 23.68	7	180	110	1595	0.327	0.219	70-400-12-01-02
7/32	16	0.845 - 0.911	21.46 - 23.13	0.040	1.02	1.001 - 1.063	25.65 - 27.00	9	230	56	812	0.388	0.261	70-300-16-01-02
1 ⅛	20	1.089 - 1.155	27.67 - 29.34	0.038	0.97	1.251 - 1.305	31.77 - 33.15	16	410	42	609	0.522	0.351	70-400-20-01-02

* For anti-static grade, add 10 to the 3-digit part number e.g. 70-100- becomes 70-110.

The Hyperline SB range meets or exceeds the SAE 100 R14 standard. The performance testing results stated in the above table have been carried out at ambient temperature, in a controlled laboratory environment, using water as the media. We recommend that the customer carries out stringent application performance testing on the hose, using the actual working conditions over a set period of time to validate the hose.

Temperature and pressures

- Temperature affects the maximum working pressure (MWP) as listed above, so for temperatures above 130 °C reduce the MWP by 0.75% for each 1 °C / 33 °F above 130 °C / 266 °F. Example: at 180 °C / 356 °F, reduce the MWP by (180 - 130) x 0.75 = 37.5%.
- Pressure ratings above 100 Bar (1500 psi) only apply for the transfer of non-penetrating fluids. If gases or penetrating fluids are used in the apvplication, or used during pressure testing at pressures above 100 Bar, HPG grade hose is required.

MWP listed are calculated on the basis of a 3:1 safety factor relative to the burst pressure, so burst pressure = 3 x MWP. If MWP is required based on a 4:1 safety factor (e.g EN 16643 requirement), multiply the listed value by 0.75.

HPG specification

For applications where gases are used in the hose at high pressures, or testing procedures above 100 bar (1500 psi) it is necessary to specify a HPG grade PTFE liner tube. HPG grade is also required when high pressures are applied to penetrating fluids.

HPG grade tubing is acheived by subjecting the PTFE tube to certain special processes, commonly known as “post sintering”, which increases the resistance of the material to penetration and porosity development by gases in service.

This specification requires that when compressed air or nitrogen is applied to a sample length at a pressure of 275 Bar (4000 psi) for one minute, then the pressure rapidly broken then re-applied for a total of 10 cycles, the sample must not show signs of excessive diffusion when finally gas tested under water.

Pure gases do not generate static charges, HPG liners are rarely required to be anti-static, but on such rare occasions, a special “inner layer” AS grade is used.

All sizes and types of Smoothbore hose PTFE tube liners can be supplied to HPG quality. However, we would always recommend that HPG hoses are supplied with a HW (Heavy Wall) for maximum performance.