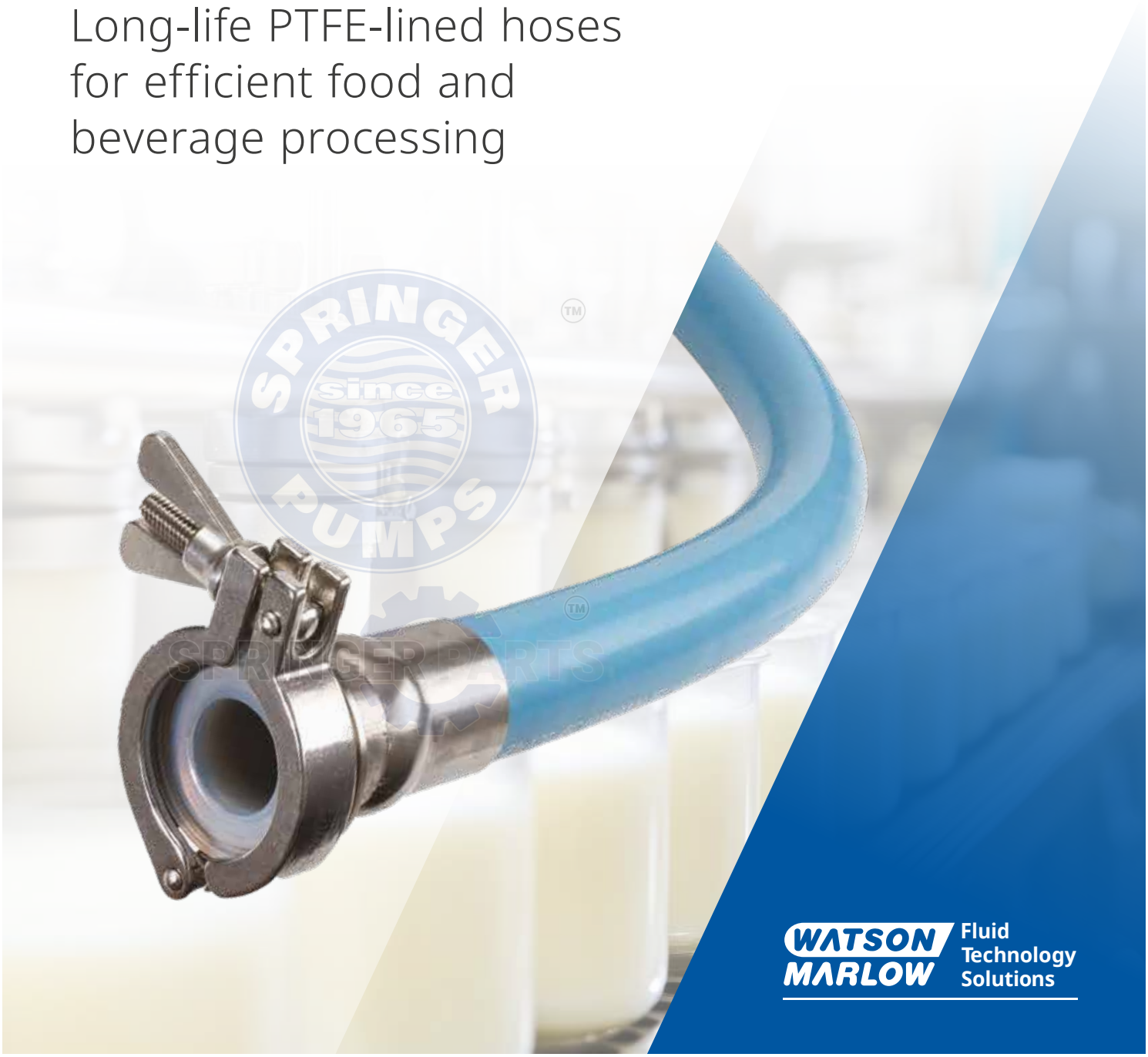
AFLEX HOSE

FaBLINE

Long-life PTFE-lined hoses for efficient food and beverage processing



WATSON MARLOW Fluid Technology Solutions

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AFLEX HOSE

THE WORLD'S LEADING MANUFACTURER OF PTFE LINED FLEXIBLE HOSE

For more than 40 years, we have been producing the most technically advanced range of PTFE-lined flexible hose products in the world.

From our factories in the UK and USA, we design, develop and manufacture our hoses from raw materials to finished products. This comprehensive approach gives us an unrivaled ability to meet specific needs, whatever your application.

Our dedication to developing quality products and becoming a trusted partner, has meant our biotechnology and pharmaceutical customers have standardized on our hose products as the most reliable choice in their manufacturing plants.

UNIQUE LINER DESIGN

LINED AND NON-LINED END FITTINGS

24-MONTH Manufacturer's Guarantee

13 PSI Usable at VACUUM All sizes

PTFE will outperform RUBBER SILICONE PVC

EN 16643:2016 European standard for non-bonded PTFE-lined hoses

Maximize the profitability of your food and beverage production with FaBLINE™, the ultimate food grade hose from Aflex. Engineering experts at Aflex have developed FaBLINE to meet the latest hygiene standards. The patented PTFE-lined hose, with standard 316 stainless steel braid will ensure efficient product transfer and handling with extended life over any rubber hose alternative on the market.

- Increased service life
- Reduced maintenance and CIP downtime
- Reduced processing costs

Unlocking production efficiency

With excellent flexibility and kink-free design requiring less force to bend than competitor smooth bore products, FaBLINE offers a versatile hose solution throughout production processes. FaBLINE hoses carry up to twice the flow of similar-sized convoluted delivery hoses, providing a faster and more efficient processing solution.

For applications where hoses are tasked to dispense highly viscous media in precise quantities, traditional rubber hoses can block or burst. FaBLINE's low friction, smooth bore construction will minimize back-pressure to avoid downtime and material losses.

Hygienic by design

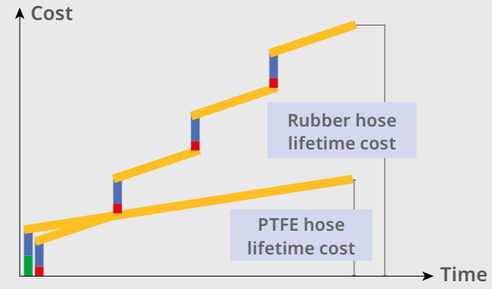
- High flexibility with kink resistance
- Smooth bore for uninterrupted fluid flow and ease of cleaning
- High temperature and pressure capability
- Chemical resistant
- PTFE-lined and non-lined end fittings with laser etched ferrule for ultimate traceability

FaBLINE's smooth bore eliminates the potential for any product entrapment or bacterial build up. Constructed without adhesive, the hose will not absorb product or cleaning chemicals that can leach into and taint subsequent product batches.

The PTFE lining further ensures cleanability with excellent chemical and heat resistance in CIP cycles. The high temperature ratings means FaBLINE is perfect for utility connections to steam and hot water systems.

Long life and low cost

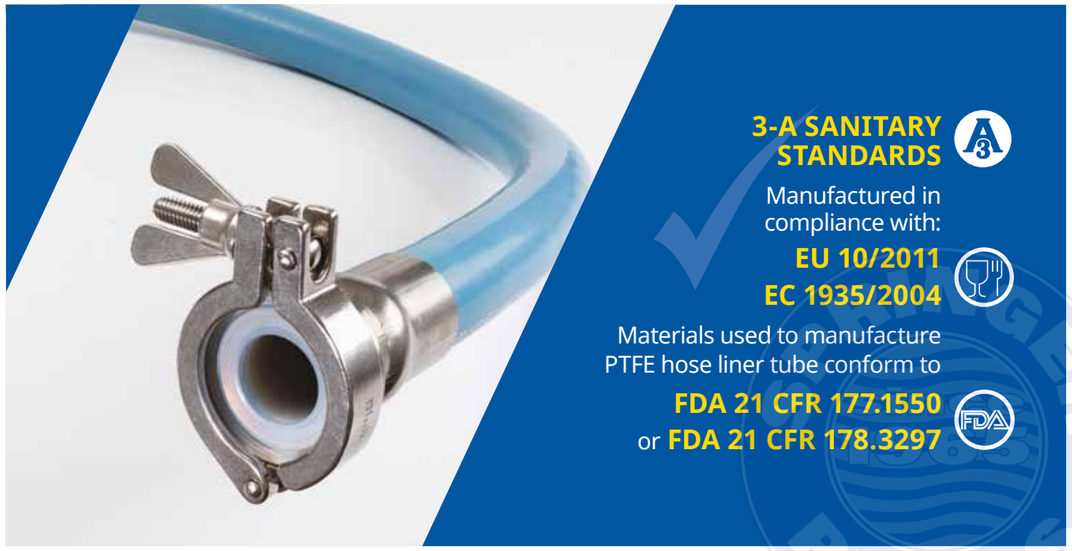
- Rubber hose cost
- PTFE hose cost
- Installation cost (incl. shutdown, labor, production costs)
- Operations cost (incl. power, cleaning, output cost)



FaBLINE

FaBLINE™ hose was designed and developed to provide customers with a universal product.

- A smooth rubber cover finish
- Resistant to temperatures from 104°F to 399°F
- Usable at vacuum up to 13 psi
- Up to 3" bore and hose lengths of up to 98'



3-A SANITARY STANDARDS

Manufactured in compliance with:

EU 10/2011
EC 1935/2004

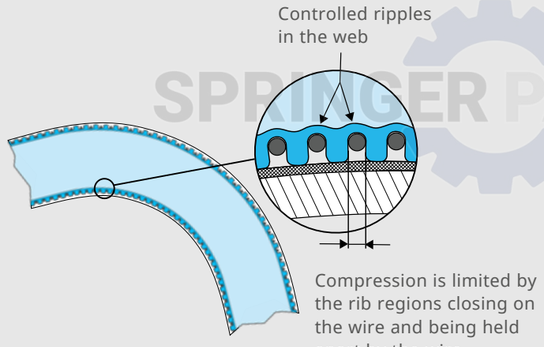
Materials used to manufacture PTFE hose liner tube conform to

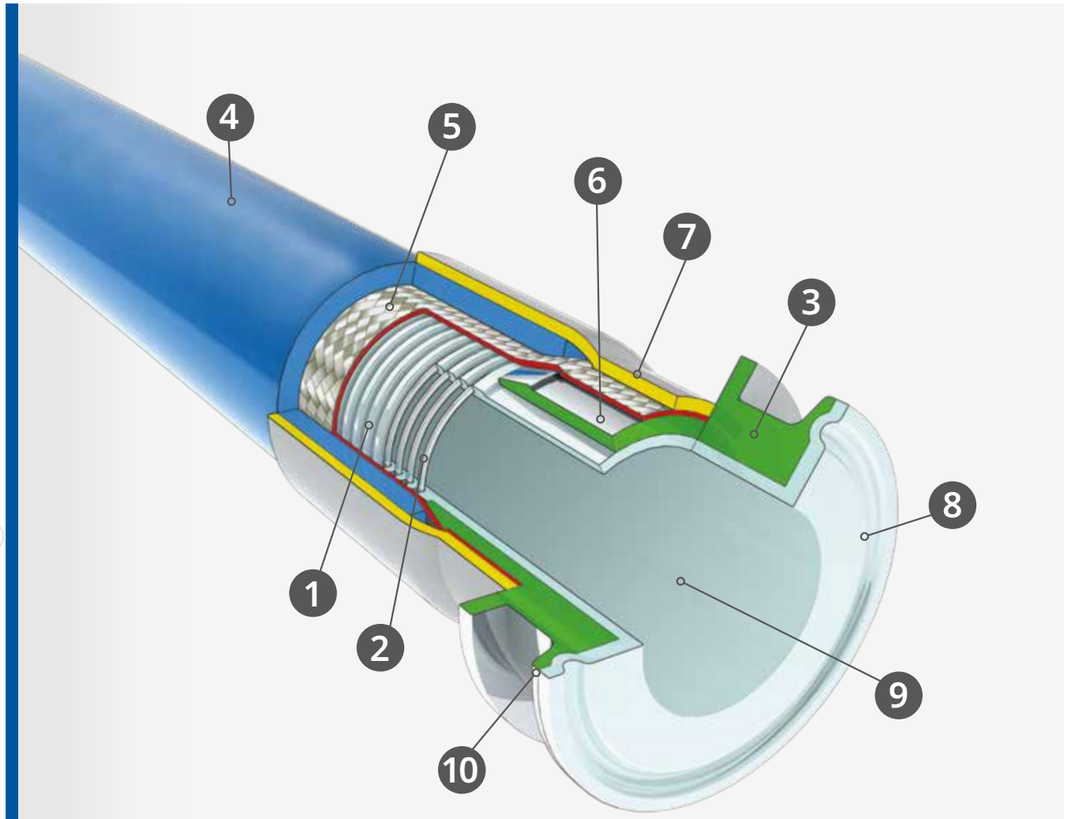
FDA 21 CFR 177.1550
or **FDA 21 CFR 178.3297**

Aflex hose unique PTFE liner

The patented design of the PTFE liner used in FaBLINE allows the liner to expand around the outside and compress around the inside of a bend. This helps to retain a smooth circular bore throughout the hose, without distortion.

- General purpose or anti-static options
- No entrapment zones
- Minimal turbulence means a faster flow rate
- Excellent internal cleanability
- Longer service life

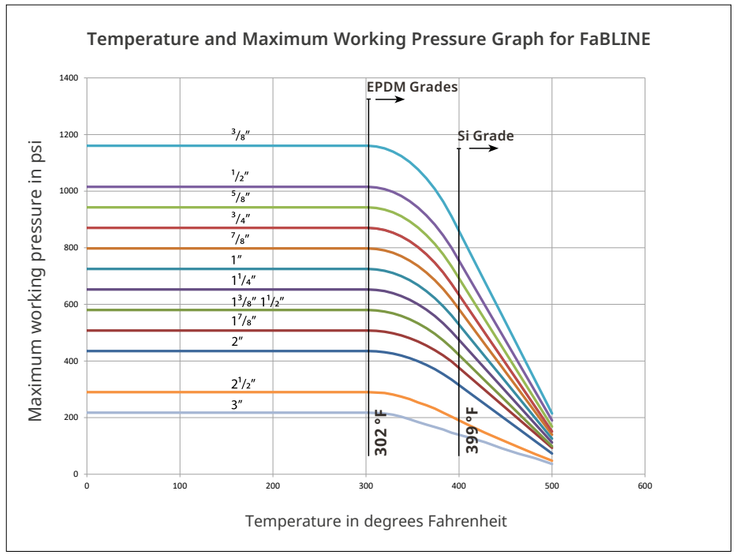




1. PTFE liner tube, smooth bore inside, convoluted outside
2. 316 stainless steel helical wire reinforcement
3. Sanitary Tri-clamp Insert
4. EPDM Blue and Platinum cured Grey Silicone cover options as standard.
5. 316 stainless steel braid
6. 316 stainless steel spigot
7. Ferrule, crimped to secure braid to spigot
8. PTFE liner tube extended through the end fitting, then flared out and hot-formed on the sealing face (optional)
9. Polished hygienic tail supports the bore of the liner
10. Ferrule crimped direct onto rubber cover

Technical specifications

FaBLINE



Hose bore size range

3/8″–3″

Hose lengths

98′ (up to 2″ bore size)
59′ (up to 2 1/2″ bore size)
49′ (up to 3″ bore size)

Temperature limits

EPDM rubber covered hose

-40 °F to 302 °F

Silicone rubber covered hose

-99 °F to 399 °F

Working pressure ranges

1,160 psi for 3/8″ bore size
217 psi for 3″ bore size

Vacuum limitations

Usable at vacuum to -13 psi for all sizes up to 392 °F
212 °F for tube only grade (TO)

Hose liners

GP - general purpose liner

GP hoses are for applications where fluids or gases being conveyed do not generate a risk of static charge development.

AS - anti-static PTFE liner

AS hoses are for use where the risk of an electrostatic charge build-up on the inside surface of the PTFE tube may then discharge through the tube wall.

Labeling

Laser etched as standard for ultimate traceability

All FaBLINE hose assemblies are labeled with the following information:

Manufacturer's name (Aflex Hose Ltd)
Hose type, size and grade
EN16643 and year of standard publication
EN16643 electrical property grade
Max. working pressure and test pressure
Working temperature range*
Unique serial number
Month and year of manufacture
Aflex telephone number
CE mark (if applicable)

**Note any restrictions on working pressure resulting from elevated temperatures.*

This information is normally laser-etched onto a ferrule.

In some cases the information may be etched onto a stainless steel ring, or a thin stainless steel plate which is clamped to the hose.

Streamline tagging

A label and/or color code is placed around the silicone cover of the hose and then encapsulated by a transparent silicone that is formed into a thin streamlined cover.

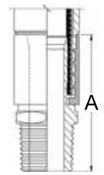
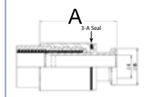
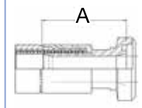
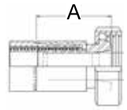
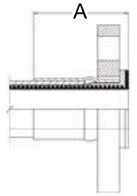
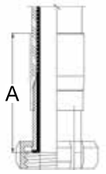
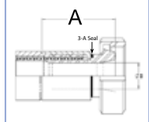
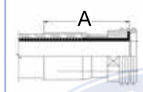
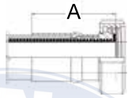
Streamline tagging is available for silicone rubber covered grades with stainless steel braid.

Features and benefits

- Increased product service life for reduced replacement, downtime and labor costs
- Reduced CIP downtime with cost savings on chemicals and utilities
- Superior flow rates for shorter load/unload times and lower processing cost
- Increased CIP chemical compatibility reduces cycle times and the risk of recall and product spoiling

Technical specifications

End fittings

	Flanges	SMS Female	NPT or BSPT fixed Male	3A Triclover fittings	DIN 11851 Male	DIN 11851 Female
Non-lined fittings						
Lined fittings						

Size	Non-lined		Lined		Lined	Non-lined	Non-lined	Lined	Non-lined	Lined	Non-lined	Lined
	ASA 150	PN 10/16	ASA 150	PN 10/16								
¼							1.30					
⅜							1.65					
½	1.69	1.81	2.24	2.28		2.40	1.73		1.81	2.28	1.65	2.01
⅝								3.03				
¾	1.85	2.13	1.89	1.93		2.68	1.97	3.03	2.05	2.44	1.89	2.17
*⅞								2.56				
1	2.36	2.44	2.40	2.48	3.39	3.07	2.28	2.56	2.68	2.99	2.32	2.76
1¼	2.68	2.72	2.24	2.32	3.39	3.58			2.48	2.76	0.24	2.52
*1⅜								2.83				
1½	2.76	2.91	2.36	2.44	3.70	3.82	2.64	3.15	2.83	2.83	2.76	2.99
*1⅞								3.31				
2	3.19	3.50	2.72	2.91	4.09	4.57	3.07	3.58	3.23	3.46	3.23	3.54
2½	3.70	3.62	4.88	4.88	6.38	5.31	2.80	5.31	3.23	5.91	3.03	5.20
3	3.74	3.74	5.16	5.16	6.85	5.39	3.15	5.59	3.23	6.38	2.99	5.51

All dimensions in inches

* ⅞, 1⅜ and 1⅞ hose sizes are only suitable for use with PTFE sanitary clamp (or Triclover) and PTFE-lined I-line end fittings.

	FaBLINE
Nominal bore size	0.375 - 3 in
Actual bore size	0.3 - 3.024 in
Length	50 - 100 Ft
Outside diameter	0.61 - 3.654 in
Max. operating pressure	580 psi (40 bar)
Burst pressure	868 - 2,320 psi
Certification and compliance	3.1 Traceability, 3-A 62-02, EC 1935/2004, EC 2023/2006, EN16643:2016, FDA (materials)
Operating temperature	-40 °F to 300 °F
Bend radius	0.75 - 13.75 in
Gamma stability	Not suitable
Autoclave stability	Suitable
Cover	EPDM and platinum cured Silicone
Hose external protection options	Protection coil, Safeguard, Scuff rings
End fitting	ANSI 150, BSP and NPT threaded fittings, Cam and Groove and dip pipes, DIN 11851 fittings, DIN and JIS swivel flange, Hygienic SMS, IDF fittings, I-line, JIC fittings, RJT fittings, Sanitary triclamp fittings
Labeling options	Color coding, Standard
Vacuum resistance	Vacuum resistant to -13psi

PTFE liner tubes are chemically resistant to all CIP, SIP and Autoclave conditions. Static build-up is prevented in FaBLINE hoses during steam or dry air purging by their conductive liners. Assemblies are electrically continuous between ends as standard and designated M/Ω-L according to EN16643. Customers are advised to ensure appropriate grounding at the hose ends.

Frequent and rapid phase change in the transported media from liquid to gas and back, could shorten the expected hose life. Customers should inform Aflex Hose of the process details to confirm suitability prior to ordering.

FaBLINE hoses are not suitable for exposure to high energy radioactive sources, including Gamma radiation which embrittles PTFE.

Materials of construction

	FaBLINE RC	FaBLINE SI
Helical wire	Stainless steel 316	Stainless steel 316
Liner tube	PTFE	PTFE
Wire braid	Stainless steel 316	Stainless steel 316
Cover	EPDM	Platinum cured silicone rubber

Technical specifications

Sizes, grades, bend radius and dimensions

Nominal Hose Bore Size		Actual Bore Size		FaBLINE Grade (Braid & Cover)	Helical Wire	O/D of Tube, Braid or Rubber		Minimum Bend Radius		Maximum Continuous Hose Length	
in	mm	in	mm			in	mm	in	mm	Ft	Mtrs
1/4	6.4	0.260	6.6	RC/SI	-	0.46	11.6	3/4	19		
3/8	9.5	0.382	9.7	RC/SI	-	0.61	15.5	3/4	19	100	30
1/2	15	0.516	13.1	RC/SI	√	0.845	21.4	11/2	38	100	30
5/8	16	0.638	16.2	RC//SI	√	0.990	25.2	13/4	45	100	30
3/4	20	0.760	19.3	RC//SI	√	1.120	28.5	2	50	100	30
7/8	22	0.870	22.1	RC//SI	√	1.260	32.0	21/8	55	100	30
1	25	1.012	25.7	RC//SI	√	1.455	37.0	23/4	70	100	30
11/4	32	1.268	32.2	RC//SI	√	1.755	44.6	4	100	100	30
13/8	35	1.370	34.8	RC/SI	√	1.865	47.4	4	100	100	30
11/2	40	1.516	38.5	RC/SI	√	2.035	51.7	51/2	140	100	30
17/8	48	1.866	47.4	RC/SI	√	2.410	61.3	65/8	170	100	30
2	50	2.012	51.1	RC/SI	√	2.580	65.6	8	200	80	25
21/2	65	2.508	63.7	RC/SI	√	3.169	80.5	117/8	300	60	18
3	80	3.024	76.8	RC/SI	√	3.654	92.8	133/4	350	50	15

Sizes, grades, pressures & weights

Nominal Hose Bore Size		Actual Bore Size		FaBLINE Grade (Braid & Cover)	Helical Wire	**Maximum Working Pressure of Hose		Burst Pressure		Weight per Unit Length	
in	mm	in	mm			Bar	psi	Bar	psi	Kg/Mtr	lb/ft
1/4	6.4	0.260	6.6	RC/SI	-	80	1160	320	4641	.17	.11
3/8	9.5	0.382	9.7	RC/SI	-	80	1160	500	7200	.22	.15
1/2	15	0.516	13.1	RC/SI	√	70	1015	400	5800	.39	.26
5/8	16	0.638	16.2	RC/SI	√	65	940	380	5500	.47	.31
3/4	20	0.760	19.3	RC/SI	√	60	870	300	4350	.55	.37
7/8	22	0.870	22.1	RC/SI	√	55	800	220	3200	.82	.55
1	25	1.012	25.7	RC/SI	√	50	720	200	2900	.92	.62
11/4	32	1.268	32.2	RC/SI	√	45	650	180	2600	1.15	.77
13/8	35	1.370	34.8	RC/SI	√	40	580	160	2320	1.51	1.01
11/2	40	1.516	38.5	RC/SI	√	40	580	160	2320	1.55	1.04
17/8	48	1.866	47.4	RC/SI	√	35	500	140	2000	2.22	1.49
2	50	2.012	51.1	RC/SI	√	30	430	120	1750	2.56	1.71
21/2	65	2.508	63.7	RC/SI	√	20	290	80	1160	3.59	2.41
3	80	3.024	76.8	RC/SI	√	15	218	60	870	4.30	2.96

Testimonials

Case study:
Casa Mendes Gonçalves

FaBLINE PTFE-lined hoses are ensuring filling accuracy, easy cleaning and lower maintenance downtime time for Casa Mendes Gonçalves in its production of vinegar and sauces.

Casa Mendes Gonçalves—a Portuguese company which creates vinegars, sauces and seasonings and sells to over 40 countries—previously used rubber and silicone hoses, which are known to commonly absorb and leach particles between processes. This resulted in extensive cleaning cycles, reduced productivity through lost time in operation and increased maintenance.

To address this, Casa Mendes Gonçalves adopted FaBLINE, a speciality food and beverage PTFE-lined hose with kink-free design. The PTFE liner does not suffer from volumetric expansion (a regular cause of inaccurate dosage), while the patented design of the liner supports a significant improvement in the number of dosing cycles in a dynamic application such as filling machine flexibles.

Backed by European Food Contact and FDA certifications, FaBLINE's PTFE liner does not absorb product which reduces maintenance and energy consumption for cleaning. It is compatible with clean-in-place (CIP) and steam-in-place (SIP) process media and temperatures. Casa Mendes Gonçalves's maintenance records also showed FaBLINE hoses have a longer service life.

Case study:
Padstow Cheese

Padstow Cheese, a small cheese producer in Cornwall, England, significantly improved its production process by adopting a MasoSine Certa pump with FaBLINE hose.

Padstow Cheese installed a Certa 200 with FaBLINE hose to pump the milk into the curdling tank, and to transfer the curd from the vat to the prepress. By introducing a Certa pump, Padstow Cheese decreased the number of fines in its cheeses, and increased yield by an estimated 8-10%. The pump, in combination with FaBLINE hoses, is saving 90 minutes a day in production time. In addition, the smooth construction of FaBLINE hoses means Padstow Cheese can flush the cleaning products through and rinse out very easily, for a more simplified cleaning process.

The Certa pump and FaBLINE hose enabled Padstow Cheese to go from a 600-liter vat operation, to 2000 liters, and to produce cheese more days a week, essentially quadrupling its output. Thanks to its shrewd investment, Padstow Cheese has increased the quality of its products, grown yield and shortened processing time by up to two hours a day.

"...the smooth construction of Aflex FaBLINE hoses means we can flush the cleaning products through and rinse out very easily."

Lawrence Reynolds,
Padstow Cheese Co.

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AFLEX HOSE

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