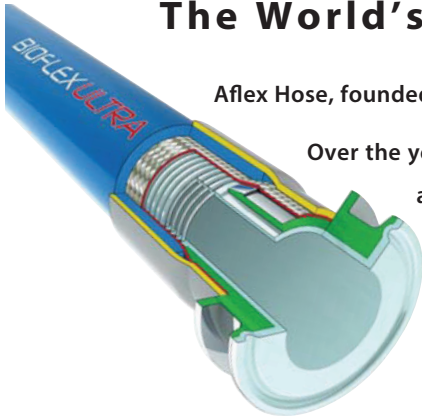


Bioflex Ultra - The New Product Design from Aflex Hose

The World's Leading Manufacturer of PTFE Flexible Hose

Aflex Hose, founded in 1973, pioneered the concept of PTFE lined flexible hose for the transfer of process fluids.

Over the years since then, hundreds of thousands of custom-built PTFE Lined hoses have been designed and manufactured by Aflex Hose to cope with the most difficult of operating conditions, and Aflex have continuously developed and expanded their product range having pioneered and introduced Antistatic hose, Polypropylene Braided hose and many other innovations in response to customer demands.



In 2001, Aflex fulfilled the most stringent demand yet. Customers, worldwide, had always asked for the ultimate PTFE lined flexible hose... one product which incorporates the advantages of both convoluted and smoothbore designs. A product which is sufficiently flexible, like convoluted, yet which retains the advantages offered by smoothbore, like fast flow rate and cleanability.

After years of painstaking research and development, Aflex launched such a hose **BIOFLEX**.

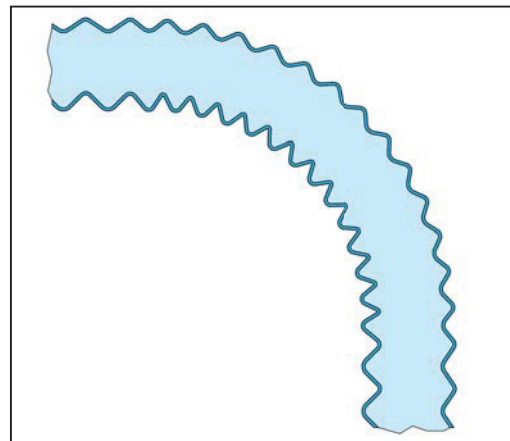
Bioflex is a smooth bore, highly flexible, PTFE lined hose. Its design overcomes the disadvantages of conventional smooth bore and convoluted PTFE flexible hose designs, dramatically improving on many of their individual technical performance parameters.

The key feature of Bioflex PTFE hose is the PTFE liner design, which comprises integral rib sections which support the tube against kinking, vacuum and pressure, and highly compressed web sections which give a smoothbore inner surface and excellent flexibility.

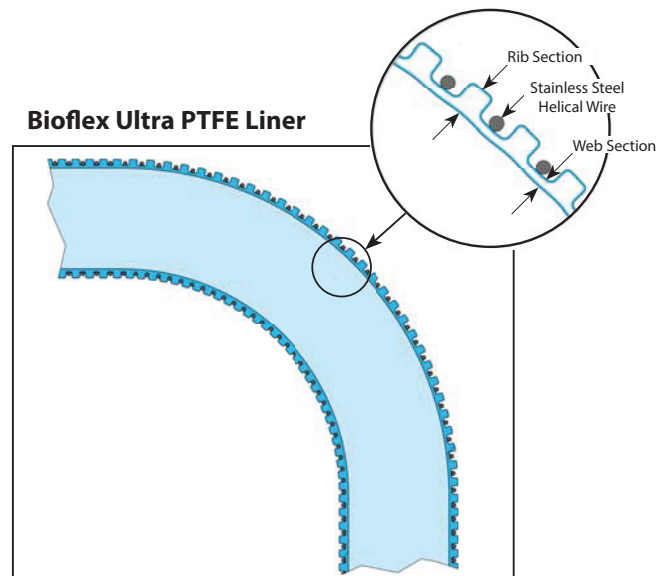
In 2013 in response to customer's requests for an even more flexible and kink resistant hose, Aflex re-designed the convolution profile of the Bioflex PTFE liner tube and introduced a high tensile, 316 stainless steel wire, helically wound in to the root of the convolutions. This wire provides greatly increased kink resistance by providing radial reinforcement to the tube, and axial reinforcement to the web section, preventing web section collapse when the tube is heavily flexed.

The actual bore size of the tube and hoses was also slightly increased to permit easier insertion of fittings. Hoses incorporating this PTFE liner tube design have been re-named as **BIOFLEX ULTRA**.

Conventional Convoluted PTFE Liner



Bioflex Ultra PTFE Liner



Note - The new designs with the increased bores and the helical wire reinforcement only apply to the standard products. The $\frac{3}{8}$ " size will remain the same as before, with nominal bore size and no helical wire reinforcement.

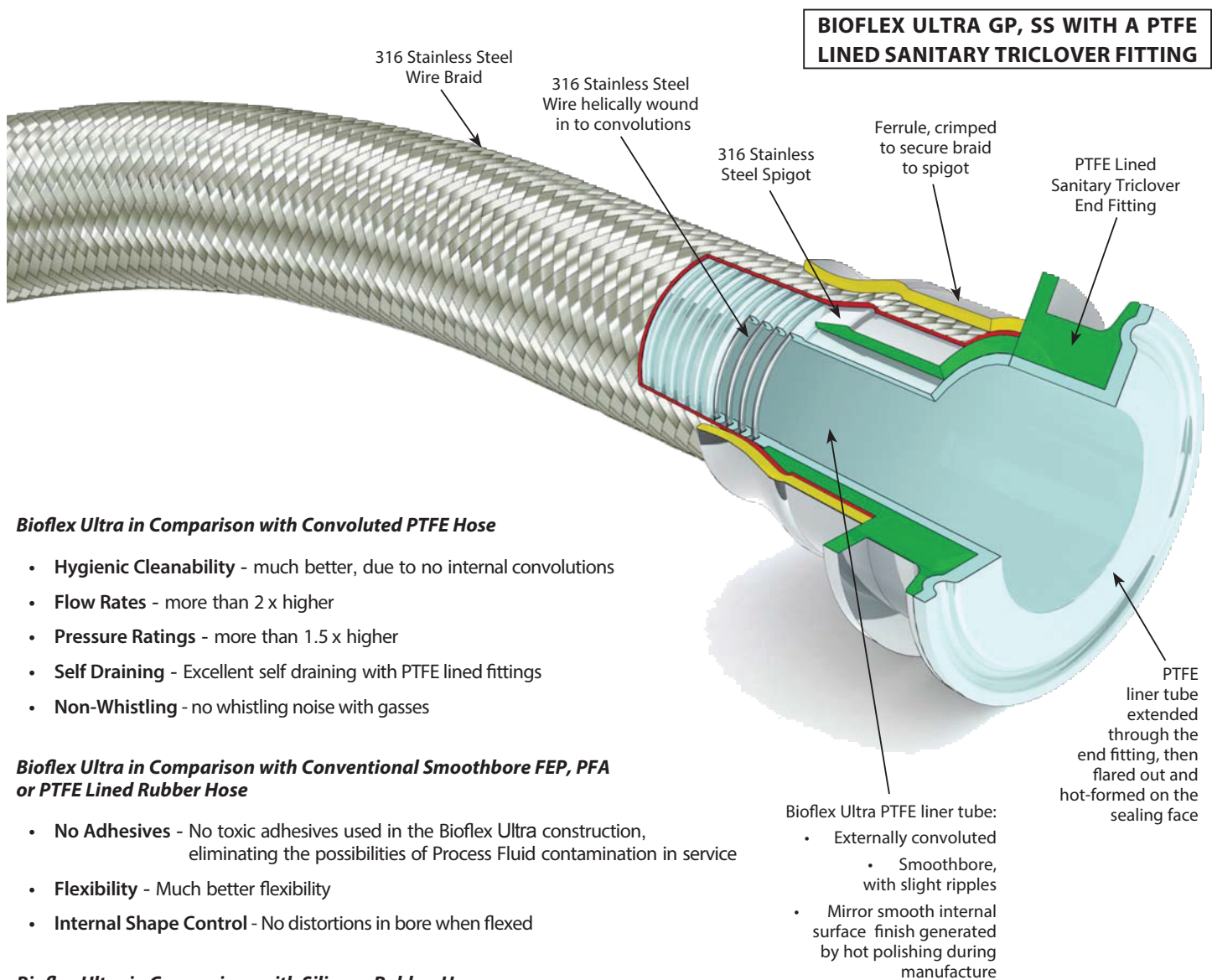
Bioflex Ultra Hose Design and Comparative Properties

Bioflex Ultra Hose Design Options

Bioflex Ultra Hose Grades are made up by combining the Design Options, which are defined by 2 letters as shown below, and fully described on the indicated pages.

For example, "Bioflex Ultra AS, PB, SG" defines a hose with an Antistatic PTFE liner (AS) and a Polypropylene braid (PB) and an outer "Safeguard" (SG) spiral HDPE protection sleeve.

PTFE Liner Tube Options -	GP (Natural PTFE) and AS (Antistatic PTFE) -	Page 14
Braid Options -	TO (Tube Only, No Braid), SS (316 SS Wire), and PB (Polypropylene) -	Page 15
Rubber Cover Options -	RC (Blue EPDM), BK (Black EPDM) and SI (Silicone Rubber) -	Page 16
External Protection Options -	SR (Scuff Rings), SG (Safeguard Spiral) and PC (SS Wire Coil) -	Page 17



Bioflex Ultra in Comparison with Convoluted PTFE Hose

- **Hygienic Cleanability** - much better, due to no internal convolutions
- **Flow Rates** - more than 2 x higher
- **Pressure Ratings** - more than 1.5 x higher
- **Self Draining** - Excellent self draining with PTFE lined fittings
- **Non-Whistling** - no whistling noise with gasses

Bioflex Ultra in Comparison with Conventional Smoothbore FEP, PFA or PTFE Lined Rubber Hose

- **No Adhesives** - No toxic adhesives used in the Bioflex Ultra construction, eliminating the possibilities of Process Fluid contamination in service
- **Flexibility** - Much better flexibility
- **Internal Shape Control** - No distortions in bore when flexed

Bioflex Ultra in Comparison with Silicone Rubber Hose

- **Hygienic Cleanability** - much better, due to the non-stick PTFE Liner
- **Chemical Resistance** - considerably improved, particularly to strong oxidising acids and bases
- **Temperature & Pressure Ratings** - much higher temperature and pressure capability
- **Steam Resistance** - permanently resistant to steam sterilising (unlike silicone hose, which has a limited life)

Bioflex Ultra Sizes, Grades, Bend Radius and Dimensions

Nominal Hose Bore Size		Actual Bore Size		Bioflex Ultra 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
3/8	9.5	0.375	9.5	TO	-	0.47	12.0	1 3/8	35	100	30
		0.375	9.5	SS	-	0.50	12.8	3/4	19	100	30
		0.375	9.5	RC/BK/SI	-	0.68	17.4	3/4	19	100	30
1/2	15	0.530	13.5	TO	√	0.654	16.4	2 3/8	60	100	30
		0.530	13.5	SS	√	0.700	17.8	1 1/2	38	100	30
		0.530	13.5	PB	√	0.800	20.5	1 1/2	38	100	30
		0.530	13.5	RC/BK/SI	√	0.845	21.4	1 1/2	35	100	30
5/8	16	0.650	16.5	TO	√	0.780	20.1	2 1/2	64	100	30
		0.650	16.5	SS	√	0.850	21.6	1 3/4	45	100	30
		0.650	16.5	PB	√	0.955	24.3	1 3/4	45	100	30
		0.650	16.5	RC/BK/SI	√	0.990	25.2	1 3/4	45	100	30
3/4	20	0.780	19.8	TO	√	0.920	23.4	3	75	100	30
		0.780	19.8	SS	√	0.980	24.9	2	50	100	30
		0.780	19.8	PB	√	1.085	27.6	2	50	100	30
		0.780	19.8	RC/BK/SI	√	1.120	28.5	2	50	100	30
* 7/8	22	0.875	22.2	TO	√	1.040	26.4	3 1/2	90	100	30
		0.875	22.2	SS	√	1.090	27.7	2 1/8	55	100	30
		0.875	22.2	PB	√	1.240	31.5	2 1/8	55	100	30
		0.875	22.2	RC/BK/SI	√	1.260	32.0	2 1/8	55	100	30
1	25	1.030	26.1	TO	√	1.200	30.5	4 3/4	110	100	30
		1.030	26.1	SS	√	1.255	31.9	2 3/4	70	100	30
		1.030	26.1	PB	√	1.455	37.0	2 3/4	70	100	30
		1.030	26.1	RC/BK/SI	√	1.455	37.0	2 3/4	70	100	30
1 1/4	32	1.280	32.5	TO	√	1.490	37.8	5 1/2	140	100	30
		1.280	32.5	SS	√	1.555	39.5	4	100	100	30
		1.280	32.5	PB	√	1.740	44.2	4	100	100	30
		1.280	32.5	RC/BK/SI	√	1.755	44.6	4	100	100	30
* 1 3/8	35	1.375	34.9	TO	√	1.590	40.3	6 1/2	160	100	30
		1.375	34.9	SS	√	1.665	42.3	4	100	100	30
		1.375	34.9	PB	√	1.850	47.0	4	100	100	30
		1.375	34.9	RC/BK/SI	√	1.865	47.4	4	100	100	30
1 1/2	40	1.530	38.8	TO	√	1.750	44.5	7	180	100	30
		1.530	38.8	SS	√	1.840	46.7	5 1/2	140	100	30
		1.530	38.8	PB	√	2.020	51.4	5 1/2	140	100	30
		1.530	38.8	RC/BK/SI	√	2.035	51.7	5 1/2	140	100	30
* 1 7/8	48	1.875	47.6	TO	√	2.145	54.4	11	280	100	30
		1.875	47.6	SS	√	2.220	56.4	6 5/8	170	100	30
		1.875	47.6	PB	√	2.410	61.3	6 5/8	170	100	30
		1.875	47.6	RC/BK/SI	√	2.410	61.3	6 5/8	170	100	30
2	50	2.030	51.5	TO	√	2.320	58.9	12	300	100	30
		2.030	51.5	SS	√	2.390	60.7	8	200	100	30
		2.030	51.5	PB	√	2.575	65.4	8	200	100	30
		2.030	51.5	RC/BK/SI	√	2.580	65.6	8	200	100	30

*The 7/8", 1 3/8" and 1 7/8" hose sizes are only suitable for use with PTFE lined sanitary clamp (or triclover) end fittings and PTFE lined I-Line end fittings.

† Longer lengths may be available to special order

Bioflex Ultra Sizes, Grades, Pressures & Weights

Nominal Hose Bore Size		Actual Bore Size		Bioflex Ultra 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
3/8	9.5	0.375	9.5	TO	-	5	72	20	290	.06	.04
		0.375	9.5	SS	-	80	1160	500	7200	.14	.09
		0.375	9.5	RC/BK/SI	-	80	1160	500	7200	.22	.15
1/2	15	0.530	13.5	TO	√	5	72	20	290	.15	.10
		0.530	13.5	SS	√	70	1015	400	5800	.29	.19
		0.530	13.5	PB	√	35	500	140	2000	.22	.15
		0.530	13.5	RC/BK/SI	√	70	1015	400	5800	.39	.26
5/8	16	0.650	16.5	TO	√	5	72	20	290	.17	.11
		0.650	16.5	SS	√	65	940	380	5500	.35	.23
		0.650	16.5	PB	√	33	480	130	1900	.25	.17
		0.650	16.5	RC/BK/SI	√	65	940	380	5500	.47	.31
3/4	20	0.780	19.8	TO	√	5	72	20	290	.20	.13
		0.780	19.8	SS	√	60	870	300	4350	.40	.27
		0.780	19.8	PB	√	30	440	120	1750	.28	.19
		0.780	19.8	RC/BK/SI	√	60	870	300	4350	.55	.37
* 7/8	22	0.875	22.2	TO	√	4	60	16	230	.34	.23
		0.875	22.2	SS	√	55	800	220	3200	.60	.40
		0.875	22.2	PB	√	27.5	400	110	1600	.44	.30
		0.875	22.2	RC/BK/SI	√	55	800	220	3200	.82	.55
1	25	1.030	26.1	TO	√	4	60	16	230	.36	.24
		1.030	26.1	SS	√	50	720	200	2900	.63	.42
		1.030	26.1	PB	√	25	360	100	1450	.47	.31
		1.030	26.1	RC/BK/SI	√	50	720	200	2900	.92	.62
1 1/4	32	1.280	32.5	TO	√	3	43	12	175	.45	.30
		1.280	32.5	SS	√	45	650	180	2600	.85	.57
		1.280	32.5	PB	√	23	330	90	1300	.72	.48
		1.280	32.5	RC/BK/SI	√	45	650	180	2600	1.15	.77
* 1 3/8	35	1.375	34.9	TO	√	2	29	8	115	.68	.46
		1.375	34.9	SS	√	40	580	160	2320	1.14	.77
		1.375	34.9	PB	√	20	290	80	1160	1.00	.67
		1.375	34.9	RC/BK/SI	√	40	580	160	2320	1.51	1.01
1 1/2	40	1.530	38.8	TO	√	2	29	8	116	.66	.44
		1.530	38.8	SS	√	40	580	160	2320	1.10	.74
		1.530	38.8	PB	√	20	290	80	1160	.90	.60
		1.530	38.8	RC/BK/SI	√	40	580	160	2320	1.55	1.04
* 1 7/8	48	1.875	47.6	TO	√	2	29	8	115	1.12	.75
		1.875	47.6	SS	√	35	500	140	2000	1.70	1.14
		1.875	47.6	PB	√	18	250	72	1040	1.40	.94
		1.875	47.6	RC/BK/SI	√	35	500	140	2000	2.22	1.49
2	50	2.030	51.5	TO	√	2	29	8	116	1.25	.84
		2.030	51.5	SS	√	30	430	120	1750	1.90	1.27
		2.030	51.5	PB	√	15	215	60	870	1.60	1.07
		2.030	51.5	RC/BK/SI	√	30	430	120	1750	2.56	1.71

*The 7/8", 1 3/8" and 1 7/8" hose sizes are only suitable for use with PTFE lined sanitary clamp (or triclover) end fittings and PTFE lined I-Line end fittings.

** The Maximum Working Pressure of a hose assembly is limited to the lowest of the MWP's of either of the two end fittings, or of the hose itself as listed above. The MWP of the hose reduces as the operating temperature increases as specified in the Graph on the 'Bioflex Ultra Specification' page 7.