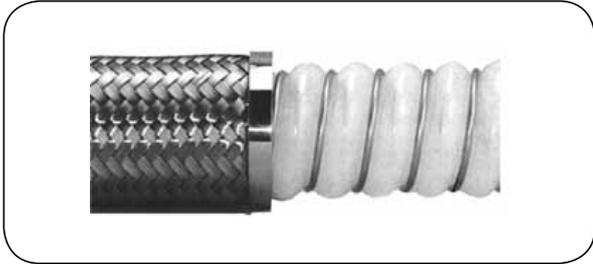


INDUSTRIAL HOSES - PTFE

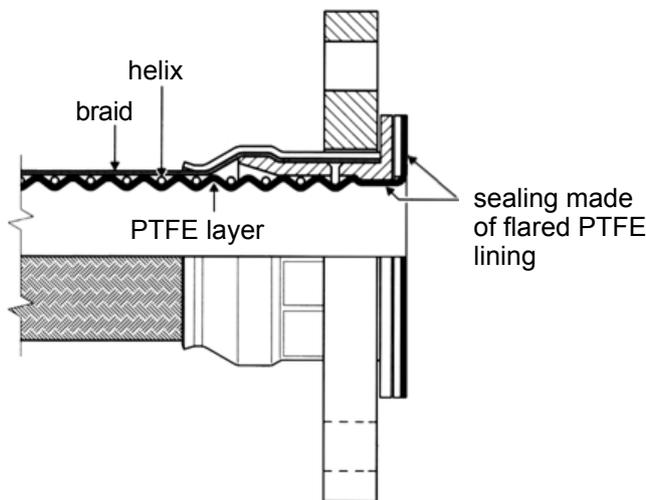


CORROFLON

Material: Helically corrugated PTFE
Reinforcement: AISI 304 stainless steel wire helix
 AISI 304 braid (SS version)
 Polypropylene braid (PB version)
Working temp.: From -70°C up to +260°C (SS version)
 From -30°C up to +100°C (PB version)
 (working pressure depends on temperature)

Characteristics: CORROFLON hose is made of helically corrugated PTFE reinforced with AISI 304 stainless steel wire helix and stainless steel braid (SS version). The construction ensures resistance to vacuum and kinking. A thick wall reduces permeation to minimum. A gentle, shallow corrugation gives an uninterrupted flow, increases cleanability and encourages self-cleaning. All versions are supplied as complete hose assemblies with standard or PTFE lined (flared) fittings.

Applications: Due to the unique properties of PTFE (wide temperature range, excellent chemical resistance, non-stick surface), widely used to transfer chemicals, foodstuffs, fuels, oils, paints, solvents, adhesives, detergents, inks, steam, etc.



CORROFLON - SS version - AISI 304 stainless steel braid

DN [inch]	DN [mm]	flow diameter [mm]	O.D. [mm]	working pressure [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
1/2	15	11.2	17.5	41	38	0.33	28
3/4	20	15.7	23.1	35	51	0.45	30
1	25	21.5	31.7	31	70	0.70	40
1.1/4	32	27.5	38.4	27	82	0.82	30
1.1/2	40	32	44.6	23	100	1.50	25
2	50	43	59	20	140	2.10	18
2.1/2	65	54	73	16	178	2.58	13
3	80	64	86	14	230	3.29	10
4	100	98	117	10	300	5.05	5
6	150	130	170	5	600	6.70	4

INDUSTRIAL HOSES - PTFE

CORROFLON - PB version - polypropylene braid

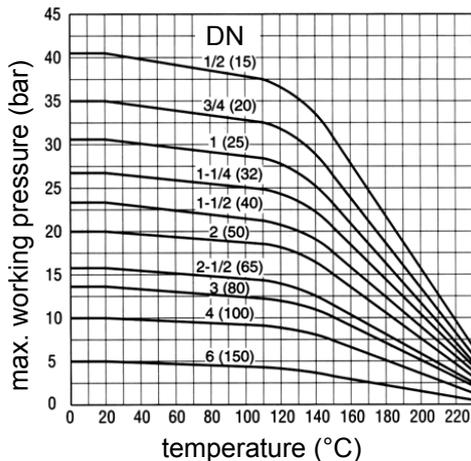
DN [inch]	DN [mm]	flow diameter [mm]	O.D. [mm]	working pressure [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
1/2	15	11.2	19.1	31	38	0.26	28
3/4	20	15.7	26	26	51	0.36	30
1	25	21.5	34	23	70	0.56	40
1 1/4	32	27.5	43.6	20	80	0.66	30
1 1/2	40	32	48.6	17	100	1.20	25
2	50	43	62	15	140	1.68	18
2 1/2	65	54	77	12	178	2.06	13
3	80	64	90	10	230	2.63	10
4	100	98	120	8	300	3.98	5



PB - polypropylene braid

A hose in polypropylene braid is more lightweight (around 20% compared to GPSS version) and more resistant to abrasion.

Recommended for applications involving frequent operation and relocation. Excellent for frequent manual handling of the hose in particular. The working temperature ranges from -30°C up to +100°C.



Relation between working pressure and temperature

The graph shows the relation between the maximum working pressure and temperature for nominal diameters of CORROFLON GPSS hose. At temperatures lower than 0°C and down to -70°C, the maximum working pressures applies as the nominal pressure of the hose.

For PB version, in the temperature range from -30°C up to +80°C as per graph. From +80°C up to +100°C reduce the pressure by 50%. RC, FP, SI versions as per graph (within the temperature range of the particular version).

Vacuum resistance

Hoses in SS version are resistant to full vacuum up to +130°C. Vacuum resistance must be reduced by 1% for every 1°C above +130°C. The resistance of other versions is limited by their maximum working temperature.



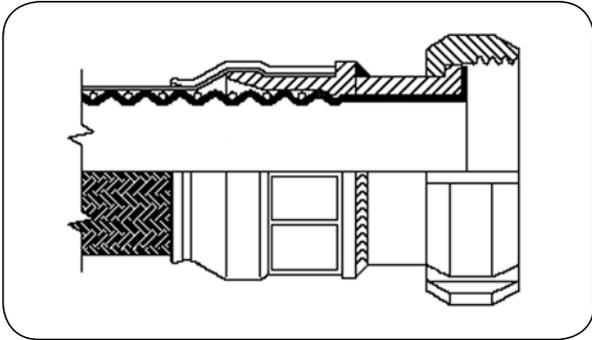
AS - antistatic internal layer

Special additives reduce inherent, high resistance of PTFE. The electrical resistance between an end fitting and a wetted internal layer should not exceed $10^8 \Omega$. One of the end fittings must be grounded. The additives in the material of the hose do not have any impact on its sanitary properties. Compliant with FDA standards.

INDUSTRIAL HOSES - PTFE

Complete CORROFLON hose assemblies

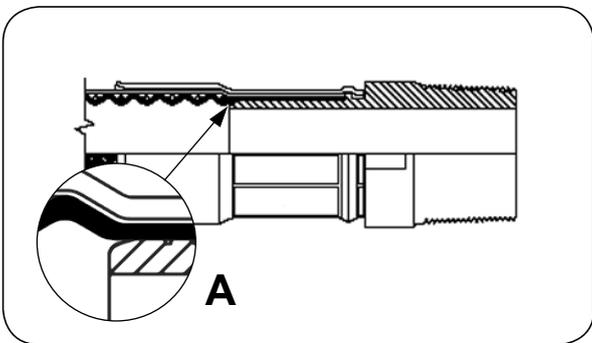
TUBES INTERNATIONAL® produces CORROFLON hose assemblies with fittings in two versions: PTFE lined fittings (PTFE layer is extended through the fitting and flared out as the sealing face) and standard fittings (non-lined fittings).



PTFE lined fittings

The internal layer of PTFE hose is extended through the fitting and flared out as the sealing face. This construction prevents any contact of the transferred medium with the material of the fitting. Advantages:

- for aggressive media - the separation of transferred fluid from the fitting.
- for food and pharmaceutical substances - the lack of crevices (A) - places in which material particles may be entrapped. It allows to ensure clean and sterile system.



Non-lined fittings

CORROFLON hose can be equipped with standard fittings used for PTFE hoses with thread and seal types as for hydraulic fittings. Then this PTFE hose assembly is similar to HYPERLINE V hose assemblies but its operation life is much longer, resistance to bending, mechanical impact and vacuum is higher, permeability is reduced. Available with TRICLOVER, non-flared fittings as well.

CORROFLON hose assembly length limitations

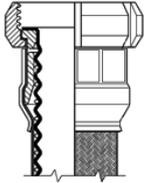
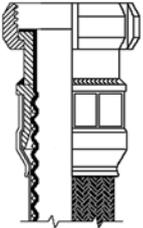
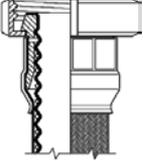
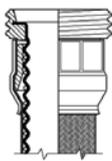
DN		minimum length		maximum length
[inch]	[mm]	straight [mm]	bent 90° [mm]	[m]
1/2	15	75	60	28
3/4	20	75	81	30
1	25	75	110	40
1.1/4	32	75	129	30
1.1/2	40	75	158	25
2	50	75	220	18
2.1/2	65	100	280	13
3	80	100	362	10
4	100	350	472	5
6	150	300	943	4

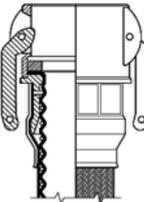
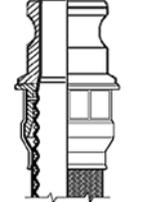
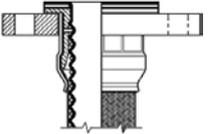
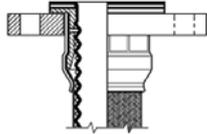
Values given in the table above do not include the length of the fittings (fitting + ferrule), apply to versions in stainless steel or plastic braid, without rubber cover. The values should be increased by 50% for rubber covered hoses. The length of a complete hose assembly is taken as the length from the sealing face of the fitting at one end of the assembly to the same at the other end. Length tolerance: from 0% to 10% - for lengths above 1 meter and 0% to 5% - for lengths up to 1 meter.

The maximum working pressure of a hose assembly is determined by the lower from two values: hose working pressure and fitting working pressure.

INDUSTRIAL HOSES - PTFE

Standard flared fittings for CORROFLON hoses

fitting type	SMS	SMS HP	DIN 11851 female	DIN 11851 male
				
working pressure [bar]	10 (static)	10 (pulsating)	to 1.1/4" - 40, above - 25	
code	AF-CFXSMS...N AF-CFXSMS...W	AF-CFXSMSHP...	AF-CFXDIN...N AF-CFXDIN...W	AF-CFXDIN...Z
hose DN	thread	thread	thread	thread
1"	25	Rd 40x1/6"	Rd 40x1/6"	Rd 52x1/6"
1.1/4"	32	-	-	Rd 58x1/6"
1.1/2"	40	Rd 60x1/6"	Rd 60x1/6"	Rd 65x1/6"
2"	50	Rd 70x1/6"	Rd 70x1/6"	Rd 78x1/6"
2.1/2"	65	Rd 85x1/6"	Rd 85x1/6"	Rd 95x1/6"
3"	80	Rd 98x1/6"	Rd 98x1/6"	Rd 110x1/4"

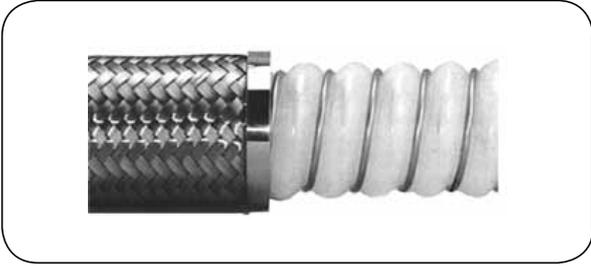
fitting type	CAMLOCK C type	CAMLOCK A type	swivel flange DIN PN10/16	swivel flange ASA 150
				
working pressure [bar]	16 (DN 3"-14)	16 (DN 3"-14)	16 (DN 3"-14)	16 (DN 3"-14)
code	AF-CFXCAM...G	AF-CFXCAM...W	AF-CFXSFL...W AF-CFXSFL...K AF-CFXSFL...U	AF-CFXSFLA...W AF-CFXSFLA...K AF-CFXSFLA...U
hose DN	size	size	size	size
1/2"	15	-	DN 15	DN 15
3/4"	20	3/4"	DN 20	DN 20
1"	25	1"	DN 25	DN 25
1.1/4"	32	1.1/4"	DN 32	DN 32
1.1/2"	40	1.1/2"	DN 40	DN 40
2"	50	2"	DN 50	DN 50
2.1/2"	65	2.1/2"	DN 65	DN 65
3"	80	3"	DN 80	DN 80

Fittings are made of AISI 316 stainless steel as a standard (ferrules and flanges with PTFE lined option AISI 304).

Available on request: hose assemblies with flared TRICLOVER fittings, hose assemblies with fittings specified by the customer, 4" and 6" hose assemblies. Please contact Technical Department of TUBES INTERNATIONAL® for advice.

INDUSTRIAL HOSES - PTFE

CORROFLON hose versions

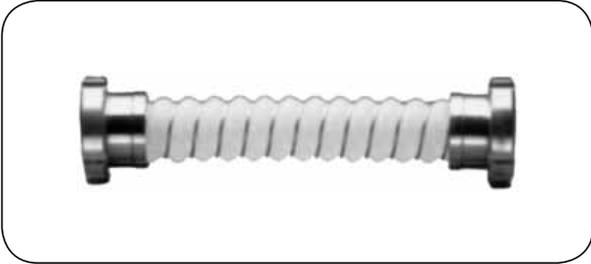


EC - electrical continuity between fittings

Resistance between end fittings for hoses up to 5 meter:

- SS version $<10 \Omega$
- PB and KYB versions $<20 \Omega$

If electrical continuity is required, EC version should be ordered.



TO - tube only (no braid)

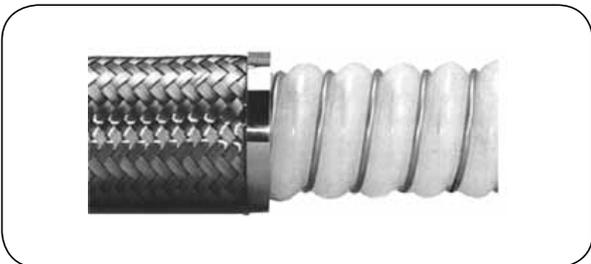
Economical solution for low pressure applications without a risk of mechanical damage. Made of translucent PTFE that enables visual control of the flow. The working pressure is reduced by 85%, weight by 35% compared to SS version.



KYB - KYNAR braid

Braid made of Polyvinylidene Fluoride Monofilament (KYNAR). Excellent chemical resistance. The working temperature ranges from -40°C up to $+120^{\circ}\text{C}$ (inside); up to $+100^{\circ}\text{C}$ (outside the hose).

The working pressure is reduced by 60%, weight by 30% compared to GP SS version.



HB - HASTELLOY braid

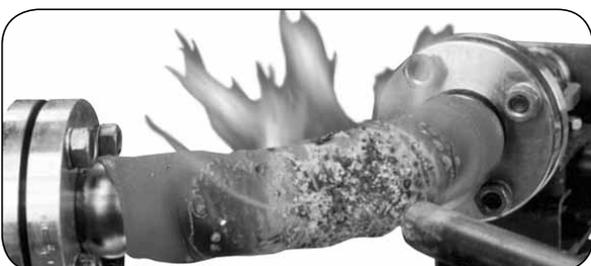
HASTELLOY braid is more resistant to chemicals than SS version. Suitable for applications conveying chlorine or fluoride, and wherever the hose is exposed to intense chemical corrosion.

The working pressure is reduced by 50% compared to SS version.



RC - rubber cover

Designed for heavy duty application (e.g. reloading applications). It is SS version with the layer of antistatic EPDM rubber (neoprene/Hypalon also available) vulcanized directly onto the steel braid. The working temperature ranges from -40°C up to $+140^{\circ}\text{C}$ (inside); up to $+120^{\circ}\text{C}$ for EPDM (outside of the hose).

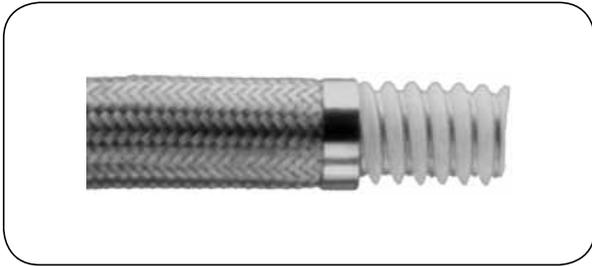


FP - fireproof

Fire resistant version of RC hose designed to resist flame and maintain continuous flow in the event of fire. Manufactured according to BS 5173. The working temperature ranges from -40°C up to $+140^{\circ}\text{C}$ (inside); up to $+1200^{\circ}\text{C}$ (outside of the hose). An antistatic version is also available.

INDUSTRIAL HOSES - PTFE

CORROFLON hose versions



SP - special profile

As a result of construction with corrugations closer together, SP version has better parameters than the standard one. Kink and crush resistance is improved, the working pressure is increased by 25% but the weight is increased by 30%, actual bore diameter is reduced by 3 mm, bending radius is reduced by 25%. The maximum continuous length is reduced by 50%. An antistatic version is also available.



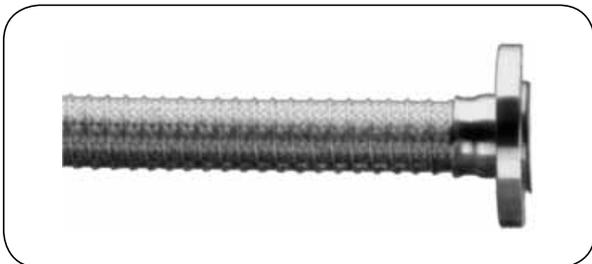
SI - additional silicone rubber cover

Used in applications where cleanliness is essential (pharmaceutical, food industry). Remaining parameters are the same as for SS version. Available in diameters up to 3". The working temperature ranges from -40°C up to +180°C (inside); up to +160°C (outside the hose).



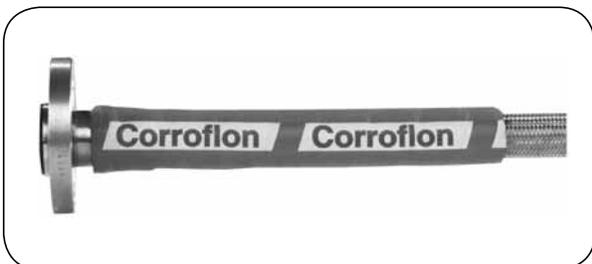
SR - scuff rings

Rubber rings are placed every half meter along the hose (diameters from 1" to 3") to protect against abrasion and damage. Resistant to temperature up to +140°C.



PC - protection coil

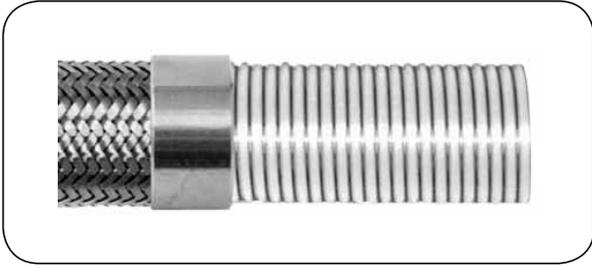
For applications where the hose requires protection against abrasion but other covers are not acceptable (e.g. due to high temperature). Technical parameters are the same as for SS version.



RC 300 - rubber cover for fittings

A layer of EPDM rubber is vulcanized directly on the ferrule to protect a handling person from direct contact with a very hot or very cold hose assembly. Also protects against excessive flexing of the hose at the fitting. Length 300 mm.

INDUSTRIAL HOSES - PTFE



BIOFLEX ULTRA

Material: Smooth inside, corrugated outside PTFE
Reinforcement: AISI 304 steel braid (SS version)
Working temp.: From -70°C up to +260°C (SS version) (working pressure depends on temperature)

Characteristics: BIOFLEX ULTRA hose is made of smooth inside and corrugated outside PTFE, reinforced with an external AISI 304 stainless steel braid (SS version). The construction combines properties of smooth hoses (ease of cleaning, uninterrupted flow) and high flexibility that is specific to corrugated hoses. When compared to classic PTFE corrugated hoses, BIOFLEX ULTRA features better resistance to cyclic bending, smaller permeability and the maximum flow rates. Numerous versions are available as complete hose assemblies with PTFE-lined fittings.

Applications: Due to the unique properties of PTFE and state-of-the-art construction, BIOFLEX ULTRA hose is frequently employed in installations transferring: chemicals, food and pharmaceutical substances, fuels, oils, solvents, detergents, adhesives, paints, inks, steam, etc.

BIOFLEX ULTRA- standard version GPSS

DN [inch]	DN [mm]	flow diameter [mm]	O.D. [mm]	working pressure* [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
3/8	10	9.5	12.8	80	19	0.14	18
1/2	15	12.7	16.6	70	38	0.29	18
5/8	16	16	20.6	65	45	0.35	18
3/4	20	19	24.5	60	50	0.40	18
7/8	22	22	28.2	55	60	0.52	18
1	25	25.4	32.3	50	70	0.63	18
1.1/4	32	32	39.5	45	100	0.85	18
1.3/8	35	34.9	43.1	40	120	1.00	16
1.1/2	40	38	47	40	140	1.10	17
1.7/8	48	47.6	57.1	35	190	1.38	13
2	50	50.8	61	30	200	1.90	10

* maximum working pressure depends on the temperature and the maximum working pressure of fittings assembled on a hose (contact the Technical Department of TUBES INTERNATIONAL®).

BIOFLEX ULTRA hose versions



AS - antistatic internal layer

Special additives reduce inherent, high resistance of PTFE. Compliant with ISO 8031 Annex A. The electrical resistance between an end fitting and a wetted internal layer should not exceed $10^8 \Omega$. One of the end fittings must be grounded. Compliant with FDA standards.

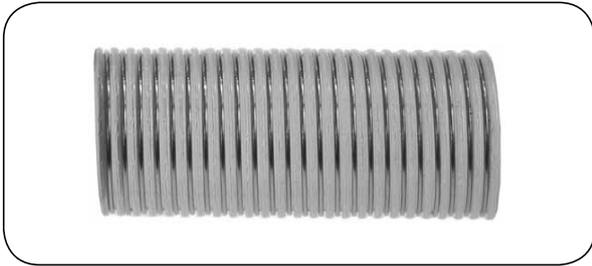


EC - electrical continuity between end fittings

Resistance between end fittings:
 - SS version $<10 \Omega$
 - PB version $<20 \Omega$
 If electrical continuity is required, EC version should be ordered.

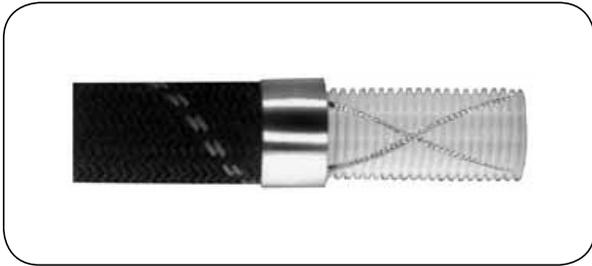
INDUSTRIAL HOSES - PTFE

BIOFLEX ULTRA hose versions



TO - tube only (no braid)

A lightweight hose without braid (available in GP and AS versions) used at low pressure.



PB - polypropylene braid

A hose in polypropylene braid is more lightweight and more resistant to abrasion. Recommended for applications involving frequent operation and relocation. The working pressure is reduced by 50% (up to +80°C) compared to GPSS version. The hose features two Monel wires to ensure electrical continuity between end fittings. The working temperature ranges from -30°C up to +100°C.



RC - rubber cover

A hose in smooth, blue, EPDM rubber is more resistant to abrasion, chemicals and easier to clean. The cover compliant with USP Class VI. The working temperature: -40°C up to +140°C.



RC FP - fireproof rubber cover

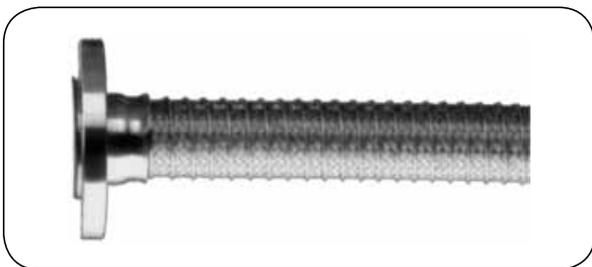
Developed for heavy duty conditions (e.g. reloading systems). It is GP SS version with a layer of black antistatic EPDM rubber vulcanized onto the stainless steel braid. RC FP version conforms to the fire resistance requirements of BS5173 standard.

The working temperature ranges from -40°C up to +140°C.



SI - silicone cover

A cover made of platinum cured silicone allows visual control of the braid. A very smooth surface of the cover facilitates cleaning. The cover compliant with USP Class VI. The working temperature ranges from -73°C up to +204°C.



PC - protection coil

SR - scuff rings

Description as for CORROFLON.

INDUSTRIAL HOSES - PTFE

BIOFLEX ULTRA hose fittings



SMS

A fitting with a female thread compliant with Swedish SMS specification. PTFE liner ensures clean and uninterrupted flow. All parts made of acid-resistant steel.



RJT

A fitting with a female thread compliant with British BS4825 standard. PTFE liner ensures clean and uninterrupted flow. All parts made of acid-resistant steel.



DIN 11851

A fitting with a female thread according to German DIN 11851 standard. PTFE liner ensures clean and uninterrupted flow. All parts made of acid-resistant steel.



DIN 11851

A fitting with a male thread according to German DIN 11851 standard. PTFE liner ensures clean and uninterrupted flow. All parts made of acid-resistant steel.



CAMLOCK

CAMLOCK coupling compliant with MIL-C-27487 standard. PTFE liner ensures clean and uninterrupted flow. All parts made of acid-resistant steel.



TRICLOVER

A fitting compliant with BS 4825, ISO 2852 or DIN 32676. PTFE liner ensures clean and uninterrupted flow. All parts made of acid-resistant steel.

INDUSTRIAL HOSES - PTFE

BIOFLEX ULTRA hose fittings



Standard flanges

Swivel flanges compliant with ASA 150 and DIN PN16. PTFE liner ensures clean and uninterrupted flow. Flange material: AISI 304 stainless steel. Spigot material: AISI 316L stainless steel.

ASA 150 flanges (ANSI B 16.5 class 150)

flange size		O.D. [mm]	number of bolts	bore diameter [mm]	raised face diameter [mm]
[inch]	[mm]				
1/2	15	89	4	16	32
3/4	20	98	4	16	43
1	25	108	4	16	50
1.1/2	40	127	4	16	73
2	50	152	4	19	92
3	80	190	4	19	152
4	100	228	8	19	190
6	150	279	8	22	241

DIN PN16 flanges (BS 4504)

flange size		O.D. [mm]	number of bolts	bore diameter [mm]	raised face diameter [mm]
[inch]	[mm]				
1/2	15	95	4	14	32
3/4	20	105	4	14	43
1	25	115	4	14	63
1.1/2	40	150	4	18	88
2	50	165	4	18	102
3	80	200	8	18	160
4	100	220	8	18	180
6	150	285	8	22	240



DIP PIPES - tube fittings

Rigid tube fittings, straight or 90° elbow, designed for suction of fluids (or filling up) from tanks, containers, drums, etc. Made of antistatic (AS) PTFE as a standard. Available in AISI 316 stainless steel, virgin PTFE or other materials. The working pressure ranges from full vacuum to 3 bar.



INDUSTRIAL HOSES - PTFE



BIOFLON

- Material:** Smooth PTFE tube
Reinforcement: AISI 304 steel braid, Steel wire helix (AISI 304)
External layer: Blue EPDM rubber (RC version) or transparent silicone (SI version)
Working temp.: From -40°C up to +140°C (RC version) From -73°C up to +204°C (SI version) (working press. depends on temp.)

Characteristics: BIOFLON hose includes a smooth PTFE tube. It is reinforced with AISI 304 steel wire braid and AISI 304 steel wire helix which is wound onto the braid and vulcanized into the rubber cover. This construction allowed to satisfy market demand for smooth bore PTFE hoses in 2.1/2" and 3" diameter. When compared to its competitive counterparts, the construction of BIOFLON is surely prevailing as there is no glue used which might contaminate the medium in case of hose failure. Moreover, the use of virgin PTFE guarantees excellent chemical resistance (in comparison to rubber hoses with FEP, PFA MFA, XLPE, UHMWPE liners). The flexibility of BIOFLON hose is considerably limited. It is stiffer than rubber hoses - the minimum bending radius is twice as large. Vacuum resistance depends on the temperature and bending radius. If a hose undergoes constant bending and is frequently disassembled, it is recommended to use CORROLINE or 2" BIOFLEX with larger end fittings, 2.1/2" or 3" nominal diameter, or use 2.1/2" or 3" CORROFLON. All BIOFLON versions are always supplied as complete hose assemblies with fittings, PTFE lined (flared) fittings as well.

Applications: Transfer of chemicals, food and pharmaceutical substances, fuels, oils, paints, solvents, adhesives, detergents, inks, steam, etc. - wherever excellent chemical resistance of PTFE and smooth internal layer are of primary importance but flexibility is not that vital.

BIOFLON - standard version RC

DN [inch]	DN [mm]	flow diameter [mm]	O.D. [mm]	working pressure [bar]	bending radius [mm]	maximum length [m]
2.1/2	65	60	78	20	800	10
3	80	73	96.5	16	1000	10

BIOFLON hose versions



RC SI - silicone cover

A hose designed to operate at higher temperatures than hoses in EPDM rubber cover. The working temperature ranges from -73°C up to +204°C.



AS - antistatic internal layer

Special additives reduce inherent, high resistance of PTFE. Compliant with EN ISO 8031:2009. The electrical resistance between an end fitting and a wetted internal layer should range from $10^3 \Omega$ up to $10^7 \Omega$. One of the end fittings must be grounded. Compliant with FDA standards.

INDUSTRIAL HOSES - PTFE

BIOFLON hose fittings



Flange fittings

Swivel flanges compliant with ASA 150 and DIN PN16. A version with PTFE liner ensures clean and uninterrupted flow.

Flange material: AISI 304 stainless steel.
Spigot material: AISI 316L stainless steel.

ASA 150 flange (ANSI B 16.5, 150 class)

flange size		O.D. [mm]	number of holes	bore diameter [mm]	flared diameter * [mm]
[inch]	[mm]				
2 1/2	65	178	4	19	105
3	80	191	4	19	127

DIN PN16 flanges (EN 1092-1)

flange size		O.D. [mm]	number of holes	bore diameter [mm]	flared diameter * [mm]
[inch]	[mm]				
2 1/2	65	185	4	18	122
3	80	200	4	18	127

* - flared diameter is the diameter of a sealing face made of the flared PTFE liner. Due to technological limitations the actual diameter of some sizes may be smaller than the raised face diameter specified by the standard.

Other types of fittings

BIOFLON can be used with a variety of other fittings either standard or made according to customer specifications, e.g.:

- non-flared, straight or 90° elbow TRICLOVER fittings,
- imperial or metric fittings with standard sealing,
- tube fittings.



Some of the types of fittings listed above are available with PTFE liner (flared). Please contact Technical Department of TUBES INTERNATIONAL® for technical details and availability.