



- PTFE hose
- Self-draining
- Hygienic
- Flexible and kink resistant
- High purity
- CIP/SIP
- Chemical resistant
- Long service life
- Increased flow rate





## Pharma-Flow<sup>®</sup>: the newest member of the Flow-Family

With the Pharma-Flow<sup>®</sup> range of products, Xtraflex introduces a PTFE hose with smooth-convoluted design. This design combines the best of both worlds, the ultimate cleanability of a smooth PTFE hose with the excellent flexibility of a convoluted hose. This makes it ideally suited for pharmaceutical-, biotech- or food applications.

Platinum cured white  
silicone cover

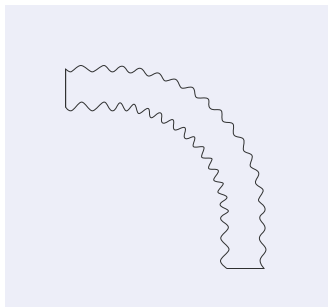
V16642-2016 - Smooth bore  
Made in Belgium by Xtraflex  
**PHARMA-FLOW**

316 Stainless Steel  
wire braid

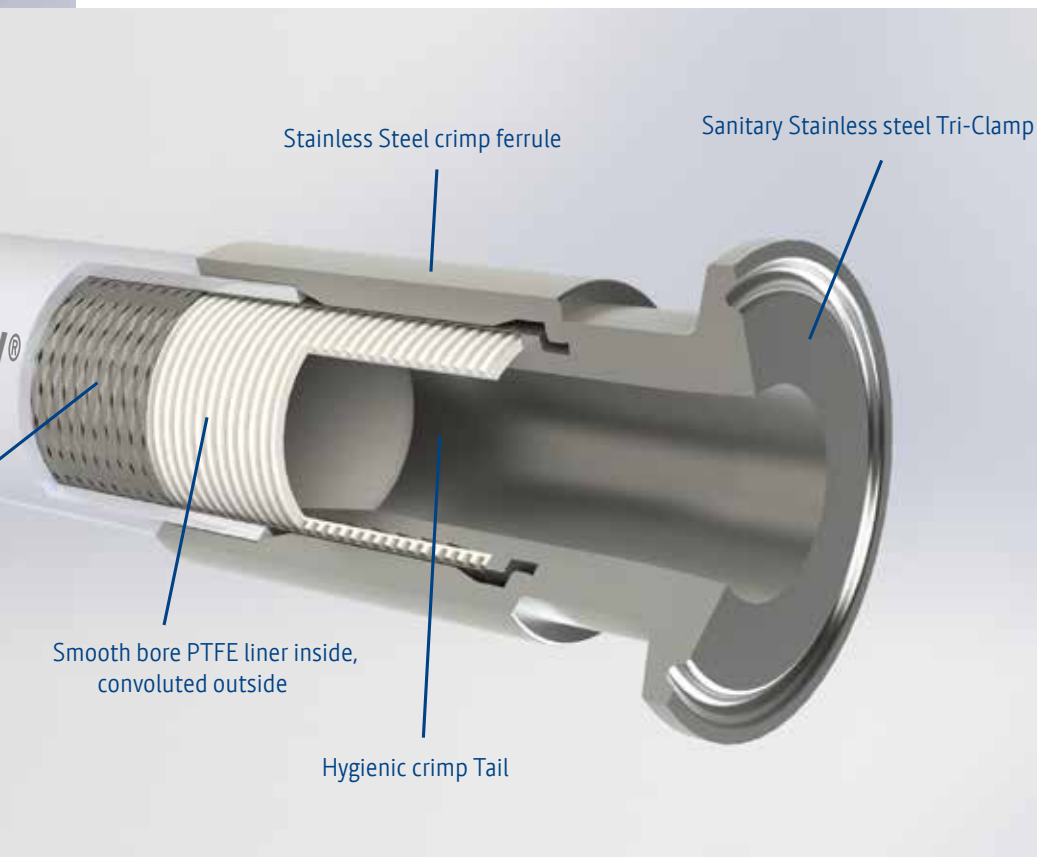
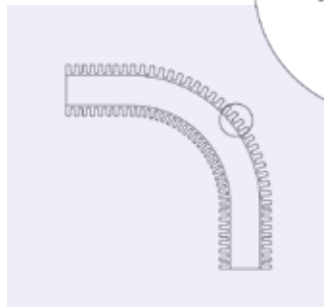
# Hose design

The concept of this hose design makes it possible to create a hose that is **completely smooth on the inside**, but **convoluted on the outside**. All Pharma-Flow® braids are made from high tensile AISI 316L Stainless Steel wire. The silicone cover is made out of platinum cured silicone that is USP VI approved.

Convoluted hose liner



Xtra-Flow hose liner



This hose design has several important advantages over a conventional convoluted hose:

- ⊕ Improved cleanability
- ⊕ Increased flow rates
- ⊕ Even better self-draining
- ⊕ Higher pressure ratings
- ⊕ Non-whistling
- ⊕ Less sensitive to deformation at higher temperatures





## Pharma-Flow<sup>®</sup> hose liners: Virgin or anti-static?

Pharma-Flow<sup>®</sup> can be supplied with a virgin (white) or anti-static (black) PTFE liner.



### Virgin

All Pharma-Flow<sup>®</sup> hose liners are made out of copolymer PTFE powders that guarantee a very long flex-life\*. The virgin version of the Pharma-Flow<sup>®</sup> is intended for **general applications** (fluids or gases) **that don't pose any risk for electrostatic build-up**. All hose liners are **FDA and USP VI approved**.

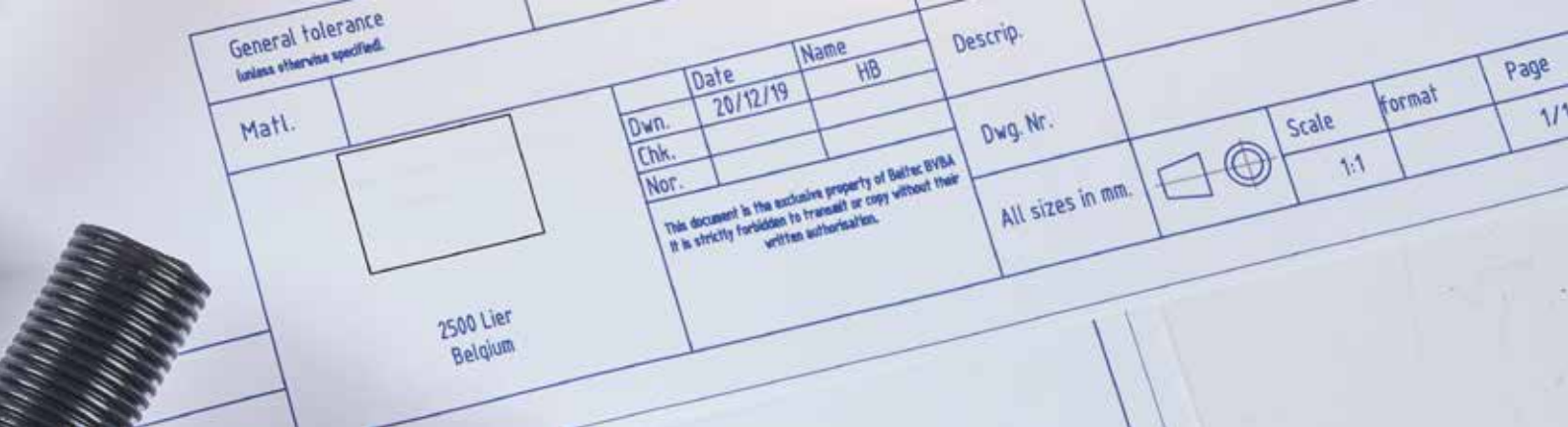


### Anti-Static

Virgin PTFE is a very good electrical insulator and therefore carries the risk of electrostatic charge building up in specific applications. Electric charges can build up by processing certain liquids or by processing liquids at high speeds. The higher velocity of the liquid can result in a higher build-up of static charge. Applications with steam are a good example of possible causes for electrostatic build-up. This eventually can lead to electrostatic discharge, which can cause leakage of the hose, fire or even, under specific conditions, an explosion.

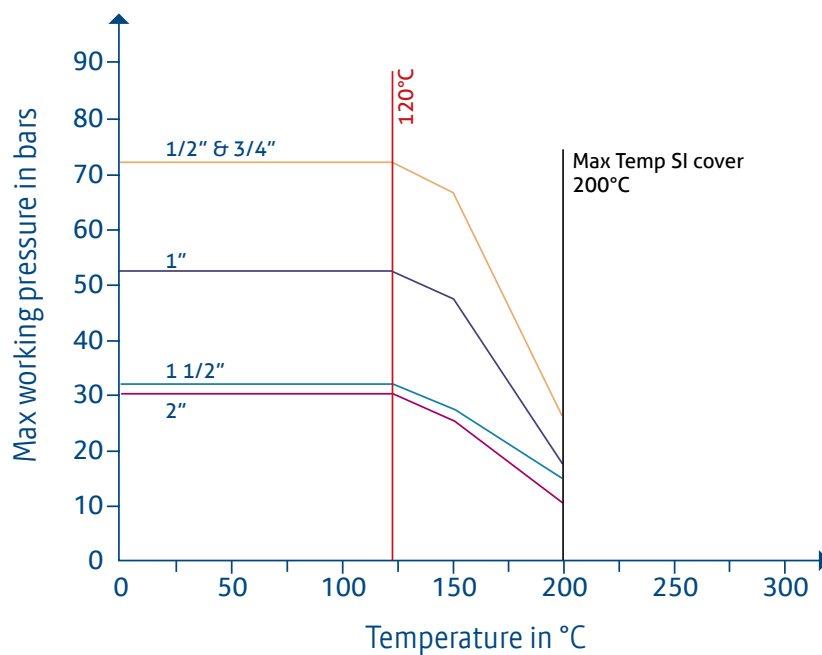
To avoid this risk, the hose needs to be made **conductive**. This is achieved **by adding a low percentage of (FDA approved) carbon** to the PTFE. As a result of this carbon, the liner of the hose becomes conductive and therefore **avoids electrostatic build-up**. The hose should be grounded in order to avoid this kind of electrostatic build-up. Anti-static hose liners are suited for ATEX environments. The carbon material that is being used to make the PTFE liners anti-static is FDA-approved. This means that our anti-static hoses can also be used in high-purity environments.

\*flex-life: the amount of cycles that a hose can be bend without failing



## Pharma-Flow<sup>®</sup>: Temperature-pressure rating

Temperature & pressure resistance graph for Pharma-Flow<sup>®</sup>



Due to the Smooth-Convuluted construction of the Pharma-Flow<sup>®</sup>, the pressure rating at higher temperatures is greater than that of a conventional convuluted hose. The thicker wall and smooth profile give the liner more strength and form stability.

## Pharma-Flow®: Rolling U-test



**Pharma-Flow®** is a hose that can be used in a large variety of applications. The hose was designed for intense use and has proven to have a service life that exceeds that of other hose designs available in the market.

To simulate very intensive use, we have performed the rolling U-test on Pharma-Flow® hose assemblies. This setup allows us to conduct testing on hoses under both pressure and vacuum whilst bending the hose with a roll-movement at a steady pace, and at the minimum bend radius. Test results show that all tested hoses have exceeded 500.000 roll cycles without any problem.

These results confirm that our Pharma-Flow® hoses are able to withstand the most demanding applications when it comes to flex-life whilst being put under pressure or vacuum.

As for other Gassó hoses, this hose design also guarantees a long and stable service life.



## Pharma-Flow®: Specifications

Size	Hose id D1	Hose od D3	Bend r	MAX WP (SF4)	BP	Weight	Vacuum Barg 20° C	Ref Virgin	Ref Anti-static
	Nom	Nom	mm	Barg 20° C		g/m			
1/2"	13,10	23,00	37	114	457	522	-0,9	TSCMB2SI012	TASCMB2SI012
5/8"	16,30	27,00	50	102	409	603	-0,9	TSCMB2SI016	TASCMB2SI016
3/4"	19,60	31,00	77	87	347	817	-0,9	TSCMB2SI020	TASCMB2SI020
7/8"	22,15	35,00	78	85	340	990	-0,9	TSCMB2SI022	TASCMB2SI022
1"	25,50	38,70	80	81	324	1016	-0,9	TSCMB2SI025	TASCMB2SI025
1 1/4"	32,40	46,00	100	63	251	1272	-0,9	TSCMB2SI032	TASCMB2SI032
1 3/8"	34,80	50,00	130	60	240	1541	-0,9	TSCMB2SI035	TASCMB2SI035
1 1/2"	39,00	52,00	145	55	220	1735	-0,9	TSCMB2SI040	TASCMB2SI040
1 7/8"	47,70	61,00	210	48	192	2113	-0,9	TSCMB2SI048	TASCMB2SI048
2"	51,00	67,00	250	47	189	2318	-0,9	TSCMB2SI050	TASCMB2SI050



# Certificates and approvals

ATEX

FDA

USP-VI

EN16643

Pressure Test certification

EN ISO 9001:2015

EN ISO 14001:2015

3-A Sanitary Standards

BPSA leachables and  
extractables testing

EN45545-2-2013

Material 3.1

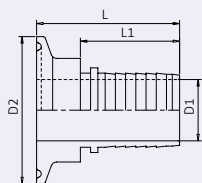
2002/72/EG, 2007/19/EG,  
1935/2004



## Pharma-Flow<sup>®</sup> fittings

### Triclamps

TRI



Triclamp fittings exist in a lot of different dimensions and can be finished according to several **different standards**. Also special triclamp fittings, elbows, adapters and others **can be made to customer order**.

The **most common standards** for triclamp fittings are:

- DIN 32676 Reihe A (DIN sizes)
- DIN 32676 Reihe B (ISO sizes)
- DIN 32676 Reihe C (ASME BPE sizes)

Our standard triclamp fittings are made out of stainless steel AISI 316L (1.4404), crimping ferrules are made out of stainless steel AISI 303/304L (1.4305/1.4301) as standard. Fittings can also be supplied in other materials, to customer specification.

The surface roughness of the inside of the fitting can be made to customer specification or conform the requested standard. To achieve this we use mechanical polishing and electropolishing. Measuring reports and certificates can be ordered for each individual fitting, to confirm the surface roughness of each individual component.

The pressure ratings for triclamp fittings are the following:

- DN6-32: 25 bar
- DN40-65: 16 bar
- >DN80: 10 bar

Gaskets in different materials can be supplied with the hose/fittings.





### DIN 32676 Series A (DIN)

NOMINAL SIZE		FLANGE DIAMETER		ID FITTING		REFERENCE
Inch	DN	Inch	mm	Inch	mm	
1/4	6	0.984	25	0.236	6	TRI252xxx060
5/16	8	0.984	25	0.315	8	TRI252xxx080
3/8	10	1.339	34	0.394	10	TRI342xxx100
1/2	15	1.339	34	0.630	16	TRI342xxx160
3/4	20	1.339	34	0.787	20	TRI342xxx200
1	25	1.988	50.5	1.024	26	TRI502xxx260
1 1/4	32	1.988	50.5	1.260	32	TRI502xxx320
1 1/2	40	1.988	50.5	1.496	38	TRI502xxx380
2	50	2.520	64	1.969	50	TRI642xxx500

### DIN 32676 Series B (ISO)

NOMINAL SIZE		FLANGE DIAMETER		ID FITTING		REFERENCE
Inch	DN	Inch	mm	Inch	mm	
1/4	10.2	0.984	25	0.276	7	TRI252xxx070
5/16	13.5	0.984	25	0.406	10.3	TRI252xxx103
3/8	17.2	0.984	25	0.551	14	TRI252xxx140
1/2	21.3	1.988	50.5	0.713	18.1	TRI502xxx181
3/4	26.9	1.988	50.5	0.933	23.7	TRI502xxx237
1	33.7	1.988	50.5	1.169	29.7	TRI502xxx297
1 1/4	42.4	2.520	64	1.512	38.4	TRI642xxx384
1 1/2	48.3	2.520	64	1.744	44.3	TRI642xxx443
2	60.3	2.217	77.5	2.217	56.3	TRI772xxx563

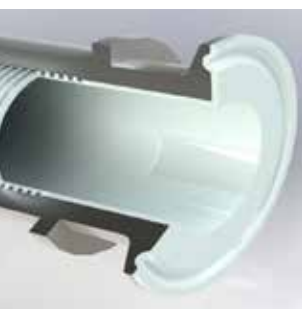
### DIN 32676 Series C (ASME)

NOMINAL SIZE		FLANGE DIAMETER		ID FITTING		REFERENCE
Inch	DN	Inch	mm	Inch	mm	
1/4	6	0.984	25	0.180	4.57	TRI252xxx046
3/8	10	0.984	25	0.305	7.75	TRI252xxx078
1/2	15	0.984	25	0.370	9.4	TRI252xxx094
3/4	20	0.984	25	0.620	15.75	TRI502xxx158
1	25	1.988	50.5	0.870	22.1	TRI502xxx221
1 1/2	40	1.988	50.5	1.370	34.8	TRI502xxx348
2	50	2.520	64	1.870	47.5	TRI642xxx475

## Other fitting types

While triclamps are the most commonly used fittings in the pharmaceutical industry, the possibilities are very broad.

Pharma-Flow® hoses can be supplied with DIN/ANSI/JIS flanges, DIN11851/SMS1145/cam & groove fittings, tube or threaded fittings and many more. Also fittings made to customer specification can be manufactured in our own machine shop.



## Lined & flared fittings

With lined & flared fittings, the PTFE liner of the hose itself is being lined through the inside of the fitting and flared onto the sealing surface of the fitting. The advantage of this technique is that there are no transitions between different materials, no gaps or places where residues of fluids can stay behind. This makes cleaning of the hoses even easier.

The possibilities are very broad since all fitting types with a flat sealing surface can be lined and flared. The most popular PTFE flared fittings are triclamps, flanges, cam & groove and DIN 11851 fittings. It is also possible to line and flare several other fitting types.

## Thread- & tube fittings

The possibilities for thread and tube fittings for the Pharma-Flow® range are very broad. The most common thread and tube fittings can be ordered as standard but also fittings made to customer specification can be made in our machine shop. For more information on the possibilities, please contact our sales team.



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