



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





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# About Xtraflex

Xtraflex BV is a Belgian based manufacturing company, specialized for over 20 years in the manufacturing and assembly of PTFE hoses and other related components for a wide variety of applications. The company is privately owned.

Our expertise and technical approach have pushed us to continuously grow and strengthen our market position as a leading supplier in the PTFE hose business.



In its two state-of-the-art production sites, covering over 11,000m<sup>2</sup>, Xtraflex produces a range of hoses, machined parts and fittings:

## SMOOTH BORE PTFE hoses and assemblies

Extrusion of smooth bore tubes out of PTFE in standard virgin (white) and anti-static (black) version. **A wide variety of bore sizes and wall thicknesses.** Besides the bare tubes, typical reinforcement includes SS, PP, PVDF and also additional EPDM or Silicon outer covers.

## CONVOLUTED PTFE hoses and assemblies

Our auto-convoluting equipment allows for modification of the above-mentioned tubes into convoluted versions. Wire forming is another technique used by Xtraflex to obtain a convoluted hose. Both techniques offer **increased flexibility** and **solutions to usage in confined areas and vacuum applications**. Typical use for the smaller sizes can be found in hydraulic applications, while larger sizes are more commonly used in industrial applications such as chemical, process or other highly demanding areas of use.

Alternatively, Xtraflex has the possibility to manufacture a tape wrapped PTFE hose. This is a convoluted hose made from PTFE tape and glass fibre, reinforced with a SS braid. This type of hose can be used for **a lot of different applications**, f.e.: injection moulding, paper & pulp industry, applications with frequent thermal cycling and all other applications where high flexibility is important.

## SMOOTH-CONVOLUTED PTFE hoses and assemblies

This hose design combines the best of the two above-mentioned hose designs. Using special forming equipment, Xtraflex is able to create a **PTFE hose liner that is smooth on the inside and convoluted on the outside**. This type of PTFE hose liner can be combined with a variety of braids, covers and reinforcements. The field of use is very broad and ranges from **automotive** or **hydraulic** applications to use in the **pharmaceutical, food, cosmetic** or **semiconductor industry**.

## FITTINGS AND MACHINED PARTS

We have our own machine shop that consists of several CNC lathe machines, multi-spindle machines, automated sawing lines and others. This allows us to guarantee the **same high quality on all hose components**. Fittings can be polished on request to obtain a very low surface roughness, also measurement reports can be supplied with each fitting.



# Xtraflex:

## Markets and target audience

As PTFE hoses are well known for their cleanliness, high temperature and chemical resistance properties, typical applications can be found in the following industries:

|                     |               |                          |
|---------------------|---------------|--------------------------|
| PHARMACEUTICAL      | BIOTECH       | FOOD                     |
| COSMETIC            | SEMICONDUCTOR | CHEMICAL & PETROCHEMICAL |
| GENERAL PROCESS     | HYDRAULICS    | RAILWAY                  |
| AUTOMOTIVE & RACING | AVIATION      | GAS TRANSFER SYSTEMS     |

For every single market and application, we can offer one or more specifically dedicated **solutions**, available either as assembled hoses or as loose components of hose and dedicated fittings.

The hose range includes sizes up to DN150 (6") and working pressures going up as high as 350 bar (5000 psi) up till 1".

Xtraflex's quality system and environmental management system are **ISO9001:2015** and **ISO14001:2015** approved. Furthermore, the company holds several material approvals for the food and pharma industries, highlighting our dedication to consistent quality and improvement.

Xtraflex sells its range through a network of specialist distributors who can rely on the company's extensive technical and commercial expertise.

As a manufacturer of PTFE hoses, Xtraflex is familiar with the requirements of high purity applications. With the **Pharma-Flow®** range we are able to offer a product that meets and exceeds the high standards demanded in high purity applications in the pharmaceutical, biotech and other industries.



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

With the Pharma-Flow<sup>®</sup> range of products, Xtraflex introduces a new PTFE hose design to its range - a smooth-convoluted PTFE hose. 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

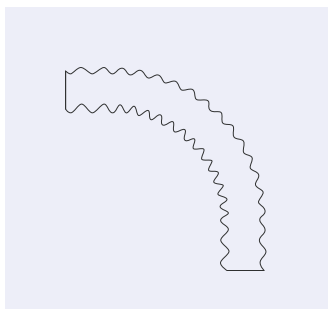
V16642-2016 - Smooth bore  
Made in Belgium by Xtraflex  
**PHARMA-FLOW**

316 Stainless Steel  
wire braid

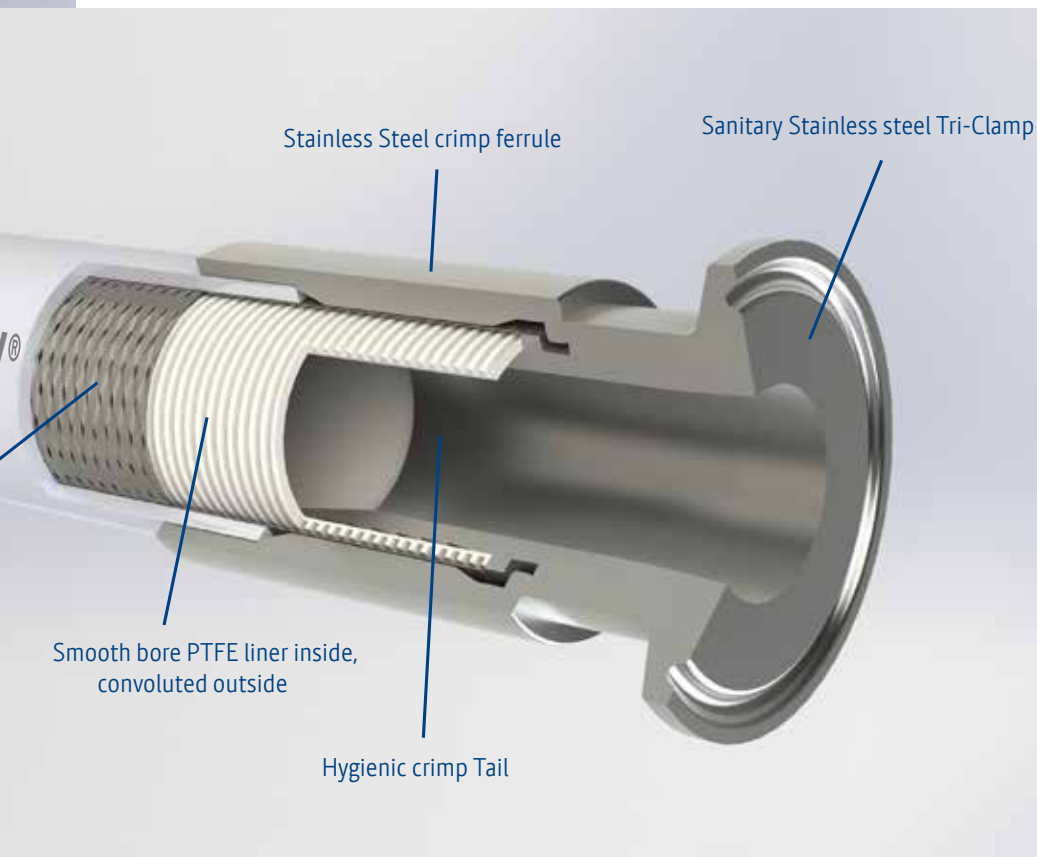
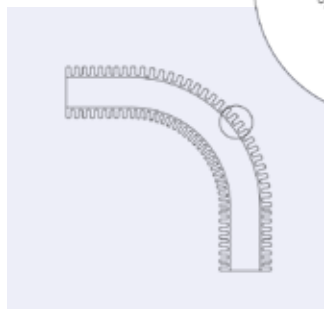
# Xtraflex: Hose design

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.

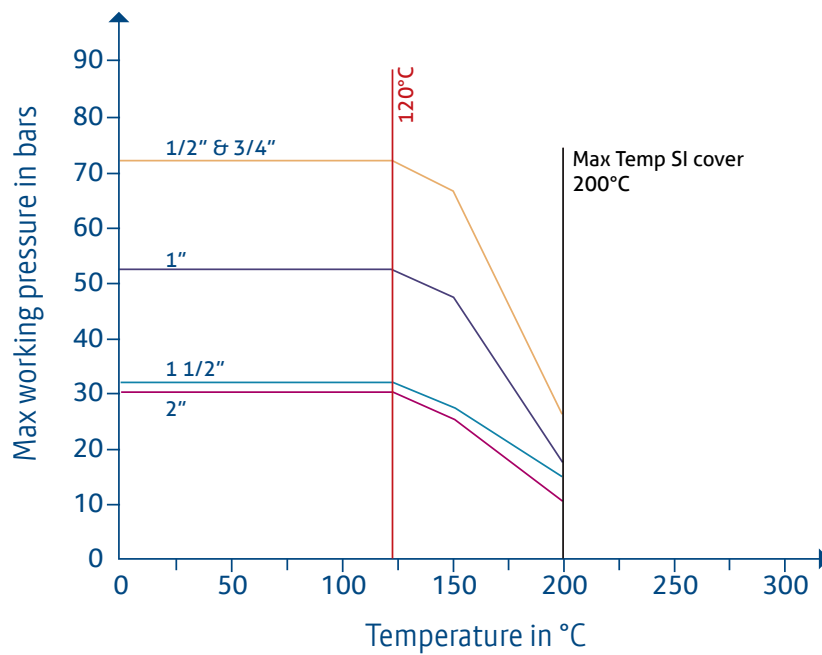
To avoid this risk, the hose needs to be made **conductive**. This is achieved **by adding a low percentage of (FDA approved) carbon** to the PTFE. As a result of this carbon, the liner of the hose becomes conductive and therefore **avoids electrostatic build-up**. The hose should be grounded in order to avoid this kind of electrostatic build-up.



## 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 several 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 Xtraflex 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 Xtraflex hoses, this hose design also guarantees a long and stable service life.



## Pharma-Flow®:

### Specifications

| Size   | Hose id<br>D1 | Hose od<br>D3 | Bend<br>r | MAX WP<br>(SF4) | BP  | Weight | Vacuum<br>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

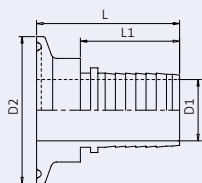
Material 3.1



## 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 go up to 16 bar (230 psi). Gaskets in different materials can be supplied with the hose/fittings.

Disclaimer: Information Contained in this Brochure is believed to be correct at the time of Printing, and Xtraflex reserve the right to alter Specifications without notice.





### 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 |

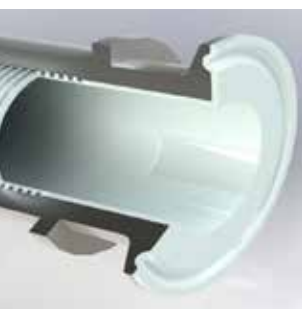
### DIN 32676 Series C (ASME)

| 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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**Xtraflex**  
PHARMA-flow®



**BS SPECIALSLANGER A/S**

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