

**proflex**<sup>®</sup>

COMPOSITE HOSES

**italprotec**  
critical fluids solutions



# Hose styles & standards

## composite hose

proflex®

### hose styles & selections

Composite hoses are manufactured on the mandrel wrapped principle. The hose consists of an inner wire spiral upon which layers of fabric and film are wrapped, and bound with an external wire spiral. The tension between each other of the wire spirals gives the hose its pressure capability.

The heart of a composite hose is in the materials selection. Fabric and film materials used include Polypropylene, Polyester and Polyamide. The wire helices can be of galvanised steel, aluminium, stainless steel or polypropylene coated steel.

The final selection of the materials depends upon the application for the hose.

For ease of identification, Italprotec hoses incorporate either a white striped marked with the hose name or a coloured stripe which denotes the material composition of the hose, as follows:

### standards and tolerances

Italprotec Composite Hoses are manufactured in accordance with generally recognised industry standards including European Standards EN 13765 and EN 13766, and Australian Standards AS 2117 and AS 2683, and Australian Institute of Petroleum Code of Practices.

Our Composite Hoses are tested in accordance with International Standard ISO 1402, British Standard BS 5173 and Australian Standard AS 1180.

Composite hose is generally ordered by its nominal bore (inside diameter) size.

The working pressure stated in the data sheets are at ambient temperature (20°C).

Italprotec reserves the right to change the specification of any product and/or withdraw it from its range of products without notice.

Composite hoses are classified under a group number which refers to their chemical resistance suitability.



## COMP PP composite hose

### description

Composite hose made from polypropylene fabrics and films with an abrasion resistant PVC coated fabric cover. Inner wire of polypropylene coated steel wire and an outer wire of galvanised mild steel.

### classification

Chemical Group 2 Hose.

### manufacture

Complies with EN 13765 Type 3.

### principal applications

Transchem is suitable for the transfer of acids and alkalines.

Note: Electrical continuity can be maintained for this hose by baring the inner wire (ie removing the polypropylene coating) near the fitting to allow positive connection of the wire to the fitting. This process however may introduce a potential corrosion path to the inner wire.

### special applications

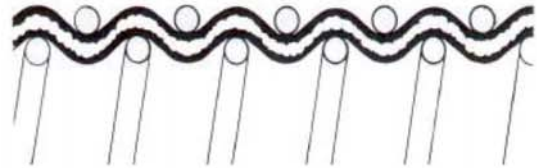
Transchem can be supplied with a stainless steel 316 outer wire for applications involving corrosive atmospheres and splash. This hose is called Transchem-S

### temperature

Depending on the conveyant -30°C to +90°C.

### standard production lengths

20 meters



### Specifications

| nominal bore<br>mm | outside dia<br>mm | bend radius<br>mm | pressure nominal<br>psi bar | weight per meter<br>Kg / m |
|--------------------|-------------------|-------------------|-----------------------------|----------------------------|
| 25                 | 38                | 90                | 150 10                      | 1.00                       |
| 38                 | 52                | 125               | 150 10                      | 1.60                       |
| 50                 | 64                | 160               | 150 10                      | 1.80                       |
| 65                 | 80                | 180               | 150 10                      | 2.60                       |
| 75                 | 92                | 220               | 150 10                      | 3.00                       |
| 100                | 120               | 350               | 150 10                      | 5.40                       |

*All pressure are based on a safety factor of 4 : 1*

**Complies with BS 5842:1980 Standard on demand.**

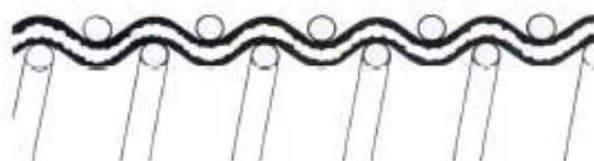
# COMP PTFE composite hose

## description

Composite hose made from polypropylene fabrics and films with an abrasion resistant PVC coated fabric cover. The hose has an inner and outer wire of stainless steel 316 and is lined with layers of PTFE film.

## classification

Chemical Group 3 Hose.



## manufacture

Complies with EN 13765 Type 2.

## principal applications

Solfon is suitable for application involving corrosive atmosphere and splash. Electrical continuity is maintained by the hose wires being securely connected to the fittings.

## temperature

Depending on the conveyant -30°C to +140°C.

## standard production lengths

20 metres

## Specifications

| nominal<br>bore<br>mm | outside<br>dia<br>mm | bend<br>radius<br>mm | pressure<br>nominal |     | weight<br>per meter<br>Kg / m |
|-----------------------|----------------------|----------------------|---------------------|-----|-------------------------------|
|                       |                      |                      | psi                 | bar |                               |
| 25                    | 38                   | 90                   | 150                 | 10  | 1.00                          |
| 38                    | 52                   | 120                  | 150                 | 10  | 1.60                          |
| 50                    | 64                   | 150                  | 150                 | 10  | 2.00                          |
| 65                    | 80                   | 180                  | 150                 | 10  | 2.70                          |
| 75                    | 92                   | 210                  | 150                 | 10  | 3.20                          |
| 100                   | 120                  | 340                  | 150                 | 10  | 6.00                          |

*All pressure are based on a safety factor of 4 : 1*

**Complies with BS 5842:1980 Standard on demand.**

# COMP OIL

## composite hose

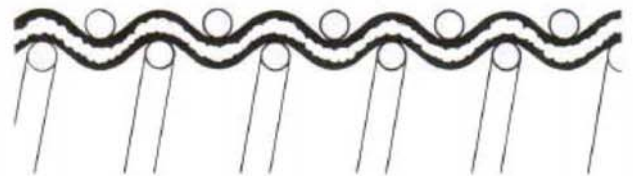
---

### description

Composite hose made from polypropylene fabrics and films with an abrasion resistant PVC coated fabric cover. Inner and outer wires are galvanized mild steel.

### classification

Fuel and Oil Group 1 Hose.



### principal applications

Transoil is especially suitable for the suction and discharge transfer of petroleum products in in-plant applications. It is an excellent hose for conveying tallow and high aromatic hydrocarbons.

### manufacture

Complies with EN 13765 Type 2 & AS 2117 Type 3 Grade 1 & 2.

### temperature

Depending on the conveyant -30°C to +80°C.

### standard production lengths

20 meters

### Specifications

| nominal bore<br>mm | outside dia<br>mm | bend radius<br>mm | pressure nominal |     | weight per meter<br>Kg / m |
|--------------------|-------------------|-------------------|------------------|-----|----------------------------|
|                    |                   |                   | psi              | bar |                            |
| 25                 | 38                | 90                | 150              | 10  | 1.00                       |
| 38                 | 52                | 120               | 150              | 10  | 1.60                       |
| 50                 | 64                | 150               | 150              | 10  | 2.00                       |
| 65                 | 80                | 180               | 150              | 10  | 2.70                       |
| 75                 | 92                | 250               | 150              | 10  | 3.20                       |
| 100                | 115               | 350               | 150              | 10  | 6.00                       |

*All pressure are based on a safety factor of 4 : 1*

**Complies with BS 5842:1980 Standard on demand.**

# COMP HI-TEMP composite hose

---

## description

Composite hose made from several layers of thermoplastic PTFE liners, polyamide fabrics and films with Fibre Glass cloth and abrasive resistance PVC coated fabric cover. Inner and outer wires are Carbon steel or stainless steel.

## classification

Heat Group 6 Hose

## certification

EN 13765 Type 4 hose with joints EN 13765-2

## manufacture

Complies with EN-13765 Type 4 hose, Electrical continuity is maintained by both hose wires being securely connected to fittings.

## temperature

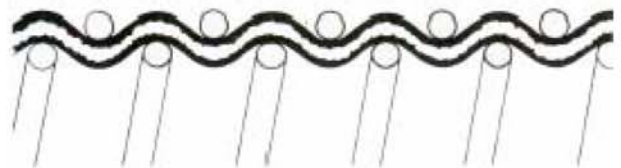
Temperature range from -40°C to +200 °C

## principal applications

Ideal for the transfer of hot viscous petroleum by-products such as tar and bitumen.

## standard production length

20 metres



## Specifications

| nominal<br>bore<br>mm | outside<br>dia<br>mm | bend<br>radius<br>mm | pressure<br>nominal |     | Weight per<br>meter<br>Kg/m |
|-----------------------|----------------------|----------------------|---------------------|-----|-----------------------------|
|                       |                      |                      | psi                 | bar |                             |
| 25                    | 40                   | 175                  | 225                 | 15  | 1.2                         |
| 38                    | 52                   | 200                  | 225                 | 15  | 2.0                         |
| 50                    | 67                   | 225                  | 225                 | 15  | 2.9                         |
| 65                    | 83                   | 250                  | 225                 | 15  | 3.8                         |
| 75                    | 96                   | 300                  | 225                 | 15  | 4.7                         |

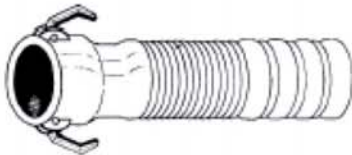
*All pressure are based on a safety factor of 4 : 1*

**Complies with BS 5842:1980 Standard on demand.**

## typical end connections composite hose assemblies

---

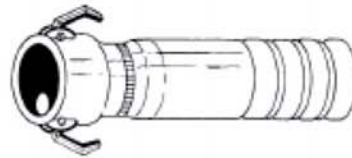
### TYPICAL WIRE WHIPPED ATTACHMENT



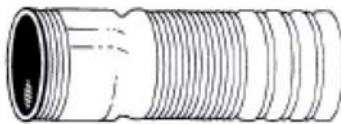
#### materials codes

A - aluminium B - bronze C - carbon steel P - polypropylene S - stainless steel 316

### TYPICAL SWAGED ATTACHMENT

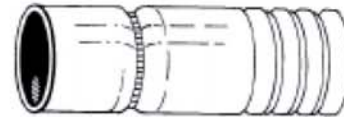


### THREADED PIPE



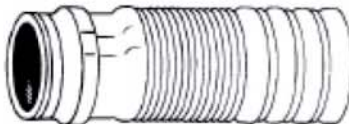
THREADS BSP, NPT with HEX NIPPLE  
MATERIALS - A, B, C, S

### LIFESAVER - PIPE END SCH 40



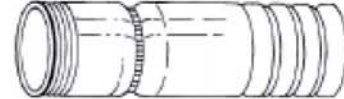
MATERIALS - C, S

### MALE QUICK COUPLING



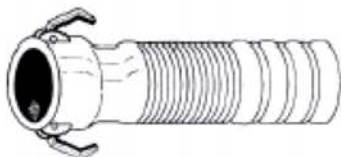
MATERIALS - A, B, P, S

### HEX NIPPLE



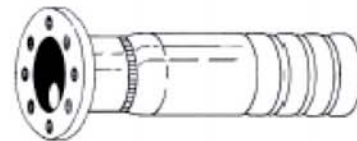
THREADS BSP, NPT  
MATERIALS - C, S

### FEMALE QUICK COUPLING



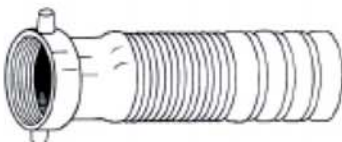
AVAILABLE IN STRAIGHT & BENT STYLES  
MATERIALS - A, B, P, S

### FIXED FLANGE



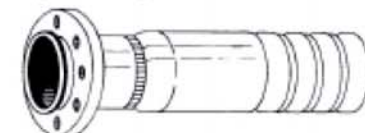
STANDARDS BST, ANSI, DIN, JIS, NTT  
MATERIALS - C, S

### LOOSE SWIVEL



STYLE - WITH LUGS OR HEX THREADS BSP  
MATERIALS - A, B, C, S

### FLOATING FLANGE



STANDARDS BST, ANSI, DIN, JIS, NTT  
MATERIALS - C, S

# Care and maintenance composite hose

## Installing

Incorrect installation of a hose assembly will create stresses within the assembly and result in a premature failure. The following guidelines should be followed:

- hose assemblies must not be twisted either during installation or in use
- hoses must not be over flexed or bent into a smaller diameter than the specified minimum bend radius
- hose assemblies should be installed so that flexing always occurs in the same plane
- it is recommended that flanged assemblies have a floating flange on one end for easier installation and to reduce the possibility of twist

## handling

Hoses should be stored in a straight line on solid supports or racks.

Large bore hoses should be carried on a dollie or moved by crane. Hoses must not be supported by a single rope or wire. A wide belt sling should be used, supporting the hose at least every 3 metres. Avoid curvatures that are less than the minimum bend radius of hose.

Do not allow sharp bends adjacent to the end connection fitting - this area is the weakest spot in any type of hose. Support the hose. Hoses should not be dragged along the ground or over guard rails. Do not allow the hose to chafe (rub) against hard surfaces and/or sharp edges. If unavoidable, consider having the hoses rope lagged.

## cleaning

Before storage, hoses should be drained and flushed with clean water to remove dangerous vapours, the exception being hoses which have been used for conveyants such as sulphuric acid when dilution with water could leave a very corrosive residue. In such instances, drain dry. Hoses must be electrically earthed during cleaning operations. Hoses may be cleaned using low pressure air, however hoses must be open-ended to avoid excessive pressure build up. Steam is not recommended for cleaning as the excessive temperature involved (over 100°C) will damage the hose fabrics.

## inspection

Inspect hose for visual damage at least every six months, more often if experience demands it. Look for:

1. Weakening of the hose adjacent to the end fitting
2. Cuts and abrasions on the fabric cover
3. Abrasion of the outer wire
4. Displacement of the outer wire - identified by differing widths between each round of wire over the length
5. Dents, kinks or twisted sections

## testing

Composite hose assemblies should be hydrostatically tested at least once every twelve (12) months and electrical continuity tested, where applicable, at least once every six(6) months. See 'hose assembly testing' data sheet.

