

**Hoses** for sanitary and heating applications,  
environmental engineering and industry



# A large fleet of braiding and assembly machines for maximum manufacturing flexibility

## PRESENTATION

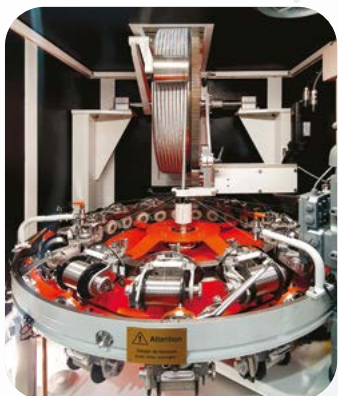
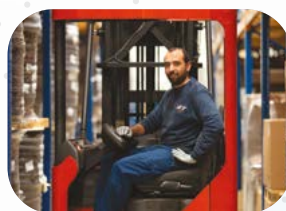
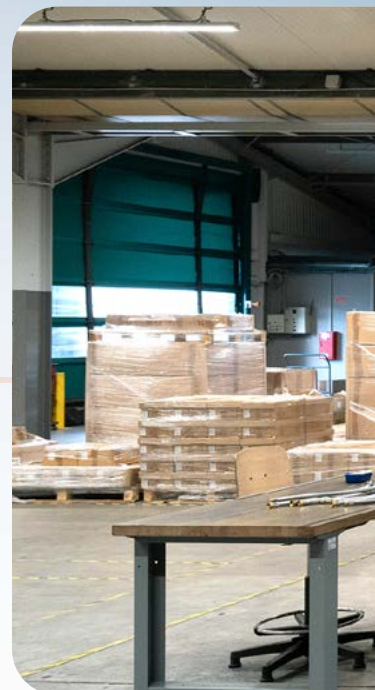
► **IFT, an OMERIN Group subsidiary since 1976**, benefits from the support of a very large fleet of machines and the Group's many areas of expertise: textile braiding, metal braiding, elastomer extrusion, coated braided sleeving.

Our strategy of developing a complete range of **HOSES** has led us to integrate the assembly and crimping of fittings, along with the design and manufacture of special assemblies and fittings.

IFT completes its product range with the production and sale of bulk braided hoses and fittings, crimping tools and accessories, thermal insulation sheaths and heating cables.

Our constant investment in productivity has enabled us to acquire genuine expertise in medium and large production runs of flexible sanitary and heating hoses.

Thanks to this organisation and the dynamism of our team, we can respond quickly and carefully to both large and small orders.





## RESEARCH AND DEVELOPMENT

► Our **research and development department** includes multidisciplinary teams that combine creativity and engineering. We work closely with our customers to come up with innovative solutions. Products are prototyped and qualified in our test laboratory.



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# Investment in Quality

## QUALITY AND CERTIFICATIONS

- ▶ Our ISO 9001-certified Company (2015 version) has created a Method/Quality department with a view to constantly improving our products and processes; all our employees are committed to this continuous improvement approach.
- ▶ To meet quality requirements, our Company has equipped itself with high-performance control and research resources. All the products we manufacture are tested at every stage of the production process in our laboratory in AMBERT.
- ▶ In addition to the test reports issued by our laboratories, approved laboratories attest to the quality of our products subject to specific constraints and to the reliability of our testing facilities.
- ▶ Our hoses have been approved by bodies such as CSTB, BUREAU VERITAS, etc.

## Brands

|                          |                                                                                                   |
|--------------------------|---------------------------------------------------------------------------------------------------|
| EZYFLEX®                 | • RANGE OF VERSATILE HOSES FOR HOT AND COLD WATER IN THE SANITARY AND HEATING SECTORS             |
| SHOWERFLEX®              | • RANGE OF SHOWER HOSES                                                                           |
| W-FLEX®                  | • RANGE OF HOSES AND FITTINGS FOR WASTE WATER                                                     |
| EKOFLEX®                 | • RANGE OF HOSES FOR RENEWABLE ENERGY HEATING                                                     |
| SUNNYFLEX®               | • RANGE OF CONNECTIONS AND FITTINGS FOR SOLAR THERMAL PANELS                                      |
| CLIMFLEX®                | • RANGE OF HOSES AND FITTINGS FOR AIR CONDITIONING AND COOLING SYSTEMS                            |
| QUAL'IFT®                | • RANGE OF LOW AND HIGH-PRESSURE HOSES                                                            |
| SILITUBE® X<br>SILITAPE® | • BRAIDED SLEEVES AND TAPES IN MINERAL FIBRE COATED WITH WATERPROOF AND FIREPROOF SILICONE RUBBER |
| SILIGAIN®                | • BRAIDED INSULATING SHEATHS                                                                      |
| STOPGEL®                 | • READY-TO-USE HEATING CABLES                                                                     |
| FLEXTRACE®               | • SELF-REGULATING HEATING CABLES FOR DOMESTIC HOT WATER                                           |



## ORGANISATIONS AND APPROVALS

### Organisations



**Centre Scientifique et Technique du Bâtiment (Scientific and Technical Centre for Buildings)**

Independent French certification body for the water and building sectors. Guarantees hose quality by issuing a CSTB technical evaluation.



### Approvals

The **ISO 9001 standard** is part of the ISO 9000 series of standards for quality management systems. It sets out the organisational requirements for implementing and improving a quality management system in order to increase customer satisfaction.



#### Attestation de Conformité Sanitaire

**(Health compliance certificate)**

Official French approval issued by the Direction Générale de la Santé (mandatory in France since 24 December 2006) concerning the general health principles applicable to materials coming into contact with water intended for human consumption.

#### Water Regulations Advisory Scheme

Official English approval concerning the general health principles applicable to materials coming into contact with water intended for human consumption.



#### The 4MS (4 Member States) standard

is a joint initiative of France, Germany, the Netherlands and the United Kingdom. Its aim is to harmonise the assessment criteria for materials and objects in contact with drinking water, in order to protect consumer health.

#### KTW

##### DVGW KTW Data sheet

Official German approval concerning the general health principles applicable to materials coming into contact with water intended for human consumption.

#### W 270

##### DVGW W 270 data sheet

Official German approval guaranteeing that certain materials will not cause microbial contamination of drinking water (only materials which, even after prolonged contact with drinking water, do not lead to the proliferation of micro-organisms, may come into contact with water).

#### FDA

US Food and Drug Administration

#### W 543

Set of tests for assessing flexible connections (mechanical tests, etc.) used to obtain the German certificate of conformity certified by the DVGW; requirements and assessments.

#### NF EN 1113

STANDARD for shower hoses for sanitary fittings and water supply systems.

#### NF T 681-1

STANDARD for rubber seals: testing and evaluation of EPDM internal tubes for hoses.

#### NF EN ISO 228

STANDARD for hose threads for connection without thread seal.

#### NF EN ISO 7

STANDARD for hose threads for thread-sealed connections.

#### Fire resistance classification: Euroclasses

European classification system for reaction to fire of construction products.

E.g.: Bs3d0. (formerly class M1).

#### RT 2005 - RT 2012

French thermal regulations designed to set a maximum limit on the energy consumption of new buildings for heating, ventilation, air conditioning, domestic hot water production and lighting.

#### RoHS

**Restriction of the use of certain Hazardous Substances in electrical and electronic equipment**

"Restriction of the use of certain hazardous substances in electrical and electronic equipment". The European RoHS directive (2002/95/EC) aims to limit the use of hazardous substances.

#### REACH

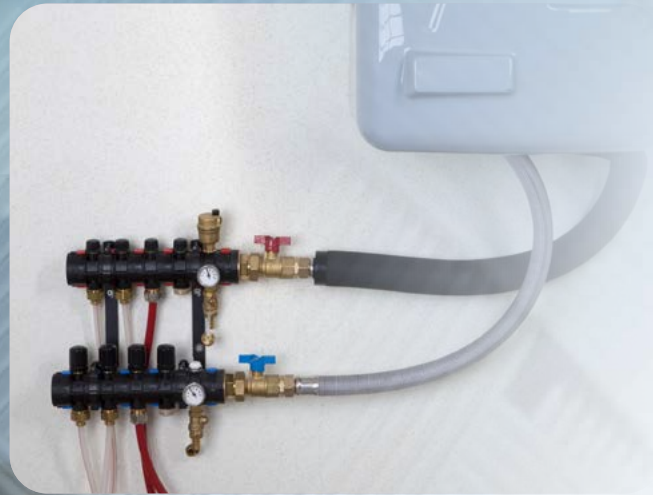
**Registration, Evaluation and Authorisation of chemicals**

The Registration, Evaluation and Authorisation of Chemicals is a Regulation of the European Parliament and of the Council of the European Union, adopted on 18 December 2006, which modernises European legislation on chemicals and establishes a single integrated system for the registration, evaluation and authorisation of chemicals in the European Union.



#### QB (Quality for the Construction sector) certification

is a quality certification. It is issued by the Centre Scientifique et Technique du Bâtiment (CSTB) and certifies the quality of products in the construction sector, along with equipment and services intended for the construction sector. Materials that come into contact with water intended for human consumption.



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EZYFLEX® / EKOFLEX®



#### HOSES FOR AIR CONDITIONING

CLIMFLEX®



#### HOSES FOR SOLAR PANELS

SUNNYFLEX®



#### HOSES FOR INDUSTRY

QUAL'IFT®

## DESIGN AND ASSEMBLE YOUR OWN HOSE

### HOSES TO ASSEMBLE



#### Guide to designing your hose



#### All the necessary components, accessories and tools:

- > Hoses
- > Bushings
- > Fittings
- > Tools
- > Accessories



# ASSEMBLED HOSES

READY-TO-USE



## READY-TO-USE HOSES



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## READY-TO-USE HOSES



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# DESIGN AND ASSEMBLE YOUR OWN HOSE!

Order your Hoses, fittings, tools and Accessories  
to assemble your own hose



## HOSES TO ASSEMBLE



### The Guide to designing your hose

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### Hoses

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## HOSES TO ASSEMBLE



### Fittings

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# ASSEMBLED HOSES

READY-TO-USE HOSES

Sanitary



Heating



Air conditioning



Solar



Industry





# SANITARY SHOWER DRAINAGE

Sanitary  
**EZYFLEX®**

Shower  
**SHOWERFLEX®**

Drainage  
**W-FLEX®**

## ► Taps and general water supply

- EPDM hose with stainless steel braid DN08 EZYFLEX® EI
- EPDM hose with stainless steel braid DN12 EZYFLEX® EI

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**FT101**

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**FT102**

## ► Kitchen shower heads, mixer outlet

- PE hose with stainless steel braid DN08 EZYFLEX® EP

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**FT103**

## ► Public sector taps and general water supply

- Cross-linked PEX hose with stainless steel braid DN08 EZYFLEX® PEXI
- Cross-linked PEX hose with stainless steel braid DN12 EZYFLEX® PEXI

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## ► Public sector wash shower heads

- EPDM stainless steel braided hose with PVC coating DN10 and 12 EZYFLEX® EC

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**FT106**

## ► Shower

- White PVC hose with internal reinforcement DN10 SHOWERFLEX® PTC

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**FT111**

## ► Drainage

- PVC spiral hose DN32 and 40 W-FLEX® V
- Hoses for washing machines, "drain hose" and "siphon" types W-FLEX® FE

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**FT122**



# EZYFLEX® EI

## EPDM hose with stainless steel braid DN08



## Sanitary

Taps and sanitary appliances



### Composition:

- EPDM tube according to EN 681-1 type WB
- AISI 304 stainless steel braid
- Nickel-plated brass fittings
- Stainless steel crimping bushings

### Sealing:

- Flat gasket on flat seat
- O-ring on metric male thread
- Barbed fitting for smooth tube for dual-taper fitting

### Standard lengths:

150, 300, 500, 700, 1000 mm

### Application:

Hot and cold water supply for taps, mixers and sanitary appliances

### Technical data



Maximum temperature  
**+90°C (peaks to +110°C)**



| DN | Nom. pressure (in bar) | Max. pressure (in bar) |
|----|------------------------|------------------------|
| 08 | 16                     | 20                     |



**8.5 x 12 mm (DN08)**



Minimum bending radius **48 mm**



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

## Taps

### Assembled hoses / References & Configurations

| Reference | Hose | Fitting 1 / Thread |      | Fitting 2 / Thread |         |
|-----------|------|--------------------|------|--------------------|---------|
| EI08P1M10 |      | Female             | 3/8" | Short male         | M10x100 |
| EI08P1M11 |      |                    |      |                    | M11x100 |
| EI08P1M12 |      |                    |      |                    | M12x100 |
| EI08P2M10 |      |                    | 1/2" |                    | M10x100 |
| EI08P1M10 |      | Female             | 3/8" | Long male          | M10x100 |
| EI08P1M11 |      |                    |      |                    | M11x100 |
| EI08P1M12 |      |                    |      |                    | M12x100 |
| EI08P2M10 |      |                    | 1/2" |                    | M10x100 |



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The information provided on this data sheet is indicative and subject to change without notice. All hoses ordered must comply with IFT's installation recommendations, which can be viewed in its catalogue. IFT can under no circumstances be held liable for any incidents arising from inappropriate use, particularly in the case of installation not carried out in accordance with the rules of the trade and the standards in force. © Registered trademark of IFT. Drawings and photos are not contractually binding. Reproduction is prohibited without the prior consent of IFT.

## CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Packaging customisation → Contact us
- Customisable fittings - Diameter, Material, etc.

## Sanitary appliances

### ► Assembled hoses / References & Configurations

| Reference | Hose                                                                                | Fitting 1 / Thread |        | Fitting 2 / Thread |        |
|-----------|-------------------------------------------------------------------------------------|--------------------|--------|--------------------|--------|
| EI08P1M1  |    | Female             | 3/8"   | Male               | 3/8"   |
| EI08P2M2  |                                                                                     |                    | 1/2"   |                    | 1/2"   |
| EI08P4M4  |                                                                                     |                    | 3/4"   |                    | 3/4"   |
| EI08P1P1  |    | Female             | 3/8"   | Female             | 3/8"   |
| EI08P2P2  |                                                                                     |                    | 1/2"   |                    | 1/2"   |
| EI08P4P4  |                                                                                     |                    | 3/4"   |                    | 3/4"   |
| EI08P1C1  |    | Female             | 3/8"   | Angled             | 3/8"   |
| EI08P2C2  |                                                                                     |                    | 1/2"   |                    | 1/2"   |
| EI08P4C4  |                                                                                     |                    | 3/4"   |                    | 3/4"   |
| EI08M1B1  |  | Male               | 3/8"   | Dual-taper         | Ø10 mm |
| EI08M2B2  |                                                                                     |                    | 1/2"   |                    | Ø12 mm |
| EI08M4B3  |                                                                                     |                    | 3/4"   |                    | Ø14 mm |
| EI08P1B1  |  | Female             | 3/8"   | Dual-taper         | Ø10 mm |
| EI08P2B2  |                                                                                     |                    | 1/2"   |                    | Ø12 mm |
| EI08P4B3  |                                                                                     |                    | 3/4"   |                    | Ø14 mm |
| EI08B1B1  |  | Dual-taper         | Ø10 mm | Dual-taper         | Ø10 mm |
| EI08B2B2  |                                                                                     |                    | Ø12 mm |                    | Ø12 mm |
| EI08B3B3  |                                                                                     |                    | Ø14 mm |                    | Ø14 mm |



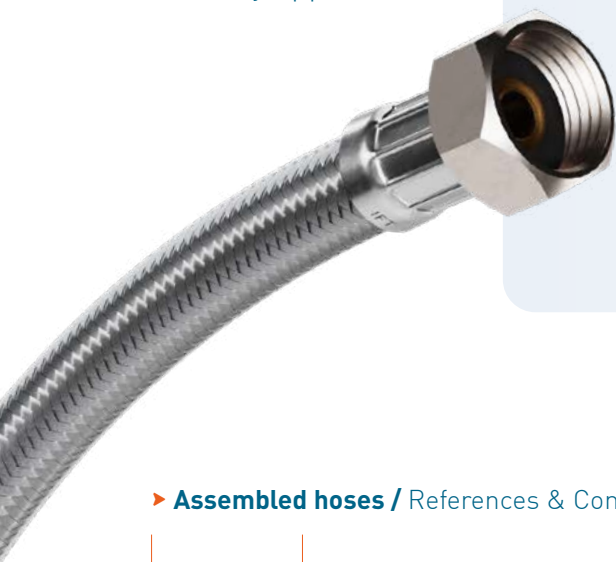
# EZYFLEX® EI

## EPDM hose with stainless steel braid DN12



## Sanitary

Sanitary appliances



### ► Composition:

- EPDM tube according to EN 681-1 type WB
- AISI 304 stainless steel braid
- Nickel-plated brass fittings
- Stainless steel crimping bushings

### ► Sealing:

- Flat gasket on flat seat

### ► Standard lengths:

300, 500, 700, 1000 mm

### ► Application:

Hot and cold water supply for sanitary appliances

### ► Technical data



Maximum temperature  
**+90°C (peaks to +110°C)**



| DN | Nom. pressure (in bar) | Max. pressure (in bar) |
|----|------------------------|------------------------|
| 12 | 16                     | 20                     |



**12 x 18 mm (DN12)**



Minimum bending radius **72 mm**



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

### ► Assembled hoses / References & Configurations

| Reference | Hose | Fitting 1 / Thread |      | Fitting 2 / Thread |      |
|-----------|------|--------------------|------|--------------------|------|
| EI12P2P2  |      | Female             | 1/2" | Female             | 1/2" |
| EI12P2P4  |      |                    | 1/2" |                    | 3/4" |
| EI12P4P4  |      |                    | 3/4" |                    | 3/4" |
| EI12P2M2  |      | Female             | 1/2" | Male               | 1/2" |
| EI12P4M2  |      |                    | 3/4" |                    | 1/2" |
| EI12P4M4  |      |                    | 3/4" |                    | 3/4" |
| EI12P2C2  |      | Female             | 1/2" | Angled             | 1/2" |
| EI12P4C4  |      |                    | 3/4" |                    | 3/4" |



# EZYFLEX® EP

## PE hose with stainless steel braid DN08



### Sanitary

Kitchen shower heads



#### ► Composition:

- EPDM tube according to EN 681-1 type WB
- Monofilament polyethylene braid (white or black)
- Nickel-plated brass fittings
- Shower head-side anti-twist system
- Stainless steel crimping bushings

#### ► Sealing:

- Flat gasket on flat seat
- O-ring on metric male thread

#### ► Standard lengths:

1250, 1500, 2000 mm

#### ► Application:

Water supply for kitchen shower heads, mixer tap outlet

#### ► Technical data



Maximum temperature  
**+80°C**



Max operating pressure **10 bar**



**8.5 x 12 mm (DN08)**



Minimum bending radius **48 mm**



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | Hose                                                                                | Fitting 1 / Thread          |      | Fitting 2 / Thread |         |
|-----------|-------------------------------------------------------------------------------------|-----------------------------|------|--------------------|---------|
| EP08D2M15 |  | Female tapered self-turning | 1/2" | Short male         | M15x100 |



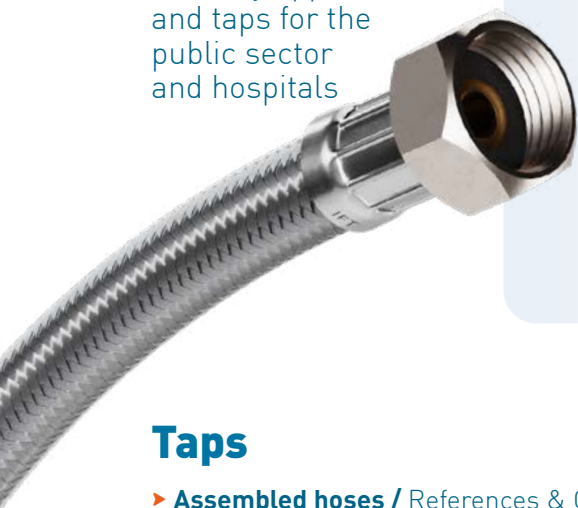
# EZYFLEX® PEXI

## PEX hose with stainless steel braid DN08



## Sanitary

Sanitary appliances and taps for the public sector and hospitals



### ► Composition:

- PEX tube
- AISI 304 stainless steel braid
- Nickel-plated brass fittings
- Stainless steel crimping bushings

### ► Sealing:

- Flat gasket on flat seat
- O-ring on metric male thread
- Barbed fitting for smooth tube for dual-taper fitting

### ► Standard lengths:

150, 300, 500, 700, 1000 mm

### ► Application:

Hot and cold water supply for taps, mixers and sanitary appliances for the public sector and hospitals

### ► Technical data



Maximum temperature  
**+90°C**



| DN | Nom. pressure (in bar) | Max. pressure (in bar) |
|----|------------------------|------------------------|
| 08 | 16                     | 20                     |



**8.2 x 11.7 mm (DN08)**



Minimum bending radius **35 mm**



Chlorine shock treatment possible



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
*MOQ depending on the desired length*
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

## Taps

### ► Assembled hoses / References & Configurations

| Reference | Hose | Fitting 1 / Thread |      | Fitting 2 / Thread |         |
|-----------|------|--------------------|------|--------------------|---------|
| XI08P1M10 |      | Female             | 3/8" | Short male         | M10x100 |
| XI08P1M11 |      |                    |      |                    | M11x100 |
| XI08P1M12 |      |                    |      |                    | M12x100 |
| XI08P2M10 |      |                    | 1/2" |                    | M10x100 |
| XI08P1M10 |      | Female             | 3/8" | Long male          | M10x100 |
| XI08P1M11 |      |                    |      |                    | M11x100 |
| XI08P1M12 |      |                    |      |                    | M12x100 |
| XI08P2M10 |      |                    | 1/2" |                    | M10x100 |

**CUSTOM OFFER**

- Specific length: **150 mm to over 10,000 mm**  
*MOQ depending on the desired length*
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

## Sanitary appliances

### ► Assembled hoses / References & Configurations

| Reference | Hose | Fitting 1 / Thread |        | Fitting 2 / Thread |        |
|-----------|------|--------------------|--------|--------------------|--------|
| XI08P1M1  |      | Female             | 3/8"   | Male               | 3/8"   |
| XI08P2M2  |      |                    | 1/2"   |                    | 1/2"   |
| XI08P4M4  |      |                    | 3/4"   |                    | 3/4"   |
| XI08P1P1  |      | Female             | 3/8"   | Female             | 3/8"   |
| XI08P2P2  |      |                    | 1/2"   |                    | 1/2"   |
| XI08P4P4  |      |                    | 3/4"   |                    | 3/4"   |
| XI08P1C1  |      | Female             | 3/8"   | Angled             | 3/8"   |
| XI08P2C2  |      |                    | 1/2"   |                    | 1/2"   |
| XI08P4C4  |      |                    | 3/4"   |                    | 3/4"   |
| XI08M1B1  |      | Male               | 3/8"   | Dual-taper         | Ø10 mm |
| XI08M2B2  |      |                    | 1/2"   |                    | Ø12 mm |
| XI08M4B3  |      |                    | 3/4"   |                    | Ø14 mm |
| XI08P1B1  |      | Female             | 3/8"   | Dual-taper         | Ø10 mm |
| XI08P2B2  |      |                    | 1/2"   |                    | Ø12 mm |
| XI08P4B3  |      |                    | 3/4"   |                    | Ø14 mm |
| XI08B1B1  |      | Dual-taper         | Ø10 mm | Dual-taper         | Ø10 mm |
| XI08B2B2  |      |                    | Ø12 mm |                    | Ø12 mm |
| XI08B3B3  |      |                    | Ø14 mm |                    | Ø14 mm |



# EZYFLEX® PEXI

## PEX hose with stainless steel braid DN12



## Sanitary

Sanitary appliances  
for the public sector  
and hospitals



### ► Composition:

- PEX tube
- AISI 304 stainless steel braid
- Nickel-plated brass fittings
- Stainless steel crimping bushings

### ► Sealing:

- Flat gasket on flat seat

### ► Standard lengths:

300, 500, 700, 1000 mm

### ► Application:

Hot and cold water supply for public sector and hospitals

### ► Technical data



Maximum temperature  
**+90°C**



| DN | Nom. pressure (in bar) | Max. pressure (in bar) |
|----|------------------------|------------------------|
| 12 | 16                     | 20                     |



**12 x 18 mm (DN12)**



Minimum bending radius **65 mm**



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

### ► Assembled hoses / References & Configurations

| Reference | Hose | Fitting 1 / Thread |      | Fitting 2 / Thread |      |
|-----------|------|--------------------|------|--------------------|------|
| XI12P2P2  |      | Female             | 1/2" | Female             | 1/2" |
| XI12P2P4  |      |                    | 1/2" |                    | 3/4" |
| XI12P4P4  |      |                    | 3/4" |                    | 3/4" |
| XI12P2M2  |      | Female             | 1/2" | Male               | 1/2" |
| XI12P4M2  |      |                    | 3/4" |                    | 1/2" |
| XI12P4M4  |      |                    | 3/4" |                    | 3/4" |
| XI12P2C2  |      | Female             | 1/2" | Angled             | 1/2" |
| XI12P4C4  |      |                    | 3/4" |                    | 3/4" |



# EZYFLEX® EC

## EPDM hose with stainless steel braid with PVC coating DN10 and 12



### Sanitary

Wash shower heads  
for the public sector  
and hospitals



#### ► Composition:

- EPDM tube according to EN 681-1 type WB
- AISI 304 stainless steel braid
- Smooth crystal-clear PVC exterior coating
- Nickel-plated brass fittings
- Shower head-side anti-twist system
- Stainless steel crimping bushings

#### ► Sealing:

- Flat gasket on flat seat
- O-ring on metric male thread

#### ► Standard lengths:

Custom-made

#### ► Application:

Hot and cold water supply wash shower heads for the public sector and hospitals

#### ► Technical data



Maximum temperature  
**+60°C**



Max operating pressure **10 bar**



**9,5 x 16 mm (DN10)**  
**12 x 20 mm (DN12)**



Min bending radius  
**60 mm (DN10)**  
**72 mm (DN12)**



This hose can be cleaned  
with all detergents



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Hose                                                                                | Fitting 1 / Thread     |      | Fitting 2 / Thread     |        |
|-----------|------------|-------------------------------------------------------------------------------------|------------------------|------|------------------------|--------|
| EC10P2D2  | 10         |  | Female                 | 1/2" | Female<br>Self-turning | 1/2"   |
| EC12P2D2  | 12         |                                                                                     |                        |      |                        |        |
| EC10D2M15 | 10         |  | Female<br>Self-turning | 1/2" | Male                   | 15x100 |
| EC10P1P1  | 10         |  | Female                 | 3/8" | Female                 | 3/8"   |
| EC10P2P2  |            |                                                                                     |                        | 1/2" |                        | 1/2"   |
| EC12P2P2  | 12         |                                                                                     |                        | 3/4" |                        | 3/4"   |
| EC12P4P4  |            |                                                                                     |                        | 3/4" |                        | 3/4"   |
| EC10P1M1  | 10         |  | Female                 | 3/8" | Male                   | 3/8"   |
| EC10P2M2  |            |                                                                                     |                        | 1/2" |                        | 1/2"   |
| EC12P2M2  | 12         |                                                                                     |                        | 3/4" |                        | 3/4"   |
| EC12P4M4  |            |                                                                                     |                        | 3/4" |                        | 3/4"   |



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# SHOWERFLEX® PTC

## White PVC hose with internal reinforcement DN10



### Shower

Shower heads



#### ► Composition:

- White PVC tube with internal braided polyester thread reinforcement
- Nickel-plated brass fittings
- Stainless steel crimping bushings

#### ► Sealing:

- Flat gasket on flat seat (optional)

#### ► Standard lengths:

1250, 1500, 2000 mm

#### ► Application:

Hot and cold water supply of shower heads after taps

#### ► Technical data



Maximum temperature  
**+60°C**



Max operating pressure **10 bar**



**9 x 15 mm (DN10)**



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
*MOQ depending on the desired length*
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | Hose | Fitting 1 / Thread          |      | Fitting 2 / Thread          |      |
|-----------|------|-----------------------------|------|-----------------------------|------|
| PT10P2P2  |      | Female knurled cylindrical  | 1/2" | Female knurled cylindrical  | 1/2" |
| PT10P2D2  |      | Female knurled cylindrical  | 1/2" | Female tapered self-turning | 1/2" |
| PT10D2D2  |      | Female tapered self-turning | 1/2" | Female tapered self-turning | 1/2" |



# W-FLEX® V

## Spiral PVC hose DN32 and 40



### Drainage

#### Sanitary appliances

#### ► Composition:

- Spiral PVC tube
- PVC fittings for gluing to the tube with PVC or silicone adhesive
- Screw-on fittings

#### ► Standard lengths:

Custom-made

#### ► Application:

Water drainage for bidets, washbasins, sinks, baths and other sanitary appliances

#### ► Technical data



Maximum temperature  
**+60°C**



**25 x 32 mm (DN32)**  
**32 x 40 mm (DN40)**



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
*MOQ depending on the desired length*
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | DN (mm) | Hose | Fitting 1      | Fitting 2       |  |
|-----------|---------|------|----------------|-----------------|--|
| V1VB1VT1  | 32      |      | Male glue-on   | Female screw-on |  |
| V2VB2VT2  | 40      |      |                |                 |  |
| V1VB1VB1  | 32      |      |                | Male glue-on    |  |
| V1VB2VB2  | 40      |      |                |                 |  |
| V1VB1VBF1 | 32      |      |                | Female glue-on  |  |
| V1VB2VBF2 | 40      |      |                |                 |  |
| V1VBF1VT1 | 32      |      | Female glue-on | Female screw-on |  |
| V2VBF2VT2 | 40      |      |                |                 |  |

#### ► Hoses to assemble / Design your own hose!

| Reference | DN (mm) | Name                       |
|-----------|---------|----------------------------|
| V1        | 32      | PVC roll<br>Length 20 m    |
| V2        | 40      |                            |
| VB1       | 32      | Glue-on end-pieces         |
| VB2       | 40      |                            |
| VBF1      | 32      | Glue-on female end-pieces  |
| VBF2      | 40      |                            |
| VT1       | 32      | Screw-on female end-pieces |
| VT2       | 40      |                            |





**W-FLEX® FE**  
Drainage hose

## Drainage

Washing machines, drain hoses and siphons



### Drainage hose for washing machines or dishwashers

#### ► Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Fittings                                |
|-----------|------------|-----------------------------------------|
| FE20PP    | 20         | Flexible push-in heat-sealed end pieces |

#### ► Composition:

- Corrugated PP tube
- EPDM thermoplastic rubber fittings

#### ► Standard lengths:

1500 mm

#### ► Technical data



Maximum temperature  
**+95°C**



### Hose type "drain hose" for bidets, washing machines or dishwashers

#### ► Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Fittings                                |
|-----------|------------|-----------------------------------------|
| FE20PP-EX | 20         | Flexible push-in heat-sealed end pieces |

#### ► Composition:

- Corrugated PP tube
- EPDM thermoplastic rubber fittings

#### ► Standard lengths (min / max):

800 / 2700 mm, 1200 / 4000 mm

#### ► Technical data



Maximum temperature  
**+95°C**



Stretch



### "Siphon" type hose for bidets, washbasins and sinks

#### ► Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Fitting 1 / Thread                            |       | Fitting 2                   |
|-----------|------------|-----------------------------------------------|-------|-----------------------------|
| FE33P6M32 | 33         | Female swivel nut                             | 1"1/4 | Male PVC glue-on<br>Ø 32 mm |
| FE40P7M40 | 40         | Flexible push-in<br>heat-sealed end<br>pieces | 1"1/2 | Male PVC glue-on<br>Ø 40 mm |

#### ► Composition:

- PVC hose
- PVC swivel nut fitting and glue-on male end piece

#### ► Standard lengths (min / max):

350 / 700 mm

#### ► Technical data



Maximum temperature  
**+90°C**



Stretch

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# HEATING

## Heating

**EZYFLEX®**  
**EKOFLEX®**

|                                                                                                                                                                                                                                                             | Pages    | Data sheets                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------|
| <b>► General water supply</b> <ul style="list-style-type: none"> <li>• EPDM hose with stainless steel braid DN15 to 50 <b>EZYFLEX® EI</b></li> <li>• Butyl hose with stainless steel braid DN15 to 26 <b>EZYFLEX® BI</b></li> </ul>                         | 26<br>28 | <b>FT201</b><br><b>FT202</b> |
| <b>► Water supply for heat pumps and reversible mixed systems</b> <ul style="list-style-type: none"> <li>• EPDM hose with textile braid DN15 to DN50 <b>EKOFLEX® ET</b></li> <li>• Butyl hose with textile braid DN15 to DN26 <b>EKOFLEX® BT</b></li> </ul> | 29<br>30 | <b>FT211</b><br><b>FT212</b> |
| <b>► Oil and hydrocarbon burner supply</b> <ul style="list-style-type: none"> <li>• Nitrile NBR hose with stainless steel braid DN08 to 33 <b>EZYFLEX® NI</b></li> </ul>                                                                                    | 31       | <b>FT221</b>                 |
| <b>► Steam supply</b> <ul style="list-style-type: none"> <li>• Corrugated stainless steel hose DN10 to 50 <b>EZYFLEX® FE</b></li> </ul>                                                                                                                     | 32       | <b>FT231</b>                 |



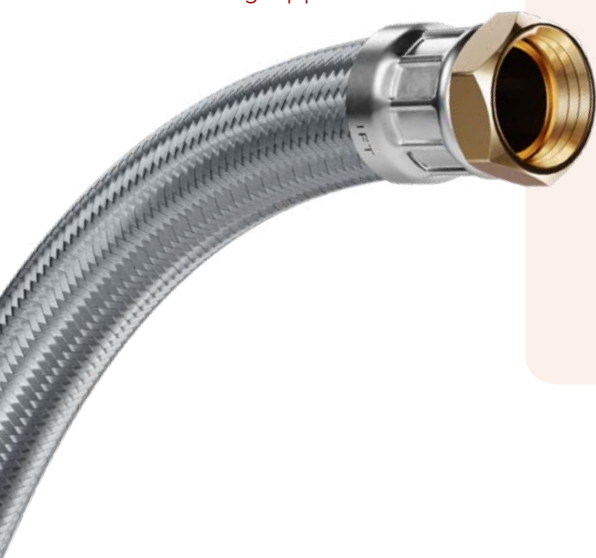
# EZYFLEX® EI

## EPDM hose with stainless steel braid DN15 to 50



## Heating

Heating appliances



### ► Composition:

- EPDM tube according to EN 681-1 type WB
- AISI 304 stainless steel braid
- Brass fittings (except nickel-plated elbow DN20 to 40)
- Stainless steel crimping bushings DN15 to 33 and aluminium DN40 and 50

### ► Sealing:

- Flat gasket on flat seat (optional)
- Metal / Metal for spherical-tapered seat (for more information, see paragraph "Special features of spherical-tapered fittings")

### ► Standard lengths:

300, 500, 700, 1000 mm

### ► Application:

Hot and cold water supply for heating appliances

### ► Technical data



Maximum temperature  
**+90°C (peaks to +110°C)**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 15, 20, 26 | 10                     | 16                     |
| 33, 40, 50 | 6                      | 6                      |



**15 x 22 mm (DN15)**  
**20 x 28 mm (DN20)**  
**26 x 35 mm (DN26)**  
**33 x 43 mm (DN33)**  
**40 x 50 mm (DN40)**  
**50 x 63 mm (DN50)**



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

### ► Assembled hoses / References & Configurations

| Reference |                                                                                     | DN<br>(mm)                                                                          | Hose                                                                                | Fitting 1<br>Thread |        | Fitting 2<br>Thread |        | Bending radius<br>(mm) |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------|--------|---------------------|--------|------------------------|
| EI15P2M2  |  | 15                                                                                  |  | Female              | 1/2"   | Male                | 1/2"   | 88                     |
| EI15P4M4  |                                                                                     |                                                                                     |                                                                                     |                     | 3/4"   |                     | 3/4"   |                        |
| EI20P4M4  |  | 3/4"                                                                                |                                                                                     |                     | 3/4"   |                     | 112    |                        |
| EI26P5M5  |                                                                                     |  |                                                                                     |                     | 1"     |                     | 1"     | 140                    |
| EI33P6M6  | -                                                                                   |                                                                                     |                                                                                     |                     | 33     |                     | 1 1/4" | 1 1/4"                 |
| EI40P7M7  | -                                                                                   | 40                                                                                  |                                                                                     |                     | 1 1/2" |                     | 1 1/2" | 392                    |
| EI50P8M8  | -                                                                                   | 50                                                                                  |                                                                                     |                     | 2"     |                     | 2"     | 488                    |
| EI15P2P2  |  | 15                                                                                  |  | Female              | 1/2"   | Female              | 1/2"   | 88                     |
| EI15P4P4  |                                                                                     |                                                                                     |                                                                                     |                     | 3/4"   |                     | 3/4"   |                        |
| EI20P4P4  |  | 3/4"                                                                                |                                                                                     |                     | 3/4"   |                     | 112    |                        |
| EI26P5P5  |                                                                                     |  |                                                                                     |                     | 1"     |                     | 1"     | 140                    |
| EI33P6P6  | -                                                                                   |                                                                                     |                                                                                     |                     | 33     |                     | 1 1/4" | 1 1/4"                 |
| EI40P7P7  | -                                                                                   | 40                                                                                  |                                                                                     |                     | 1 1/2" |                     | 1 1/2" | 392                    |
| EI50P8P8  | -                                                                                   | 50                                                                                  |                                                                                     |                     | 2"     |                     | 2"     | 488                    |

► **Assembled hoses /** References & Configurations

| Reference |                                                                                   | DN<br>(mm) | Hose                                                                              | Fitting 1<br>Thread |       | Fitting 2<br>Thread |      | Bending radius<br>(mm) |
|-----------|-----------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------|---------------------|-------|---------------------|------|------------------------|
| EI15P2C2  |  | 15         |  | Female              | 1/2"  | Angled              | 1/2" | 88                     |
| EI15P4C4  |                                                                                   |            |                                                                                   |                     | 3/4"  |                     | 3/4" | 112                    |
| EI20P4C4  |  | 20*        |  |                     | 3/4"  |                     | 112  |                        |
| EI26P5C5  |  | 26*        |                                                                                   |                     | 1"    |                     | 140  |                        |
| EI33P6C6  | -                                                                                 | 33*        |                                                                                   |                     | 1"1/4 |                     | 172  |                        |
| EI40P7C7  | -                                                                                 | 40*        |                                                                                   |                     | 1"1/2 |                     | 392  |                        |

\* Female nickel-plated brass angled fitting

► **Assembled hoses /** References & Configurations

| Reference |                                                                                     | DN<br>(mm) | Hose                                                                                | Fitting 1<br>Thread             | Fitting 2<br>Thread | Bending radius<br>(mm) |
|-----------|-------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------|---------------------------------|---------------------|------------------------|
| EI15S2S2  |  | 15         |  | Female<br>spherical-<br>tapered | 1/2"                | 88                     |
| EI15S4S4  |                                                                                     | 15**       |                                                                                     |                                 | 3/4"                | 88                     |
| EI20S4S4  |  | 20         |                                                                                     |                                 | 3/4"                | 112                    |
| EI26S5S5  |  | 26         |                                                                                     |                                 | 1"                  | 140                    |

\*\* Gasket integrated into fittings for DN15 hoses with 3/4" thread



**KEY BENEFITS**

- OPTIMUM seal
- EASY to connect





# EZYFLEX® BI

## Butyl hose with stainless steel braid DN15 to 26

### Heating

Heating appliances



#### ► Composition:

- Butyl tube
- AISI 304 stainless steel braid with double blue edging
- Brass fittings (except nickel-plated brass elbow DN20 and 26)
- Stainless steel crimping bushings

#### ► Sealing:

- Flat gasket on flat seat (optional)

#### ► Standard lengths:

300, 500, 700, 1000 mm

#### ► Application:

Hot and cold water supply for heating appliances

#### ► Technical data



Maximum temperature  
**+90°C (peaks to +110°C)**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 15, 20, 26 | 10                     | 16                     |



**15 x 22 mm (DN15)**  
**20 x 28 mm (DN20)**  
**26 x 35 mm (DN26)**



Oxygen barrier according to DIN 4726 preventing the formation of sludge, micro-organisms and algae



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | DN (mm) | Hose | Fitting 1 Thread | Fitting 2 Thread | Bending radius (mm) |
|-----------|---------|------|------------------|------------------|---------------------|
| BI15P2M2  | 15      |      | Female           | 1/2"             | 88                  |
| BI15P4M4  |         |      |                  | 3/4"             |                     |
| BI20P4M4  | 20      |      |                  | 3/4"             | 112                 |
| BI26P5M5  | 26      |      |                  | 1"               | 140                 |
| BI15P2P2  | 15      |      | Female           | 1/2"             | 88                  |
| BI15P4P4  |         |      |                  | 3/4"             |                     |
| BI20P4P4  | 20      |      |                  | 3/4"             | 112                 |
| BI26P5P5  | 26      |      |                  | 1"               | 140                 |
| BI15P2C2  | 15      |      | Female           | 1/2"             | 88                  |
| BI15P4C4  |         |      |                  | 3/4"             |                     |
| BI20P4C4  | 20*     |      |                  | 3/4"             | 112                 |
| BI26P5C5  | 26*     |      |                  | 1"               | 140                 |

\*Female nickel-plated brass elbow fitting



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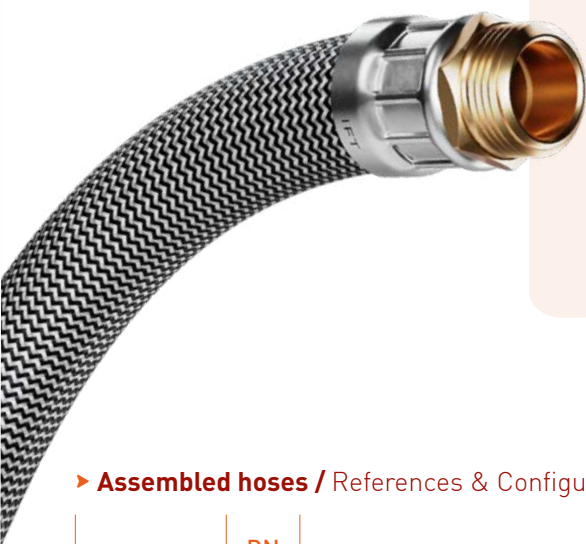
# EKOFLEX® ET

## EPDM hose with textile braid DN15 to 50



## Heating

### Heat pumps



#### Composition:

- EPDM tube according to EN 681-1 type WB
- Textile braid
- Brass fittings (except nickel-plated brass elbow DN20 and 26)
- Stainless steel crimping bushings DN15 to 33 and aluminium DN40 and 50

#### Sealing:

- Flat gasket on flat seat (optional)

#### Standard lengths:

300, 500, 700, 1000 mm

#### Application:

Hot and cold water supply for heat pumps.  
Can be fitted onto mixed reversible installations

#### Technical data



Maximum temperature  
**+90°C (peaks to +110°C)**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 15, 20, 26 | 10                     | 16                     |
| 33, 40, 50 | 6                      | 6                      |



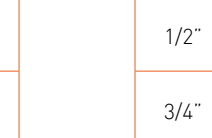
**15 x 22 mm (DN15)**  
**20 x 28 mm (DN20)**  
**26 x 35 mm (DN26)**  
**33 x 43 mm (DN33)**  
**40 x 50 mm (DN40)**  
**50 x 63 mm (DN50)**



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Hose                                                                                  | Fitting 1<br>Thread |                                                                                     | Fitting 2<br>Thread |        | Bending radius<br>(mm) |
|-----------|------------|---------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|---------------------|--------|------------------------|
| ET15P2M2  | 15         |    | Female              | 1/2"                                                                                | Male                | 1/2"   | 88                     |
| ET15P4M4  |            |                                                                                       |                     | 3/4"                                                                                |                     | 3/4"   |                        |
| ET20P4M4  | 20         |                                                                                       |                     | 3/4"                                                                                |                     | 112    |                        |
| ET26P5M5  | 26         |                                                                                       |                     | 1"                                                                                  |                     | 140    |                        |
| ET33P6M6  | 33         |                                                                                       |                     | 1"1/4                                                                               |                     | 172    |                        |
| ET40P7M7  | 40         |                                                                                       |                     | 1"1/2                                                                               |                     | 392    |                        |
| ET50P8M8  | 50         |                                                                                       |                     | 2"                                                                                  |                     | 488    |                        |
| ET15P2P2  | 15         |                                                                                       |                     |  |                     | Female | 1/2"                   |
| ET15P4P4  |            | 3/4"                                                                                  | 3/4"                |                                                                                     |                     |        |                        |
| ET20P4P4  | 20         | 3/4"                                                                                  | 112                 |                                                                                     |                     |        |                        |
| ET26P5P5  | 26         | 1"                                                                                    | 140                 |                                                                                     |                     |        |                        |
| ET33P6P6  | 33         | 1"1/4                                                                                 | 172                 |                                                                                     |                     |        |                        |
| ET40P7P7  | 40         | 1"1/2                                                                                 | 392                 |                                                                                     |                     |        |                        |
| ET50P8P8  | 50         | 2"                                                                                    | 488                 |                                                                                     |                     |        |                        |
| ET15P2C2  | 15         |  | Female              |                                                                                     | 1/2"                |        | Angled                 |
| ET15P4C4  |            |                                                                                       |                     | 3/4"                                                                                | 3/4"                |        |                        |
| ET20P4C4  | 20*        | 3/4"                                                                                  |                     | 112                                                                                 |                     |        |                        |
| ET26P5C5  | 26*        | 1"                                                                                    |                     | 140                                                                                 |                     |        |                        |
| ET33P6C6  | 33*        | 1"1/4                                                                                 |                     | 172                                                                                 |                     |        |                        |
| ET40P7C7  | 40*        | 1"1/2                                                                                 |                     | 392                                                                                 |                     |        |                        |

\*Female nickel-plated brass elbow fitting



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# EKOFLEX® BT

## Butyl hose with textile braid DN15 to 26

### Heating

Heat pumps



#### ► Composition:

- Butyl tube
- Textile braid with double blue edging
- Brass fittings (except nickel-plated brass elbow DN20 and 26)
- Stainless steel crimping bushings

#### ► Sealing:

- Flat gasket on flat seat (optional)

#### ► Standard lengths:

300, 500, 700, 1000 mm

#### ► Application:

Hot and cold water supply for heat pumps.  
Can be installed on mixed reversible installations

#### ► Technical data



Maximum temperature  
**+90°C (peaks to +110°C)**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 15, 20, 26 | 10                     | 16                     |



**15 x 22 mm (DN15)**  
**20 x 28 mm (DN20)**  
**26 x 35 mm (DN26)**



Oxygen barrier according to  
DIN 4726 prevents the formation  
of sludge, micro-organisms  
and algae



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Hose                                                                                | Fitting 1<br>Thread |      | Fitting 2<br>Thread |      | Bending radius<br>(mm) |
|-----------|------------|-------------------------------------------------------------------------------------|---------------------|------|---------------------|------|------------------------|
| BT15P2M2  | 15         |  | Female              | 1/2" | Male                | 1/2" | 88                     |
| BT15P4M4  |            |                                                                                     |                     | 3/4" |                     | 3/4" |                        |
| BT20P4M4  | 20         |                                                                                     |                     | 3/4" | 3/4"                | 112  |                        |
| BT26P5M5  | 26         |                                                                                     |                     | 1"   | 1"                  | 140  |                        |
| BT15P2P2  | 15         |  | Female              | 1/2" | Female              | 1/2" | 88                     |
|           |            |                                                                                     |                     | 1/2" |                     | 1/2" | 88                     |
| BT15P4P4  | 3/4"       |                                                                                     |                     | 3/4" |                     | 88   |                        |
| BT20P4P4  | 20         |                                                                                     |                     | 3/4" |                     | 112  |                        |
| BT26P5P5  | 26         |                                                                                     |                     | 1"   |                     | 140  |                        |
| BT15P2C2  | 15         |  | Female              | 1/2" | Angled              | 1/2" | 88                     |
| BT15P4C4  |            |                                                                                     |                     | 3/4" |                     | 3/4" |                        |
| BT20P4C4  | 20*        | 3/4"                                                                                |                     | 112  |                     |      |                        |
| BT26P5C5  | 26*        |  |                     | 1"   |                     | 1"   | 140                    |

\*Female nickel-plated brass elbow fitting



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# EZYFLEX® NI

## Nitrile NBR hose with stainless steel braid DN08 to 33

### Heating

Oil and hydrocarbon  
burners



#### ► Composition:

- Nitrile NBR tube
- AISI 304 stainless steel braid with blue or yellow edging
- Brass fittings (nickel-plated brass for angled fitting)
- Stainless steel crimping bushings

#### ► Sealing:

- Metal / Metal on spherical-tapered seat

#### ► Standard lengths:

300, 500, 700, 1000 mm

#### ► Application:

Compressed air, gas oil, etc.  
supply for oil and hydrocarbon burners

#### ► Technical data



Maximum temperature  
**+90°C**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 10                     | 16                     |
| 15, 20, 26 | 10                     | 16                     |
| 33         | 6                      | 6                      |



**7.7 x 12 mm (DN08) 20 x 28 mm (DN20)**  
**9.5 x 14 mm (DN10) 26 x 35 mm (DN26)**  
**12 x 18 mm (DN12) 33 x 43 mm (DN33)**  
**15 x 22 mm (DN15)**



#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | DN (mm) | Hose | Fitting 1 / Thread | Fitting 2 / Thread | Bending radius (mm) |
|-----------|---------|------|--------------------|--------------------|---------------------|
| NI08S0S0  | 08      |      | 1/4"               | 1/4"               | 48                  |
| NI08S0S1  |         |      | 1/4"               | 3/8"               |                     |
| NI08S1S1  |         |      | 3/8"               | 3/8"               | 60                  |
| NI10S1S1  |         |      | 3/8"               | 3/8"               |                     |
| NI12S2S2  |         |      | 1/2"               | 1/2"               | 72                  |
| NI15S2S2  |         |      | 1/2"               | 1/2"               | 88                  |
| NI20S4S4  |         |      | 3/4"               | 3/4"               | 112                 |
| NI26S5S5  |         |      | 1"                 | 1"                 | 140                 |
| NI33S6S6  | 33      |      | 1 1/4"             | 1 1/4"             | 172                 |
| NI08S0Y0  | 08      |      | 1/4"               | 1/4"               | 48                  |
| NI08S0Y1  |         |      | 1/4"               | 3/8"               |                     |
| NI08S1Y1  |         |      | 3/8"               | 3/8"               | 60                  |
| NI10S1Y1  |         |      | 3/8"               | 3/8"               |                     |
| NI12S2Y2  |         |      | 1/2"               | 1/2"               | 72                  |
| NI15S2Y2  |         |      | 1/2"               | 1/2"               | 88                  |
| NI20S4Y4  |         |      | 3/4"               | 3/4"               | 112                 |
| NI26S5Y5  |         |      | 1"                 | 1"                 | 140                 |
| NI33S6Y6  | 33      |      | 1 1/4"             | 1 1/4"             | 172                 |
| NI08S0W0  | 08      |      | 1/4"               | 1/4"               | 48                  |
| NI08S0W1  |         |      | 1/4"               | 3/8"               |                     |
| NI08S1W0  |         |      | 3/8"               | 1/4"               | 60                  |
| NI08S1W1  |         |      | 3/8"               | 3/8"               |                     |
| NI10S1W1  |         |      | 3/8"               | 3/8"               | 72                  |
| NI12S2W2  |         |      | 1/2"               | 1/2"               | 88                  |
| NI15S2W2  |         |      | 1/2"               | 1/2"               | 112                 |
| NI20S4W4  |         |      | 3/4"               | 3/4"               | 140                 |
| NI26S5W5  | 26      |      | 1"                 | 1"                 | 172                 |
| NI33S6W6  | 33      |      | 1 1/4"             | 1 1/4"             | 172                 |



# EZYFLEX® FE

## Stainless steel corrugated hose DN10 to 50

### Heating

Steam supply



#### ► Composition:

- AISI 304L stainless steel corrugated tube
- AISI 303 stainless steel fittings
- AISI 303 stainless steel fittings welded under argon

#### ► Standard lengths: (min / max)

75/130 mm, 100/200 mm, 200/400 mm,  
260/520 mm, 500/1000 mm,  
750/1500 mm, 1000/2000 mm

#### ► Application:

Steam, hot and cold water supply for heating appliances

#### ► Technical data



Maximum temperature  
**+250°C**



Maximum operating pressure for gas  
**0.5 Bar**

Max operating pressure for water  
**10 Bar (DN10)**

**8 Bar (DN15, 20, 26)**

**5 Bar (DN33, 40, 50)**



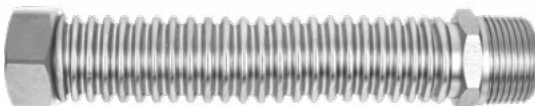
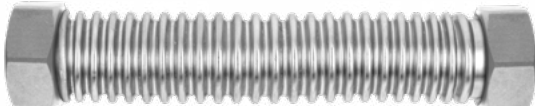
Can stretch up to twice  
the initial length

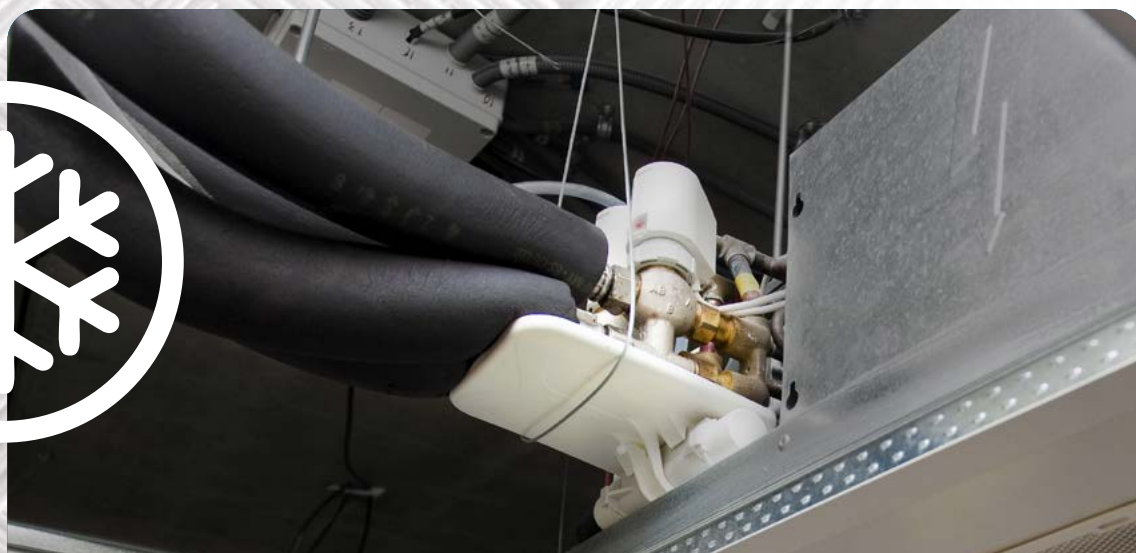


#### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Hose                                                                                | Fitting 1<br>Thread |       | Fitting 2<br>Thread |       |
|-----------|------------|-------------------------------------------------------------------------------------|---------------------|-------|---------------------|-------|
| FE10P1M1  | 10         |  | Female              | 3/8"  | Male                | 3/8"  |
| FE15P2M2  | 15         |                                                                                     |                     | 1/2"  |                     | 1/2"  |
| FE15P4M2  |            |                                                                                     |                     | 3/4"  |                     | 1/2"  |
| FE20P4M4  | 20         |                                                                                     |                     | 3/4"  |                     | 3/4"  |
| FE26P5M5  | 26         |                                                                                     |                     | 1"    |                     | 1"    |
| FE33P6M6  | 33         |                                                                                     |                     | 1"1/4 |                     | 1"1/4 |
| FE40P7M7  | 40         |                                                                                     |                     | 1"1/2 |                     | 1"1/2 |
| FE50P8M8  | 50         |                                                                                     |                     | 2"    |                     | 2"    |
| FE15P2P2  | 15         |  | Female              | 1/2"  | Female              | 1/2"  |
| FE20P4P4  | 20         |                                                                                     |                     | 3/4"  |                     | 3/4"  |
| FE26P5P5  | 26         |                                                                                     |                     | 1"    |                     | 1"    |



# AIR CONDITIONING CHILLED CEILING

**CLIMFLEX®**

|                                                                                            | Pages | Data sheets  |
|--------------------------------------------------------------------------------------------|-------|--------------|
| ▶ <b>Water supply for air conditioning units</b>                                           |       |              |
| • Heat-insulated EPDM hose with stainless steel braid DN15 to 50 CLIMFLEX® EI-C13 & EI-C19 | 34    | <b>FT301</b> |
| • Butyl insulated hose with stainless steel braid DN15 to 26 CLIMFLEX® BI-C13 & BI-C19     | 36    | <b>FT302</b> |
| ▶ <b>Water supply for chilled ceilings, chilled beams, velums</b>                          |       |              |
| • EPDM hose with stainless steel braid DN10, 12 and 15 CLIMFLEX® EI                        | 37    | <b>FT303</b> |
| ▶ <b>Refrigerant lines for air conditioning - refrigeration</b>                            |       |              |
| • Hose for refrigerants DN03 to 25 CLIMFLEX® PZT                                           | 38    | <b>FT304</b> |



# CLIMFLEX® EI-C13 / C19

## Heat-insulated EPDM hose with textile braid

### DN15 to 50



## Air conditioning

### Air conditioning units



#### ► Composition:

- EPDM tube according to EN 681-1 type WB
- AISI 304 stainless steel braid
- Brass fittings (except nickel-plated elbow DN20 to 40)
- Stainless steel crimping bushings
- Thermal insulation Euroclass B S3D0 thickness 13 or 19 mm
- Optional cups

#### ► Sealing:

- Flat gasket on flat seat (optional)
- Metal / Metal for spherical-tapered seat (for more information, see paragraph "Special features of spherical-tapered fittings")

#### ► Standard lengths:

300, 500, 700, 1000 mm

#### ► Application:

Hot and chilled water supply for "fan coil - heat pump - cassette" type terminal air conditioning units

#### ► Technical data

Minimum temperature

**-15°C**

Maximum temperature

**+90°C (peaks to +110°C)**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 15, 20, 26 | 10                     | 16                     |
| 33, 40, 50 | 6                      | 6                      |



Glycol water flow rate up to 40% (for larger capacities, contact us)



Diameters excluding thermal insulation

**15 x 22 mm (DN15)**

**20 x 28 mm (DN20)**

**26 x 35 mm (DN26)**

**33 x 43 mm (DN33)**

**40 x 50 mm (DN40)**

**50 x 63 mm (DN50)**

### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

### ► Assembled hoses / References & Configurations

| Reference<br>13 mm thermal<br>insulation | Reference<br>19 mm thermal<br>insulation |                                                                                     | DN<br>(mm) | Hose                                                                                | Fitting 1<br>Thread |        | Fitting 2<br>Thread |       | Bending radius<br>(mm) |      |
|------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------|---------------------|--------|---------------------|-------|------------------------|------|
| EI15P2M2-C13                             | EI15P2M2-C19                             |  | 15         |  | Female              | Male   | 1/2"                | 1/2"  | 88                     |      |
| EI15P4M4-C13                             | EI15P4M4-C19                             |                                                                                     |            |                                                                                     |                     |        |                     |       |                        | 3/4" |
| EI20P4M4-C13                             | EI20P4M4-C19                             |  | 20         |                                                                                     |                     |        |                     | 3/4"  | 3/4"                   | 112  |
| EI26P5M5-C13                             | EI26P5M5-C19                             |  | 26         |                                                                                     |                     |        |                     | 1"    | 1"                     | 140  |
| EI33P6M6-C13                             | EI33P6M6-C19                             | -                                                                                   | 33         |                                                                                     |                     |        |                     | 1"1/4 | 1"1/4                  | 172  |
| EI40P7M7-C13                             | EI40P7M7-C19                             | -                                                                                   | 40         |                                                                                     |                     |        |                     | 1"1/2 | 1"1/2                  | 392  |
| EI50P8M8-C13                             | EI50P8M8-C19                             | -                                                                                   | 50         |                                                                                     |                     |        |                     | 2"    | 2"                     | 488  |
| EI15P2P2-C13                             | EI15P2P2-C19                             |  | 15         |  | Female              | Female | 1/2"                | 1/2"  | 88                     |      |
| EI15P4P4-C13                             | EI15P4P4-C19                             |                                                                                     |            |                                                                                     |                     |        |                     |       |                        | 3/4" |
| EI20P4P4-C13                             | EI20P4P4-C19                             |  | 20         |                                                                                     |                     |        |                     | 3/4"  | 3/4"                   | 112  |
| EI26P5P5-C13                             | EI26P5P5-C19                             |  | 26         |                                                                                     |                     |        |                     | 1"    | 1"                     | 140  |
| EI33P6P6-C13                             | EI33P6P6-C19                             | -                                                                                   | 33         |                                                                                     |                     |        |                     | 1"1/4 | 1"1/4                  | 172  |
| EI40P7P7-C13                             | EI40P7P7-C19                             | -                                                                                   | 40         |                                                                                     |                     |        |                     | 1"1/2 | 1"1/2                  | 392  |
| EI50P8P8-C13                             | EI50P8P8-C19                             | -                                                                                   | 50         |                                                                                     |                     |        |                     | 2"    | 2"                     | 488  |

### ► Assembled hoses / References & Configurations

| Reference<br>13 mm thermal<br>insulation | Reference<br>19 mm thermal<br>insulation |                                                                                   | DN<br>(mm) | Hose                                                                              | Fitting 1<br>Thread |       | Fitting 2<br>Thread |       | Bending radius<br>(mm) |  |
|------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------|---------------------|-------|---------------------|-------|------------------------|--|
| EI15P2C2-C13                             | EI15P2C2-C19                             |  | 15         |  | Female              | 1/2"  | Angled              | 1/2"  | 88                     |  |
| EI15P4C4-C13                             | EI15P4C4-C19                             |                                                                                   |            |                                                                                   |                     | 3/4"  |                     | 3/4"  |                        |  |
| EI20P4C4-C13                             | EI20P4C4-C19                             |  | 20*        |  |                     | 1"    |                     | 1"    | 112                    |  |
| EI26P5C5-C13                             | EI26P5C5-C19                             |  | 26*        |                                                                                   |                     | 1"1/4 |                     | 1"1/4 | 140                    |  |
| EI33P6C6-C13                             | EI33P6C6-C19                             | -                                                                                 | 33*        |                                                                                   |                     | 1"1/2 |                     | 1"1/2 | 172                    |  |
| EI40P7C7-C13                             | EI40P7C7-C19                             | -                                                                                 | 40*        |                                                                                   |                     |       |                     |       | 392                    |  |

\* Female nickel-plated brass angled fitting

### ► Assembled hoses / References & Configurations

| Reference<br>13 mm thermal<br>insulation | Reference<br>19 mm thermal<br>insulation |                                                                                     | DN<br>(mm) | Hose                                                                                | Fitting 1<br>Thread            |       | Fitting 2<br>Thread            |       | Bending radius<br>(mm) |
|------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------|--------------------------------|-------|--------------------------------|-------|------------------------|
| EI15S2S2-C13                             | EI15S2S2-C19                             |  | 15         |  | Female<br>spherical<br>tapered | 1/2"  | Female<br>spherical<br>tapered | 1/2"  | 88                     |
| EI15S4S4-C13                             | EI15S4S4-C19                             |  | 15**       |                                                                                     |                                | 3/4"  |                                | 3/4"  |                        |
| EI20S4S4-C13                             | EI20S4S4-C19                             |  | 20         |                                                                                     |                                | 1"    |                                | 1"    | 112                    |
| EI26S5S5-C13                             | EI26S5S5-C19                             |  | 26         |                                                                                     |                                | 1"1/4 |                                | 1"1/4 | 140                    |
| EI33S6S6-C13                             | EI33S6S6-C19                             | -                                                                                   | 33         |                                                                                     |                                |       |                                |       | 172                    |

\*\* Gasket integrated into fittings for DN15 hoses with 3/4" thread



#### KEY BENEFITS

- OPTIMUM seal
- EASY to connect



# CLIMFLEX® BI-C13 / C19

## Butyl insulated hose with stainless steel braid

### DN15 to 26

## Air conditioning

### Air conditioning units



#### ► Composition:

- Butyl tube
- AISI 304 stainless steel braid with double blue edging
- Brass fittings (except nickel-plated brass elbow DN20 and 26)
- Stainless steel crimping bushings
- Thermal insulation Euroclass B S3D0 thickness 13 or 19 mm
- Optional cups

#### ► Sealing:

- Flat gasket on flat seat (optional)

#### ► Standard lengths:

300, 500, 700, 1000 mm

#### ► Application:

Hot and chilled water supply for "fan coil - heat pump - cassette" type terminal air conditioning units

#### ► Technical data

Minimum temperature

**-15°C**

Maximum temperature

**+90°C (peaks to +110°C)**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 15, 20, 26 | 10                     | 16                     |



Glycol water flow rate up to 40% (for larger capacities, contact us)



Diameters excluding thermal insulation

**15 x 22 mm (DN15)**

**20 x 28 mm (DN20)**

**26 x 35 mm (DN26)**



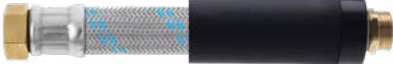
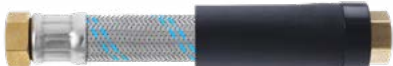
Oxygen barrier according to DIN 4726 preventing the formation of sludge, micro-organisms and algae



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference<br>13 mm thermal<br>insulation | Reference<br>19 mm thermal<br>insulation | DN<br>(mm) | Hose                                                                                | Fitting 1<br>Thread |      | Fitting 2<br>Thread |      | Bending radius<br>(mm) |
|------------------------------------------|------------------------------------------|------------|-------------------------------------------------------------------------------------|---------------------|------|---------------------|------|------------------------|
| BI15P2M2-C13                             | BI15P2M2-C19                             | 15         |  | Female              | 1/2" | Male                | 1/2" | 88                     |
| BI15P4M4-C13                             | BI15P4M4-C19                             |            |                                                                                     |                     | 3/4" |                     | 3/4" |                        |
| BI20P4M4-C13                             | BI20P4M4-C19                             | 20         |                                                                                     |                     | 3/4" |                     | 3/4" | 112                    |
| BI25P5M5-C13                             | BI25P5M5-C19                             | 26         |                                                                                     |                     | 1"   |                     | 1"   | 140                    |
| BI15P2P2-C13                             | BI15P2P2-C19                             | 15         |  | Female              | 1/2" | Female              | 1/2" | 88                     |
| BI15P4P4-C13                             | BI15P4P4-C19                             |            |                                                                                     |                     | 3/4" |                     | 3/4" |                        |
| BI20P4P4-C13                             | BI20P4P4-C19                             | 20         |                                                                                     |                     | 3/4" |                     | 3/4" | 112                    |
| BI25P5P5-C13                             | BI25P5P5-C19                             | 26         |                                                                                     |                     | 1"   |                     | 1"   | 140                    |
| BI15P2C2-C13                             | BI15P2C2-C19                             | 15         |  | Female              | 1/2" | Angled              | 1/2" | 88                     |
| BI15P4C4-C13                             | BI15P4C4-C19                             |            |                                                                                     |                     | 3/4" |                     | 3/4" |                        |
| BI20P4C4-C13                             | BI20P4C4-C19                             | 20*        |                                                                                     |                     | 3/4" |                     | 3/4" | 112                    |
| BI26P5C5-C13                             | BI26P5C5-C19                             | 26*        |                                                                                     |                     | 1"   |                     | 1"   | 140                    |

\* Female nickel-plated brass angled fitting



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# CLIMFLEX® EI

## EPDM hose with stainless steel braid DN10, 12 and 15



## Chilled ceilings



### ► Safety clips (OPTIONAL) / References

| Reference | For copper tube Diameter (mm) |
|-----------|-------------------------------|
| CLIPS12   | 12                            |
| CLIPS15   | 15                            |

- **Composition:**
  - EPDM tube according to EN 681-1 type WB
  - AISI 304 stainless steel braid
  - Brass fittings
  - Stainless steel crimping bushings
- **Sealing:**
  - Flat gasket on flat seat
  - integrated DN10 and 12
  - optional DN15
- **Safety:**
  - Optional safety clips for quick coupling
- **Lengths:**
  - Custom-made
- **Application:**
  - Hot and chilled water supply to chilled ceilings - Chilled beams - Velums.
  - If chilled water (temp. Below dew point): contact us for insulation requirements.



### ► Technical data



Minimum temperature

**-15°C**

Maximum temperature  
**+90°C**



| DN     | Nom. pressure (in bar) | Max. Pressure (in bar) |
|--------|------------------------|------------------------|
| 10, 12 | 16                     | 20                     |
| 15     | 10                     | 16                     |



Glycol water flow rate up to 40%  
(for larger capacities, contact us)



**9.5 x 14 mm (DN10)**  
**12 x 18 mm (DN12)**  
**15 x 22 mm (DN15)**



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

### ► Assembled hoses / References & Configurations

| Reference | DN<br>(mm) | Hose                                                                                | Fitting 1<br>Thread |                                                                                     | Fitting 2<br>Thread |        | Bending radius<br>(mm) |
|-----------|------------|-------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|---------------------|--------|------------------------|
| EI10I0I0  | 10         |  | Quick               | Ø 10 mm                                                                             | Quick               | Ø10mm  | 60                     |
| EI12I1I1  | 12         |                                                                                     |                     | Ø 12 mm                                                                             |                     | Ø12 mm | 72                     |
| EI12I2I2  |            |                                                                                     |                     | Ø 15 mm                                                                             |                     | Ø15 mm |                        |
| EI15I2I2  | 15         |                                                                                     |                     | Ø 15 mm                                                                             | Ø15 mm              | 88     |                        |
| EI10P1I0  | 10         |                                                                                     |                     |  | Female              | 3/8"   | Quick                  |
| EI10P2I0  | 10         | 1/2"                                                                                | Ø10 mm              |                                                                                     |                     | 60     |                        |
| EI12P2I1  | 12         | 1/2"                                                                                | Ø12 mm              |                                                                                     |                     | 72     |                        |
| EI12P2I2  |            | 1/2"                                                                                | Ø15 mm              |                                                                                     |                     | 88     |                        |
| EI15P2I2  | 15         | 1/2"                                                                                | Ø15 mm              |                                                                                     |                     | 88     |                        |
| EI10P2C0  | 10         |  | Female              | 1/2"                                                                                | Quick<br>Angled     | Ø10 mm | 60                     |
| EI10P2C1  |            |                                                                                     |                     |                                                                                     |                     | Ø12 mm |                        |
| EI12P2C1  | 12         |                                                                                     |                     |                                                                                     |                     | Ø12 mm | 72                     |
| EI12P2C2  |            |                                                                                     |                     |                                                                                     |                     | Ø15 mm | 88                     |
| EI15P2C2  | 15         |                                                                                     |                     |                                                                                     |                     | Ø15 mm | 88                     |

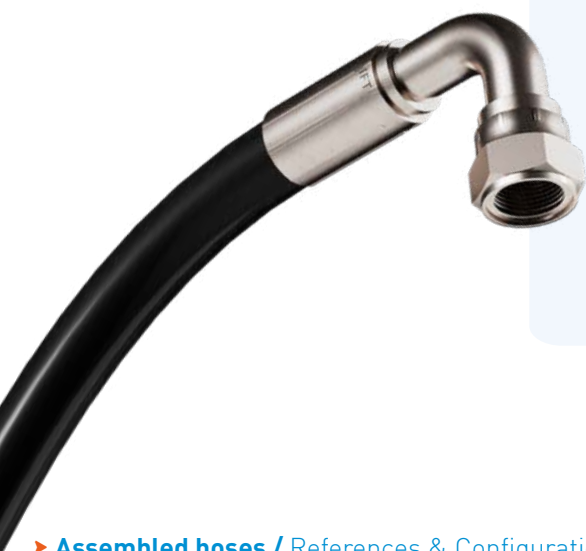


# CLIMFLEX® PZT

## Hoses for refrigerants

### DN03 to 25

## Lines Refrigerants



#### ► Composition:

- Special polyamide tube, compliant with EN1736, reinforced with high-density polyester braiding and covered with an abrasion-resistant polyurethane external sheath
- Steel high-pressure screw-on fittings "FLARE SAE"
- High-pressure treated steel crimping bushings

#### ► Sealing:

- Metal / metal

#### ► Standard lengths:

Custom-made

#### ► Application:

Refrigerant lines for air conditioning (Split system) - refrigeration (compressors, etc.)  
CFC - HFC - HFO

#### ► Technical data



Operating temperature  
**-40°C to +100°C**



See table below



Glycol water flow rate up to 40%  
(for larger capacities, contact us)



Refrigerant gas-tight  
(R22, R134A, R404, R407, R410, R507)  
and oil-resistant



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
MOQ depending on the desired length
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us

#### ► Assembled hoses / References & Configurations

| Reference   | DN<br>(mm) | Hose | Diameter<br>int. x ext.<br>(mm) | Min burst<br>pressure<br>at 23°C<br>(bar) | Min burst<br>pressure<br>(bar) | Fitting 1<br>Thread |          | Fitting 2<br>Thread |          | Bending radius<br>(mm) |
|-------------|------------|------|---------------------------------|-------------------------------------------|--------------------------------|---------------------|----------|---------------------|----------|------------------------|
| FLEXPZT3FF  | 3          |      | 3.5 x 8.5                       | 920                                       | 230                            | Female              | 1/8"     | Female              | 1/8"     | 12                     |
| FLEXPZT5FF  | 5          |      | 4.8 x 10.0                      | 840                                       | 210                            |                     | 3 and 16 |                     | 3 and 16 | 30                     |
| FLEXPZT6FF  | 6          |      | 6.4 x 11.8                      | 800                                       | 200                            |                     | 1/4"     |                     | 1/4"     | 35                     |
| FLEXPZT8FF  | 8          |      | 8.0 x 14.3                      | 760                                       | 190                            |                     | 5 and 16 |                     | 5 and 16 | 45                     |
| FLEXPZT10FF | 10         |      | 9.7 x 16.0                      | 700                                       | 175                            |                     | 3/8"     |                     | 3/8"     | 55                     |
| FLEXPZT12FF | 12         |      | 13.0 x 20.3                     | 560                                       | 140                            |                     | 1/2"     |                     | 1/2"     | 75                     |
| FLEXPZT16FF | 16         |      | 16.0 x 23.5                     | 420                                       | 105                            |                     | 5/8"     |                     | 5/8"     | 120                    |
| FLEXPZT19FF | 19         |      | 19.2 x 26.5                     | 360                                       | 90                             |                     | 3/4"     |                     | 3/4"     | 145                    |
| FLEXPZT25FF | 25         |      | 25.6 x 33.6                     | 280                                       | 70                             | Female              | 1"       | Angled              | 1"       | 200                    |
| FLEXPZT3FC  | 3          |      | 3.5 x 8.5                       | 920                                       | 230                            |                     | 1/8"     |                     | 1/8"     | 12                     |
| FLEXPZT5FC  | 5          |      | 4.8 x 10.0                      | 840                                       | 210                            |                     | 3 and 16 |                     | 3 and 16 | 30                     |
| FLEXPZT6FC  | 6          |      | 6.4 x 11.8                      | 800                                       | 200                            |                     | 1/4"     |                     | 1/4"     | 35                     |
| FLEXPZT8FC  | 8          |      | 8.0 x 14.3                      | 760                                       | 190                            |                     | 5 and 16 |                     | 5 and 16 | 45                     |
| FLEXPZT10FC | 10         |      | 9.7 x 16.0                      | 700                                       | 175                            |                     | 3/8"     |                     | 3/8"     | 55                     |
| FLEXPZT12FC | 12         |      | 13.0 x 20.3                     | 560                                       | 140                            |                     | 1/2"     |                     | 1/2"     | 75                     |
| FLEXPZT16FC | 16         |      | 16.0 x 23.5                     | 420                                       | 105                            |                     | 5/8"     |                     | 5/8"     | 120                    |
| FLEXPZT19FC | 19         |      | 19.2 x 26.5                     | 360                                       | 90                             |                     | 3/4"     |                     | 3/4"     | 145                    |
| FLEXPZT25FC | 25         |      | 25.6 x 33.6                     | 280                                       | 70                             |                     | 1"       |                     | 1"       | 200                    |



# SOLAR THERMAL

**SUNNYFLEX®**

|                                                                                                    | Pages | Data sheets  |
|----------------------------------------------------------------------------------------------------|-------|--------------|
| ▶ <b>Steam or water supply</b>                                                                     |       |              |
| • Corrugated stainless steel hose DN13 to 25 <b>SUNNYFLEX® IPO</b>                                 | 40    | <b>FT401</b> |
| • Stainless steel corrugated hose with insulating sheath DN13 to 25 <b>SUNNYFLEX® IPOCALO</b>      | 41    | <b>FT402</b> |
| ▶ <b>Two-hoses connection for solar panel / DHW cylinder / heat exchanger</b>                      |       |              |
| • 2-hoses corrugated stainless steel hose with insulating sheath DN13 to 25 <b>SUNNYFLEX® BIPO</b> | 42    | <b>FT403</b> |
| ▶ <b>Hose installation guide <b>SUNNYFLEX®</b></b>                                                 | 43    | <b>FT411</b> |



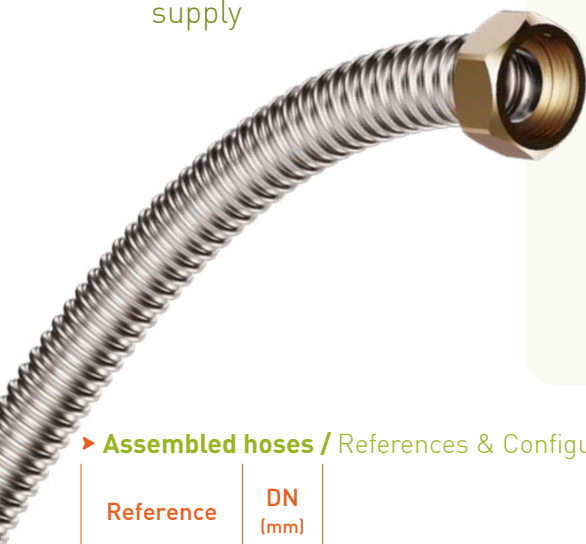
# SUNNYFLEX® IPO

## Corrugated stainless steel hose

### DN13 to 25

## Solar

Steam or water supply



#### ► Composition:

- AISI 316 L stainless steel corrugated tube
- Brass fittings and stainless steel segments

#### ► Seal (optional):

- Flat gasket on flat seat

#### ► Mounting tools (optional):

- Striking tool: Ref. FRAP245
- Matrices: Ref. MAT24 (DN13 and 16), MAT56 (DN20 and 25)

#### ► Connection kit (optional):

Kit comprising 10 nuts, 10 segments and 10 gaskets

#### ► Lengths:

Custom-made

#### ► Application:

Steam or hot or cold water supply

#### ► Technical data



Maximum temperature  
**+150°C (peaks to +200°C)**



Max operating pressure  
**20 Bar (DN13)**  
**16 Bar (DN16)**  
**10 Bar (DN20 and 25)**



- Excellent resistance to UV radiation and bad weather
- Excellent corrosion resistance

#### ► Assembled hoses / References & Configurations

| Reference | DN (mm) | Hose | Fitting 1 Thread |        | Fitting 2 Thread |        | Bending radius (mm) |
|-----------|---------|------|------------------|--------|------------------|--------|---------------------|
| IPOF2F2   | 13      |      | Female           | 1/2"   | Female           | 1/2"   | 20                  |
| IPOF4F4   | 16      |      |                  | 3/4"   |                  | 3/4"   | 25                  |
| IPOF5F5   | 20      |      |                  | 1"     |                  | 1"     | 30                  |
| IPOF6F6   | 25      |      |                  | 1 1/4" |                  | 1 1/4" | 35                  |
| IPOF2M2   | 13      |      | Female           | 1/2"   | Male             | 1/2"   | 20                  |
| IPOF4M4   | 16      |      |                  | 3/4"   |                  | 3/4"   | 25                  |

#### ► Hoses to assemble (self-assembly)

| Reference | DN (mm) | Hose | Length        | Connection kit (optional) | Tools (optional) |
|-----------|---------|------|---------------|---------------------------|------------------|
| IPO12     | 13      |      | Roll<br>100 m | 20                        | FRAP245 + MAT24  |
| IPO16     | 16      |      |               | 25                        | FRAP245 + MAT24  |
| IPO20     | 20      |      |               | 30                        | FRAP245 + MAT56  |
| IPO25     | 25      |      |               | 35                        | FRAP245 + MAT56  |



#### ASSEMBLY

► SUNNYFLEX® hoses must be assembled by scrupulously respecting the assembly rules and steps listed on the technical data sheet  
**FT304 SUNNYFLEX® ASSEMBLY**



# SUNNYFLEX® IPOCALO

Stainless steel corrugated hose with insulating sheath DN13 to 25

## Solar

Steam or water supply

### ► Composition:

- AISI 316 L stainless steel corrugated tube
- Brass fittings and stainless steel segments
- Thermal insulation Euroclass B S3D0 thickness 13 or 19 mm
- Optional cups

### ► Seal (optional):

- Flat gasket on flat seat

### ► Lengths:

- Custom-made

### ► Application:

- Steam or hot or cold water supply

### ► Technical data



Maximum temperature  
**+150°C (peaks to +200°C)**



Max operating pressure  
**20 Bar (DN13)**  
**16 Bar (DN16)**  
**10 Bar (DN20 and 25)**



### CUSTOM OFFER

- Specific length: **150 mm to over 10,000 mm**  
*MOQ depending on the desired length*
- Customisable fittings: diameter, material, etc.
- Customisable packaging: contact us
- Thermal insulation thickness: **9mm, 13mm or 19mm**

### ► Assembled hoses / References & Configurations

| Reference   | DN (mm) | Hose | Fitting 1 Thread |        | Fitting 2 Thread |        | Bending radius (mm) |
|-------------|---------|------|------------------|--------|------------------|--------|---------------------|
| IPOCALOF2F2 | 13      |      | Female           | 1/2"   | Female           | 1/2"   | 20                  |
| IPOCALOF4F4 | 16      |      |                  | 3/4"   |                  | 3/4"   | 25                  |
| IPOCALOF5F5 | 20      |      |                  | 1"     |                  | 1"     | 30                  |
| IPOCALOF6F6 | 25      |      |                  | 1 1/4" |                  | 1 1/4" | 35                  |
| IPOCALOF2M2 | 13      |      | Female           | 1/2"   | Male             | 1/2"   | 20                  |
| IPOCALOF4M4 | 16      |      |                  | 3/4"   |                  | 3/4"   | 25                  |

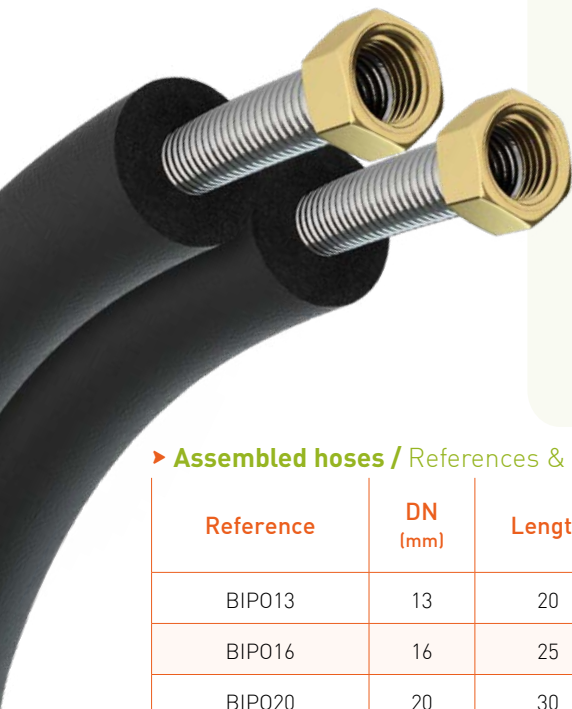


# SUNNYFLEX® BIPO

2-tube corrugated stainless steel hose with insulating sheath DN13 to 25

## Solar

Twin-tube connection  
for solar panel  
DHW tank - exchanger



### ► Composition:

- Two AISI 316 L stainless steel corrugated tubes
- Thermal insulation Euroclass B S3D0 thickness 13 or 19 mm
- 4 brass fittings, 4 stainless steel segments and 4 male-male union fittings

### ► Sealing:

- 4 HT (high temperature) fibre gaskets

### ► Mounting tools (optional):

- Striking tool: Ref. FRAP245
- Matrices: Ref. MAT24 (DN13 and 16), MAT56 (DN20 and 25)

### ► Connection kit (optional):

Kit comprising 10 nuts, 10 segments and 10 gaskets

### ► Lengths:

10 m / 15 m / 20 m / 25 m (DN13)  
10 m / 15 m / 20 m / 25 m / 50 m (DN16, DN20, DN25)

### ► Application:

Twin-tube connection (flow - return) for solar panel - DHW cylinder - exchanger

### ► Technical data



Maximum temperature  
**+150°C (peaks to +200°C)**



Max operating pressure  
**10 Bar (DN13 to 25)**



Good abrasion resistance



- Excellent resistance to UV radiation and weather
- Excellent corrosion resistance

### ► Assembled hoses / References & Configurations

| Reference | DN (mm) | Length | Fitting 1 / Thread |        | Fitting 1 / Thread |        | Tools (optional) |
|-----------|---------|--------|--------------------|--------|--------------------|--------|------------------|
| BIP013    | 13      | 20     | Female             | 1/2"   | Female             | 1/2"   | FRAP245 + MAT24  |
| BIP016    | 16      | 25     |                    | 3/4"   |                    | 3/4"   |                  |
| BIP020    | 20      | 30     |                    | 1"     |                    | 1"     | FRAP245 + MAT56  |
| BIP025    | 25      | 35     |                    | 1 1/4" |                    | 1 1/4" |                  |

### ► The SUNNYFLEX® BIPO hose

is delivered assembled in a cardboard box with a bag containing:

- 4 brass fittings
- 4 stainless steel segments
- and 4 male-male brass union fittings





# SUNNYFLEX®

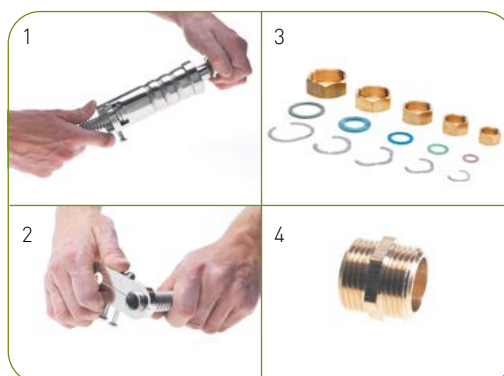
## Assembly guide for solar panel hoses

### ► List of products concerned by the assembly sheet

- **SUNNYFLEX® IPO** - Stainless steel corrugated hoses
- **SUNNYFLEX® BIPO** - EPDM insulated hoses with stainless steel braid

### ► Tools

- 1 • FRAP245 striking tool
- 2 • MAT24 and MAT56 matrices
- 3 • Fitting sets (nuts + segments + gaskets)
- 4 • Brass male-male unions



| DN (mm) | Tools to use    |
|---------|-----------------|
| 13      | FRAP245 + MAT24 |
| 16      | FRAP245 + MAT24 |
| 20      | FRAP245 + MAT56 |
| 25      | FRAP245 + MAT56 |

### ► SUNNYFLEX® Kits supplied with hoses to assemble

#### Kit components

| DN (mm) | Fittings      | Stainless steel segments | HT fibre gaskets (high temperature) | Reference of Kits           | Number of components | Available diameters |
|---------|---------------|--------------------------|-------------------------------------|-----------------------------|----------------------|---------------------|
| 13      | Female 1/2"   | SEG1/2"                  | JFHT2                               | SUNNYFLEX® IPOCALO BAG KIT  | 2 each               | DN13 / 16 / 20 / 25 |
| 16      | Female 3/4"   | SEG3/4"                  | JFHT4                               | SUNNYFLEX® BIPOCALO BAG KIT | 4 each               |                     |
| 20      | Female 1"     | SEG1"                    | JFHT5                               | SUNNYFLEX® IPO BAG KIT      | 10 of each           |                     |
| 25      | Female 1 1/4" | SEG1/4"                  | JFHT6                               |                             |                      |                     |

### ► Steps for assembling your SUNNYFLEX® hose



#### Step 1

Cut a length of corrugated stainless steel with a tube cutter



#### Step 2

Place the matrix behind the first 2 waves



#### Step 3

Insert the matrix and corrugated stainless steel into the striking tool. Strike with the striking tool to obtain a flared nipple



#### Step 4

Place the segment behind the flared nipple



#### Step 5

Tighten the segment and position the two fittings in order to be able to prepare the other end of the hose





# INDUSTRY

QUAL'IFT®

## ► Specific hoses for industrial use

|                                                                                                     | Pages | Data sheets  |
|-----------------------------------------------------------------------------------------------------|-------|--------------|
| • Specific hose with corrugated stainless steel tube and stainless steel braid <b>QUAL'IFT® IPI</b> | 46    | <b>FT501</b> |
| • Silicone hose with stainless steel braid <b>QUAL'IFT® SI</b>                                      | 47    | <b>FT502</b> |
| • Nitrile NBR hose with stainless steel braid <b>QUAL'IFT® NI</b>                                   | 48    | <b>FT503</b> |
| • PTFE hose with stainless steel braid <b>QUAL'IFT® TFI</b>                                         | 49    | <b>FT504</b> |



# QUAL'IFT® IPI

## Specific hose with corrugated stainless steel tube and stainless steel braid

### Specific applications



#### ► Composition:

- 316 L corrugated stainless steel tube
- AISI 304 stainless steel braid

#### ► Lengths:

Custom-made

#### ► Diameters:

DN08 to 300

#### ► Application:

- All industries
- Transport of all fluids, water, steam, chemicals, hot oils, petrochemicals, cryogenics, etc.

#### ► Technical data



Operating temperature  
**-200°C to +600°C**



Max operating pressure  
**see table below**



#### KEY BENEFITS

- Excellent corrosion and ageing resistance
- Extreme temperature resistance
- Very good pressure resistance

#### ► Assembled hoses / Hose & Connection references

| Reference of the hose | DN (Inches) | Diameter int. x ext. (mm) | Min static bending radius (mm) | Min static bending radius (mm) | Min burst (Bar) |
|-----------------------|-------------|---------------------------|--------------------------------|--------------------------------|-----------------|
| IPI 06                | 1/4"        | 6.2 x 10.8                | 25                             | 85                             | 120             |
| IPI 08                | 5 and 16    | 8.2 x 13.3                | 32                             | 125                            | 100             |
| IPI 10                | 3/8"        | 10.3 x 15.5               | 38                             | 140                            | 90              |
| IPI 13                | 1/2"        | 12.2 x 17.9               | 45                             | 140                            | 80              |
| IPI 16                | 5/8"        | 16,2 x 23                 | 38                             | 160                            | 70              |
| IPI 20                | 3/4"        | 20.3 x 28.5               | 60                             | 155                            | 64              |
| IPI 25                | 1"          | 25.6 x 35.5               | 70                             | 165                            | 50              |
| IPI 32                | 1"1/4       | 32.6 x 44.5               | 85                             | 225                            | 40              |
| IPI 40                | 1"1/2       | 40.5 x 52.5               | 100                            | 255                            | 35              |
| IPI 50                | 2"          | 50,8 x 67                 | 120                            | 280                            | 30              |
| IPI 65                | 2"1/2       | 65,6 x 83                 | 180                            | 410                            | 24              |
| IPI 80                | 3"          | 80,3 x 97                 | 200                            | 450                            | 18              |
| IPI 100               | 4"          | 100.8 x 119               | 290                            | 560                            | 16              |
| IPI 125               | 5"          | 125.4 x 152.5             | 325                            | 710                            | 14              |
| IPI 150               | 6"          | 150.8 x 177.5             | 380                            | 815                            | 10              |
| IPI 200               | 8"          | 197 x 228                 | 500                            | 1015                           | 8               |
| IPI 250               | 10"         | 250.4 x 281.5             | 620                            | 1270                           | 7.5             |
| IPI 300               | 12"         | 300.2 x 339.5             | 725                            | 1525                           | 6               |



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# QUAL'IFT® SI

## Specific silicone hose with stainless steel braid

| DN     | Nom. pressure (in bar) | Max. Pressure (in bar) |
|--------|------------------------|------------------------|
| 10, 12 | 16                     | 20                     |
| 15     | 10                     | 16                     |



## Specific applications



### ► Composition:

- Silicone tube (food grade) - translucent or coloured
- AISI 304 stainless steel braid

### ► Lengths:

Custom-made

### ► Diameters:

DN06 to 26

### ► Application:

- Food-grade: all foods and beverages, vegetable and animal oils
- Industry: certain aggressive products such as citric or tartaric acid, alcohols, etc.
- Compressor outputs (industrial quality)
- High temperatures

### ► Technical data



Operating temperature  
**-80°C to +200°C**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 16                     | 20                     |
| 15, 20, 26 | 10                     | 16                     |



### KEY BENEFITS

- Excellent corrosion resistance and ageing resistance
- High flexibility
- Resistant to high temperatures
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Good resistance to aggressive fluids, alcohols and acids

- Does not transmit hose noise
- Good UV resistance

\* Tube material FDA 21 CFR 177.2600 approved, European Regulation 1935/2004, European Pharmacopoeia section 3.1.9

### ► Assembled hoses / Hose & Connection references

| Reference of the hose | DN (mm) | Diameter int. x ext. (mm) | Min bending radius (mm) |
|-----------------------|---------|---------------------------|-------------------------|
| SI 08                 | 08      | 8 x 12.8                  | 55                      |
| SI 10                 | 10      | 10 x 14.8                 | 70                      |
| SI 12                 | 12      | 12 x 17.8                 | 85                      |
| SI 15                 | 15      | 15 x 21.8                 | 120                     |
| SI 20                 | 20      | 20 x 28                   | 200                     |
| SI 25                 | 26      | 25 x 33                   | 300                     |



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# QUAL'IFT® NI

## Specific Nitrile NBR hose with stainless steel braid

### Specific applications



#### ► Composition:

- Nitrile NBR tube
- AISI 304 stainless steel braid with distinctive blue or yellow edging (other colours on request)

#### ► Lengths:

Custom-made

#### ► Diameters:

DN06 to 33

#### ► Application:

- Industry: fuel oil, diesel, oils, greases, compressed air, regulation, natural gas, LPG, etc.

#### ► Technical data



Operating temperature  
**-10°C to +90°C (peaks at 100°C)**



Max operating pressure  
**16 Bar (DN06 to 15)**  
**10 Bar (DN20)**  
**6 Bar (DN26 and 33)**



#### KEY BENEFITS

- Excellent corrosion and ageing resistance
- Accidental abrasion and alternating stresses resistance
- Hoses tested according to ISO 6806 type 1

#### ► Assembled hoses / Hose & Connection references

| Reference of the hose | DN (mm) | Diameter int. x ext. (mm) | Min bending radius (mm) |
|-----------------------|---------|---------------------------|-------------------------|
| NI 06                 | 06      | 5.5 x 10                  | 40                      |
| NI 08                 | 08      | 7.5 x 12                  | 48                      |
| NI 10                 | 10      | 9.5 x 14                  | 60                      |
| NI 12                 | 12      | 12 x 18                   | 72                      |
| NI 15                 | 15      | 15 x 22                   | 88                      |
| NI 20                 | 20      | 20 x 28                   | 112                     |



# QUAL'IFT® TFI

## Specific PTFE hose with stainless steel braid

### Specific applications



#### ► Composition:

- PTFE tube
- AISI 304 stainless steel braid

#### ► Lengths:

Custom-made

#### ► Diameters:

DN06 to 26

#### ► Application:

- Industry: steam circuits (high temperature and high pressure)
- Chemicals / Petrochemicals: all chemicals, virtually universal use
- Food-grade: all foods and beverages, vegetable and animal oils

#### ► Technical data



Operating temperature  
**-70°C to +260°C**



Max operating pressure  
**From 60 to 175 Bar depending on diameter**  
(more information in the table below)



#### KEY BENEFITS

- Very good pressure resistance
- Excellent heat and ageing resistance
- Excellent chemical resistance
- Internal tube is easy to clean and combines non-stick properties with a low friction coefficient to ensure good flow of fluids conveyed
- Chlorine shock treatment possible (in accordance with the technical guide "L'eau dans les établissements de santé – French Ministry of Health")

#### ► Assembled hoses / Hose & Connection references

| Reference of the hose | DN (mm) | Diameter int. x ext. (mm) | Max operating pressure (Bar) | Min bending radius (mm) |
|-----------------------|---------|---------------------------|------------------------------|-------------------------|
| TFI 06                | 06      | 6.4 x 12                  | 175                          | 75                      |
| TFI 08                | 08      | 8 x 11                    | 160                          | 100                     |
| TFI 10                | 10      | 10 x 12.2                 | 140                          | 115                     |
| TFI 13                | 12      | 13 x 16                   | 120                          | 130                     |
| TFI 16                | 15      | 16 x 19                   | 100                          | 150                     |
| TFI 20                | 20      | 19 x 23                   | 80                           | 210                     |
| TFI 26                | 26      | 25 x 29                   | 60                           | 300                     |

# DESIGN AND ASSEMBLE YOUR OWN HOSE

## HOSES TO ASSEMBLE

Guide

Hoses

Bushings

Fittings

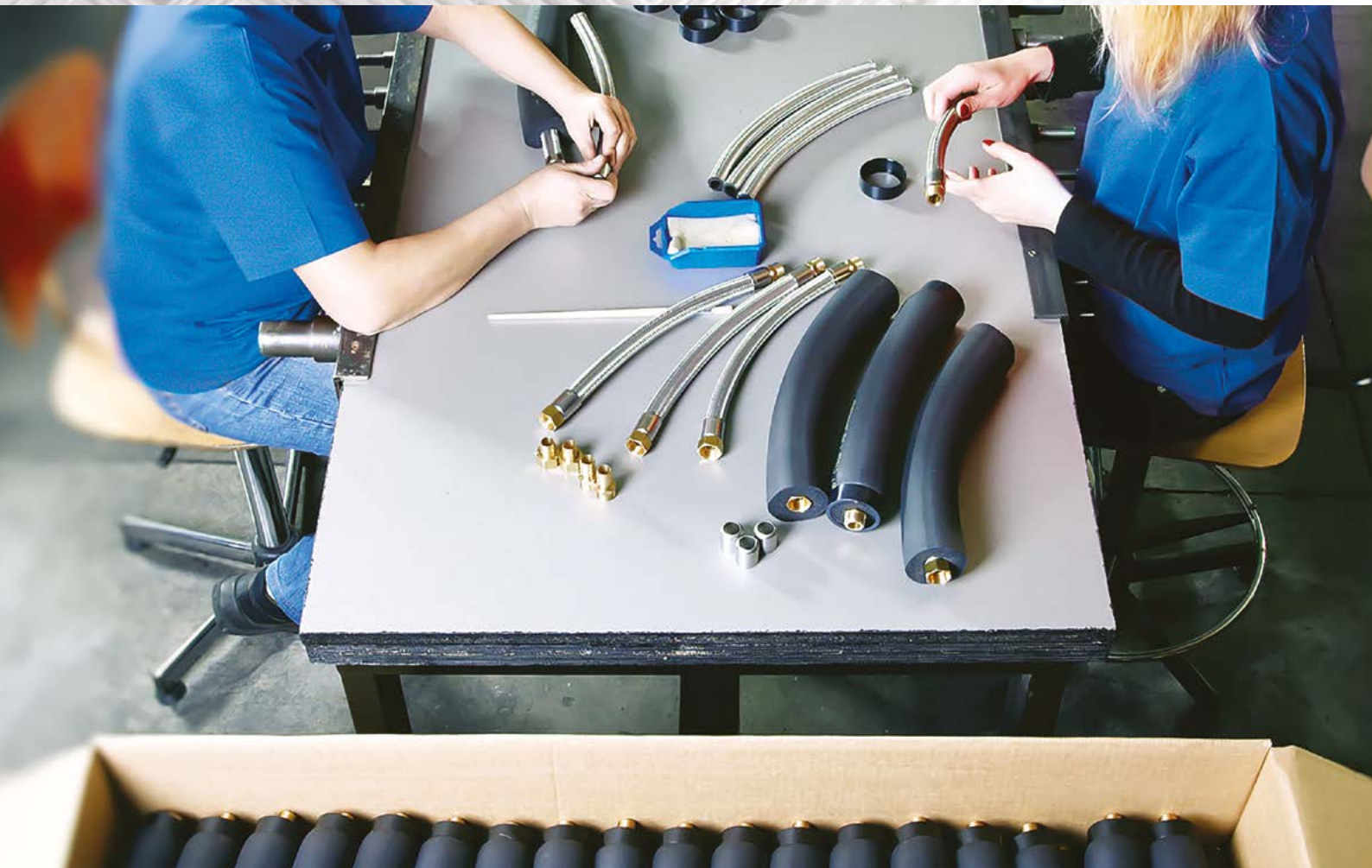
Tools

Accessories





# GUIDE FOR COMPOSING YOUR HOSE

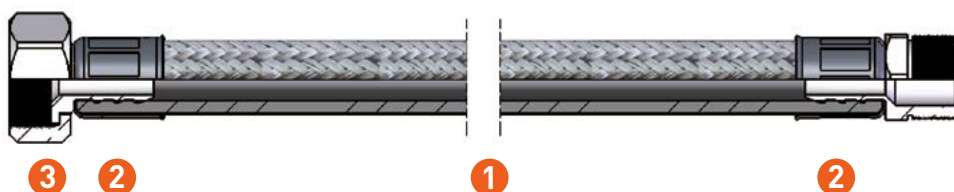




# GUIDE FOR COMPOSING YOUR HOSE



## Overview of hose components



- 1 ▶ One hose
- 2 ▶ Two bushings, one for each end of the hose
- 3 ▶ Connection = Left and Right connections (+) accessory(ies) such as thermal insulation

### ASSEMBLY

▶ **QUAL'IFT®** hoses must be assembled in strict compliance with the rules and assembly steps listed in the "Recommendations for use" paragraph (see page 100)

## 1 Choose your hose

### According to

- ▶ Your application and use (sanitary, heating, air conditioning or industrial)
- ▶ The environment in which the hose will be used (temperature, mechanical stress, chemical resistance, etc.)

### Different materials used

- ▶ EPDM
- ▶ Butyl
- ▶ PEX
- ▶ Nitrile
- ▶ Silicone



### For further information

- ▶ Full specifications for our **QUAL'IFT®** hoses can be found in the technical data sheets **FT601 to FT624**
- ▶ Chemical resistance table (technical form at the end of the catalogue)

## 2 Choose your bushings

### According to

- ▶ The diameter of your hose

### 2 types of bushings to use

- ▶ Stainless steel bushings for DN06 to 33 hoses
- ▶ Aluminium bushings for DN40 and 50 hoses



### For further information

- ▶ Full crimping bushing specifications on our technical data sheet **FT701**



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## 3 Choose your connection

### According to

- › your application and use (sanitary, heating, air conditioning or industrial)
- › the environment in which the hose will be used (configuration of the space, etc.)

### Different fitting types possible

- › Male (cylindrical, tapered, taps)
- › Female (with flat, spherical-tapered or angled seat)
- › Dual-taper
- › Quick
- › Union



### For further information

- › Full specifications of our fittings on data sheets **FT801 to FT852**



## Available accessories

### Thermal insulation

- › Available in 4 thicknesses 9, 13, 19 and 25 mm (for your air conditioning and chilled ceiling applications)
- › Thermal protection sheath (for environments subject to high temperatures)



### For further information

- › Full specifications of our accessories on technical data sheets **FT911 and FT913**

## 4 Recommended tools

### Hose cutting

#### Portable manual hose cutter

- › For cutting hoses up to DN26
- › Maximum passage diameter: 50 mm
- › Easily transportable, ideal for on-site work

### Fitting crimping

#### Manual site crimper

- › Crimping of **QUAL'IFT®** DN08 to DN20 hoses

#### Portable electric crimper

- › Hose crimping **QUAL'IFT®** DN08 to DN33



### For further information

- › Full specifications of our tools on technical data sheets **FT901 and FT904**



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# HOSES

QUAL'IFT®

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Pages                                             | Data sheets                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <p>► <b>Hoses with stainless steel braid</b></p> <ul style="list-style-type: none"> <li>• EPDM hose with stainless steel braid DN08 to 50 <b>QUAL'IFT® EI</b></li> <li>• Butyl hose with stainless steel braid DN08 to 26 <b>QUAL'IFT® BI</b></li> <li>• PEX hose with stainless steel braid DN08 to 12 <b>QUAL'IFT® PEXI</b></li> <li>• Nitrile hose with stainless steel braid DN06 to 33 <b>QUAL'IFT® NI</b></li> <li>• Silicone hose with stainless steel braid DN08 to 25 <b>QUAL'IFT® SI</b></li> </ul> | <p>56</p> <p>57</p> <p>58</p> <p>59</p> <p>60</p> | <p><b>FT601</b></p> <p><b>FT602</b></p> <p><b>FT603</b></p> <p><b>FT604</b></p> <p><b>FT605</b></p> |
| <p>► <b>Hoses with stainless steel braid and coating</b></p> <ul style="list-style-type: none"> <li>• EPDM stainless steel braided hose with PVC coating DN10 and 12 <b>QUAL'IFT® EIC</b></li> <li>• Nitrile hose with galvanised steel braid and PVC coating DN10 to 15 <b>TUBOL® NGP</b></li> </ul>                                                                                                                                                                                                         | <p>61</p> <p>62</p>                               | <p><b>FT611</b></p> <p><b>FT612</b></p>                                                             |
| <p>► <b>Hoses with textile braid</b></p> <ul style="list-style-type: none"> <li>• EPDM hose with polyester braid DN08 to 50 <b>QUAL'IFT® ET</b></li> <li>• EPDM hose with polyester / glass fibre braid DN10 to 20 <b>QUAL'IFT® ETV</b></li> <li>• Butyl hose with polyester braid DN08 to 26 <b>QUAL'IFT® BT</b></li> <li>• EPDM hose with polyethylene monofilament braid DN08 <b>QUAL'IFT® EP</b></li> </ul>                                                                                               | <p>63</p> <p>64</p> <p>65</p> <p>66</p>           | <p><b>FT621</b></p> <p><b>FT622</b></p> <p><b>FT623</b></p> <p><b>FT624</b></p>                     |


**QUAL'IFT® EI**
**EPDM hose with stainless steel braid DN08 to 50**

**► Composition:**

- EPDM tube according to EN 681-1 type WB
- AISI 304 stainless steel braid

**► Lengths:**

See table below

**Roll packaging**

(other types of packaging on request)

**► Application:**

- Water flow for sanitary, heating and air-conditioning applications (max glycol content : 40%)
- Aqueous solutions

**► Technical data**

 Operating temperature  
**-15°C to +90°C peaks at +110°C**


| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 16                     | 20                     |
| 15, 20, 26 | 10                     | 16                     |
| 33         | 6                      | 6                      |



See table below


**KEY BENEFITS**

- Excellent corrosion and ageing resistance
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Good UV resistance
- Does not transmit hose noise


**ASSEMBLY**

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"


**CUSTOM OFFER**

- Contact us for all your specific requirements

**► Hoses for your low-pressure applications / References**

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m)    | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|------------|---------------------|
| EI 08     | 08      | 8.5 x 12                  | 110                  | 25         | 48                  |
| EI 10     | 10      | 9.5 x 14                  |                      |            | 60                  |
| EI 12     | 12      | 12 x 18                   | 90                   | 25         | 72                  |
| EI 15     | 15      | 15 x 22                   | 80                   | 25         | 88                  |
| EI 20     | 20      | 20 x 28                   | 60                   | 20         | 112                 |
| EI 26     | 26      | 26 x 35                   | 45                   | 30         | 140                 |
| EI 33     | 33      | 33 x 43                   | 40                   | 20         | 172                 |
| EI 40     | 40      | 40 x 50                   | 30                   | Contact us | 392                 |
| EI 50     | 50      | 50 x 63                   |                      |            | 488                 |



# QUAL'IFT® BI

## Butyl hose with stainless steel braid DN08 to 26



### ► Composition:

- Combined EPDM Butyl tube
- AISI 304 stainless steel braid with double blue edging

### ► Lengths:

See table below

### Roll packaging

(other types of packaging on request)

### ► Application:

- Water passage for heating and air conditioning requiring an oxygen barrier

### ► Technical data



Operating temperature  
**-15°C to +90°C peaks at +110°C**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 16                     | 20                     |
| 15, 20, 26 | 10                     | 16                     |
| 33         | 6                      | 6                      |



See table below



Oxygen barrier according to DIN 4726 preventing the formation of sludge, micro-organisms and algae



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- **Oxygen impermeability (according to DIN 4726)**
- Absorbs expansion and water hammer

- Accidental abrasion resistance
- Good UV resistance
- Does not transmit hose noise



### ASSEMBLY

► **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

### ► Hoses for your low-pressure applications / References

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m)    | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|------------|---------------------|
| BI 08     | 08      | 8.5 x 12                  | 110                  | Contact us | 48                  |
| BI 10     | 10      | 9.5 x 14                  |                      |            | 60                  |
| BI 12     | 12      | 12 x 18                   | 90                   |            | 72                  |
| BI 15     | 15      | 15 x 22                   | 80                   |            | 88                  |
| BI 20     | 20      | 20 x 28                   | 60                   |            | 112                 |
| BI 26     | 26      | 26 x 35                   | 45                   |            | 140                 |
| BI 33     | 33      | 33 x 43                   | 40                   |            | 172                 |



# QUAL'IFT® PEXI

PEX hose with stainless steel braid DN08 to 12



## ► Composition:

- PEX tube  
(translucent cross-linked polyethylene)
- AISI 304 stainless steel braid

## ► Lengths:

See table below

## ► Roll packaging

[other types of packaging on request]

## ► Application:

- Sanitary water passage

## ► Technical data



Operating temperature  
**-15°C to +90°C peaks at +110°C**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 16                     | 20                     |



See table below



Very good chemical resistance



## KEY BENEFITS

- Excellent corrosion and ageing resistance
- **Resists household and chemical waters, acids over a wide range of concentrations and temperatures**
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Good UV resistance
- Does not transmit hose noise



## ASSEMBLY

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

- Contact us for all your specific requirements

## ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m)    | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|------------|---------------------|
| PEXI 08   | 08      | 8 x 12.3                  | 110                  | Contact us | 35                  |
| PEXI 10   | 10      | 9.9 x 14                  |                      |            | 50                  |
| PEXI 12   | 12      | 12.7 x 17                 | 90                   |            | 65                  |



# QUAL'IFT® NI

## Nitrile hose with stainless steel braid DN06 to 33



### ► Composition:

- Nitrile NBR tube
- AISI 304 stainless steel braid with blue or yellow edging (other edging colours on request MOQ on request)

### ► Lengths:

See table below

#### Roll packaging

(other types of packaging on request)

### ► Application:

- Transport of fuel oil, diesel, oils and greases, compressed air, natural gas, LPG, etc.

### ► Technical data



Operating temperature  
**-15°C to +90°C peaks at +110°C**



| DN             | Nom. pressure (in bar) | Max. Pressure (in bar) |
|----------------|------------------------|------------------------|
| 06, 08, 10, 12 | 16                     | 20                     |
| 15, 20         | 10                     | 16                     |
| 26, 33         | 6                      | 6                      |



See table below



Excellent resistance to hydrocarbons



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- **Excellent resistance to hydrocarbons**
- Absorbs expansion and water hammer
- Accidental abrasion and alternating stress resistance
- Good UV resistance
- Does not transmit hose noise



### ASSEMBLY

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

### ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m)    | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|------------|---------------------|
| NI 06     | 06      | 5.5 x 10                  | 110                  | 25         | 40                  |
| NI 08     | 08      | 7.5 x 12                  |                      |            | 48                  |
| NI 10     | 10      | 9.5 x 14                  |                      |            | 60                  |
| NI 12     | 12      | 12 x 18                   | 90                   | 25         | 72                  |
| NI 15     | 15      | 15 x 22                   | 80                   | 25         | 88                  |
| NI 20     | 20      | 20 x 28                   | 60                   | 25         | 112                 |
| NI 26     | 26      | 26 x 35                   | 45                   | 25         | 140                 |
| NI 33     | 33      | 33 x 43                   | 40                   | Contact us | 172                 |



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# QUAL'IFT® SI

## Silicone hose with stainless steel braid DN08 to 33



### ► Composition:

- Silicone tube (food grade) - translucent
- AISI 304 stainless steel braid

### ► Lengths:

See table below

### Roll packaging

(other types of packaging on request)

### ► Application:

- Transport of food liquids, alcohols, acids, steam

### ► Technical data



Operating temperature  
**-60°C to +180°C peaks at +200°C**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 16                     | 20                     |
| 15, 20, 25 | 10                     | 16                     |
| 33         | 6                      | 6                      |



See table below



Great flexibility



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- **High flexibility**
- **Resistant to high temperatures**
- Absorbs expansion and water hammer
- **Excellent abrasion resistance**
- Good resistance to aggressive fluids, alcohols and acids

- Does not transmit hose noise
- Good UV resistance

\*Tube material FDA 21 CFR approved  
177.2600, European Regulation 1935/2004,  
European Pharmacopoeia section 3.1.9



### ASSEMBLY

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

### ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m) | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|---------|---------------------|
| SI 08     | 08      | 8 x 12.8                  | 110                  | 25      | 48                  |
| SI 10     | 10      | 10 x 14.8                 |                      |         | 60                  |
| SI 12     | 12      | 12 x 17.8                 | 90                   |         | 72                  |
| SI 15     | 15      | 15 x 21.8                 | 80                   |         | 88                  |
| SI 20     | 20      | 20 x 28                   | 60                   |         | 112                 |
| SI 26     | 25      | 25 x 33                   | 45                   |         | 140                 |



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# QUAL'IFT® EIC

## EPDM hose with stainless steel braid and PVC coating DN10 to 12



### ► Composition:

- EPDM tube according to EN 681-1 type WB
- AISI 304 stainless steel braid
- Crystal PVC coating

### ► Lengths:

See table below

### Roll packaging

(other types of packaging on request)

### ► Application:

- Pressurised water transport for cleaning in the public sector, hospitals and the food industry

### ► Technical data



Operating temperature  
**-15°C to +60°C**



Max operating pressure  
**16 Bar**



See table below



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- Easy maintenance
- Excellent abrasion resistance
- Absorbs expansion and water hammer
- Good UV resistance
- Does not transmit hose noise



### ASSEMBLY

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

### ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m) | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|---------|---------------------|
| EIC 10    | 10      | 9.5 x 16                  | 110                  | 25      | 60                  |
| EIC 12    | 12      | 12 x 20                   | 90                   |         | 72                  |



# TUBOL<sup>®</sup> NGP

Nitrile hose with galvanised steel braid and PVC coating DN10 to 15



## ► Composition:

- Nitrile tube
- Galvanized steel braid
- Crystal PVC coating

## ► Lengths:

See table below

## ► Roll packaging

(other types of packaging on request)

## ► Application:

- Transport of air or lubricants under Pressure

## ► Technical data



Operating temperature  
**-20°C to +70°C**



See table below



See table below



## KEY BENEFITS

- Excellent corrosion and ageing resistance
- High flexibility
- Good resistance to oils and gases
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Good UV resistance
- Does not transmit hose noise



## ASSEMBLY

- **QUAL'IFT<sup>®</sup>** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

- Contact us for all your specific requirements

## ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN (mm) | Diameter int. x ext. (mm) | Max operating pressure (Bar) | Burst pressure (Bar) | MOQ (m) | Bending radius (mm) |
|-----------|---------|---------------------------|------------------------------|----------------------|---------|---------------------|
| NGP 10    | 10      | 10 x 14.8                 | 35                           | 106                  | 50      | 60                  |
| NGP 12    | 12      | 12 x 17.8                 | 27                           | 81                   | 50      | 72                  |
| NGP 15    | 15      | 15 x 21.8                 | 26                           | 78                   | 25      | 88                  |



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# QUAL'IFT® ET

## EPDM hose with polyester braid DN08 to 50



### ► Composition:

- EPDM tube according to EN 681-1 type WB
- Stiff polyester braid

### ► Lengths:

See table below

### Roll packaging

(other types of packaging on request)

### ► Application:

- Water passage for sanitary, heating and air conditioning (max glycol content : 40%)
- Aqueous solutions

### ► Technical data



Operating temperature  
**-15°C to +90°C peaks at +110°C**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 16                     | 20                     |
| 15, 20, 26 | 10                     | 16                     |
| 33, 40, 50 | 6                      | 6                      |



See table below



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Does not transmit hose noise



### ASSEMBLY

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

### ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m)    | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|------------|---------------------|
| ET 08     | 08      | 8.5 x 12                  | 110                  | 25         | 48                  |
| ET 10     | 10      | 9.5 x 14                  |                      |            | 60                  |
| ET 12     | 12      | 12 x 18                   | 90                   | 25         | 72                  |
| ET 15     | 15      | 15 x 22                   | 80                   | 25         | 88                  |
| ET 20     | 20      | 20 x 28                   | 60                   | 20         | 112                 |
| ET 26     | 26      | 26 x 35                   | 45                   | 30         | 140                 |
| ET 33     | 33      | 33 x 43                   | 40                   | 20         | 172                 |
| ET 40     | 40      | 40 x 50                   | 30                   | Contact us | 392                 |
| ET 50     | 50      | 50 x 63                   |                      |            | 488                 |



# QUAL'IFT® ETV

## EPDM hose with polyester / glass fibre braid DN10 to 20



### ► Composition:

- EPDM tube according to EN 681-1 type WB
- Polyester / fibreglass braid

### ► Lengths:

See table below

### Roll packaging

(other types of packaging on request)

### ► Application:

- Water passage for sanitary, heating and air conditioning (max glycol content : 40%)
- Aqueous solutions

### ► Technical data



Operating temperature  
**-15°C to +90°C peaks at +110°C**



Max operating pressure  
**16 Bar (DN10)**  
**10 Bar (DN15)**  
**6 Bar (DN20)**



See table below



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- **Withstands accidental heating**
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Good UV resistance
- Does not transmit hose noise



### ASSEMBLY

► **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

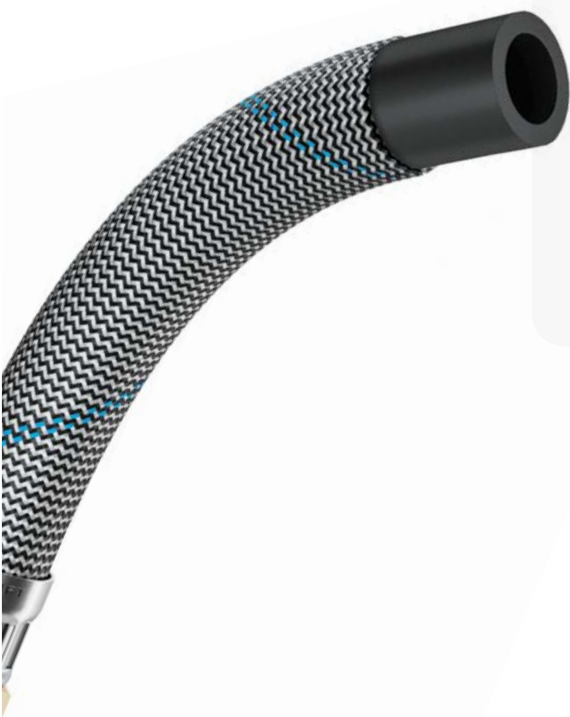
### ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN<br>(mm) | Diameter int. x ext.<br>(mm) | Burst pressure<br>(Bar) | MOQ<br>(m) | Bending radius<br>(mm) |
|-----------|------------|------------------------------|-------------------------|------------|------------------------|
| ETV 10    | 10         | 9.5 x 14                     | 110                     | Contact us | 60                     |
| ETV 15    | 15         | 15 x 22                      | 80                      |            | 88                     |
| ETV 20    | 20         | 20 x 28                      | 60                      |            | 112                    |



# QUAL'IFT® BT

## Butyl hose with polyester braid DN08 to 26



### ► Composition:

- Combined EPDM / butyl tube
- Stiff polyester braid with double blue edging

### ► Lengths:

See table below

#### Roll packaging

(other types of packaging on request)

### ► Application:

- Water passage for sanitary, heating and air conditioning (max glycol content : 40%)
- Aqueous solutions

### ► Technical data



Operating temperature  
**-15°C to +90°C peaks at +110°C**



| DN         | Nom. pressure (in bar) | Max. Pressure (in bar) |
|------------|------------------------|------------------------|
| 08, 10, 12 | 16                     | 20                     |
| 15, 20, 26 | 10                     | 16                     |



See table below



Oxygen barrier according to DIN 4726 preventing the formation of sludge, micro-organisms and algae



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- **Oxygen impermeability (according to DIN 4726)**
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Good UV resistance
- Does not transmit hose noise



### ASSEMBLY

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

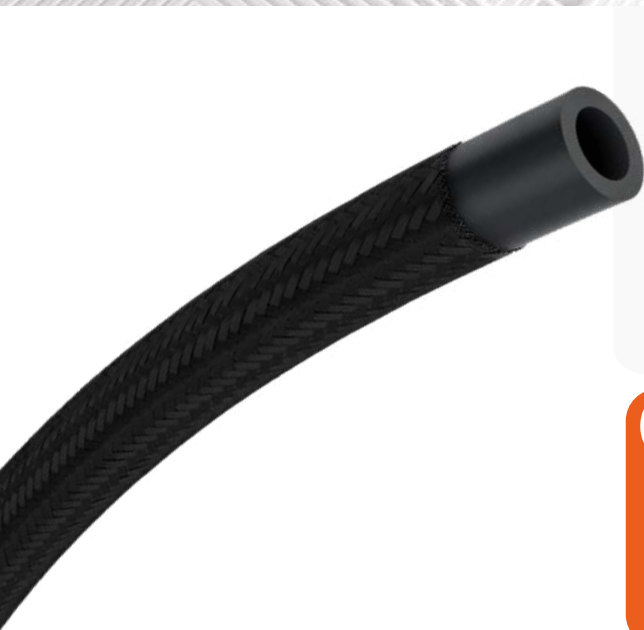
### ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN (mm) | Diameter int. x ext. (mm) | Burst pressure (Bar) | MOQ (m)    | Bending radius (mm) |
|-----------|---------|---------------------------|----------------------|------------|---------------------|
| BT 08     | 08      | 8.5 x 12                  | 110                  | Contact us | 48                  |
| BT 10     | 10      | 9.5 x 14                  |                      |            | 60                  |
| BT 12     | 12      | 12 x 18                   | 90                   |            | 72                  |
| BT 15     | 15      | 15 x 22                   | 80                   |            | 88                  |
| BT 20     | 20      | 20 x 28                   | 60                   |            | 112                 |
| BT 26     | 26      | 26 x 35                   | 45                   |            | 140                 |



# QUAL'IFT® EP

## EPDM hose with polyethylene monofilament braid DN08



### ► Composition:

- EPDM tube according to EN 681-1 type WB
- Monofilament polyethylene braid
- Standard colours: black or white

### ► Lengths:

See table below

### Roll packaging

(other types of packaging on request)

### ► Application:

- Water passage for sanitary, shower connection and hydrotherapy nozzles

### ► Technical data



Operating temperature  
**-10°C to +80°C**



Max operating pressure  
**10 Bar**



See table below



### KEY BENEFITS

- Excellent corrosion and ageing resistance
- **Withstands accidental heating**
- Absorbs expansion and water hammer
- Accidental abrasion resistance
- Good UV resistance
- Does not transmit hose noise



### ASSEMBLY

- **QUAL'IFT®** hoses must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

- Contact us for all your specific requirements

### ► Hoses for your low-pressure applications / References & Compositions

| Reference | DN<br>(mm) | Diameter int. x ext.<br>(mm) | MOQ<br>(m) | Bending radius<br>(mm) |
|-----------|------------|------------------------------|------------|------------------------|
| EP 08     | 08         | 8 x 12                       | Contact us | 48                     |



# BUSHINGS

- ▶ Stainless steel or aluminium crimping bushings
  - DI, DA bushing – Low-pressure crimp

Pages

**Data  
sheets**

68

**FT701**



## Bushings DI, DA

### Low-pressure crimping



#### ► Composition:

- 304 L stainless steel (DN06 to 33)
- Aluminium (DN40 and 50)  
(other materials on request)

#### ► Application:

- All low-pressure applications



### ASSEMBLY

► IFT bushings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"

#### ► Bushings for your low-pressure applications / References & Compositions

| DN<br>(mm) | Reference | Compatibility                |
|------------|-----------|------------------------------|
| 06         | DI06A     | QUALI'FT® NI06               |
|            | DI06B     |                              |
| 08         | DI08A     | All QUALI'FT® standard hoses |
| 10         | DI10C     |                              |
|            | DI10N     | QUALI'FT® EIC10              |
| 12         | DI12B     | All QUALI'FT® standard hoses |
|            | DI12N     | QUALI'FT® EIC12              |
| 15         | DI15N     | All QUALI'FT® standard hoses |
| 20         | DI20B     |                              |
| 26         | DI26N     |                              |
| 33         | DI33B     |                              |
| 40         | DA40A     |                              |
| 50         | DA50B     |                              |



# FITTINGS

|                                                                | Pages | Data sheets  |
|----------------------------------------------------------------|-------|--------------|
| ► Female fittings                                              |       |              |
| • P fitting - Female with flat seat                            | 70    | <b>FT801</b> |
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| • P-Shower fitting - Female knurled cylindrical nut            | 72    | <b>FT803</b> |
| ► Male fittings                                                |       |              |
| • M fitting - Fixed male cylindrical                           | 73    | <b>FT811</b> |
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| ► Union fittings                                               |       |              |
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| ► Quick-Connect Fittings                                       |       |              |
| • RR fitting - Quick-connect straight                          | 83    | <b>FT851</b> |
| • RRC fitting - Quick-connect angled                           | 84    | <b>FT852</b> |
| ► Gaskets                                                      | 85    | <b>FT861</b> |



# P fitting

## Female with flat seat



### ► Composition:

- Brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

P fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

### ► Sealing:

Flat gasket on flat seat

### ► Application:

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Without integrated gasket |          |                     |                     |         |         |        |      |
|---------------------------|----------|---------------------|---------------------|---------|---------|--------|------|
| Reference                 | For hose | Material            |                     | Thread  |         | Diam.  |      |
|                           | DN (mm)  | Hose connection     | Nut                 | mm      | thumb   | mm     |      |
| P080LAENI                 | 08       | Brass               | Nickel-plated brass | 8 x 13  | 1/4"    | 6.2    |      |
| P081LAENI                 |          |                     |                     | 12 x 17 | 3/8"    |        |      |
| P082LAENI                 |          |                     |                     | 15 x 21 | 1/2"    |        |      |
| P101LAENI                 | 10       |                     |                     | 12 x 17 | 3/8"    | 7      |      |
| P102LAENI                 |          |                     |                     | 15 x 21 | 1/2"    |        |      |
| P104LAENI                 |          |                     |                     | 20 x 27 | 3/4"    |        |      |
| P121LAENI                 | 12       |                     |                     | 12 x 17 | 3/8"    | 9.5    |      |
| P122LAENI                 |          |                     |                     | 15 x 21 | 1/2"    |        |      |
| P124LAENI                 |          |                     |                     | 20 x 27 | 3/4"    |        |      |
| P152LAELA                 | 15       |                     | Brass               | Brass   | 15 x 21 | 1/2"   | 12.5 |
| P154LAELA                 |          |                     |                     |         | 20 x 27 | 3/4"   |      |
| P155LAELA                 |          |                     |                     |         | 26 x 34 | 1"     |      |
| P204LAELA                 | 20       |                     |                     |         | 20 x 27 | 3/4"   | 17   |
| P205LAELA                 |          |                     |                     |         | 26 x 34 | 1"     |      |
| P265LAELA                 | 26       |                     |                     |         | 26 x 34 | 1"     | 22   |
| P266LAELA                 |          |                     |                     |         | 33 x 42 | 1" 1/4 |      |
| P336LAELA                 | 33       | Brass               | Brass               | 33 x 42 | 1"1/4   | 28     |      |
| P337NIELA                 |          | Nickel-plated brass |                     | 40 x 49 | 1"1/2   |        |      |
| P407LAELA                 | 40       | Brass               |                     | 40 x 49 | 1"1/2   | 34.5   |      |
| P508LAELA                 | 50       |                     |                     | 50 x 60 | 2"      | 44     |      |

| With integrated gasket |          |                 |                     |         |       |       |
|------------------------|----------|-----------------|---------------------|---------|-------|-------|
| Reference              | For hose | Material        |                     | Thread  |       | Diam. |
|                        | DN (mm)  | Hose connection | Nut                 | mm      | thumb | mm    |
| P081LAENIJ             | 08       | Brass           | Nickel-plated brass | 12 x 17 | 3/8"  | 6.2   |
| P082LAENIJ             |          |                 |                     | 15 x 21 | 1/2"  |       |
| P084LAENIJ             |          |                 |                     | 20 x 27 | 3/4"  |       |
| P101LAENIJ             | 10       |                 |                     | 12 x 17 | 3/8"  | 7     |
| P102LAENIJ             |          |                 |                     | 15 x 21 | 1/2"  |       |
| P104LAENIJ             |          |                 |                     | 20 x 27 | 3/4"  |       |
| P122LAENIJ             | 12       |                 |                     | 15 x 21 | 1/2"  | 9.5   |
| P124LAENIJ             |          |                 |                     | 20 x 27 | 3/4"  |       |



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# PSM fitting

## Female with spherical-tapered seat



### ► Composition:

- Brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

PSM fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

### ► Sealing:

Metal / Metal

### ► Application:

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Without integrated gasket |          |          |         |       |       | With integrated gasket |          |          |         |       |       |
|---------------------------|----------|----------|---------|-------|-------|------------------------|----------|----------|---------|-------|-------|
| Reference                 | For hose |          | Thread  |       | Diam. | Reference              | For hose |          | Thread  |       | Diam. |
|                           | DN (mm)  | Material | mm      | thumb | mm    |                        | DN (mm)  | Material | mm      | thumb | mm    |
| PSM060LAELA               | 06       | Brass    | 8 x 13  | 1/4"  | 4.8   | PSM154LAELAJ           | 15       | Brass    | 20 x 27 | 3/4"  | 12.5  |
| PSM061LAELA               |          |          | 12 x 17 | 3/8"  |       |                        |          |          |         |       |       |
| PSM080LAELA               | 08       |          | 8 x 13  | 1/4"  | 6.2   |                        |          |          |         |       |       |
| PSM081LAELA               |          |          | 12 x 17 | 3/8"  |       |                        |          |          |         |       |       |
| PSM101LAELA               | 10       |          | 12 x 17 | 3/8"  | 7     |                        |          |          |         |       |       |
| PSM102LAELA               |          |          | 15 x 21 | 1/2"  |       |                        |          |          |         |       |       |
| PSM121LAELA               | 12       |          | 12 x 17 | 3/8"  | 9.5   |                        |          |          |         |       |       |
| PSM122LAELA               |          |          | 15 x 21 | 1/2"  |       |                        |          |          |         |       |       |
| PSM124LAELA               |          |          | 20 x 27 | 3/4"  |       |                        |          |          |         |       |       |
| PSM152LAELA               | 15       |          | 15 x 21 | 1/2"  | 12.5  |                        |          |          |         |       |       |
| PSM204LAELA               | 20       |          | 20 x 27 | 3/4"  | 17    |                        |          |          |         |       |       |
| PSM205LAELA               |          |          | 26 x 34 | 1"    |       |                        |          |          |         |       |       |
| PSM265LAELA               | 26       |          | 26 x 34 | 1"    | 22    |                        |          |          |         |       |       |
| PSM336LAELA               | 33       |          | 33 x 42 | 1"1/4 | 29    |                        |          |          |         |       |       |
| PSM407LAELA               | 40       |          | 40 x 49 | 1"1/2 | 34.5  |                        |          |          |         |       |       |



# P-Shower fitting

## Female knurled cylindrical nut



### ► Composition:

- Brass
- Gas thread according to ISO 228

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

P fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

### ► Sealing:

Flat gasket on flat seat

### ► Application:

Water passage for sanitary applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference       | For hose | Material        |                     | Thread  |       | Diameter |
|-----------------|----------|-----------------|---------------------|---------|-------|----------|
|                 | DN (mm)  | Hose connection | Nut                 | mm      | thumb | mm       |
| P082LAENI - MOL | 08       | Brass           | Nickel-plated brass | 15 x 21 | 1/2"  | 62       |
| P102LAENI - MOL | 10       |                 |                     |         |       | 70       |



# M fitting

## Male fixed cylindrical



### ► Composition:

- Brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

M fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

### ► Sealing:

Flat gasket on flat seat

### ► Application:

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference | For hose | Material            | Thread  |       | Diameter |
|-----------|----------|---------------------|---------|-------|----------|
|           | DN (mm)  |                     | mm      | thumb | mm       |
| M080NIB   | 08       | Nickel-plated brass | 8 x 13  | 1/4"  | 6.2      |
| M081NIB   |          |                     | 12 x 17 | 3/8"  |          |
| M082NIB   |          |                     | 15 x 21 | 1/2"  |          |
| M101NIB   | 10       |                     | 12 x 17 | 3/8"  | 7        |
| M102NIB   |          |                     | 15 x 21 | 1/2"  |          |
| M104NIB   |          |                     | 20 x 27 | 3/4"  |          |
| M121NIA   | 12       |                     | 12 x 17 | 3/8"  | 9.5      |
| M122NIB   |          |                     | 15 x 21 | 1/2"  |          |
| M124NIB   |          |                     | 20 x 27 | 3/4"  |          |
| M152LAC   | 15       | Brass               | 15 x 21 | 1/2"  | 12.5     |
| M154LAC   |          |                     | 20 x 27 | 3/4"  |          |
| M202LAA   | 20       |                     | 15 x 21 | 1/2"  | 17       |
| M204LAC   |          |                     | 20 x 27 | 3/4"  |          |
| M205LAC   |          |                     | 26 x 34 | 1"    |          |
| M265LAC   | 26       |                     | 26 x 34 | 1"    | 22       |
| M266LAA   |          |                     | 33 x 42 | 1"1/4 |          |
| M336LAA   | 33       |                     | 33 x 42 | 1"1/4 | 28       |
| M337LAA   |          |                     | 40 x 49 | 1"1/2 |          |
| M407LAA   | 40       |                     | 40 x 49 | 1"1/2 | 34.5     |
| M508LAA   | 50       |                     | 50 x 60 | 2"    | 44       |



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# MC fitting

## Male fixed tapered



### ► Composition:

- Brass or nickel-plated brass
- Gas thread according to ISO 7
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

MC fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

### ► Sealing:

Flat gasket on flat seat

### ► Application:

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference | For hose | Material            | Thread  |       | Diameter |
|-----------|----------|---------------------|---------|-------|----------|
|           | DN (mm)  |                     | mm      | thumb | mm       |
| MC080LAC  | 08       | Brass               | 8 x 13  | 1/4"  | 6.2      |
| MC081LAC  |          |                     | 12 x 17 | 3/8"  |          |
| MC101NIC  | 10       | Nickel-plated brass | 12 x 17 | 3/8"  | 7        |
| MC102LAC  |          | Brass               | 15 x 21 | 1/2"  |          |
| MC121LAA  | 12       | Brass               | 12 x 17 | 3/8"  | 9.5      |
| MC122LAC  |          |                     | 15 x 21 | 1/2"  |          |
| MC152LAC  | 15       |                     | 15 x 21 | 1/2"  | 12.5     |
| MC154LAC  |          |                     | 20 x 27 | 3/4"  |          |
| MC204LAC  | 20       |                     | 20 x 27 | 3/4"  | 17       |
| MC205LAC  |          |                     | 26 x 34 | 1"    |          |
| MC265LAC  | 26       |                     | 26 x 34 | 1"    | 22       |
| MC336LAA  | 33       |                     | 33 x 42 | 1"1/4 | 28       |
| MC407LAA  | 40       |                     | 40 x 49 | 1"1/2 | 34.5     |
| MC508LAA  | 50       |                     | 50 x 60 | 2     | 44       |



## MR fitting

### Male metric tap



#### ► Composition:

- Nickel-plated brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

#### ► Packaging:

- In bags
- Other packaging types on request

#### ► Assembly:

MR fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

#### ► Sealing:

Integrated O-ring

#### ► Application:

All low-pressure applications



### ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

► Contact us for all your specific requirements

#### ► Fittings for your low-pressure applications / References & Compositions

| Reference   | For hose | Material            | Thread   | Length | Diameter |
|-------------|----------|---------------------|----------|--------|----------|
|             | DN (mm)  |                     | mm       |        | mm       |
| M0810X1NI18 | 08       | Nickel-plated brass | 10 x 100 | Short  | 6.2      |
| M0810X1NI46 |          |                     |          | Long   |          |
| M0811X1NI18 |          |                     | 11 x 100 | Short  |          |
| M0812X1NI20 |          |                     | 12 x 100 | Short  |          |
| M0812X1NI46 |          |                     |          | Long   |          |
| M0815X1NIB  |          |                     | 15 x 100 | Short  |          |



## MB fitting

### Dual-taper for copper tube



#### ► Composition:

- Nickel-plated brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

#### ► Packaging:

- In bags
- Other packaging types on request

#### ► Assembly:

MB fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

#### ► Sealing:

Metal / Metal

#### ► Application:

All low-pressure applications



### ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

► Contact us for all your specific requirements

#### ► Fittings for your low-pressure applications / References & Compositions

| Reference   | For hose | Material            | Thread  |        | Diameter (copper tube) | Diam. |
|-------------|----------|---------------------|---------|--------|------------------------|-------|
|             | DN (mm)  |                     | mm      | inches | mm                     | mm    |
| MB081NIB010 | 08       | Nickel-plated brass | 12 x 17 | 3/8"   | 10                     | 62    |
| MB081NIB012 |          |                     |         |        | 12                     |       |
| MB082NIB014 |          |                     | 15 x 21 | 1/2"   | 14                     |       |



# RCP fitting

## Female angled 90° with flat seat



### ► Composition:

- Brass or nickel-plated brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

RCP fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

### ► Sealing:

Flat gasket on flat seat

### ► Application:

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Without integrated gasket |          |                      |                     |                     |         |       |      |
|---------------------------|----------|----------------------|---------------------|---------------------|---------|-------|------|
| Reference                 | For hose | Material             |                     | Thread              |         | Diam. |      |
|                           | DN (mm)  | Hose connection      | Nut                 | mm                  | inches  | mm    |      |
| RCP080NIENI               | 08       | Nickel-plated brass  | Nickel-plated brass | 8 x 13              | 1/4"    | 6.2   |      |
| RCP081NIENI               |          |                      |                     | 12 x 17             | 3/8"    |       |      |
| RCP082NIENI               |          |                      |                     | 15 x 21             | 1/2"    |       |      |
| RCP101NIENI               | 10       |                      |                     | 12 x 17             | 3/8"    | 7     |      |
| RCP102NIENI               |          |                      |                     | 15 x 21             | 1/2"    |       |      |
| RCP104NIENI               |          |                      |                     | 20 x 27             | 3/4"    |       |      |
| RCP122NIENI               | 12       |                      |                     | 15 x 21             | 1/2"    | 9.5   |      |
| RCP124NIENI               |          |                      |                     | 20 x 27             | 3/4"    |       |      |
| RCP152LAELA               | 15       | Brass                | Brass               | 15 x 21             | 1/2"    | 12.5  |      |
| RCP154LAELA               |          |                      |                     | 20 x 27             | 3/4"    |       |      |
| RCP204CNELA               | 20       | Nickel-plated copper |                     | 20 x 27             | 3/4"    | 17    |      |
| RCP205CNELA               |          |                      |                     | 26 x 34             | 1"      |       |      |
| RCP265CNELA               |          |                      |                     | 26                  | 26 x 34 | 1"    | 22   |
| RCP336NIENI               | 33       | Nickel-plated brass  |                     | Nickel-plated brass | 33 x 42 | 1"1/4 | 28   |
| RCP407NIENI               | 40       |                      |                     |                     | 40 x 49 | 1"1/2 | 34.5 |

| With integrated gasket |          |                     |                     |         |        |      |
|------------------------|----------|---------------------|---------------------|---------|--------|------|
| Reference              | For hose | Material            |                     | Thread  |        | Diam |
|                        | DN (mm)  | Hose connection     | Nut                 | mm      | inches | mm   |
| RCP080NIENIJ           | 08       | Nickel-plated brass | Nickel-plated brass | 8 x 13  | 1/4"   | 6.2  |
| RCP081NIENIJ           |          |                     |                     | 12 x 17 | 3/8"   |      |
| RCP082NIENIJ           |          |                     |                     | 15 x 21 | 1/2"   |      |
| RCP101NIENIJ           | 10       |                     |                     | 12 x 17 | 3/8"   | 7    |
| RCP102NIENIJ           |          |                     |                     | 15 x 21 | 1/2"   |      |
| RCP104NIENIJ           |          |                     |                     | 20 x 27 | 3/4"   |      |
| RCP122NIENIJ           | 12       |                     |                     | 15 x 21 | 1/2"   | 9.5  |
| RCP124NIENIJ           |          |                     |                     | 20 x 27 | 3/4"   |      |



# RCPS fitting

Female angled 90° with spherical-tapered seat



## ► Composition:

- Brass or nickel-plated brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

## ► Packaging:

- In bags
- Other packaging types on request

## ► Assembly:

RCPS fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

## ► Sealing:

Metal / Metal

## ► Application:

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

## ► Fittings for your low-pressure applications / References & Compositions

| Without integrated gasket |          |                     |                     |         |        |       |
|---------------------------|----------|---------------------|---------------------|---------|--------|-------|
| Reference                 | For hose | Material            |                     | Thread  |        | Diam. |
|                           | DN (mm)  | Hose connection     | Nut                 | mm      | inches | mm    |
| RCPS080NIENI              | 08       | Nickel-plated brass | Nickel-plated brass | 8 x 13  | 1/4"   | 6.2   |
| RCPS081NIENI              |          |                     |                     | 12 x 17 | 3/8"   |       |
| RCPS152LAELA              | 15       | Brass               | Brass               | 15 x 21 | 1/2"   | 12.5  |
| RCPS204LAELA              | 20       |                     |                     | 20 x 27 | 3/4"   | 17    |

| With integrated gasket |          |                 |       |         |        |       |
|------------------------|----------|-----------------|-------|---------|--------|-------|
| Reference              | For hose | Material        |       | Thread  |        | Diam. |
|                        | DN (mm)  | Hose connection | Nut   | mm      | inches | mm    |
| RCPS154LAELAJ          | 15       | Brass           | Brass | 20 x 27 | 3/4"   | 12.5  |



# UMM fitting

## Male-Male Union with flat seat



### ► Composition:

- Brass
- A gas thread according to ISO 228
- B gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

UMM fittings can be used with flat-seat female fittings: P and RCP

### ► Sealing:

Flat gasket on flat seat

### ► Application:

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference | Material | A thread |        | B thread |        |
|-----------|----------|----------|--------|----------|--------|
|           |          | mm       | inches | mm       | inches |
| UMM0LAG   | Brass    | 8 x 13   | 1/4"   | 8 x 13   | 1/4"   |
| UMM10LAG  |          | 12 x 17  | 3/8"   |          | 1/4"   |
| UMM1LAG   |          | 12 x 17  | 3/8"   | 12 x 17  | 3/8"   |
| UMM21LAG  |          | 15 x 21  | 1/2"   |          | 3/8"   |
| UMM2LAG   |          | 15 x 21  | 1/2"   | 15 x 21  | 1/2"   |
| UMM42LAG  |          | 20 x 27  | 3/4"   |          | 1/2"   |
| UMM4LAG   |          | 20 x 27  | 3/4"   | 20 x 27  | 3/4"   |
| UMM52LAG  |          | 26 x 34  | 1"     | 15 x 21  | 1/2"   |
| UMM54LAG  |          | 26 x 34  | 1"     | 20 x 27  | 3/4"   |
| UMM5LAG   |          | 26 x 34  | 1"     | 26 x 34  | 1"     |
| UMM65LAG  |          | 33 x 42  | 1" 1/4 |          | 1"     |
| UMM6LAG   |          | 33 x 42  | 1" 1/4 | 33 x 42  | 1" 1/4 |
| UMM76LAG  |          | 40 x 49  | 1" 1/2 |          | 1" 1/4 |
| UMM7LAG   |          | 40 x 49  | 1" 1/2 | 40 x 49  | 1" 1/2 |
| UMM87LAG  |          | 50 x 60  | 2"     |          | 1" 1/2 |
| UMM8LAG   |          | 50 x 60  | 2"     | 50 x 60  | 2"     |



# UMF fitting

## Male-Female Flat-seat union



### ► Composition:

- Brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

UMF fittings can be used with flat-seat fittings: P, M, MC and RCP

### ► Sealing:

Flat gasket on flat seat

### ► Application:

All low-pressure applications



## ASSEMBLY

► **IFT** fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference | Material | Male thread |        | Female thread |        |
|-----------|----------|-------------|--------|---------------|--------|
|           |          | mm          | inches | mm            | inches |
| UMF01LAG  | Brass    | 8 x 13      | 1/4"   | 12 x 17       | 3/8"   |
| UMF0LAG   |          |             |        | 8 x 13        | 1/4"   |
| UMF10LAG  |          | 12 x 17     | 3/8"   | 8 x 13        | 1/4"   |
| UMF12LAG  |          |             |        | 15 x 21       | 1/2"   |
| UMF1LAG   |          |             |        | 12 x 17       | 3/8"   |
| UMF21LAG  |          | 15 x 21     | 1/2"   | 12 x 17       | 3/8"   |
| UMF24LAG  |          |             |        | 20 x 27       | 3/4"   |
| UMF2LAG   |          |             |        | 15 x 21       | 1/2"   |
| UMF42LAG  |          | 20 x 27     | 3/4"   | 15 x 21       | 1/2"   |
| UMF45LAG  |          |             |        | 26 x 34       | 1"     |
| UMF46LAG  |          |             |        | 33 x 42       | 1 1/4" |
| UMF4LAG   |          |             |        | 20 x 27       | 3/4"   |
| UMF54LAG  |          | 26 x 34     | 1"     | 20 x 27       | 3/4"   |
| UMF56LAG  |          |             |        | 33 x 42       | 1 1/4" |
| UMF5LAG   |          |             |        | 26 x 34       | 1"     |
| UMF64LAG  |          | 33 x 42     | 1 1/4" | 20 x 27       | 3/4"   |
| UMF65LAG  |          |             |        | 26 x 34       | 1"     |
| UMF67LAG  |          |             |        | 40 x 49       | 1 1/2" |
| UMF6LAG   |          |             |        | 33 x 42       | 1 1/4" |
| UMF75LAG  |          | 40 x 49     | 1 1/2" | 26 x 34       | 1"     |
| UMF76LAG  |          |             |        | 33 x 42       | 1 1/4" |
| UMF78LAG  |          |             |        | 50 x 60       | 2"     |
| UMF7LAG   |          |             |        | 40 x 49       | 1 1/2" |
| UMF87LAG  |          | 50 x 60     | 2"     | 40 x 49       | 1 1/2" |
| UMF8LAG   |          |             |        | 50 x 60       | 2"     |

**IFT**  
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# UMSM fitting

## Male Male union with spherical-tapered seat



### ► Composition:

- Brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

UMSM fittings can be used with spherical-tapered fittings: PSM, RCPS

### ► Sealing:

Metal / Metal (A thread)  
In the thread (B thread)

### ► Application:

All low-pressure applications



## ASSEMBLY

► **IFT** fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference | Material | Male thread |        | Male thread spherical-tapered |        |
|-----------|----------|-------------|--------|-------------------------------|--------|
|           |          | mm          | inches | mm                            | inches |
| UMSM01LAG | Brass    | 8 x 13      | 1/4"   | 12 x 17                       | 3/8"   |
| UMSM0LAG  |          |             |        | 8 x 13                        | 1/4"   |
| UMSM10LAG |          | 12 x 17     | 3/8"   | 8 x 13                        | 1/4"   |
| UMSM12LAG |          |             |        | 15 x 21                       | 1/2"   |
| UMSM1LAG  |          |             |        | 12 x 17                       | 3/8"   |
| UMSM21LAG |          | 15 x 21     | 1/2"   | 12 x 17                       | 3/8"   |
| UMSM24LAG |          |             | 1/2"   | 20 x 27                       | 3/4"   |
| UMSM2LAG  |          |             | 1/2"   | 15 x 21                       | 1/2"   |
| UMSM42LAG |          | 20 x 27     | 3/4"   | 15 x 21                       | 1/2"   |
| UMSM4LAG  |          |             | 3/4"   | 20 x 27                       | 3/4"   |
| UMSM5LAG  |          | 26 x 34     | 1"     | 26 x 34                       | 1"     |
| UMSM6LAG  |          | 33 x 42     | 1"1/4  | 33 x 42                       | 1"1/4  |
| UMSM7LAG  |          | 40 x 49     | 1"1/2  | 40 x 49                       | 1"1/2  |
| UMSM87LAG |          | 50 x 60     | 2"     | 40 x 49                       | 1"1/2  |
| UMSM8LAG  |          |             |        | 50 x 60                       | 2"     |



# UMSF fitting

Female male union with spherical-tapered seat



► **Composition:**

- Brass
- Gas thread according to ISO 228
- Other materials on request (nickel-plated brass, stainless steel, etc.)

► **Packaging:**

- In bags
- Other packaging types on request

► **Assembly:**

UMSF fittings can be used with spherical-tapered fittings: PSM, RCPS

► **Sealing:**

Metal / Metal (A thread)  
Flat gasket on flat seat (B thread)

► **Application:**

All low-pressure applications



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference | Material | Male thread<br>spherical-tapered |        | Female thread |        |
|-----------|----------|----------------------------------|--------|---------------|--------|
|           |          | mm                               | inches | mm            | inches |
| UMSF01LAG | Brass    | 8 x 13                           | 1/4"   | 12 x 17       | 3/8"   |
| UMSF0LAG  |          |                                  |        | 8 x 13        | 1/4"   |
| UMSF10LAG |          | 12 x 17                          | 3/8"   | 8 x 13        | 1/4"   |
| UMSF12LAG |          |                                  |        | 15 x 21       | 1/2"   |
| UMSF1LAG  |          |                                  |        | 12 x 17       | 3/8"   |
| UMSF21LAG |          | 15 x 21                          | 1/2"   | 12 x 17       | 3/8"   |
| UMSF24LAG |          |                                  |        | 20 x 27       | 3/4"   |
| UMSF2LAG  |          |                                  |        | 15 x 21       | 1/2"   |
| UMSF42LAG |          | 20 x 27                          | 3/4"   | 15 x 21       | 1/2"   |
| UMSF4LAG  |          |                                  |        | 20 x 27       | 3/4"   |
| UMSF5LAG  |          | 26 x 34                          | 1"     | 26 x 34       | 1"     |
| UMSF6LAG  |          | 33 x 42                          | 1"1/4  | 33 x 42       | 1"1/4  |
| UMSF7LAG  |          | 40 x 49                          | 1"1/2  | 40 x 49       | 1"1/2  |



## RR fitting Quick straight



### ► Composition:

- Brass + acetal
- Other materials on request (nickel-plated brass, etc.)
- Supplied with 316 L stainless steel claw

### ► Option:

- Safety clips

### ► Packaging:

- In bags
- Other packaging types on request

### ► Assembly:

RR fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

### ► Sealing:

Integrated EPDM O-ring



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



## CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference | For hose | Material | Available (mm) |      |
|-----------|----------|----------|----------------|------|
|           | DN (mm)  |          | A              | B    |
| RR10010   | 10       | Brass    | 10             | 7    |
| RR12012   | 12       |          | 12             | 9.5  |
| RR15015   | 15       |          | 15             | 12.5 |

### ► Safety clips (OPTIONAL)/ References

| Reference | For copper tube Diameter (mm) |
|-----------|-------------------------------|
| CLIPS10   | 10                            |
| CLIPS12   | 12                            |
| CLIPS15   | 15                            |





## RRC fitting

### Quick angled



#### ► Composition:

- Brass + acetal
- Other materials on request

#### ► Option:

- Safety clips

#### ► Packaging:

- In bags
- Other packaging types on request

#### ► Assembly:

RRC fittings can be used on our QUAL'IFT® hoses (according to the indications in the table below)

#### ► Sealing:

Integrated EPDM O-ring



### ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



### CUSTOM OFFER

► Contact us for all your specific requirements

#### ► Fittings for your low-pressure applications / References & Compositions

| Reference | For hose | Material            | Available (mm) |      |
|-----------|----------|---------------------|----------------|------|
|           | DN (mm)  |                     | A              | B    |
| RR12C12   | 12       | Nickel-plated brass | 12             | 9.5  |
| RR15C15   | 15       |                     | 15             | 12.5 |

#### ► Safety clips (OPTIONAL)/ References

| Reference | For copper tube Diameter (mm) |
|-----------|-------------------------------|
| CLIPS12   | 12                            |
| CLIPS15   | 15                            |





# Gaskets

## Fibre / High-temperature fibre / EPDM



Fibre gaskets  
(JF)



High-Temperature  
fibre / Solar gaskets  
(JFHT)



EPDM gaskets  
(JCP)

### ► Composition:

- Fibre gaskets (JF)
  - > Vulcanized fibre gaskets
- High-temperature fibre gaskets / Solar (JFHT)
  - > Aramid fibre + NBR gaskets
- EPDM gaskets (JCP)
  - > EPDM Flat Gaskets

### ► Packaging:

- In bags
- Other packaging types on request



### ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"

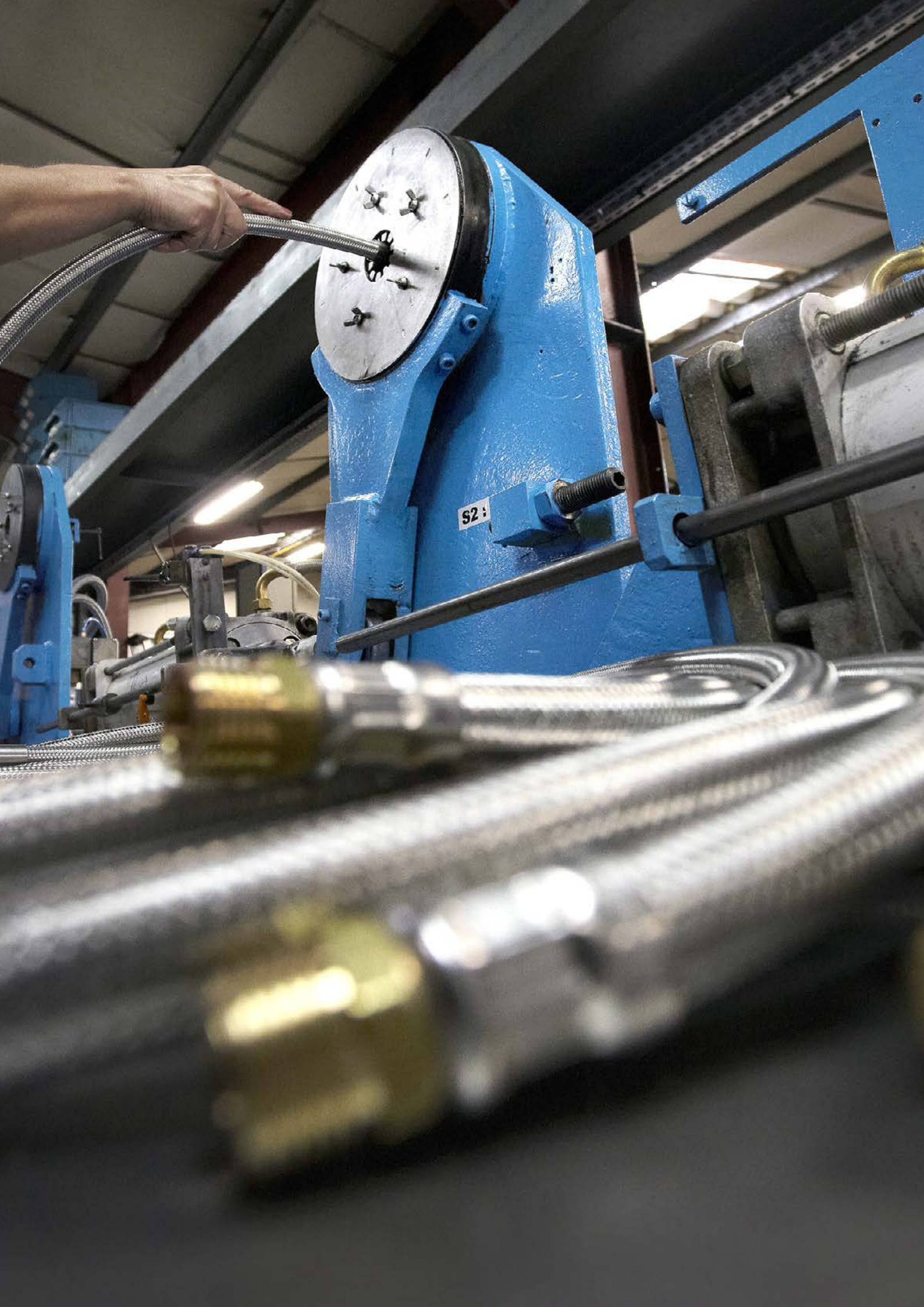


### CUSTOM OFFER

► Contact us for all your specific requirements

### ► Fittings for your low-pressure applications / References & Compositions

| Reference     |                                  |               | Dimensions |        |
|---------------|----------------------------------|---------------|------------|--------|
| JF<br>(Fibre) | JFHT<br>(High-temperature fibre) | JCP<br>(EPDM) | mm         | inches |
| JF0           | JFHT0                            | JCP0EPDM      | 8 x 13     | 1/4"   |
| JF1           | JFHT1                            | JCP1EPDM      | 12 x 17    | 3/8"   |
| JF2           | JFHT2                            | JCP2EPDM      | 15 x 21    | 1/2"   |
| JF4           | JFHT4                            | JCP4EPDM      | 20 x 27    | 3/4"   |
| JF5           | JFHT5                            | JCP5EPDM      | 26 x 34    | 1"     |
| JF6           | JFHT6                            | JCP6EPDM      | 33 x 42    | 1"1/4  |
| JF7           | JFHT7                            | JCP7EPDM      | 40 x 49    | 1"1/2  |
| JF8           | JFHT8                            | JCP8EPDM      | 50 x 60    | 2"     |





# TOOLS

- SMS10-20 manual site crimper for DN08 to 20 hoses
- K200 portable electric crimper for DN08 to 20 hoses
- K300 portable electric crimper for DN08 to 33 hoses
- M200 and M400 cutting machines

| Pages | Data sheets  |
|-------|--------------|
| 88    | <b>FT901</b> |
| 89    | <b>FT902</b> |
| 90    | <b>FT903</b> |
| 91    | <b>FT904</b> |



# SMS10-20 for DN08 to 20 hoses

## Manual site crimper

### ► Description:

- Low-pressure crimping with 6 fingers - 1 set for DN10 to 20
- Crimping of all IFT fittings on our QUAL'IFT® hoses for diameters DN08 - 10 - 13 - 15 - 20, max capacity 3/4" nut

Note: an additional set of fingers can be used to crimp DN06 hoses

### ► Specifications:

- Reliable and robust design
- Weight: approx. 20 kg
- Dimensions: L 60 x H 60 x D 15 cm

### ► Application:

Manual site press for small and medium production runs



### ASSEMBLY

- IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"



► SMS10-20 manual crimper



# K200 for DN08 to 20 hoses

## Portable electric crimper



### ► Description:

- Crimping using interchangeable jaws
- Crimping our bushings onto our QUAL'IFT® hoses for diameters DN08 to 20

Note: our crimping using an electro-portable gun is only suitable for our hoses and uses specific bushings, sealing for all other supplies (bushings and hoses) is not guaranteed

### ► Specifications:

- Quick crimping
- Automatic piston stop at the end of the crimping process
- Pivoting head to approximately 350°
- 18 V battery gun
- Linear thrust force of approximately 15 kN
- Battery charge time: 15 min
- Gun weight (without jaw) 1.7 kg

### ► Packaging:

Robust plastic case with battery and charger

### ► Application:

Automatic site crimping for small production runs



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"

### ► Jaws for K200

#### Clamp



Ref: **PK200 10-20**

#### Matrices



DN10 / Ref: **MK10**



DN13 / Ref: **MK12**



DN15 / Ref: **MK15**



DN20 / Ref: **MK20**



# K300 for DN08 to 33 hoses

## Portable electric crimper



► Jaws for K300

### ► Description:

- Crimping using interchangeable jaws
- Crimping our bushings onto our QUAL'IFT® hoses for diameters DN08 to 33

Note: our crimping using an electro-portable gun is only suitable for our hoses and uses specific bushings, sealing for all other supplies (bushings and hoses) is not guaranteed

### ► Specifications:

- Quick crimping
- Automatic piston stop at the end of the crimping process
- Pivoting head to approximately 350°
- 18 V battery gun
- Linear thrust force of approximately 32 kN
- Battery charge time: 22 min
- Weight of gun (without jaw) 3.5 kg

### ► Packaging:

Robust plastic case with battery and charger

### ► Application:

Automatic site crimping for small production runs



## ASSEMBLY

► IFT fittings must be assembled by scrupulously following the recommended rules and stages in paragraph "Recommendations for use"

### Clamp



Ref: PK300 10-20

### Matrices



DN10 / Ref: MK10



DN13 / Ref: MK12



DN15 / Ref: MK15



DN20 / Ref: MK20

### Clamp



Ref: PK300 26-33

### Matrices



Ref: MK26



Ref: MK33



## M200 & M400 Cutting machines



### ► M200

#### ► Description:

- Bevel cutting disc Diameter 200 x 1.6 x 30 mm
- Cutting hoses up to DN26

#### ► Specifications:

- Easy to transport, ideal for on-site work
- Single lever for bending and cutting the hose
- Power supply: 220 V single-phase / 50 Hz
- Maximum clearance: 50 mm
- Dimensions: L 55 x H 53 x D 43 cm
- Weight: 17 kg

#### ► Application:

Portable manual cutter for cutting low-pressure hoses, electrical cables, metal sheathing, plastic sheathing, etc.



### ► M400

#### ► Description:

- Bevel cutting disc Diameter 300 x 4 x 30 mm
- Cutting hoses up to DN40

#### ► Specifications:

- Single lever for bending and cutting the hose
- Fitted with a removable protective flap
- Direct start protected by thermal probe
- Power supply: 400 V three-phase / 50 Hz
- Maximum clearance: 65 mm
- Dimensions: L 60 x H 75 x D 52 cm
- Weight: 40 kg

#### ► Application:

Manual bench saw for cutting low-pressure hoses





# ACCESSORIES

- ▶ Insulation
- ▶ Fireproof sheath **SILITUBE® X**
- ▶ Thermal protection sheath **SILIGAINÉ® 15C3**
- ▶ Kit for keeping hoses frost-free **STOPGEL®**

Pages

**Data  
sheets**

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**FT911**

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**FT912**

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**FT913**

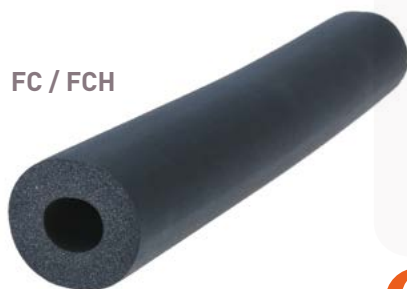
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**FT914**



# FC insulation

FC / FCH



EF (cup)

## ► Composition:

Closed-cell synthetic rubber foam (elastomer)

## ► Application:

Thermal insulation, soundproofing, vibration isolation

## ► Packaging:

In 2 m sleeves or roll

## ► Technical data



Operating temperature  
-40°C to +85°C



## KEY BENEFITS

- Asbestos-free, expansion gas-free, CFC-free
- Excellent resistance to chemical agents
- Cu and Fe corrosion: meets the requirements of DIN 1988/7
- Fire performance: Euroclass B S3D0: low flammability, self-extinguishing, does not spread fire, no droplets in the event of fire

## ► Thermal insulation and cups / References & Compositions

| Thermal insulation |                  |                |                                      | Finishing cup reference                                                                            |      |      |      |      |      |      |
|--------------------|------------------|----------------|--------------------------------------|----------------------------------------------------------------------------------------------------|------|------|------|------|------|------|
| Reference          | For DN hose (mm) | Thickness (mm) | Insulation diameter int. x ext. (mm) | EF17                                                                                               | EF22 | EF27 | EF34 | EF42 | EF54 | EF62 |
| FC18               | 12               | 9              | 18 x 36                              | •                                                                                                  |      |      |      |      |      |      |
| FC22               | 15               |                | 22 x 40                              |                                                                                                    | •    |      |      |      |      |      |
| FC28               | 20               |                | 28 x 46                              |                                                                                                    |      | •    |      |      |      |      |
| FC35               | 25               |                | 35 x 53                              |                                                                                                    |      |      | •    |      |      |      |
| FC42               | 33               |                | 42 x 60                              |                                                                                                    |      |      |      | •    |      |      |
| FC54               | 40               |                | 54 x 72                              |                                                                                                    |      |      |      |      | •    |      |
| FC62               | 50               |                | 64 x 82                              |                                                                                                    |      |      |      |      |      | •    |
| FCH14              | 10               | 13             | 15 x 41                              |                                                                                                    | •    |      |      |      |      |      |
| FCH18              | 12               |                | 18 x 44                              |                                                                                                    |      | •    |      |      |      |      |
| FCH22              | 15               |                | 22 x 48                              |                                                                                                    |      | •    |      |      |      |      |
| FCH28              | 20               |                | 28 x 54                              |                                                                                                    |      |      | •    |      |      |      |
| FCH35              | 25               |                | 35 x 61                              |                                                                                                    |      |      |      | •    |      |      |
| FCH42              | 33               |                | 42 x 68                              |                                                                                                    |      |      |      |      | •    |      |
| FCH54              | 40               |                | 54 x 80                              |                                                                                                    |      |      |      |      |      | •    |
| FCH62              | 50               |                | 64 x 90                              | Can be held in place with black adhesive protective tape on each end of the heat insulating sleeve |      |      |      |      |      |      |

► Thermal insulation and cups / References & Compositions

| Thermal insulation |                  |                |                                      | Protective cup reference                                                                              |      |      |      |      |      |      |
|--------------------|------------------|----------------|--------------------------------------|-------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|
| Reference          | For hose DN (mm) | Thickness (mm) | Insulation diameter int. x ext. (mm) | EF17                                                                                                  | EF22 | EF27 | EF34 | EF42 | EF54 | EF62 |
| FCH214             | 10               | 19             | 14 x 32                              | Can be held in place with black adhesive protective tape at each end of the thermal insulation sleeve |      |      |      |      |      |      |
| FCH218             | 12               |                | 18 x 36                              |                                                                                                       |      | •    |      |      |      |      |
| FCH222             | 15               |                | 22 x 60                              |                                                                                                       |      |      | •    |      |      |      |
| FCH228             | 20               |                | 28 x 66                              |                                                                                                       |      |      |      | •    |      |      |
| FCH235             | 25               |                | 35 x 73                              |                                                                                                       |      |      |      |      | •    |      |
| FCH242             | 33               |                | 42 x 80                              |                                                                                                       |      |      |      |      | •    | •    |
| FCH254             | 40               |                | 54 x 92                              | Can be held in place with black adhesive protective tape at each end of the thermal insulation sleeve |      |      |      |      |      |      |
| FCH262             | 50               |                | 62 x 100                             |                                                                                                       |      |      |      |      |      |      |
| FCH318             | 12               | 25             | 18 x 68                              |                                                                                                       |      |      |      |      | •    |      |
| FCH322             | 15               |                | 22 x 72                              |                                                                                                       |      |      |      |      | •    |      |
| FCH328             | 20               |                | 28 x 78                              |                                                                                                       |      |      |      |      |      | •    |
| FCH335             | 25               |                | 35 x 85                              | Can be held in place with black adhesive protective tape at each end of the thermal insulation sleeve |      |      |      |      |      |      |
| FCH342             | 33               |                | 42 x 92                              |                                                                                                       |      |      |      |      |      |      |
| FCH354             | 40               |                | 54 x 104                             |                                                                                                       |      |      |      |      |      |      |
| FCH362             | 50               |                | 62 x 112                             |                                                                                                       |      |      |      |      |      |      |



# SILITUBE® X

## Fireproof sleeving



### ► Composition:

Mineral fibre braided sheath with silicone coating, waterproof and flame-retardant

### ► Application:

Protection and insulation of bundles of water, gas, compressed air or hydraulic fluid hoses against environmental aggressions (presence of flames, splashes of molten metal or glass, episodic very high temperatures, vapour sprays, etc.)

### ► Packaging:

On request: contact us

### ► Technical data



Operating temperature  
**-60°C to +250°C**



### KEY BENEFITS

- Point flame resistance and tightness
- Excellent flexibility at low temperatures: SILITUBE® X does not harden, does not flake or soften
- Self-extinguishing-meets with test VW-1 requirements, according to standard UL 1441
- Swells slightly in the presence of hydrocarbons
- Very flexible

### ► Accessories - Sheaths / References & Compositions

| Internal diameter     | SILITUBE® X                    |                                   |
|-----------------------|--------------------------------|-----------------------------------|
| Nominal value<br>(mm) | Nominal wall thickness<br>(mm) | Approx. linear density<br>(kg/km) |
| 8                     | 4                              | 120                               |
| 10                    |                                | 140                               |
| 13                    |                                | 200                               |
| 16                    |                                | 220                               |
| 19                    |                                | 340                               |
| 22                    |                                | 360                               |
| 25                    |                                | 380                               |
| 32                    |                                | 480                               |
| 38                    |                                | 680                               |
| 45                    |                                | 720                               |
| 51                    |                                | 750                               |

Self-extinguishing – meets with test VW-1 requirements, according to standard UL 1441



# SILIGAINÉ® 15C3

## Thermal protection sleeving



### ► Composition:

Fibreglass braided sleeving  
with silicone coating

### ► Application:

Thermal protection for hoses  
and rigid or flexible piping

### ► Packaging:

In spools of 20m to 100m  
(more information in the table below)

### ► Technical data



Operating temperature  
-60°C to +250°C



### KEY BENEFITS

- Good resistance to moisture, ozone and UV radiation
- Good resistance to common chemical atmospheres
- Self-extinguishing – meets with test VW-1 requirements, according to standard UL 1441
- Very flexible
- Halogen-free

### ► Accessories - Sheaths / References & Compositions

| Internal diameter     |                   | SILIGAINÉ® 15C3                |                                   |                        |
|-----------------------|-------------------|--------------------------------|-----------------------------------|------------------------|
| Nominal value<br>(mm) | Tolerance<br>(mm) | Minimum wall thickness<br>(mm) | Approx. linear density<br>(kg/km) | Spool packaging<br>(m) |
| 8                     | +/- 0.25          | 0.40                           | 24.9                              | 100                    |
| 10                    | +/- 0.50          | 0.50                           | 33.3                              |                        |
| 12                    | +/- 0.50          |                                | 54.6                              |                        |
| 14                    | +/- 1.0           |                                | 77.2                              |                        |
| 16                    | +/- 1.0           | 0.60                           | 92.7                              | 50                     |
| 18                    | +/- 1.0           | 0.75                           | 112                               |                        |
| 20                    | +/- 1.0           |                                | 134                               |                        |
| 22                    | +/- 1.0           | 0.90                           | 158                               |                        |
| 25                    | +/- 1.0           | 0.90                           | 197                               | 25                     |
| 30                    | +/- 2.0           | 1.00                           | 267                               |                        |
| 35                    | +/- 2.0           | 1.10                           | 327                               |                        |
| 40                    | +/- 3.0           | 1.30                           | 389                               |                        |
| 45                    | +/- 4.0           | 1.50                           | 480                               | 20                     |
| 50                    | +/- 5.0           | 1.60                           | 580                               |                        |



# STOPGEL®

## Kit for keeping hoses frost-free



### ► Composition:

Frost-proof heating cable with thermostat and power plug, along with the accessories needed for installation

### ► Specifications:

- Voltage 230 V – 50 Hz
- Double insulation
- Protection class II
- Power 15 W/m
- Flat shape 5 x 7 mm for better heat transfer
- 1 m supply section at one end only
- Electrical connection plug included
- Thermostat built into end of cable

### ► Application:

STOPGEL® anti-freeze heating cords protect hoses from freezing.

### ► Packaging:

Individual packaging including:

- A STOPGEL® heating cable
- An electric tracing signal label
- A roll of adhesive tape for fixing the heating cable
- Clamps for fixing the thermostat
- Instructions for installation and assembly of the kit

### ► Technical data



Operating temperature  
-30°C to +80°C



## KEY BENEFITS

- Available in 5 lengths: 3, 5, 7, 10 and 15 metres
- Complete kit for easy installation
- Installation accessories supplied
- 2-year warranty



## CAUTION

- Cables should never be cropped to reduce the length of the cold outlets. The round, domed part of the thermostat (sensor) must be in contact with the hosework



## ► Accessories - Antifreeze heating cable / References

| STOPGEL®   |            |                 |
|------------|------------|-----------------|
| Reference  | Length (m) | Power (W ± 10%) |
| STOPGEL-03 | 3          | 45              |
| STOPGEL-05 | 5          | 75              |
| STOPGEL-07 | 7          | 105             |
| STOPGEL-10 | 10         | 150             |
| STOPGEL-15 | 15         | 225             |



# RECOMMENDATIONS FOR USE OF THE HOSES AND TECHNICAL FORM

|                                                            | Pages |
|------------------------------------------------------------|-------|
| ► General recommendations for hose use                     | 100   |
| ► Operating instructions for low-pressure crimping presses | 102   |
| ► Technical form                                           | 103   |
| ► General terms and conditions of sale                     | 110   |



## 1 Recommendations for fitting IFT hoses between 2 fixed points



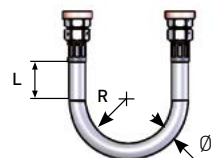
GOOD

BAD

For all assemblies, the correct length involves:

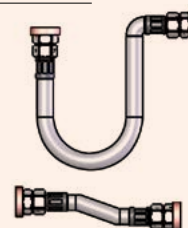
- $R \geq 6 \varnothing$  (bending radius)\*
- $L = 4$  Diameter (straight run after each end)

\* Take into account the minimum bending radius of the hose used.



The use of angled fittings improves the bending radius.

Keep to the minimum radius.



The length must be sufficient.

Any traction or tension on the end caps should be avoided.



Hoses must not be twisted.

- The fixed fitting must be fitted first.
- The hose must always be bent in the same plane.



Provide supports where the hose's own weight could have a detrimental effect.



The supports are different and appropriate for each location.



## 2 Tightening swivel nuts for gas threads

Our nuts are suitable for cylindrical threads only.

The seal, either via a gasket or metal-to-metal, is by simple locking in place with a spanner.

| Nut tapping (inches) | "   | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1  | 1"1/4 | 1"1/2 | 2  |
|----------------------|-----|-----|-----|-----|-----|-----|----|-------|-------|----|
| Max torque (in N.m)  | N.m | 10  | 20  | 25  | 25  | 40  | 50 | 60    | 60    | 70 |

Tightening with a tool that could damage the nut (multi-grip pliers - pin spanner) should be avoided. A visual check after tightening is necessary. For tap connections (M8x100, M10x100, M11x100, M12x100) max torque of 8 N.m recommended.

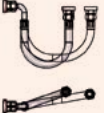
### 3 General instructions for fitting hoses

- All our hoses are inspected: however, an anomaly can always escape inspection, just as damage can occur during transport or handling.
- Also, before fitting a hose, we ask the fitter to carry out a final check. An anomalous hose (damaged fitting or braid, non-crimped/poorly crimped, oxidized or split bushing, etc.) must not be fitted under any circumstances.
- When fitting hoses, observe the minimum bending radius and avoid tensioning, pulling or twisting the hose (use 2 suitable spanners). Simple locking in place is sufficient for a gasket or metal/metal seal.
- Bushings for hoses fitted for very cold water must be stainless steel (air conditioning).
- Each hose must be fitted with at least one fitting with a swivel nut.
- Do not use the hose as an expansion coupling (when connecting fixed straight columns); in this case, use elbows and make an expansion loop after consulting us.
- Do not fit two hoses end to end.
- Do not position a hose against a rough or rough plastered wall, metal sheets or sharp-edged objects, as these could destroy the braid by friction when the taps are opened and closed.
- Our nut fittings have a cylindrical thread and are sealed at their seat (by gasket if flat seat, metal/metal if spherical-tapered seat). Adapting a male fitting or tapered thread directly to it without a union is prohibited, as is using any other type of seal: oakum, grease, etc.
- Our EPDM rubber hoses are designed exclusively for the passage of raw water or glycol solutions. In the case of water treatment, the customer must check the chemical compatibility of the components; do not use amine or mineral oil-based additives. If in doubt, contact us.
- Do not fit hoses near hot parts exceeding 100°C.
- Keep rubber and plastic hoses away from flames: blowtorches, soldering lamps, matches, etc. BEWARE OF WELDING near hoses; protect them well.
- For outdoor use (solar collectors, swimming pools, etc.) use EI (stainless steel), ETV (U.V. resistant textile) or IPO (all stainless steel) hoses if temperature >110°C.
- If the hose freezes, thaw with hot water.
- Crossings of partitions, slabs, floors must be made under a protective sheath allowing the passage of the hose equipped with its fittings. Embedding a hose in a slab or partition, even plaster, is strictly forbidden.
- All hose installations must be easily accessible, and a hose change should not take more than 15 minutes. This change must not cause any damage to the wall, partition or floor; if it does, fit in the traditional way. All hoses must be replaceable. Hoses must not be laid in the thickness of a slab without direct access to the fittings.
- All installations involving hoses must be tested at 1.5 times the operating pressure before commissioning. This pressure should be maintained for 1/2 an hour during the test.
- Beware of the risk of an iron/copper "galvanic couple": use suitable iron/iron or brass/copper fittings.
- For the construction sector, do not forget that all completed installations must be pressure-tested (in accordance with EN DTU in force).
- Sealing is the responsibility of the fitter, except for fittings with integral seals.

### 4 General transport and storage instructions

- Avoid storing hoses near an electric motor ozone source, fluorescent lamps, etc.
- Observe the bending radius on the packaging.
- If possible, leave the hoses in their original packaging before use.
- Avoid impacts.

### 5 Specific recommendations for use

| Quick fittings                                                                       |                                                                                     |                                                                                     | Expansion loop                                           |                                                                                       |                                                                                       |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                      | GOOD                                                                                | BAD                                                                                 | GOOD                                                     | BAD                                                                                   |                                                                                       |
| Deburr the copper tube                                                               |  |  | Axial load:<br>Use elbows and fit the hose in a U-shape. |  |  |
| Insert the straight tube and push it in as far as it will go into the quick fitting. |  |  |                                                          |                                                                                       |                                                                                       |
| Place the clips between the moving part and the fixed part of the fitting.           |  |  | Twist:<br>Align the fittings and hoses.                  |  |  |

Can only be fitted to copper hoses complying with standard NF EN 1057

#### N.B. :

- If the crimping is not carried out in our workshops, the company carrying out the crimping is responsible for its work and must carry out checks on samples in accordance with our crimping instructions.
- Our LP hoses are marked IFT, with the nominal diameter, the date of manufacture and, where applicable, the approval name and technical evaluation number, on the crimping bushings.



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# INSTRUCTIONS FOR USE OF LOW-PRESSURE CRIMP PRESSES



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SMS 10-20                                                                       | K200<br>K300                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>1 - Installation Low-pressure hose and fittings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                 |                                                                                 |
| <ul style="list-style-type: none"><li>▶ Use only IFT hose components, fittings and crimp bushings - otherwise consult us</li><li>▶ When fitting bushings to hoses with external braid, use adhesive tape to prevent the braid from "kinking"</li><li>▶ Assembly must be carried out without any particular effort - a lubricant suitable for the hose can be used - please consult us</li><li>▶ Crimping the fitting resting on its stop and centred on the length of the bushing</li></ul> | <ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li><li>•</li></ul> | <ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li><li>•</li></ul> |
| <b>2 - Crimp setting and action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                 |                                                                                 |
| <ul style="list-style-type: none"><li>▶ Operate the control lever to the stop of the circular ring on the barrel<br/><b>DO NOT USE AN EXTENSION</b></li><li>▶ Comprehensive instructions for use enclosed with machines</li></ul>                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"><li>•</li><li>•</li></ul>                     | <ul style="list-style-type: none"><li>•</li><li>•</li></ul>                     |
| <b>3 - Press maintenance</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                 |                                                                                 |
| <ul style="list-style-type: none"><li>▶ Verification and lubrication of crimping fingers (monthly check)</li><li>▶ Checks on moving parts (monthly check)</li></ul>                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>•</li><li>•</li></ul>                     | <ul style="list-style-type: none"><li>•</li><li>•</li></ul>                     |
| <b>4 - Checking low-pressure crimps</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                 |                                                                                 |
| <b>Visual checks:</b> <ul style="list-style-type: none"><li>• Presence of crimping</li><li>• Crimp positioning and evenness on the bushing</li><li>• Check that the braid is not twisted under the bushing</li></ul> <b>Pressure tests:</b> <ul style="list-style-type: none"><li>• Pressure tests according to DTU in force</li><li>• Test at 1.5 times maximum operating pressure on 5% of hoses (reusable samples)</li><li>• Burst tests on 1% of hoses (destructive tests)</li></ul>    |                                                                                 |                                                                                 |
| <b>5 - Warranties</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                 |                                                                                 |
| <ul style="list-style-type: none"><li>• IFT only guarantees the components if they are all supplied by IFT, but not the crimping.</li><li>• The crimping operation must be covered by your own insurance, which you should notify in advance.</li><li>• Law no. 78-12 of 04.01.78 on participation in the building process applies to this operation.</li></ul>                                                                                                                             |                                                                                 |                                                                                 |

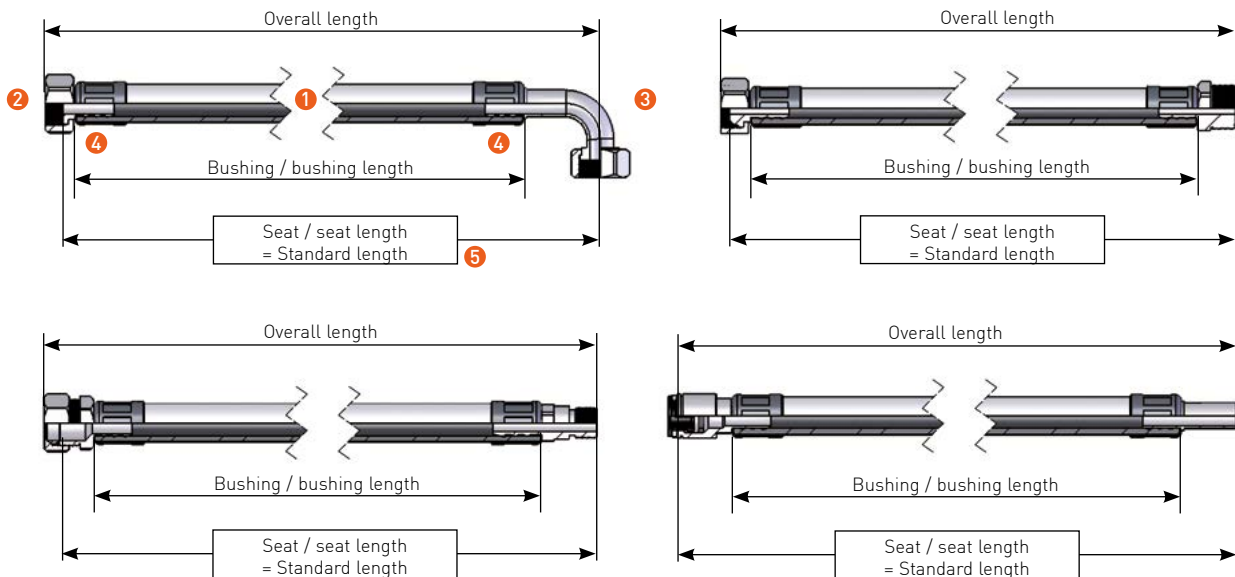


# TECHNICAL FORM

## Definition of a hose

### 1 Presentation of a hose

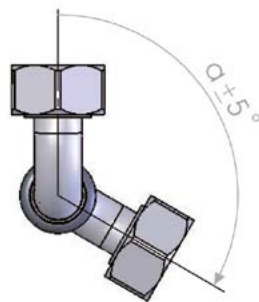
#### 1 • Length



NB: Length tolerance:  $\pm 2\%$

#### 2 • Orientation

For a hose with 2 angled end-pieces, also specify the value of the angle in the direction shown in the figure below (Q).



#### 3 - Quick IFT hose designation

See 1<sup>st</sup> diagram above, designation successively contains:

- ① The hose reference
- ② The 1<sup>st</sup> fitting reference
- ③ The 2<sup>nd</sup> fitting reference
- ④ The reference of the crimp bushings or clamping system
- ⑤ Standard hose length (unless specified)

Example:

|      |           |             |      |        |
|------|-----------|-------------|------|--------|
| ET10 | P101NIENI | RCP101NIENI | DI10 | 500 MM |
| ①    | ②         | ③           | ④    | ⑤      |



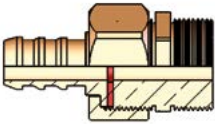
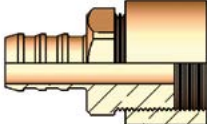
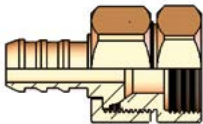
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## 2 Threads and fittings shown

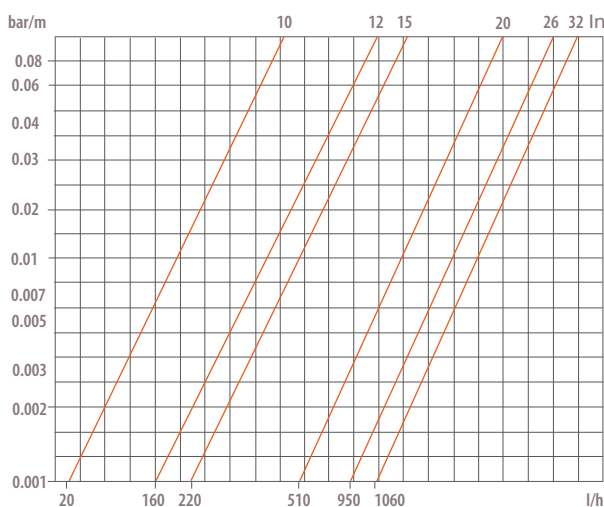
| Types      | BSP flat bottom                                                                   | BSP tapered gas                                                                              | BSP                                                                                 |
|------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Assemblies |  |            |  |
| Seal       | By compressing a flat gasket between 2 flat faces                                 | By wedging oakum or PTFE tape between tapered male and female threads cylindrical or tapered | Metal / Metal on male spherical-tapered seat in 60° female cone                     |
| Thread     | Gas                                                                               | Gas                                                                                          | Gas                                                                                 |

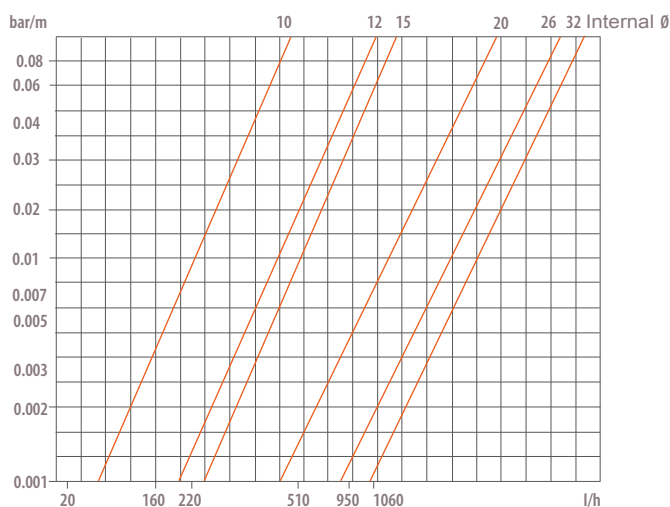
| Types      | JIC                                                                                | SAE                                                                                  |
|------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Assemblies |  |  |
| Seal       | Metal / Metal on male tapered seat and 74° female cone                             | Metal / Metal on male tapered seat and 90° female cone                               |
| Thread     | UNF                                                                                | UNF                                                                                  |

## 3 Pressure loss in rubber hoses - Fluids / Water

Pressure loss per metre of hose straight length



Pressure loss at both straight fittings



**N.B. :** For bent hose runs and angled fittings, add the singular pressure losses to be calculated according to the rules of the trade.

## 4 Threads and fittings shown

| Hoses                           | EI06 | EI08 | EI10 | EI12 | EI15 | EI20 | EI26 | EI33 | EI40 | EI50 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|
| Internal diameter (mm)          | 6    | 8.5  | 9.5  | 12   | 15   | 20   | 26   | 33   | 40   | 50   |
| External diameter (mm)          | 10   | 12   | 14   | 18   | 22   | 28   | 35   | 43   | 50   | 61   |
| Min bending radius (mm)         | 40   | 48   | 60   | 72   | 88   | 112  | 140  | 172  | 392  | 488  |
| Fitting clearance diameter (mm) | 4.6  | 6    | 7    | 9    | 12.5 | 16.5 | 21   | 27.5 | 35   | 44   |
| Flow rate at 3 bar (l/min)      | 19   | 32   | 45   | 72   | 99   | 150  | 220  | 410  | 750  | 1100 |
| Operating pressure (bar)        | 16   | 16   | 16   | 16   | 16   | 10   | 10   | 6    | 6    | 6    |
| Max temperature (°C)            | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   |



### 5 Conversion factors for metric and Anglo-Saxon measurements

| Measurement of | US/GB UNITS                                                              | METRIC UNITS                                                                                                 | US/GB>SI                                                                       | SI>US/GB                                                                                 |
|----------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Lengths        | Inch (in)                                                                | Metre (m)                                                                                                    | (in) x 0.0254 = (m)                                                            | (m) x 39.370 = (in)                                                                      |
|                |                                                                          | millimetre (mm)                                                                                              | (in) x 25.4 = (mm)                                                             | (mm) x 0.0393 = (in)                                                                     |
| Pressure       | Pound/square inch<br>=<br>Pound/Sq Inch (PSI)<br>(PSI)<br>(Bar)<br>(Bar) | Newton/square metre<br>=<br>(N/m <sup>2</sup> )<br>Bar (Bar)<br>(Kg/cm <sup>2</sup> )<br>(N/m <sup>2</sup> ) | (psi) x 6.8948 x 10 <sup>3</sup>                                               | (N/m <sup>2</sup> ) x 1.450 x 10 <sup>4</sup>                                            |
|                |                                                                          |                                                                                                              | =<br>(N/m <sup>2</sup> )                                                       | =<br>(PSI)                                                                               |
|                |                                                                          |                                                                                                              | (psi) x 0.0689 = (Bar)                                                         | (Bar) x 14.504 = (psi)                                                                   |
|                |                                                                          |                                                                                                              | (Bar) x 0.9806 = (Kg/cm <sup>2</sup> )<br>(Bar) x 100000 = (N/m <sup>2</sup> ) | (Kg/cm <sup>2</sup> ) x 1.0197 = (Bar)<br>(N/m <sup>2</sup> ) x 10 <sup>-5</sup> = (Bar) |
| Temperature    | Degree Fahrenheit (°F)                                                   | Degree Celsius (°C)                                                                                          | (°F-32)/1.8 = (°C)                                                             | (°C x 1.8) + 32 = (°F)                                                                   |
| Moment         | Pound-inch<br>Pound-inch = (lb <sub>f</sub> - in)                        | Newton metre = (N.m)                                                                                         | (lb <sub>f</sub> - in) x 0.113 = (N.m)                                         | (N.m) x 8.8507 = (lb <sub>f</sub> - in)                                                  |
| Volumes        | US Gallon (USGal)                                                        | (dcm <sup>3</sup> ) = litre                                                                                  | (USGal) x 3.785 = (dcm <sup>3</sup> )                                          | (dcm <sup>3</sup> ) x 0.2641 = (USGal)                                                   |
|                | GB Gallon (GBGal)                                                        | Litre = (dcm <sup>3</sup> )                                                                                  | (GBGal) x 4.546 = (dcm <sup>3</sup> )                                          | (dcm <sup>3</sup> ) x 0.299 = (GBGal)                                                    |
|                | Cubic Inch (in <sup>3</sup> )                                            | Litre = (dcm <sup>3</sup> )                                                                                  | (in <sup>3</sup> ) x 0.0164 = (dcm <sup>3</sup> )                              | (dcm <sup>3</sup> ) x 60.98 = (in <sup>3</sup> )                                         |
| Flow rates     | (in <sup>3</sup> /min)                                                   | Litre/min (l/min)                                                                                            | (in <sup>3</sup> /min) x 0.0164 = (l/min)                                      | (l/min) x 60.98 = (in <sup>3</sup> /min)                                                 |
|                | US Gallon/hour = (USGal/h)                                               | (m <sup>3</sup> /h)                                                                                          | (USGal/h) x 0.0038 = (m <sup>3</sup> /h)                                       | (m <sup>3</sup> /h) x 264.2 = (USGal/h)                                                  |
|                | GB Gallon/hour = (GBGal/h)                                               | (m <sup>3</sup> /h)                                                                                          | (GBGal/h) x 0.0045 = (m <sup>3</sup> /h)                                       | (m <sup>3</sup> /h) x 220 = (GBGal/h)                                                    |



# TECHNICAL FORM

## Chemical resistance

- A** Very good  
**B** Good  
**C** Relatively good  
**D** Not compatible  
Compatibility unknown  
**1** Satisfactory at room temperature  
**2** Satisfactory up to 50°C  
**3** Satisfactory for O-ring

|                                   | PLASTICS  |              |           |       | ELASTOMERS |       |          | METALS    |           |       |        |  |
|-----------------------------------|-----------|--------------|-----------|-------|------------|-------|----------|-----------|-----------|-------|--------|--|
|                                   | POLYESTER | POLYETHYLENE | POLYAMIDE | PTFE  | NITRILE    | EPDM  | SILICONE | ALUMINIUM | ALUMINIUM | BRASS | COPPER |  |
| Acetaldehyde                      | -         | A A1         | A D       | D     | A A        | A B   | A A      | A B       | A C       | -     | -      |  |
| Acetamide                         | -         | A A          | A D       | A     | A B        | B A   | A A      | A A       | -         | D     | -      |  |
| Acetone                           | B         | B1 A         | A D       | D     | A B        | A A   | A A      | A A       | A A       | A     | A      |  |
| Acetylene                         | A         | D A          | A A1      | B     | A B        | A A   | A A      | B A       | D         |       |        |  |
| Acetic acid                       | -         | A2 D         | A D       | C3    | A C        | D B   | B D      | D B       |           |       |        |  |
| 20%                               | -         | A D          | A D       | B     | A B        | B A   | B D      | D B       |           |       |        |  |
| 80%                               | -         | D D          | A C       | C3    | A B        | D B   | B D      | D B       |           |       |        |  |
| glacial                           | A1        | D B          | A D       | C     | B B        | C A   | B -      | D B       |           |       |        |  |
| Arsenic acid                      | -         | B2 C1        | A A1      | A2    | A A2       | A2    | D D      | D A       |           |       |        |  |
| Boric acid                        | A1        | A2 B         | A A2      | A A   | A B2       | A1    | D -      | D B       |           |       |        |  |
| Hydrobromic acid                  | 20%       | -            | B2 D      | -     | B2 D       | A D   | D D      | D D       |           |       |        |  |
| 100%                              | -         | B1 D         | A A1      | D     | A D        | D D   | D D      | D D       |           |       |        |  |
| Butyric acid                      | B1        | D C1         | A2 B1     | D     | B D        | B2 B2 | B -      | D C       |           |       |        |  |
| Carbolic acid (phenol)            | D         | D D          | A D       | D     | B D        | B B   | A D      | D D       |           |       |        |  |
| Hydrochloric acid                 | 20%       | B            | A2 D      | A A2  | -          | A D   | D D      | -         | D D       |       |        |  |
| 37%                               | C         | B2 D         | A B       | B C   | B D        | D D   | -        | D D       |           |       |        |  |
| 100%                              | -         | -            | D A       | D D   | D D        | D D   | D D      | D D       |           |       |        |  |
| Chloroacetic acid                 | D         | D D          | A B1      | D     | B D        | B1 A1 | D D      | D D       |           |       |        |  |
| Chlorosulfonic acid               | D         | D D          | A D       | D     | D D        | D B2  | C B      | D D       |           |       |        |  |
| Chromic acid                      | 5%        | D            | D D       | A A2  | A A        | C B   | A C      | D D       |           |       |        |  |
| 10%                               | D         | D D          | A A2      | D     | C C        | B B   | D D      | D D       |           |       |        |  |
| 30%                               | D         | D D          | A A1      | D     | B C        | B2 B2 | D D      | D D       |           |       |        |  |
| 50%                               | D         | D D          | A D       | D     | B C        | C B2  | D D      | D D       |           |       |        |  |
| Citric acid                       | A1        | D A1         | A B2      | A A   | A B1       | A2 C  | D D      | D D       |           |       |        |  |
| Cresylic acid                     | -         | B1 D         | A D       | D D   | D A1       | A B2  | -        | A B       |           |       |        |  |
| Hydrocyanic acid                  | C         | A2 B         | A B       | B B   | C B1       | A A   | D D      | D D       |           |       |        |  |
| Hydrofluoric acid                 | 20%       | -            | A2 C1     | A B   | D D        | D D   | D -      | D B       |           |       |        |  |
| 50%                               | D         | A1 D         | A B1      | D     | D D        | D D   | -        | D B       |           |       |        |  |
| 75%                               | D         | C1 D         | A C       | D     | C D        | D D   | -        | D B       |           |       |        |  |
| 100%                              | D         | -            | D A       | C D   | D D        | B1 B1 | D -      | D B       |           |       |        |  |
| Formic acid                       | B         | D D          | A A1      | C     | A B1       | A1 A  | D D      | C         |           |       |        |  |
| Fatty acids                       | -         | D A1         | A A       | B D   | C B        | A A   | C C      | D         |           |       |        |  |
| Lactic acid                       | D         | A1 B         | A B1      | A A   | A B1       | B1 B  | D D      | B         |           |       |        |  |
| Malic acid                        | -         | B2 A         | A A2      | A D   | B A        | A2 B1 | B -      | D         |           |       |        |  |
| Muriatic acid (Hydrochloric acid) |           |              |           |       |            |       |          |           |           |       |        |  |
| Nitric acid                       | 5-10%     | C            | B D       | A A1  | D A1       | C A   | A A      | D D       |           |       |        |  |
| 20%                               | D         | C D          | A A1      | D     | A1 D       | A A   | D D      | D D       |           |       |        |  |
| 50%                               | D         | B1 D         | A B1      | D     | D A2       | A1 D  | D D      | D D       |           |       |        |  |
| concentrated                      | D         | C1 D         | A B1      | D     | D A1       | A1 D  | D D      | D D       |           |       |        |  |
| Oleic acid (tallow)               | A         | C2 A         | A C2      | B     | B D        | A A   | A D      | -         | A         |       |        |  |
| Oxalic acid                       | D         | A2 B2        | A1 B      | D     | A B        | B A   | A D      | C B       |           |       |        |  |
| Palmitic acid                     | A         | -            | A A2      | B1 A2 | B1 D       | B1 A1 | B D      | -         | B         |       |        |  |
| Phosphoric acid                   | ≤ 40%     | -            | A B1      | A B   | D B        | C D   | C D      | D D       |           |       |        |  |
| > 40%                             | -         | B1 B1        | A B       | D B   | D D        | D C   | D D      | D D       |           |       |        |  |
| Picric acid                       | -         | A C1         | A D       | C B   | D B        | B C   | -        | A D       |           |       |        |  |
| Salicylic acid                    | -         | B2 A1        | A2 B1     | B A   | -          | B2 B2 | B2 -     | A A       |           |       |        |  |
| Stearic acid                      | C         | B1 A2        | A B2      | B B   | B B        | B A   | B D      | C D       |           |       |        |  |
| Sulphurous acid                   | -         | B2 D         | A A2      | B1 B  | D B1       | B B1  | -        | D D       |           |       |        |  |
| Sulphuric acid                    | 10-75%    | -            | A1 D      | A A1  | B2 D       | D D   | D D      | -         | D         |       |        |  |

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|                           | PLASTICS  |              |           |       | ELASTOMERS |         |      | METALS    |           |       |           |        |
|---------------------------|-----------|--------------|-----------|-------|------------|---------|------|-----------|-----------|-------|-----------|--------|
|                           | POLYESTER | POLYETHYLENE | POLYAMIDE | PTFE  | PVC        | NITRILE | EPDM | ALUMINIUM | ALUMINIUM | BRASS | CAST IRON | COPPER |
| Sulphuric acid            | 75-100%   | C B1         | D A       | D A   | D C        | B1 D    | C D  | D -       | D D       | -     | D         | D      |
| < 10%                     | A         | A1 C1        | A A1      | A1 A  | C D        | D B     | D -  | C -       |           |       |           |        |
| concentrated cold         | B         | C D          | A D       | D C   | D C        | B B     | -    | D -       |           |       |           |        |
| concentrated hot          | C         | D D          | A D       | D D   | D D        | D C     | D -  | D -       |           |       |           |        |
| Tannic acid               | A         | B2 C1        | A A1      | A A   | B B1       | A C     | B C  | A         |           |       |           |        |
| Tartaric acid             | C         | A1 B2        | A A1      | A B   | A C2       | B1 D    | C A  |           |           |       |           |        |
| Alcohol (Ethanol)         | -         | B A1         | A C       | C A   | B A        | A B     | A B  | A         |           |       |           |        |
| Amyl alcohol              | A1        | B2 A1        | A A2      | B A   | D A        | A B     | A1 B | A         |           |       |           |        |
| Butyl alcohol             | B1        | B2 B1        | A2 C1     | A A   | B A        | A1 B    | -    | B         |           |       |           |        |
| Ethyl Alcohol             | -         | B A1         | A C       | C A   | B A        | A B     | A B  | A         |           |       |           |        |
| Isobutyl alcohol          | -         | A2 A1        | A2 A1     | B A   | A A        | A B     | -    | C -       |           |       |           |        |
| Isopropyl alcohol         | -         | A2 D         | A2 A1     | B A   | A A        | B B     | -    | A B       |           |       |           |        |
| Methyl alcohol            | B         | A1 B1        | A A1      | A A   | A A        | A1 A    | A A  | B1        |           |       |           |        |
| Propyl alcohol            | -         | A2 D         | A A1      | A A   | A A        | A A     | A A  | A         |           |       |           |        |
| Aluns                     | D         | A A          | -         | A A1  | A1 -       | A A     | -    | D C       |           |       |           |        |
| Anhydrous ammonia         | D         | B2 A1        | A A2      | B A   | C A        | A2 A1   | D A  | D         |           |       |           |        |
| Ammonia                   | 10%       | -            | C1 A      | A B1  | A A        | -       | A A2 | -         | A -       |       |           |        |
| Liquid ammonia            | -         | C1 B1        | A A1      | C A   | -          | B2 A2   | A -  | A -       |           |       |           |        |
| Acetic anhydride          | C         | D A1         | A D       | D B   | C B        | A A1    | D D  | B         |           |       |           |        |
| Phthalic anhydride        | -         | -            | -         | A D   | D A        | -       | A A  | -         | C         |       |           |        |
| Aniline                   | D         | C A2         | A C1      | D B   | B A        | B C     | D C  | D         |           |       |           |        |
| Asphalt                   | B1        | A1 A         | A1 A2     | B D   | D B        | A A     | B1 A | A         |           |       |           |        |
| Benzene                   | C         | C1 A1        | A C1      | D D   | D B        | B B     | -    | A B       |           |       |           |        |
| Benzaldehyde              | B         | A1 A1        | A1 D      | D A   | D B        | B B     | -    | A B       |           |       |           |        |
| Sodium Bicarbonate        | -         | A2 A         | A A2      | A1 A2 | A A        | A1 D    | D C  | B         |           |       |           |        |
| Potassium dichromate      | C         | A B1         | A A       | A1 A1 | A B        | B1 B    | -    | A B       |           |       |           |        |
| Beer                      | A1        | A2 A1        | A A2      | A A   | A A        | A A     | B D  | B         |           |       |           |        |
| Calcium bi                | B         | A1 A2        | A B       | A D   | A B        | A D     | -    | -         |           |       |           |        |
| Borax (sodium borate)     | A1        | A2 A         | A A1      | B A   | B A        | A B1    | -    | A B       |           |       |           |        |
| Bromine                   | D         | D D          | A C1      | D D   | D D        | D D     | -    | -         |           |       |           |        |
| Potassium bromide         | -         | A A1         | A A       | A A1  | A1 B       | B C1    | -    | D         |           |       |           |        |
| B                         |           |              |           |       |            |         |      |           |           |       |           |        |
| Butane                    | -         | C1 A2        | A C1      | A D   | D A2       | A2 A    | -    | -         | C         |       |           |        |
| Ethylene bromide          | -         | D -          | A D       | D D   | D B        | B B     | -    | B         |           |       |           |        |
| Ammonium Carbonate        | -         | B2 A1        | A A2      | B A   | C B        | B B     | D B  | D         |           |       |           |        |
| Barium carbonate          | -         | B2 A1        | A A2      | A2 A  | -          | B1 B    | D B1 | A         |           |       |           |        |
| Magnesium carbonate       | -         | B -          | A1 B      | A2 A  | -          | B B     | A -  | A         |           |       |           |        |
| Potassium carbonate       | D         | A1 A         | -         | A A1  | -          | B B     | D -  | C B       |           |       |           |        |
| Sodium Carbonate          | -         | B2 B1        | A A2      | A A2  | A A        | A D     | B B  | A         |           |       |           |        |
| Chlorine in solution      | -         | B1 C1        | A A2      | D C   | D C        | C D     | D -  | D         |           |       |           |        |
| Anhydrous liquid chlorine | -         | D D          | A D       | D B   | D C1       | C D     | D D  | -         |           |       |           |        |
| Dry chlorine              | D         | D D          | A D       | B A   | D A1       | B C1    | D D  | A         |           |       |           |        |
| Ethylene Chlorohydrin     | -         | D D          | A D       | D B   | C B        | B B     | -    | B         |           |       |           |        |
| Chlorobenzene             | D         | C1 D         | B D       | D D   | D A        | B A     | B1 B | B         |           |       |           |        |
| Chlorobromomethane        | -         | A C          | A D       | D B   | D -        | -       | -    | B B       |           |       |           |        |
| Chloroform                | D         | C1 A1        | D D       | D D   | A A        | B1 B1   | B A  |           |           |       |           |        |
| Ammonium chloride         | A1        | A2 B         | A A2      | B A   | C C        | B2 B1   | D D  | D         |           |       |           |        |
| Aluminium chloride        | C         | B2 B1        | A A2      | A A   | B B        | B D     | D D  | B         |           |       |           |        |
| Amyl chloride             | -         | D C1         | A D       | D D   | D A2       | A2 A1   | -    | A A       |           |       |           |        |



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|                            | PLASTICS             |              |           |      | ELASTOMERS |         |      |          | METALS                   |                          |           |       |
|----------------------------|----------------------|--------------|-----------|------|------------|---------|------|----------|--------------------------|--------------------------|-----------|-------|
|                            | POLYESTER            | POLYETHYLENE | POLYAMIDE | PTFE | PVC        | NITRILE | EPDM | SILICONE | ALSI 304 STAINLESS STEEL | ALSI 316 STAINLESS STEEL | ALUMINIUM | BRASS |
| Barium chloride            | B 1                  | A 1          | A         | A    | A 1        | A       | A    | A        | A 1                      | D                        | B 1       | C     |
| Benzyl chloride            | -                    | -            | A 2       | -    | -          | D       | D    | D        | C 1                      | B 1                      | D         | -     |
| Calcium chloride           | A 1                  | B 2          | A 1       | A    | C          | A       | A    | A        | C 2                      | B 2                      | D         | -     |
| Copper chloride            | A 1                  | -            | D         | A    | A 1        | A       | A    | A 1      | D                        | D                        | -         | -     |
| Ethyl chloride             | C                    | C 1          | A 1       | A    | D          | A       | D    | A        | A                        | B                        | A         | C     |
| Ferrous Chloride           | -                    | A 2          | D         | A    | A          | A       | -    | -        | D                        | D                        | D         | D     |
| Ferric chloride            | C                    | A 1          | A         | A    | A          | A       | B    | D        | D                        | D                        | D         | D     |
| Magnesium Chloride         | C                    | A 1          | A 1       | A    | B          | A 2     | A    | A        | D                        | D                        | D         | A 2   |
| Mercury chloride           | B                    | A            | D         | A    | A          | A 1     | -    | D        | D                        | D                        | D         | D     |
| Methyl Chloride            | -                    | C 1          | B 1       | A    | D          | D       | D    | D        | A                        | D                        | A         | D     |
| Methylene chloride         | D                    | D            | C 1       | A    | D          | D       | C 1  | -        | B                        | B                        | C         | A     |
| Nickel chloride            | -                    | A            | C 1       | A    | A          | A 1     | A 1  | A        | D                        | C                        | D         | D     |
| Potassium Chloride         | B                    | A 1          | A 1       | A    | A          | A 1     | A 1  | A        | B 1                      | A 1                      | D         | A     |
| Sodium Chloride            | A                    | A 2          | A 1       | A    | A 2        | A       | A    | A        | B                        | B                        | C         | D     |
| Sulphur Chloride           | -                    | C 1          | A 1       | A    | C 1        | D       | D    | C        | D                        | D                        | D         | D     |
| Vinyl chloride             | -                    | -            | A 1       | A 2  | D          | D       | C    | -        | B 2                      | A 1                      | B 1       | -     |
| Copper cyanide             | -                    | B 2          | D         | A    | A 2        | A       | A    | A        | B                        | B                        | D         | A     |
| Mercury Cyanide            | -                    | A            | A 2       | B    | A          | A       | A 1  | A        | C                        | C                        | D         | -     |
| Potassium cyanide solution | B                    | A            | A 1       | A    | A          | A 1     | A 1  | A        | B 1                      | B 1                      | D         | D     |
| Sodium cyanide             | B                    | A 2          | A 1       | A    | A 2        | A       | A 2  | A        | A 1                      | B 1                      | D         | D     |
| Cyclohexane                | A 1                  | B 1          | A         | A    | D          | B       | D    | D        | A 1                      | A                        | A         | B     |
| Cyclohexanone              | -                    | D            | A         | A    | D          | D       | B    | D        | A 1                      | A 2                      | A         | -     |
| Diacetone alcohol          | -                    | B 1          | A         | A    | B 1        | D       | A    | D        | A                        | A                        | A         | -     |
| Dichlorobenzene            | -                    | -            | D         | A    | D          | D       | D    | -        | B 1                      | B 1                      | -         | -     |
| Ethylene Dichloride        | C                    | D            | A 1       | A    | D          | D       | C    | D        | B                        | B                        | A 1       | B     |
| Diethyl ether              | -                    | D            | A         | A    | D          | D       | C    | D        | A                        | A                        | B 1       | B 1   |
| Diethylamine               | -                    | D            | A         | D    | D          | C       | B    | B        | A                        | A                        | B         | A     |
| Diethylene glycol          | -                    | B 2          | A 1       | A 2  | C 1        | A 2     | A 2  | B 1      | A 1                      | A                        | B 1       | -     |
| Dimethylaniline            | -                    | -            | A         | A    | D          | D       | B 2  | D        | B 2                      | B 2                      | A 2       | -     |
| Dimethylformamide          | -                    | A            | A         | D    | D          | D       | B    | C        | A                        | B                        | A 1       | -     |
| Diphenyl oxide             | -                    | -            | -         | A 1  | D          | A       | D    | C        | B 1                      | A                        | B 1       | -     |
| Water                      | < 80°C               | A            | A 2       | A 1  | A          | B       | D    | A        | B                        | A                        | B         | D     |
| Seawater                   |                      | A            | A 2       | A 2  | A          | A 2     | D    | A 2      | A 1                      | C                        | C         | B     |
| Distilled water            |                      | -            | A 2       | A 1  | A          | A 2     | D    | A        | C                        | A                        | A         | A     |
| Salt water                 |                      | A            | A 2       | A 2  | A          | B       | D    | A        | B                        | B                        | B         | D     |
| Hydrogen peroxide          | 10%                  | -            | A         | C 1  | A          | A 1     | D    | A        | A                        | B 2                      | B         | A     |
|                            | 30%                  | -            | C 2       | D    | A          | A 1     | D    | B        | B                        | B 2                      | B         | A     |
|                            | 50%                  | -            | C 2       | D    | A          | A 1     | D    | B        | B                        | B 2                      | A 2       | A     |
|                            | 100%                 | -            | C 2       | D    | A          | A       | D    | D        | B                        | B 2                      | A 2       | A     |
| Aqua regia                 | [80% HC1 + 20% HNO3] | -            | B 1       | D    | A          | C 1     | D    | C        | D                        | D                        | D         | D     |
| Petrol                     |                      | A            | -         | A 2  | A          | B       | A 2  | D        | D                        | A 1                      | A 2       | A     |
| Unleaded petrol            |                      | -            | -         | A 2  | A          | C 2     | A 1  | D        | D                        | A 1                      | A 2       | A     |
| Ethane                     |                      | -            | -         | D    | A          | A 1     | A    | D        | D                        | A                        | A 1       | -     |
| Ethanolamine               |                      | -            | -         | A    | A 1        | D       | B    | B        | B                        | A                        | A         | B     |
| Ether                      |                      | -            | D         | A    | A          | D       | D    | C        | D                        | A                        | A         | B 1   |
| Butyl ether                |                      | -            | -         | A 2  | A 1        | A 2     | B 2  | D        | D                        | -                        | A 1       | A 1   |
| Isopropyl ether            |                      | -            | B         | A 1  | A 1        | B       | B    | D        | D                        | A                        | A         | A     |
| Ethylene diamine           |                      | -            | A         | D    | A          | D       | A    | A        | A                        | B 1                      | B 1       | D     |
| Ethylene glycol            |                      | A            | D         | A    | A          | A       | A    | A        | A                        | B                        | B         | A     |
| Ethylene oxide             |                      | A            | A         | A 1  | A          | D       | D    | C        | D                        | B                        | B         | D     |

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|                                | PLASTICS  |           |      |     | ELASTOMERS |      |          |                          | METALS                   |           |       |        |
|--------------------------------|-----------|-----------|------|-----|------------|------|----------|--------------------------|--------------------------|-----------|-------|--------|
|                                | POLYESTER | POLYAMIDE | PTFE | PVC | NITRILE    | EPDM | SILICONE | ALSI 304 STAINLESS STEEL | ALSI 316 STAINLESS STEEL | ALUMINIUM | BRASS | COPPER |
| Aluminium fluoride             | -         | A 2       | A 1  | A   | A 2        | A    | A        | B                        | D                        | D         | B 1   | -      |
| Sodium Fluoride                | -         | A 2       | B    | A 1 | A 2        | A 1  | A        | -                        | D                        | D         | B     | -      |
| Formaldehyde                   | 40%       | B         | D    | A   | A          | A    | B        | A                        | -                        | A 1       | A     | B      |
|                                | 100%      | -         | B    | D   | A          | A    | C        | A                        | B                        | C         | A     | A      |
| Freon 11                       | A         | C         | D    | A   | A 2        | B    | D        | D                        | A                        | A         | D     | -      |
| Freon 12                       | A         | A 1       | A    | A 2 | A          | B    | D        | B 1                      | B                        | B 1       | B 1   | A      |
| Freon 22                       | -         | -         | B    | A   | A          | D    | A        | D                        | A                        | D         | A     | D      |
| Freon 113                      | A         | -         | -    | A   | B          | A    | D        | D                        | -                        | -         | -     | -      |
| Freon TF                       | A         | -         | D    | -   | B          | A    | D        | D                        | A                        | D         | -     | A      |
| Furan (resin)                  | -         | D         | -    | A   | A          | D    | C        | D                        | A 1                      | A         | A     | -      |
| Furfural                       | -         | D         | B    | A   | D          | D    | D        | D                        | A                        | B         | A 1   | -      |
| Gasoline                       | A         | A         | A    | B   | A          | A    | D        | D                        | A                        | A         | D     | -      |
| Carbon dioxide                 | A         | A 1       | A 1  | A   | A 1        | A    | B        | B                        | A                        | A 1       | B     | -      |
| Hydrogen gas                   | A         | A 2       | A 2  | A   | A 2        | A    | A        | C                        | A                        | A         | A     | -      |
| Natural gas                    | -         | A         | -    | A   | A          | A    | D        | A                        | A                        | A         | A     | -      |
| Gelatine                       | -         | A 2       | A 1  | A   | B          | A    | A        | A                        | A 2                      | A 2       | A     | D      |
| A                              |           |           |      |     |            |      |          |                          |                          |           |       |        |
| Glucose                        | -         | A 2       | A    | A   | A 2        | A    | A        | A                        | A 1                      | A         | A     | A      |
| Glycerin                       | A         | A 1       | A 1  | A   | A          | A    | A        | A                        | A 2                      | A         | A     | B      |
| Grease                         | -         | -         | -    | A   | A          | A    | D        | D                        | -                        | A         | -     | A      |
| Hexahydrobenzene (cyclohexane) | A 1       | B 1       | A    | A   | D          | B    | D        | D                        | A 1                      | A         | A     | B      |
| Hexane                         | A         | D         | B    | A   | B 1        | A    | D        | D                        | A                        | A         | A     | A      |
| Hexyl alcohol                  | -         | A         | A    | A 2 | A          | C    | B        | A                        | A                        | A         | -     | A      |
| Peanut oil                     | -         | A         | -    | A   | A          | D    | A        | A                        | A                        | A         | -     | A      |
| ASTM Oil No. 1                 | -         | -         | -    | -   | A          | C    | B        | -                        | -                        | -         | -     | -      |
| ASTM Oil no. 2                 | -         | -         | -    | -   | A          | C    | B        | -                        | -                        | -         | -     | -      |
| ASTM Oil no. 3                 | -         | -         | -    | -   | B          | C    | C        | -                        | -                        | -         | -     | -      |
| Cottonseed oil                 | A 1       | A         | B    | A   | B 2        | A    | D        | A                        | A                        | A         | A     | A      |
| Cod liver oil                  | -         | -         | -    | A   | A 1        | A    | A        | B                        | A                        | A         | -     | -      |
| Hydraulic oil                  | -         | C         | A 1  | A   | A          | A    | D        | B                        | A                        | A         | A     | A      |
| Synthetic hydraulic oil        | -         | A         | A 1  | A   | A          | D    | A        | B                        | A                        | A         | A     | -      |
| Linseed oil                    | B 1       | A         | A 1  | A   | A 2        | A    | D        | A                        | A                        | A         | B     | B      |
| Mineral oils                   | A         | B 1       | A    | A   | B          | A    | D        | C                        | A                        | A         | A     | -      |
| Corn oil                       | A         | A         | A    | A   | B          | D    | C        | A                        | A                        | A         | -     | A      |
| Coconut oil                    | -         | A         | -    | A   | A 1        | A    | D        | A                        | A                        | A         | -     | A      |
| Olive oil                      | -         | A 1       | A 1  | A 1 | C          | D    | D        | D                        | A                        | A         | -     | -      |
| Pine oil                       | -         | D         | A    | A   | D          | D    | D        | D                        | A                        | A         | -     | C      |
| Soybean oil                    | B         | A 1       | A    | A   | A 1        | A    | C        | A                        | A                        | A         | -     | A      |
| Silicone oil                   | A         | A         | A 1  | A   | A          | A    | A        | C                        | A                        | A         | -     | A      |
| Hydrogen sulphide              | -         | A         | C 1  | A   | B 1        | D    | B        | C                        | C 1                      | A         | B     | D      |
|                                | dry       | A         | A    | C 1 | A          | A 2  | D        | B                        | C                        | C 1       | A     | B      |
| Hydrogen                       | A         | A 2       | A 2  | A   | A 2        | A    | A        | C                        | A                        | A         | -     | -      |
| A                              |           |           |      |     |            |      |          |                          |                          |           |       |        |
| Aluminium hydroxide            | -         | A 2       | A 1  | A   | A 2        | A    | A        | -                        | A 1                      | C 1       | B 1   | B      |
| Ammonium hydroxide             | C         | A 1       | A    | A   | A          | D    | A        | -                        | A 1                      | A 1       | B 2   | D      |
| Barium hydroxide               | B 1       | B 2       | A 1  | A   | A 2        | A    | A        | A                        | B 1                      | B         | D     | D      |
| Calcium hydroxide              | B 1       | A 2       | A 2  | A   | B          | A    | A        | A                        | B 1                      | B         | C 1   | -      |
| Magnesium hydroxide            | C         | A 2       | B 1  | A   | A 2        | A    | A        | A                        | B                        | A 1       | C 1   | D      |
| Potassium hydroxide            | D         | A         | C 1  | A   | A 1        | B 1  | A 2      | C                        | B                        | A 1       | D     | D      |
| Sodium hydroxide               | 20%       | B         | D    | A   | A          | A    | A        | B                        | A 2                      | B         | B 2   | D      |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|--------------|-----------|------|-----|------------|------|----------|--------------------------|----|--------------------------|----|-----------|-------|-----------|--------|
|                                                                                                                                                                                         |       | POLYESTER | POLYETHYLENE | POLYAMIDE | PTFE | PVC | NITRILE    | EPDM | SILICONE | AISI 304 STAINLESS STEEL |    | AISI 316 STAINLESS STEEL |    | ALUMINIUM | BRASS | CAST IRON | COPPER |
|                                                                                                                                                                                         |       |           |              |           |      |     |            |      |          |                          |    |                          |    |           |       |           |        |
|                                                                                                                                                                                         |       |           |              |           |      |     |            |      |          |                          |    |                          |    |           |       |           |        |
| Sodium hydroxide                                                                                                                                                                        | 50%   | C         | D            | A         | A    | A   | A          | B1   | A1       | B                        | B1 | D                        | D  | D         | D     | B         |        |
|                                                                                                                                                                                         | 80%   | -         | D            | C         | A1   | A   | D          | B1   | A1       | C                        | B1 | D                        | D  | D         | D     | D         |        |
| Hypochlorite de calcium                                                                                                                                                                 |       | C1        | A1           | D         | A    | B1  | C1         | B1   | B        | C1                       | B1 | D                        | -  | D         | C     |           |        |
| Sodium hypochlorite                                                                                                                                                                     |       | D         | B2           | D         | A    | B   | D          | B1   | B        | D                        | D  | D                        | D  | D         | D     | -         |        |
| Sodium hypochlorite                                                                                                                                                                     | < 20% | A         | A            | D         | A    | A   | B          | B    | B        | C                        | C  | D                        | D  | D         | D     | -         |        |
| Isooctane                                                                                                                                                                               |       | A         | B            | A1        | A    | A1  | A2         | D    | D        | A1                       | A1 | A1                       | A  | -         | -     | -         |        |
| JP 3 JP 4 JP 5                                                                                                                                                                          |       | -         | D            | C         | A    | C   | A          | D    | D        | A                        | A  | A                        | -  | A         | A     | A         |        |
| Kerosene                                                                                                                                                                                |       | C         | C1           | A         | A    | A2  | A          | D    | D        | A                        | A  | A                        | A  | A         | A     | A         |        |
| Milk                                                                                                                                                                                    |       | -         | A            | A         | A    | A2  | A1         | A    | A        | A                        | A  | A                        | D  | D         | D     | D         |        |
| Lacquers varnishes                                                                                                                                                                      |       | -         | A            | A1        | A    | D   | D          | D    | D        | A1                       | A  | A                        | -  | C         | A     | A         |        |
| Fuel Oil                                                                                                                                                                                |       | -         | B            | A1        | B    | A2  | D          | D    | D        | A                        | A  | C1                       | B  | A         |       |           |        |
| A                                                                                                                                                                                       |       |           |              |           |      |     |            |      |          |                          |    |                          |    |           |       |           |        |
| Mercury                                                                                                                                                                                 |       | B         | A            | A         | A    | A   | A          | A    | -        | A                        | A  | D                        | D  | A         | D     | D         |        |
| Methyl methacrylate                                                                                                                                                                     |       | -         | -            | -         | -    | A   | D          | D    | C        | B                        | B  | -                        | -  | C         | -     | -         |        |
| Methane                                                                                                                                                                                 |       | -         | -            | A         | A    | B   | A          | D    | D        | A                        | A  | A                        | -  | -         | -     | -         |        |
| Methyl ethyl ketone                                                                                                                                                                     |       | B         | B2           | A1        | A    | D   | D          | A2   | D        | A                        | A  | B                        | A  | A         | A     | A         |        |
| Methyl isobutyl ketone                                                                                                                                                                  |       | B         | C            | B2        | A    | D   | D          | B1   | D        | B                        | B  | B                        | -  | C         | B     | B         |        |
| Monochlorobenzene                                                                                                                                                                       |       | D         | C1           | D         | B    | D   | D          | D    | D        | A                        | B  | A                        | B1 | B         | B     | B         |        |
| Monoethanolamine                                                                                                                                                                        |       | -         | -            | A         | A1   | D   | B          | B    | B        | A                        | A  | B                        | -  | -         | D     | -         |        |
| Carbon monoxide                                                                                                                                                                         |       | A         | A2           | A1        | A    | A2  | A          | A    | A2       | A                        | A  | A                        | -  | A         | A     | A         |        |
| Mustard                                                                                                                                                                                 |       | -         | A            | A         | A    | B   | B          | A    | -        | A                        | A  | B                        | -  | D         | -     | -         |        |
| Naphta                                                                                                                                                                                  |       | B         | A1           | A         | B    | A1  | A          | D    | D        | A                        | A  | A                        | A  | B         | A     | A         |        |
| Naphthalene                                                                                                                                                                             |       | B         | C            | A1        | A    | D   | D          | D    | D        | A                        | A  | B1                       | -  | A         | -     | -         |        |
| Ammonium nitrate                                                                                                                                                                        |       | B1        | A1           | A1        | A    | A2  | A          | A    | C        | A1                       | A  | B1                       | D  | B         | D     | D         |        |
| Silver nitrate                                                                                                                                                                          |       | -         | A            | A1        | A    | A1  | B          | A    | A        | B                        | B  | D                        | -  | C         | -     | -         |        |
| Copper nitrate                                                                                                                                                                          |       | -         | B2           | D         | A    | A2  | A          | -    | -        | A                        | A2 | D                        | D  | D         | D     | D         |        |
| Magnesium nitrate                                                                                                                                                                       |       | -         | A2           | A1        | A    | A2  | A          | A    | -        | B                        | B  | B                        | -  | D         | B     | B         |        |
| Nickel nitrate                                                                                                                                                                          |       | -         | A            | A1        | A2   | A   | A1         | A2   | -        | B                        | B2 | D                        | -  | C         | -     | -         |        |
| Lead nitrate                                                                                                                                                                            |       | -         | A2           | -         | A1   | A2  | A2         | A2   | B1       | B1                       | B1 | D                        | -  | -         | -     | -         |        |
| Potassium nitrate                                                                                                                                                                       |       | B         | A            | B1        | A    | A   | A2         | A    | A        | B                        | B  | B                        | B  | A         | A     | A         |        |
| Sodium nitrate                                                                                                                                                                          |       | -         | A2           | A1        | A    | A2  | A1         | A    | D        | B1                       | B1 | B                        | -  | B         | D     | D         |        |
| Nitrobenzene                                                                                                                                                                            |       | D         | C1           | B1        | A    | D   | D          | B1   | D        | B                        | B  | B                        | -  | C         | B     | B         |        |
| Carbon oxide                                                                                                                                                                            |       | A         | A2           | A1        | A    | A2  | A          | A    | A2       | A                        | A  | A                        | -  | A         | A     | A         |        |
| Ozone                                                                                                                                                                                   |       | C         | A            | D         | A    | B   | D          | A    | A        | B                        | A  | B                        | -  | -         | A     | -         |        |
| Paraffin                                                                                                                                                                                |       | -         | B            | A1        | A    | B   | B          | D    | -        | A                        | A  | A                        | -  | A         | -     | B         |        |
| Pentane                                                                                                                                                                                 |       | -         | D            | A1        | A    | A   | A          | D    | D        | C                        | C  | B                        | -  | -         | -     | -         |        |
| Crude oil                                                                                                                                                                               |       | B         | C1           | A1        | A2   | -   | A2         | D    | D        | A1                       | A1 | D                        | -  | -         | B     | -         |        |
| Phenol                                                                                                                                                                                  | 10%   | -         | B            | D         | A    | C1  | D          | B    | D        | B                        | B  | A                        | -  | D         | B     | B         |        |
| Phenol                                                                                                                                                                                  |       | D         | D            | D         | A    | D   | D          | B    | D        | B                        | B  | A                        | D  | D         | D     | D         |        |
| Dibasic ammonium phosphate                                                                                                                                                              |       | -         | A2           | C1        | A2   | A2  | A          | A    | A        | B                        | C  | B1                       | B1 | D         | D     | D         |        |
| monobasic                                                                                                                                                                               |       | B1        | A            | B         | A    | A   | A          | A    | A        | B                        | C  | B                        | -  | D         | D     | D         |        |
| tribasic                                                                                                                                                                                |       | -         | C            | B         | A    | A   | A          | A    | A        | B                        | B  | B                        | -  | D         | D     | D         |        |
| Sodium phosphate                                                                                                                                                                        |       | -         | A            | A1        | A    | A1  | A          | A    | A        | D                        | B  | B                        | D  | D         | D     | A         |        |
| Potassium permanganate                                                                                                                                                                  |       | D         | A            | D         | A    | A1  | C          | A    | -        | B1                       | B  | B1                       | -  | A         | A     | A         |        |
| Hydrogen peroxide                                                                                                                                                                       | 10%   | -         | A            | C1        | A    | A1  | D          | A    | A        | B2                       | B  | A                        | -  | C         | D     | D         |        |
|                                                                                                                                                                                         | 30%   | -         | C2           | D         | A    | A1  | D          | B    | B        | B2                       | B  | A                        | -  | B         | D     | D         |        |
|                                                                                                                                                                                         | 50%   | -         | C2           | D         | A    | A1  | D          | B    | B        | B2                       | A2 | A                        | -  | -         | D     | D         |        |
|                                                                                                                                                                                         | 100%  | -         | C2           | D         | A    | A   | D          | D    | B        | B2                       | A2 | A                        | D  | B         | D     | D         |        |

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|                                                                                                                                                                                         | POLYESTER | POLYETHYLENE | POLYAMIDE | PTFE | PVC        | NITRILE | EPDM | SILICONE | AISI 304 STAINLESS STEEL | AISI 316 STAINLESS STEEL | ALUMINIUM | BRASS | CAST IRON | COPPER |
| Sodium peroxide                                                                                                                                                                         | -         | A            | A1        | A    | B2         | B       | A    | D        | A                        | A                        | C         | D     | C         | B      |
| Caustic potash                                                                                                                                                                          | D         | A            | C1        | A    | A1         | B1      | A2   | C        | B                        | A1                       | D         | D     | B2        | B      |
| Liquid propane                                                                                                                                                                          | A         | C1           | A1        | A    | A1         | A       | D    | D        | A                        | A                        | A         | A     | A         | A      |
| Propylene glycol                                                                                                                                                                        | -         | B2           | A         | A    | C1         | A       | A    | A        | B                        | B                        | B         | -     | A         | A      |
| Pyridine                                                                                                                                                                                | C         | B1           | C1        | A    | D          | D       | B    | D        | A                        | A                        | B         | B     | A         | B      |
| Lard                                                                                                                                                                                    | -         | A            | A1        | A    | A1         | A       | D    | B        | A                        | A                        | A         | -     | A         | -      |
| Sodium silicate                                                                                                                                                                         | -         | A2           | A1        | A    | A2         | A       | A    | A        | A                        | B                        | D         | D     | B         | B      |
| Arsenic salts                                                                                                                                                                           | B1        | B            | A         | -    | A          | -       | -    | -        | -                        | -                        | -         | -     | -         | -      |
| Soap solutions                                                                                                                                                                          | A         | D            | A1        | A    | A          | A       | A    | A        | A                        | A1                       | C         | B     | A         | A      |
| Soda (sodium carbonate)                                                                                                                                                                 | -         | B2           | B1        | A    | A2         | A       | A2   | A        | A                        | A                        | D         | B     | B         | A      |
| Caustic soda                                                                                                                                                                            | 20%       | B            | D         | A    | A          | A       | B    | A2       | B                        | B2                       | D         | B     | A2        | A2     |
|                                                                                                                                                                                         | 50%       | C            | D         | A    | A          | A       | A1   | B1       | A1                       | B                        | B1        | D     | D         | B      |
|                                                                                                                                                                                         | 80%       | -            | D         | C    | A1         | A       | D    | B1       | A1                       | C                        | B1        | D     | D         | D      |
| Styrene                                                                                                                                                                                 | D         | -            | A1        | A    | D          | D       | D    | D        | A                        | A                        | A         | A     | A         | B      |
| Liquid sugars                                                                                                                                                                           | -         | -            | A1        | A    | -          | A       | A    | A        | A                        | A                        | A         | -     | -         | A      |
| Liquid beet sugars                                                                                                                                                                      | -         | A1           | A         | A1   | A2         | A       | A    | A        | A                        | A                        | A         | -     | A         | A      |
| Lead sulphamate                                                                                                                                                                         | -         | A1           | B1        | B    | B          | B       | A    | B        | C                        | C                        | C         | -     | -         | -      |
| Aluminium sulphate                                                                                                                                                                      | B1        | A2           | A2        | A    | A2         | A       | A    | A        | B                        | B2                       | B1        | B1    | D         | A2     |
| Ammonium                                                                                                                                                                                | B1        | A1           | A1        | A    | A2         | A       | A    | A        | B                        | B                        | A1        | D     | D         | D      |
| Barium sulphate                                                                                                                                                                         | D         | B2           | A1        | A    | B1         | A       | A    | A        | B1                       | B1                       | B         | B     | B         | B      |
| Copper sulphate                                                                                                                                                                         | 5%        | A1           | A2        | D    | A          | A2      | A    | A        | B                        | B                        | D         | D     | D         | B      |
|                                                                                                                                                                                         | > 5%      | A1           | A2        | D    | A          | A2      | A    | A        | A                        | B                        | B         | D     | D         | -      |
| Ferric Sulphate                                                                                                                                                                         | -         | A2           | A1        | A    | A          | A       | A    | B        | B1                       | A                        | D         | D     | D         | D      |
| Ferrous sulphate                                                                                                                                                                        | -         | A2           | D         | A    | A          | A2      | A    | -        | B                        | B                        | B1        | B1    | D         | B      |
| Magnesium Sulphate                                                                                                                                                                      | -         | A2           | A1        | A    | A1         | A       | A    | A        | A                        | B                        | B1        | A     | A         | A      |
| Manganese Sulphate                                                                                                                                                                      | -         | A1           | A2        | A    | C          | A2      | A2   | A1       | B                        | B2                       | B1        | D     | A         | B      |
| Nickel sulphate                                                                                                                                                                         | -         | A            | A1        | A    | A          | A1      | A1   | A        | B                        | B1                       | D         | D     | D         | -      |
| Potassium sulphate                                                                                                                                                                      | B         | A2           | A1        | A    | A2         | A2      | A1   | A        | B1                       | A                        | C         | D     | A         | B      |
| Sodium Sulphate                                                                                                                                                                         | -         | A2           | A         | A    | A2         | A       | A    | A        | B                        | B1                       | A         | B     | B         | B      |
| Barium sulphide                                                                                                                                                                         | -         | B2           | A1        | A    | A2         | A       | A    | A        | B1                       | B2                       | D         | D     | D         | D      |
| Sodium sulphide                                                                                                                                                                         | -         | A2           | A1        | A    | A2         | A       | A2   | A        | B                        | D                        | D         | D     | C         | D      |
| Turpentine                                                                                                                                                                              | -         | D            | B         | A    | D          | -       | D    | D        | A                        | A                        | A         | D     | -         | B      |
| Tetrachloroethylene                                                                                                                                                                     | -         | B            | A1        | A    | D          | D       | D    | D        | -                        | A                        | -         | -     | A         | A      |
| Carbon tetrachloride                                                                                                                                                                    | -         | -            | -         | A    | -          | D       | D    | D        | A2                       | A2                       | D         | B1    | C         | -      |
| Dry carbon tetrachloride                                                                                                                                                                | D         | D            | -         | A    | -          | C1      | B1   | D        | B                        | B2                       | D         | A1    | -         | -      |
| Toluene                                                                                                                                                                                 | B         | C1           | A1        | A    | D          | D       | D    | D        | A                        | A                        | A         | A     | A         | A      |
| Ammonium thiosulphate                                                                                                                                                                   | A         | -            | -         | -    | A          | A1      | -    | -        | A                        | -                        | D         | D     | D         |        |
| Sodium thiosulphate                                                                                                                                                                     | -         | A1           | B         | A    | A2         | B       | A2   | A        | A2                       | B                        | A         | D     | C         | D      |
| Trichloroethylene                                                                                                                                                                       | C         | D            | C1        | A    | D          | D       | D    | D        | B                        | B                        | D         | -     | C         | A1     |
| Tricresylphosphate                                                                                                                                                                      | -         | B1           | A2        | A    | D          | D       | A    | C        | B                        | B                        | D         | -     | B         | B      |
| Phosphorus trichloride                                                                                                                                                                  | -         | B            | -         | A2   | D          | D       | A1   | -        | A1                       | A2                       | D         | -     | -         | D      |
| Triethylamine                                                                                                                                                                           | -         | -            | A1        | A    | B          | C       | A    | -        | A                        | A                        | -         | -     | A         | A1     |
| Sulphur trioxide                                                                                                                                                                        | -         | -            | D         | A    | A          | D       | C2   | B        | A                        | C                        | A         | D     | B         | C      |
| Vinegar                                                                                                                                                                                 | -         | A            | A         | A    | B          | B       | A    | A        | A                        | A                        | D         | D     | D         | B      |

Non-contractual information subject to change without notice



# GENERAL TERMS AND CONDITIONS OF SALE

By placing an order, the customer acknowledges having read and accepted our terms and conditions of sale.

## I - APPLICATION OF THE GENERAL TERMS AND CONDITIONS OF SALE - OPPOSABILITY

These general terms and conditions of sale are systematically sent or given to each buyer to enable them to place an order. Consequently, placing an order implies the buyer's full and unreserved acceptance of these GCS, to the exclusion of all other documents such as prospectuses and catalogues issued by the vendor, which are for information purposes only. Unless formally accepted in writing by the vendor, no special condition may prevail over the General Conditions of Sale. In the absence of express acceptance, any condition to the contrary on the part of the buyer will therefore be unenforceable against the vendor, regardless of when it may have been brought to the vendor's attention. The fact that the vendor does not invoke any of these GCS at a given time may not be interpreted as a waiver of the right to invoke any of the said conditions at a later date.

## II - ORDERS

Orders are not final until they have been confirmed in writing by the vendor in the form of an acknowledgement of receipt, unless otherwise stipulated. The vendor is only bound by orders taken by its representatives or employees subject to signed, written confirmation. The benefit of the order is personal to the buyer and may not be transferred without the vendor's agreement.

## III - CHANGING AN ORDER

Any modification or cancellation of an order requested by the buyer can only be taken into consideration if it is received in writing before the products are dispatched.

At the vendor's discretion, amendments or cancellations shall give rise to additional invoicing or the payment of penalties equal to 25% of the amount of the initial order. If the vendor does not accept the change or cancellation, any advance payments made will not be returned.

## IV. DELIVERY - GOODS DELIVERED

The vendor reserves the right to make any changes it deems necessary to its products at any time and, without obligation to modify products previously delivered or in the process of being ordered, reserves the right to modify the models defined in its prospectuses or catalogues without prior notice.

## V - DELIVERY

### V.I - Terms and conditions

Delivery is made either by directly handing the product to the buyer, or by delivery to a shipper or carrier at the vendor's warehouses. The buyer undertakes to take delivery within 8 days of notice of the goods' availability being provided. Once this period has elapsed, the vendor may either consider the order to be cancelled and the sale to be unilaterally terminated by the buyer, or storage costs will be taken into account.

### V.II - Deadlines

Deliveries are made subject to availability and on a first come, first served basis. The vendor is allowed to make either full or partial deliveries. The delivery times are indicated as precisely as possible, but depend on what options the vendor has in terms of procurement and transport. Should deliveries take longer than the delivery time stated, this shall not give rise to damages, deductions or the cancellation of orders in progress. Nevertheless if, one month after the indicative delivery date, the goods have not been delivered for any reason other than force majeure, the sale may then be cancelled at the request of either party; the buyer shall have their advance payment returned, but shall not be eligible for any other compensation or damages. The following are considered to be cases of force majeure which relieve the vendor of its obligation to deliver: war, riots, fire, strikes, accidents and the vendor's own inability to obtain supplies. The vendor shall, within an appropriate time, keep the buyer abreast of the cases and events listed above. In any event, delivery on time can only take place if the buyer is up to date with their obligations towards the vendor, for whatever reason.

### V.III - Expenses

Products are delivered in mainland France carriage paid for all shipments over 900 excluding VAT. For shipments of less than 900 excluding VAT, products can be delivered carriage forward on invoice. International sales shall be subject to the Incoterm selected and specified by the parties. Should no Incoterm have been selected, the sales are deemed to be EX WORKS. The minimum invoice amount is 50 excluding VAT.

The buyer cannot claim to charge the vendor for normal resale promotion under its own name.

### V.III - Risks

Products travel at the risk of the recipient, who is responsible for making any necessary observations in the event of damage or shortages and for confirming their reservations by extrajudicial document or by registered letter with acknowledgement of receipt to the carrier within three days of receipt of the goods.

## VI - RECEIPT

Without prejudice to the measures to be taken with regard to the carrier, complaints about visible defects or the non-conformity of the product delivered with the product ordered or with the dispatch note must be made in writing within 48 hours of the arrival of the products. It is up to the buyer to provide any justification as to the reality of any defects or anomalies observed. The vendor must be given every opportunity to ascertain and remedy any such defects. It will refrain from intervening or having a third party intervene for this purpose. For products sold in packaged form, the weights and measures at the point of dispatch are taken as proof of the quantities delivered. For products sold by the metre, the lengths invoiced are those actually delivered. When they are subject to special manufacturing, they may differ from the quantities ordered by 10% without this providing grounds for

being contested by the buyer. For our hoses, the standard lengths are expressed from seat to seat of the end fittings and are tolerated in accordance with our instruction I-08-003.

## VII - REPLACEMENT

### VII.I - Terms and conditions

Non-compliant or defective products may be replaced. Returns shall be subject to formal prior agreement between the vendor and the buyer. Any product returned without this agreement will be held at the disposal of the buyer and will not give rise to the issuance of a credit note. The costs and risks involved in such a return shall always be borne by the buyer. Returned goods must be accompanied by a return note to be attached to the parcel and must be in the condition in which the vendor delivered them.

### VII.II - Consequences

In the event of an apparent defect or non-conformity of the products delivered, duly noted by the vendor under the conditions set out above, the buyer may obtain a free replacement or reimbursement of the products, at the vendor's discretion, to the exclusion of any compensation or damages.

## VIII - WARRANTY FOR CONCEALED DEFECTS

### VIII.I - Scope

Goods are guaranteed against concealed defects in pursuance of Article 1641 and subsequent articles in the French Civil Code for a period of one month counting from the delivery date. The vendor's warranty is limited to defects that are inherent to the goods sold and which existed on the day on which they were sold. The vendor may not be held liable in the event of abnormal use of the products or failure to comply with safety regulations or good engineering practice.

Under this warranty, the only obligation incumbent on the vendor shall be free replacement or repair (vendor's choice) of a product or component recognised as being defective by its services. To benefit from the warranty, all products must be submitted to the vendor's after-sales service beforehand, which must provide its approval for any replacement to be provided. Any carriage costs shall be borne by the buyer.

### VIII.II - Exclusions

The warranty shall not apply to conspicuous defects. Faults and deterioration due to normal wear and tear or an external accident (incorrect assembly or installation, poor storage conditions, abnormal use, etc.), or due to a modification of the goods which was neither foreseen or specified by the vendor shall also be excluded.

## IX - PRICES

Prices are determined by quotation.

Our prices and rates are always subject to change without notice, unless otherwise agreed.

Prices are net, ex works, exclusive of tax on the basis of the rates communicated to the buyer for the supply of products and equipment. Unless otherwise agreed, any request for the provision of additional services such as studies, engineering, test reports, factory acceptance, approval procedures or miscellaneous certificates shall be subject to additional invoicing by the vendor which is separate from the cost of the products sold.

The payment currency shall be the Euro unless otherwise stipulated.

Any tax, duty or other provision of service to be paid for in pursuance of French regulations or the regulations of an importing country or a transit country shall be borne by the buyer. Unless the vendor provides written agreement, carriage costs shall always be borne by the buyer.

The share of the unit cost borne by the vendor for the management of waste construction products or materials from the construction sector, as invoiced by the eco-organisation to which the vendor belongs under the unique identifier FR334290\_040HOB, is passed on in full to the buyer of the product without any possibility of a reduction.

## X - INVOICING

An invoice is drawn up for each delivery and issued at the time of delivery, unless a summary invoice, referring to several delivery notes issued, is drawn up.

## XI - PAYMENT

### XI.I - Terms and conditions

Unless otherwise agreed, payments shall be made within 30 days of the invoice date. In the case of deferred or forward payment, payment within the meaning of this article does not constitute the mere delivery of a bill of exchange or cheque implying an obligation to pay, but payment on the agreed due date. The buyer may not set off sums owed by the vendor against sums owed by the buyer without the vendor's written agreement.

### XI.II - Down payment

The vendor reserves the right to make orders subject to the payment of a deposit.

### XI.III - Delay or default

In the event of late payment, the vendor may suspend all orders in progress without prejudice to any other course of action. Any sum not paid by the due date featured on the invoice shall lead to the application of penalties to a sum equal to one and a half times the legal interest rate.

These penalties shall be payable when the vendor so requests.

In the event of non-payment, if forty-eight hours elapse after notice has been provided without any result, the sale shall automatically be cancelled should the vendor deem fit to do so. The vendor may institute summary proceedings to request the return of the goods, without prejudice to any other damages. Cancellation shall apply not only to the order in question but also to any prior orders that are unpaid, whether or not deliveries have been made or are being delivered, and whether or not payment for them is due.

In the case of payment by bill of exchange, failure to return the bill of exchange will be considered as a refusal of acceptance, which is equivalent to a default in payment. Similarly, where payment is to be made in instalments, non-payment of a single instalment will result in

the entire debt becoming immediately due and payable, without notice of default being required.

In all the above cases, the sums that may be due for other deliveries, or for any other reason, shall become payable immediately if the vendor does not opt to cancel the relevant orders.

The buyer shall provide compensation for all expenses incurred due to the disputed recovery of sums owed, including the professional fees for legal officials.

Under no circumstances may payments be suspended or be subject to any compensation whatsoever without the vendor's prior written agreement. Any partial payment shall be attributed firstly to the non-preferential part of the debt, and then to the sums that have been outstanding for the longest.

### XI.IV - Requirement of guarantees or settlement

The vendor reserves the right to require guarantees or payment in cash or by bill of exchange payable on demand, prior to the execution of orders received.

## XII - TRANSFER OF RISKS

The transfer of risks for products, even for a sale that is agreed to on a carriage-paid basis, shall occur as of shipment from the vendor's warehouse.

This means in particular that the goods travel at the buyer's risk, and it is the buyer's responsibility in the event of damage, loss or shortages to make any reservations or take any action against the carriers responsible.

## XIII - TRANSFER OF RISKS

The goods covered by this contract are sold subject to retention of title: transfer of title is subject to full payment of the price by the buyer on the agreed due date.

In the event of non-payment on the due date, the vendor will regain possession of the goods of which it remains the owner and may, at its discretion, terminate the contract by simple registered letter sent to the buyer.

The buyer shall refrain from any transformation, incorporation or assembly of the goods prior to payment.

The buyer must store the goods sold under retention of title in such a way that they cannot be confused with goods of the same nature from other vendors.

## XIV - PACKAGING

Unless otherwise agreed, consignment of the cable drums is invoiced for at the same time as the cables (based on the professional rate in force). A refund is provided for this subject to deduction of a fixed fee if the cable drums are returned carriage-paid and in good condition within a maximum period of 3 months. Beyond this period, the vendor may apply a rental fee of 2.5% of the price per month. Packaging items and cable drums bearing the vendor's trademark may only be used for its products and may not be used for anyone else's products under any circumstances. Any breach of this rule will expose the offender to criminal prosecution and the payment of damages.

## XV - INDUSTRIAL PROPERTY

All equipment, models, plans, specifications, technical documents, assembly instructions, user manuals and other items of information provided by the vendor shall remain its property at all times.

The buyer may not claim any ownership whatsoever over the equipment, models, plans and specifications and other items of information and may not use them outside the context of the sales contract under any circumstances.

The buyer shall refrain from reproducing the Vendor's products.

All industrial property rights relating to the results of the execution of the order shall remain the property of the vendor for an unlimited period and without geographical limitation.

## XVI - CONFIDENTIALITY

The Buyer shall consider any information given, technical formula, or concept it may obtain knowledge of through this contract to be strictly confidential and shall refrain from divulging it.

For the purposes of this clause, the buyer shall be liable for its employees as if they were itself.

However, the buyer may not be held liable for any disclosure if the elements disclosed are in the public domain or if the buyer had knowledge of them or obtained them from third parties by legitimate means.

Likewise, the vendor undertakes to keep strictly confidential any information it may have obtained in the performance of this contract and not to divulge it to anyone either during the performance of the agreement or after its termination.

## XVII - COMPETENCE - APPLICABLE LAW

The courts of Thiers shall have sole jurisdiction in the event of any dispute of any nature or any challenge relating to the formation and performance of the order, unless the vendor prefers to bring the matter before any other competent court.

This clause applies even in the event of summary proceedings, incidental claims, multiple defendants or third-party claims, and regardless of the method and terms of payment, without any jurisdiction clauses that may exist in buyers' documents being an obstacle to the application of this clause.

The applicable law is French law.

## IMPORTANT

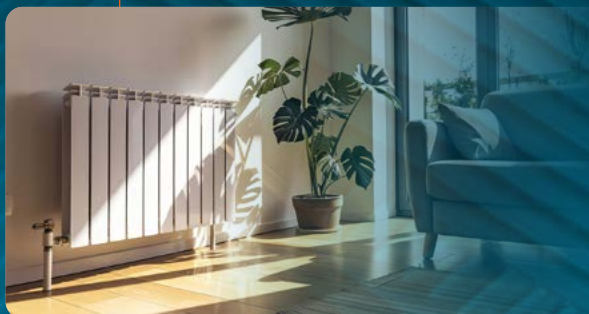
• Only hoses manufactured in our workshops benefit from our product certifications and specific guarantees.

• In the case of sales of spare parts (hoses, fittings, bushings), our guarantees only cover our supplies to the exclusion of any manufacturing operations: assembly, crimping, etc. carried out outside our workshops.



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