



EUROBATEX

INSTRUCTION
MANUAL

COMPANY PROFILE

UNION FOAM Spa was formed in the early 60s under the name of "IRG Regenerated Rubber Industry Spa" specializes in the production of regenerated derived from waste rubber.

In those early days, the company stable 'strong and important links with the largest producers of both raw materials (Enichem, BAYER, SIR) that of rubber products (PIRELLI, MANULI).

In 1978, as part of an implementation and diversification of its production facilities, the Company began producing, first in ITALY, semi-closed cell foam rubber suited to thermal insulation and acoustic components plant in the various types of civil and industrial buildings . To date UNION FOAM Spa is a Manufacturer Leader in Europe, booming and with extensive experience in research, testing and implementation of innovative high-tech manufactured goods.

The products and systems, able to prevent the formation of condensation, to limit the losses of energy, absorb noise and vibration and to safeguard the environment, are used in a wide range of applications. (Plumbing, Air Conditioning, Refrigeration, Oil & Gas, Petrochemical, Marine, Rail.)

Certifying Organizations, accredited both nationally and internationally, ensuring, in compliance with the regulations in force, the constancy of the quality and performance of different types of products.

The versatility of the production facilities and the ability to make their own customer needs worldwide allow to adapt the different types of products in full compliance with regulatory requirements in the different countries where the company interacts.

The Company EN ISO 9001: 2008, CE MARK, RAL QUALITY MARK, MED MARINE, has always pursued the objective of "Customer Satisfaction" in view of the Global Quality, to consolidate and develop collaborative relationships and partnerships with customers through the SYSTEM 1+ for assessment and verification of constancy of performance of its products.

And 'this with Agents and Distributors among the leading companies in major world markets.

UNION FOAM Spa

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PREAMBLE

To support users and applicators of insulators of its production in the correct installation UNION FOAM Spa provides this manual with the goal, on the basis of experience, to advise the technical solutions that can facilitate and simplify the construction of thermal insulation to "workmanlike". The information represents only practical suggestions, do not fall within the competence of the company installing the insulation materials that cannot be guaranteed because the variability of working conditions should be evaluated and analyzed individually.

UNION FOAM S.p.A. guarantees only "constant quality" and the compliance of its products on the basis of current regulations.

The installation manual defines the rules that must be attended for a correct installation of our whole range of flexible elastomeric foam products.

Please note that, limited to **Eurobatex HF** products, a greater care during the installation operations is recommended to avoid anomalous tensions during the application; the product structure may result more sensitive to tearing due to the absence of PVC in the formulation.

For Eurobatex HF products in sheet form, used for pipework insulation, please follow the instructions below:

| | |
|------------------------------|-----------------------------------------------------|
| thk. insulation ≤ 19 mm | to be used on pipe outer $\varnothing \geq 139$ mm; |
| thk. insulation 25mm | to be used on pipe outer $\varnothing \geq 159$ mm; |
| thk. insulation 32 mm | to be used on pipe outer $\varnothing \geq 219$ mm |

For the installation of Eurobatex HF pipes, please refer to section 5.1 .

EUROBATEX insulation system



- EUROBATEX - EUROBATEX R
- EUROBATEX AT-ATR
- EUROBATEX HF
- EUROBATEX GLASTECC
- EUROBATEX ISOLTECC
- EUROBATEX DUCT
- EUROBATEX PEN-PEAL
- EUROBATEX TRIPLEX
- EUROBATEX HI-TEC
- EUROBATEX U.V. PROTECTION

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1

ACCESSORIES AND THEIR TECHNICAL PROPERTIES

With a view to making the application of our products easier, Evocell Srl has developed a wide range of accessories. Their correct use is essential in ensuring the long-term performance of the entire insulation system in terms of its impermeability, temperature resistance, durability and pleasing aesthetic presentation.



NEOPRENE ADHESIVE

A contact adhesive with a chloroprene, synthetic resin and solvent base. Designed for use with foamed synthetic rubber insulation material, this product offers long-term durability and temperature resistance to 110°C. **It must only be applied when the ambient temperature is not below 10°C and not above 30°C, when the system is completely shut down and never in direct sunlight.** The adhesive should be stirred before application and then allowed to dry for around 24 hours before the system is switched on. Surface coverage is around 3/4 sq.m/kg. Drying time before adhesion is between 5 to 10 minutes at a temperature of 20°C. The product is also available for high temperature insulation.

CNX SYNTHETIC RUBBER ADHESIVE

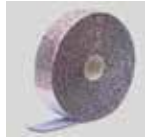
| | | |
|----------------------------------|--------------------------|------|
| Coverage of Adhesive by Area | 3 to 4m ² /kg | |
| Coverage of Adhesive on Pipework | thickness mm. | m/kg |
| | 6 | 200 |
| | 9 | 130 |
| | 13 | 90 |
| | 19 | 40 |
| | 25 | 30 |
| | 32 | 20 |

Drying time before Gluing. from 5/10 minutes at a room-temperature of 20 °C



ELASTOMERIC FOAM TAPE

Insulating adhesive closed-cell foamed elastomeric tape, with the application process (breaking, cutting and adhesive application) of the elastomeric tape allowing it to retain all its insulating and impermeable qualities. The tape is strengthened with a polyester fibre net which is tear-resistant and does not distort during application. The adhesive is permanent acrylic vinyl which has a guaranteed temperature resistance ranging from -20°C to $+85^{\circ}\text{C}$, can be applied even when the ambient temperature is only 5°C , has excellent UV and water resistance and offers superior adhesion on a range of surfaces. It is particularly suitable for insulation on anti-condensation equipment and in areas where access is difficult. It is also available in a HI-TEC version.



BITUMEN TAPE

Insulating bitumen tape with a resin, rubber and bitumen base that is ideal for moulding itself to application surfaces. It is especially suitable for complex shapes and is ideal for anti-condensation insulation work where several layers can be used. It is also suitable for pipework where the operating temperature does not exceed 80°C



ELASTOMERIC PAINT

A semi-liquid paste that is used to protect expanded insulation material in outdoor use against UV rays.

UNION COLOUR ELASTOMERIC PAINT

TECHNICAL DATA

| | |
|-------------------------|---------------------------------------------------------|
| Colours available | Black, grey, white, blue, red (some only made to order) |
| Density | 1,25 - 1,35 Kg/dm ³ at 20 °C |
| Temperature range | from - 50 °C to 120 °C |
| Application temperature | from 5 °C to 30 °C |
| Drying time | 1 - 2 hours |
| Coverage by Area | 5m ² /litre |
| Packaging | 3 litre tins or 20 litre Tubs |

Performance on insulating pipes m/l

| diameter mm | thickness 6 mm | thickness 9 mm | thickness 13 mm | thickness 19 mm | thickness 25 mm | thickness 32 mm |
|-------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| 6 | ml 71 | ml 46 | | | | |
| 8 | ml 64 | ml 43 | | | | |
| 10 | ml 58 | ml 42 | ml 35 | ml 25 | | |
| 12 | ml 53 | ml 36 | ml 34 | ml 24 | | |
| 14 | ml 49 | ml 31 | ml 34 | ml 23 | | |
| 16 | ml 46 | ml 29 | ml 28 | ml 22 | | |
| 18 | ml 43 | ml 25 | ml 26 | ml 20 | ml 15 | ml 11 |
| 20 | ml 41 | | | | | |
| 22 | ml 38 | ml 22 | ml 23 | ml 18 | ml 14 | ml 10 |
| 25 | ml 35 | | | | | |
| 27 | ml 33 | ml 20 | ml 20 | ml 16 | ml 13 | ml 9 |
| 34 | ml 28 | ml 18 | ml 16 | ml 15 | ml 12 | ml 9 |
| 42 | ml 23 | ml 18 | ml 16 | ml 14 | ml 11 | ml 8 |
| 48 | | ml 16 | ml 15 | ml 13 | ml 11 | ml 8 |
| 54 | | ml 15 | ml 14 | ml 12 | ml 10 | ml 7 |
| 60 | | ml 14 | ml 13 | ml 11 | ml 10 | ml 7 |
| 70 | | ml 13 | ml 11 | ml 10 | ml 9 | ml 6 |
| 76 | | ml 12 | ml 10 | ml 9 | ml 8 | ml 6 |
| 89 | | ml 11 | ml 9 | ml 9 | ml 8 | ml 6 |
| 102 | | ml 10 | ml 9 | ml 8 | ml 7 | ml 5 |
| 108 | | ml 9 | ml 8 | ml 8 | ml 7 | ml 5 |
| 114 | | ml 8 | ml 8 | ml 7 | ml 6 | ml 5 |
| 127 | | | ml 7 | ml 7 | ml 6 | ml 5 |
| 134 | | | ml 7 | ml 6 | ml 5 | ml 4 |
| 140 | | | ml 6 | ml 5 | ml 5 | ml 4 |
| 160 | | | ml 6 | ml 5 | ml 4 | ml 5 |

N.B.
For greater protection it is advisable to apply 2 coats of paint.

The first hand should be diluted with approx. 10% of water.



PVC TAPE

Made with auto-extinguishing adhesive PVC, this tape is available in black or grey. Has excellent durability, is dilute acid and alkaline solution resistant. Its malleability makes it ideal for application on rough surfaces.

PVC JOINTING TAPE

| TECHNICAL DATA | |
|---------------------|--------------------------------------------------------|
| Fire behaviour | B1 (DIN 4102) |
| Tape thickness | 0,10 mm |
| Tensile strength | MPa 15 |
| Elongation at break | 125% |
| Teperature limit | + 80 °C |
| Storage conditions | at approx. 20/25 °C with relative air humidity max 65% |



ALUMINIUM TAPE

This adhesive aluminium tape has a thickness of 030 mm and is available with a smooth or embossed finish. It is used for finishing and sealing polyurethane units, air conditioning ducting and surfaces protected with aluminium sheeting.

ALUMINIUM JOINTING TAPE

| TECHNICAL DATA | |
|---------------------------|--------------------------------------------------------|
| Working temperature range | from -40 °C to + 80 °C |
| Tape thickness | 0,030 mm |
| Elongation at break | 3% |
| Fire behaviour | Nonflammable (DIN 4102 Norm) |
| Storage conditions | at approx. 20/25 °C with relative air humidity max 65% |



ALUMINIUM TERMINALS

To give a professional finish to insulated piping. Available as:

18 mm for insulation between 24 and 34 mm

23 mm for insulation between 43 and 49 mm

28 mm for insulation between 61 and 90 mm

38 mm for insulation between 102 and 115 mm



DETERGENT FOR NEOPRENE ADHESIVE

Thanks to its special chemical formula this detergent gives thorough cleaning on piping and insulation materials on which the adhesive is to be used.



TACKS AND AWLS

For a professional finish using PVC coverings these accessories are indispensable when working on insulating materials.



FOIL COVER IN PVC

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LIST OF TOOLS



1 - Long and short bladed knife

2 - Rigid rule

3 - Chalk

4 - Marker pen

5 - Spatula

6 - Scissors

7 - Brush for small and larger surfaces

8 - Whetstone

9 - Compass

10 - Rigid smaller ruler

11 - Dime for grafting

3

HINTS FOR INSULATION WORK

- A)** Always ensure that pipes and sheets are completely clean and that they are not contaminated with dust, dirt or liquids (oil, water etc).

- B)** Make sure that your tools are sharp, that adhesives and paint are fresh and that brushes are in good order.

- C)** Never install insulating materials on functioning equipment; make sure that the equipment is not switched back on until at least 36/48 hours after the insulation material has been installed.

- D)** Insulation material should be protected with a coating of paint or PVC or aluminium material within 48 hours of installation, especially on outdoor equipments.

- E)** Before insulating pipework , ducts, metal tanks etc ensure that any rust is treated with an anti-corrosion agent that has been allowed to dry for at least 24/36 hours.

- F)** Make sure that the parts joined by adhesive are joined by pressure and not by pulling.

- G)** Ensure that junction points and critical points like pumps, flanges, fittings and supports are perfectly sealed.

- H)** Never insulate pipework that is too close together; optimum separation distance is at least 3/4cm.

4

ADVICE FOR WORKING WITH ADHESIVES

- A)** Ensure that you are working in the best environmental conditions (check instructions on the adhesive tin or on the technical data sheet). It is better to use smaller tins to avoid the premature evaporation of the solvents in the adhesive.

- B)** Always use the correct size brushes (dependent on the surface to be glued) that have short, stiff bristles.

- C)** Spread the adhesive in the right quantity on the surface to be glued, ensuring that said surface is clean and free from dust, dirt, oils and fats.

- D)** Before joining the surfaces to be glued is good thing to allow the solvents to evaporate. Remember that the treated surfaces adhere only when the adhesive is no longer “tacky”.



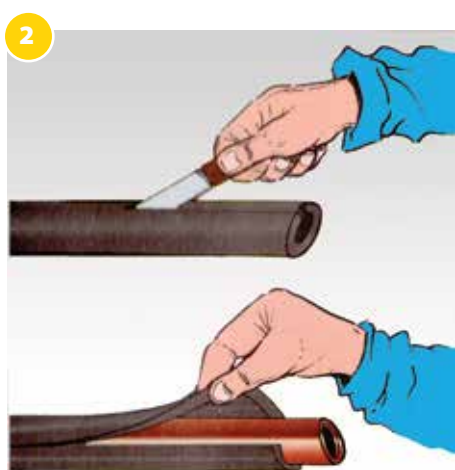
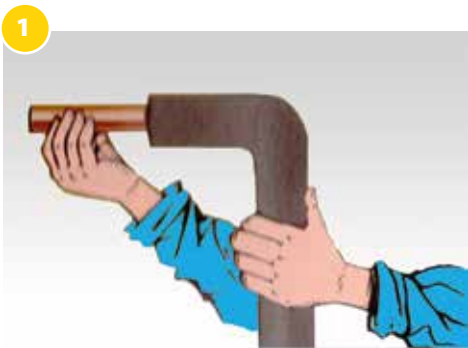
5.1 INSULATING PIPEWORK

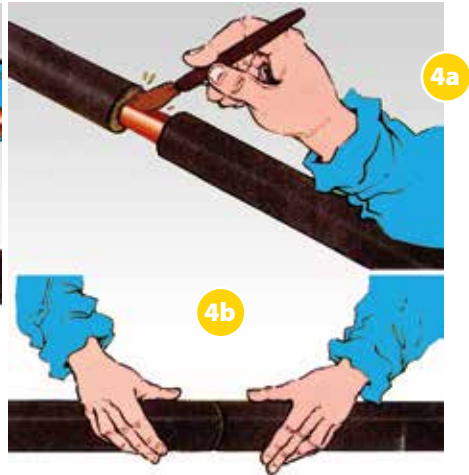
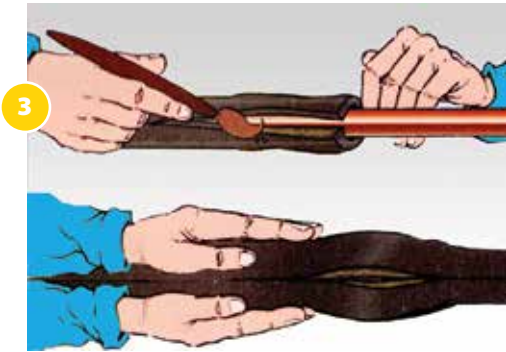
When the pipe ends are free, and not yet assembled, the insulation material can be threaded over the pipe, this applies also to curved sections (**fig 1**).

This installation procedure is not applicable for EUROBATEX HF products.

NB This application works subject to the following limitations: for insulation material with a thickness 6-9-13 mm up to a diameter of 1 and 1/4" (42-43mm), for insulation material with a thickness of 19 mm up to 3/4" (27/28mm). For big wall thickness insulation material or pipes with a larger diameter than those above proceed using the method detailed in **figs 2 and 3**.

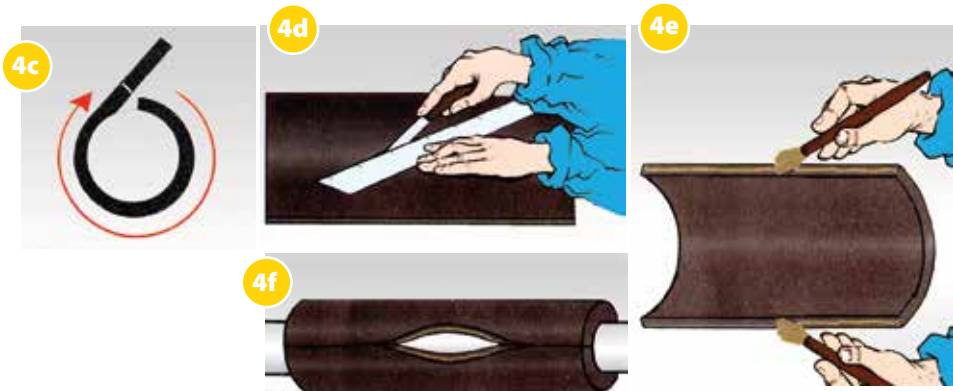
Note: For best insulation practice it is a good thing to glue the ends of the insulation material (**figs 4 and 4b**).





STRAIGHT PIPES WITH A DIAMETER ABOVE 160mm

- (A) Wrap a strip of the insulation sheet to be applied around the pipe (**fig 4c**) and mark the circumference.
- (B) Copy the mark onto the material and cut (**fig 4d**)
- (C) Glue the parts to be joined (**fig 4e**) - (D) Insulate the pipe (**fig 4f**)

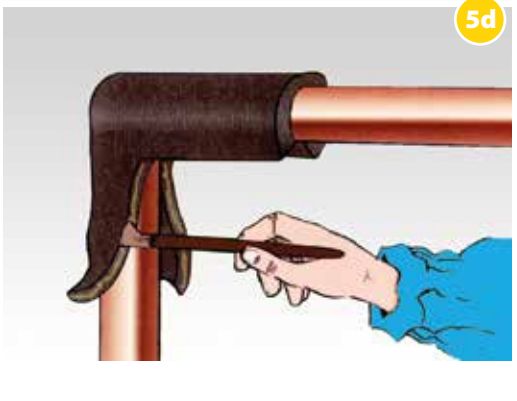
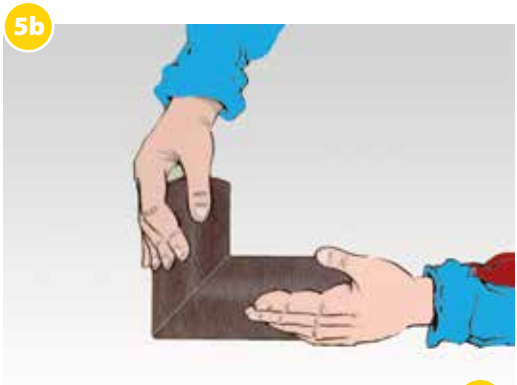


5.2 INSULATING BENDS - ELBOWS

ELBOWS

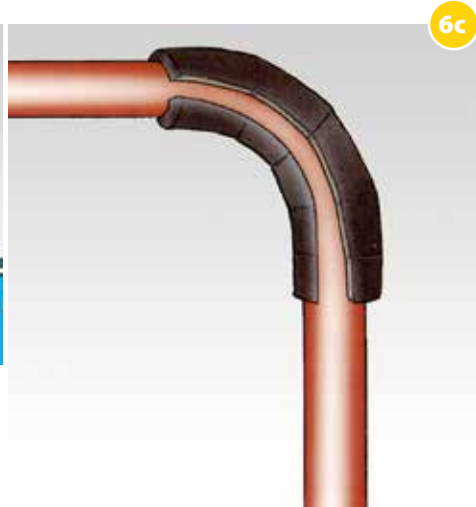
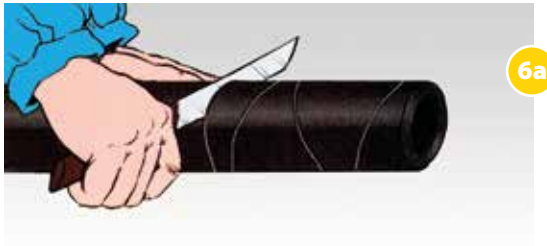
Proceed as indicated in **figs 5a,b,c,d.**

- A)** Make a 45 cut in the tube to produce two sections
- B)** Join the two parts
- C)** Cut lengthwise
- D)** Thread onto the pipe and glue the cut edges



STANDARD BENDS (DIMA 3)

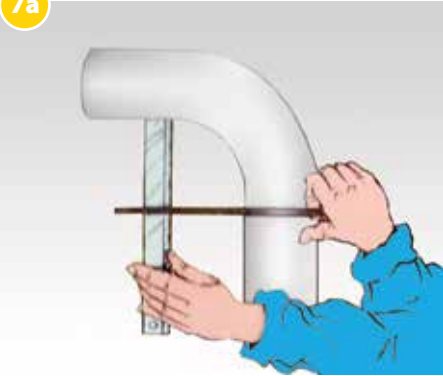
- A) Cut the insulation tube into 3, 4 or 5 sections as indicated (**fig 6a**)
- B) Glue the various sections (**fig 6b**)
- C) Cut the joined piece lengthwise, slide onto the curved pipe and glue the cut edges (**fig 6c**)



LARGE RADIUS BENDS (DIMA 5)

- A)** Measure the internal radius of the bend to be insulated (**fig 7a**)
- B)** Measure the circumference of the pipe using a piece of tape of the thickness with which the pipe is to be insulated (**fig 7b**)
- C)** Trace with chalk on the insulating material the measure and with a compass draw the bend (**fig 7c**)

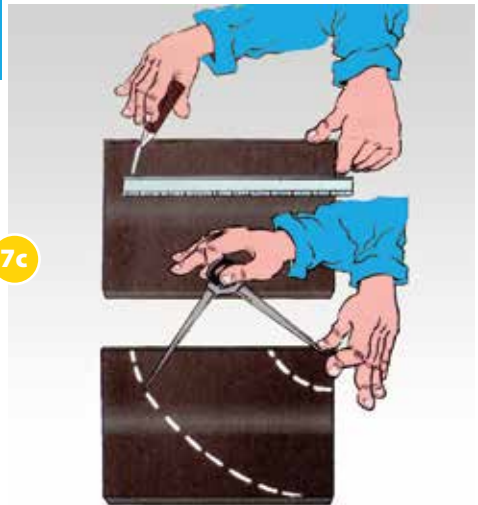
7a



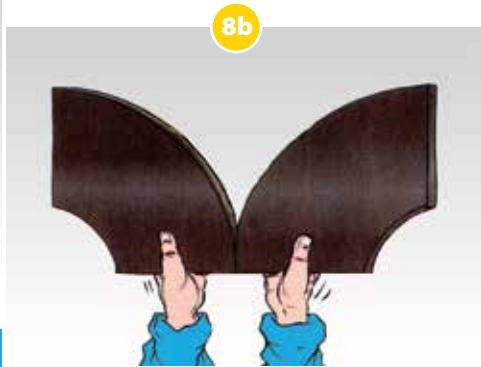
7b



7c



D) Cut the first section and then use that as a template for the second and then glue correctly and proceed as in **figs 8a, 8b, 8c, 8d, 8e.**



5.3 INSULATING TEE FITTINGS, REDUCERS AND ANGLED PIPEWORK

T-FITTINGS

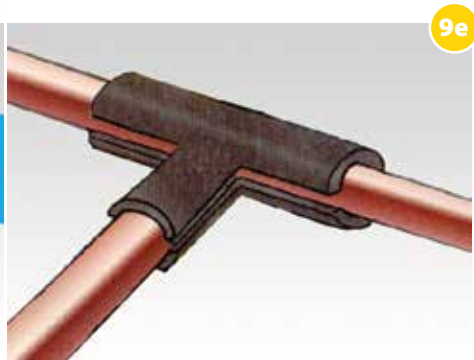
Proceed as illustrated in the illustrations below (**figs 9a and 9b**)

Prepare with a suitably sharpened metallic pipe that has the same diameter as the T-pipe to be insulated (**fig 9a**).

Cut the insulation tube at a 45 angle (two sections of the correct length **fig 9b**). In both cases join the two sections with glue (**fig 9c**).

Cut the joined pieces as per fig 9d and then fit to the T-pipe section (**fig 9e**) and glue.



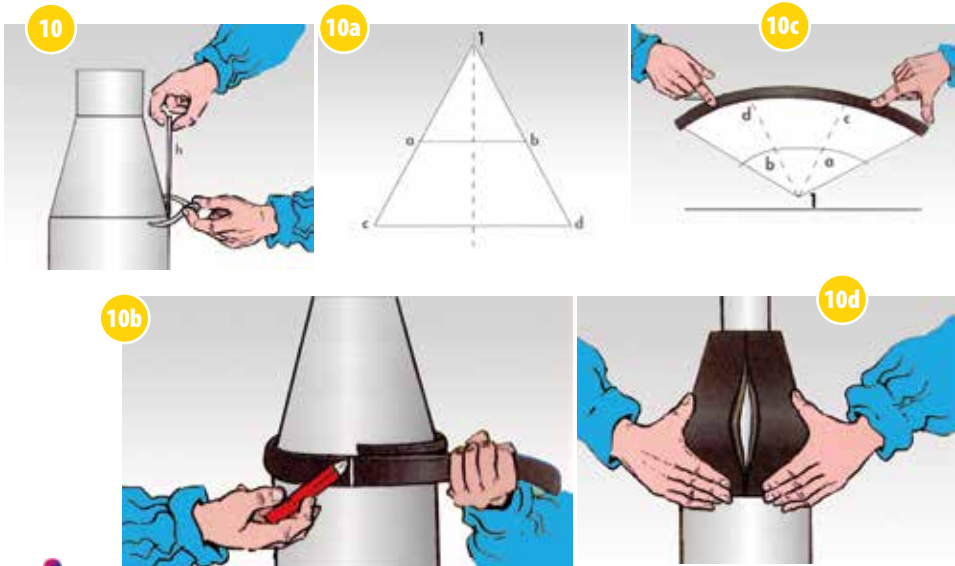


REDUCERS

(**fig 10**) Measure the height of the section to insulate (including the welding) and the smaller and larger diameter added to twice the thickness of the insulation material.

Mark on the material the measurement being careful to trace the median with the compass to mark the two arcs of circumference on the external points of the sectors **ab** and **cd** (**fig 10a**)

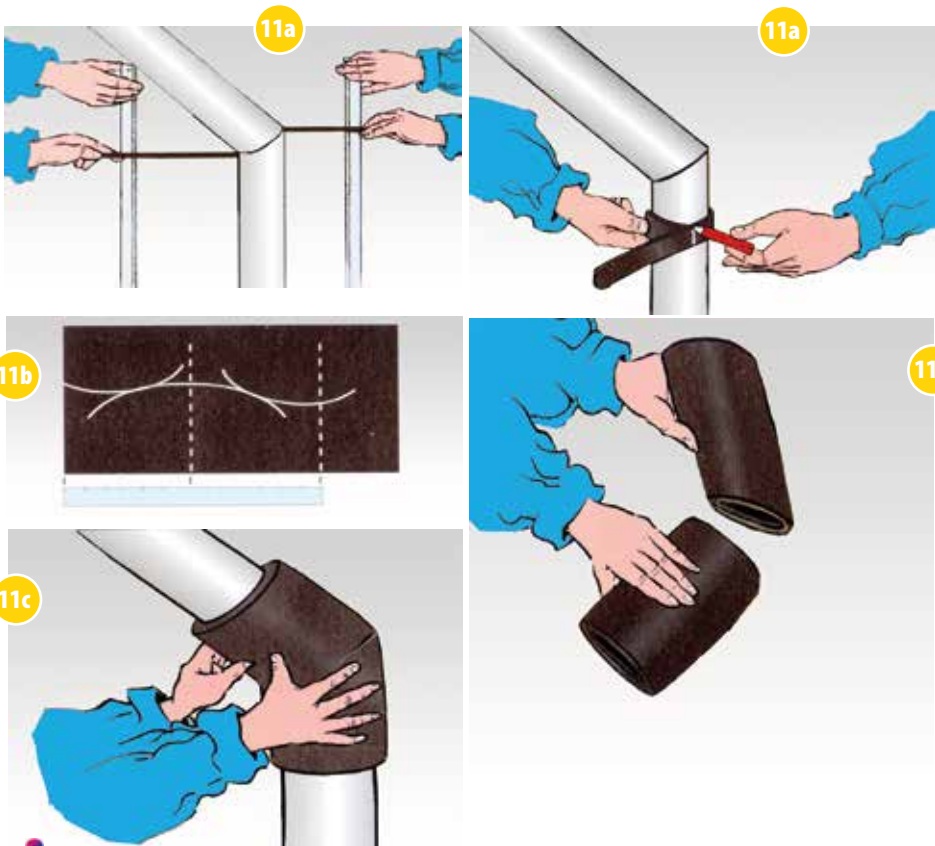
Measure the circumference of the pipe with the larger diameter with a strip of the same insulating material to be used and mark half of that circumference on the median, obtaining points **c** and **d** (**fig 10b and 10c**). Join those points, cut, glue and connect (**fig 10d**).



ANGLED PIPEWORK

The procedure is much the same as that used for elbows, taking care to mark on the material the circumference and the internal and external dimensions of the pipe to be insulated (sequence **fig 11a**).

Then proceed to glue the sections and fit onto the pipe (**figs 11b and 11c**).

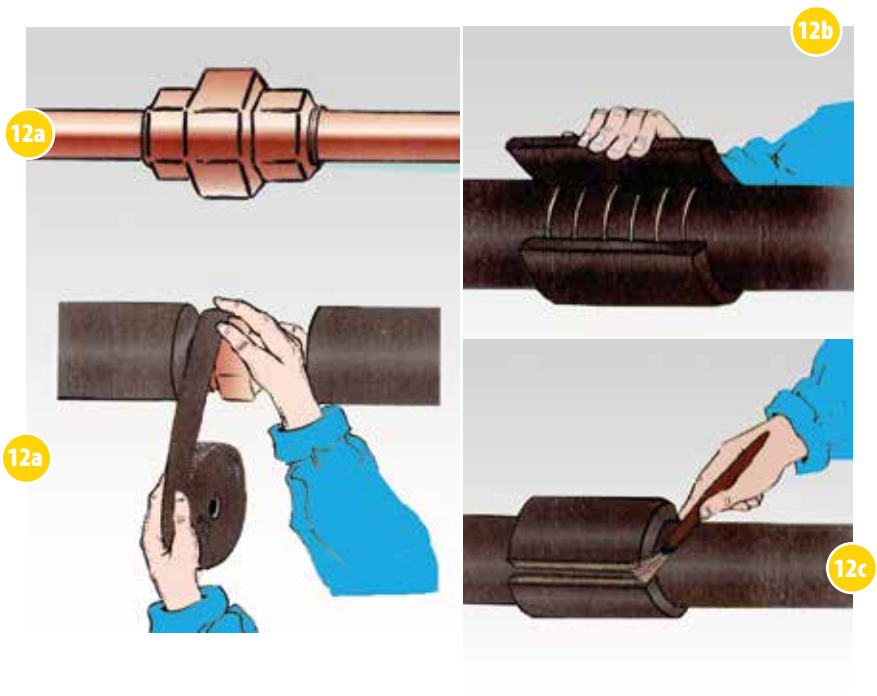


5.4 INSULATION OF FLANGES AND FITTINGS

FITTINGS

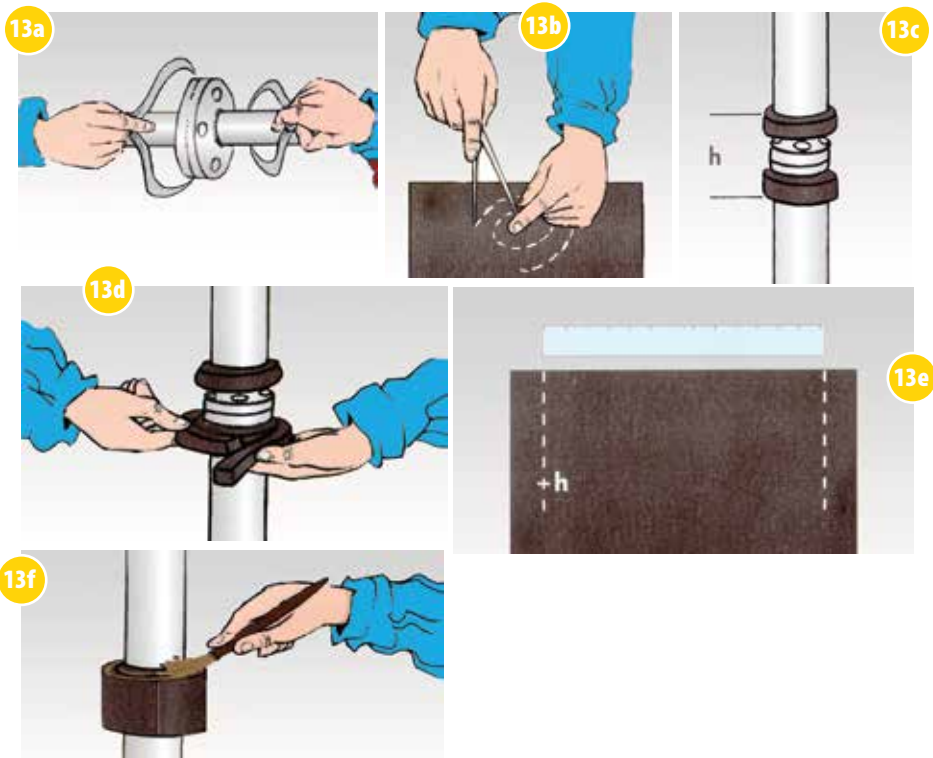
Proceed as per the sequence of illustrations (**figs 12a, 12b, 12c**). Having insulated the section of pipework, cover the fitting with anti-condensation adhesive tape (**fig 12a**).

Cover (**fig 12b**) the section of pipe with a correctly sized piece of insulating material and glue (**fig 12c**)



FLANGES

Proceed as in the sequence of illustrations (**fig 13**). Measure the external diameter of the pipe to be insulated and of the bare flange (**fig 13a**). With the compass trace the two circumferences on the material (**fig 13b**) and prepare the two gaskets that should be glued as indicated (**fig 13c**). Mark measure hon on the material (**fig 13c**). Measure the parts shown in the guide (**fig 13d**), copy them to the material and cut them out (**fig 13e**) and then glue (**fig 13f**).

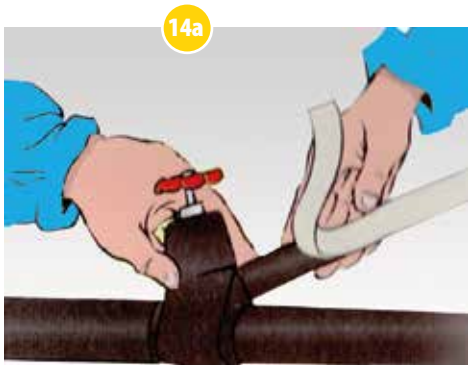


5.5 VALVE INSULATION

SMALL VALVES

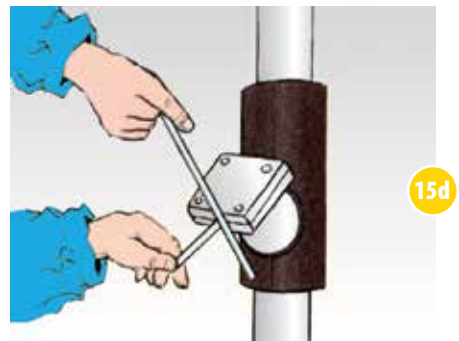
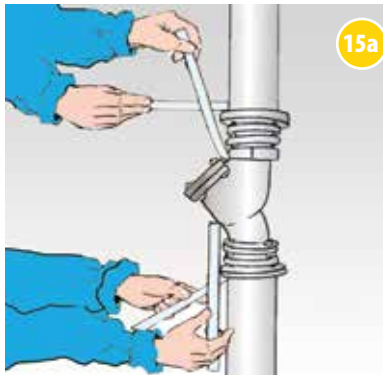
Proceed as shown in the illustrations (**figs 14a - 14b**), having insulated the pipe.

- A)** Cover the pipework with anti-condensation adhesive tape (**fig 14a**)
- B)** Having taken precise measurements, prepare a “jacket” of insulating material and glue as appropriate (**fig 14b**).



INCLINED VALVES

The same procedure should be followed for inclined valves (sequence **figs 15**)

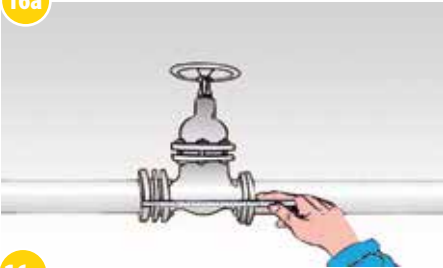


LARGE VALVES

Insulate the section as previously shown using tape. Take a measure (**fig 16a**) and copy to the material and carefully cut out the measured piece (**fig 16b**).

Once the outside edges have been glued, put the two sections together over the body of the valve (**fig 16c**). Measure, trace and cut out the circular section for the front (**fig 16d**).

16a



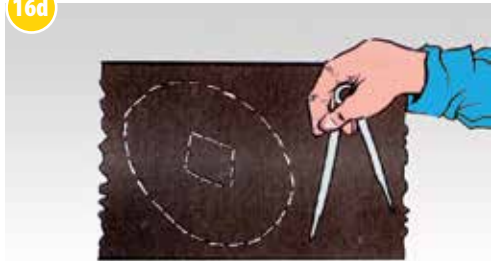
16b



16c



16d



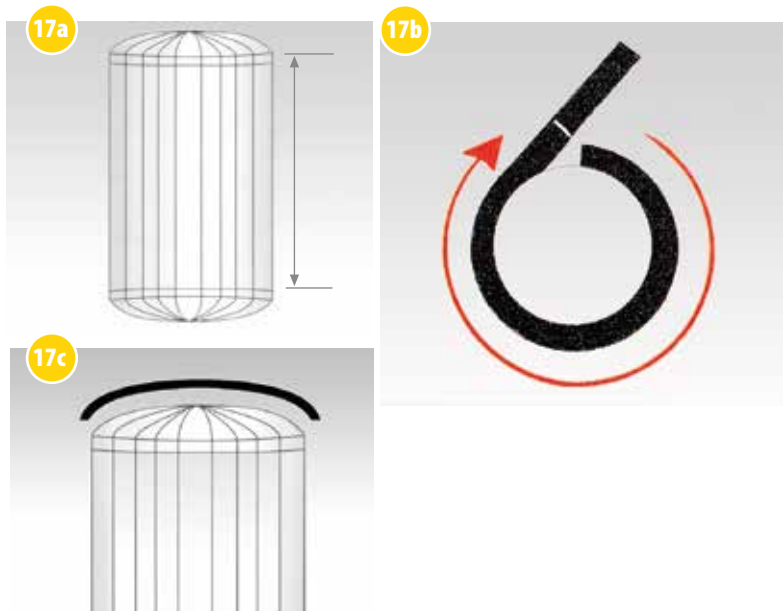
Check and transfer to the material the measurements (**fig 16e**). Trace them as shown (**fig 16f**); dress the valve (**fig 16g**) carefully glueing the various sections where necessary.



5.6 INSULATION OF TANKS

The correct procedure sees the insulation of the cylindrical part of the tank after the correct measurements have been taken (**figs 17a - 17b**) and copied onto the insulating material. The adhesive should be carefully spread on both the surface of the tank and the insulation material itself.

Subsequently the head of the tank must be insulated (**fig 17c**). Extra care should be taken in the application of sealant between the various sections.



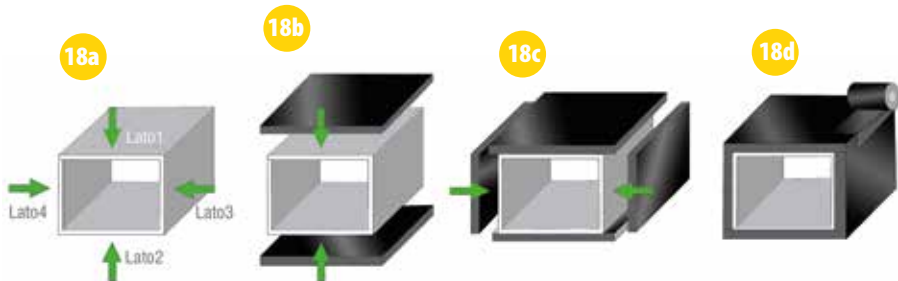
5.7 DUCTING INSULATION

The correct procedure for insulating ducting is described in the illustrations below (figs 18a, 18b, 18c, 18d).

Fig 18a. Measure sides **1** and **2**, transfer them to the material and cut out. **NB** When measuring the sides it is important to add to this the equivalent of two thicknesses of the insulation material so that this allows correct fitting of the duct with sides **3** and **4**.

Measure sides **3** and **4**, copy to the material and cut out. Proceed with the insulation as per the illustrations in figs 18b, 18c and 18d. If necessary seal the joints with adhesive tape.

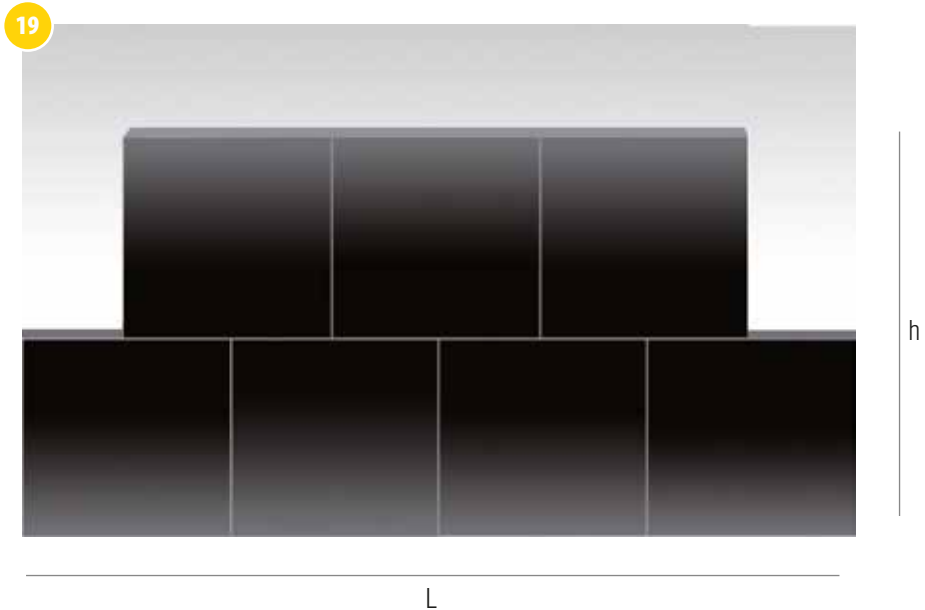
NOTE: this application can be done with standard material (for which adhesive is applied both to the material and the ducting) or with pre-glued material. In both situations we strongly recommend that a suitable solvent is used to clean the surfaces of any grease or dirt before insulation material is applied.



5.8 INSULATING FLAT SURFACES

Measure the surface to be insulated and copy the measurement to the material and cut out.

Only proceed with application of the adhesive to both the insulating material and the surface when the cleanliness of all sections has been checked. Insulation can then go ahead (**fig 19**).



5.9 MULTI-LAYER INSULATION

Proceed as in the illustrations (**figs 20a - 20b**). It is paramount that the joining sections between the various layers do not correspond; this guarantees superior performance especially in anti-condensation insulation. The adhesive both for insulation tubes and insulation sheets should be applied to all surfaces to be joined.

20a

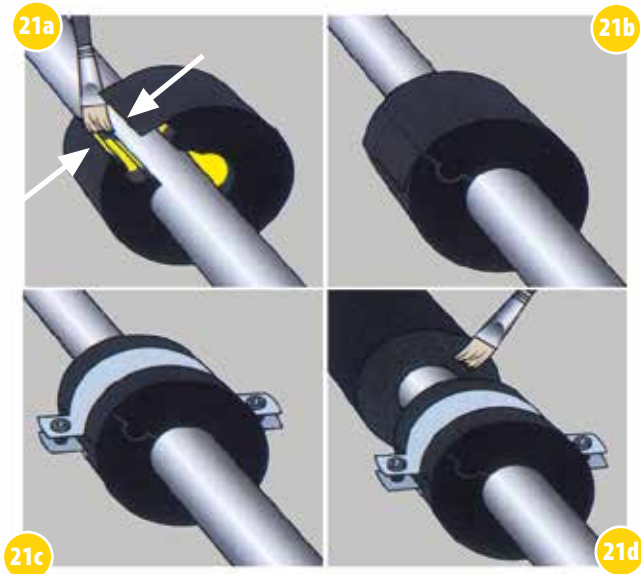


20b



5.10 INSTALLATION OF THE SUPPORTS

To ensure an effective system of thermal insulation and prevent the possible formation of condensation plant species in installations operating with cold fluids, it is recommended at the points where the pipes are supported by support brackets, the insulation of the latter using the insulating supports to assemble with the practical scheme proposed:



The inner core of the support, made of rigid polyurethane foam with excellent resistance to compression ensures an adequate protection to the pressure exerted by the bracket while keeping intact the sistema insulating and optimizing the perfect functioning of the whole system.

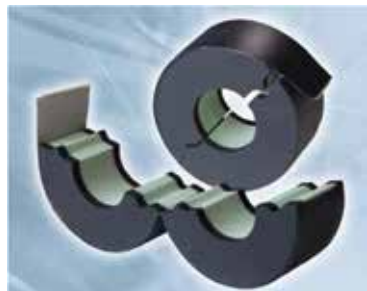
The same procedure can 'be used in case there is in the presence of support brackets square and / or rectangular typically used for the support of the ducts.

Choose the correct size of the media (refer to the thickness of insulation used on the piping specification)

(21a) Remove the adhesive tabs placed in surface protection identifying the thickness of the substrate itself.

(21b) Connect the two surfaces with adequate pressure on the parties

(21c - 21d) Treat the sides of the support (those finished elastomeric foam) with CNX glue and proceed to the connection of the support to the insulating system previously installed. Tighten the screws and fasteners securing the bracket on the supports.





EUROBATEX

INSTRUCTION MANUAL

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