



EDITION 2019

# K-FLEX® AL CLAD SYSTEM APPLICATION MANUAL

[www.kflex.com](http://www.kflex.com)



INDEX

▶ **K-FLEX® AL CLAD SYSTEM**

General informations Pg 5

▶ **TOOLS**

The applications tools Pg 8

▶ **TUBES**

Pre-cut tube with AL CLAD finishing already applied Pg 9

Insulation with K-FLEX® sheet with AL CLAD finishing already applied Pg 10

Consecutive installation of AL CLAD SYSTEM pipes and sheet sections Pg 11

▶ **ELBOWS**

Installation of pre-shaped K-FLEX® AL CLAD elbows Pg 12

▶ **DUCTS**

Insulation of duct with K-FLEX® AL CLAD standard sheet Pg 14

Insulation of duct with K-FLEX® AL CLAD adhesive sheet Pg 15

## GRAZ HOSPITAL

Country: Austria

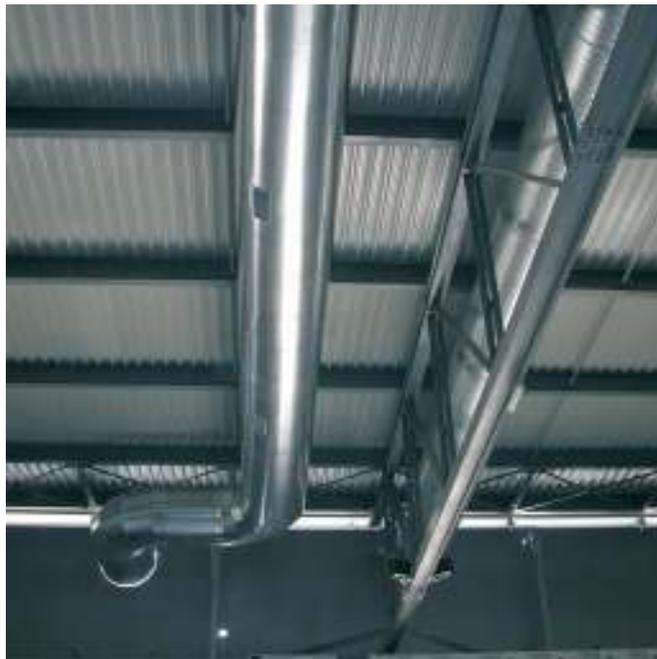


Country: Germany



## FIERA MILANO

Country: Italy



## FUNGIMENEZ

Country: Spain



# **K-FLEX<sup>®</sup>**

## **AL CLAD SYSTEM**



Site



Video



App. Manual



## K-FLEX® AL CLAD SYSTEM

- ▶ Versatile and flexible
- ▶ Reduced installation costs
- ▶ Economic system management
- ▶ Aesthetic finish
- ▶ UV and weather resistant
- ▶ Can be applied to any insulation system

### **K-FLEX® AL CLAD SYSTEM ▶ RANGE**

	▼ Length ▼	▼ Thicknesses ▼	▼ Diameters ▼
<b>K-FLEX® AL CLAD - Tubes</b>	1 m	9-13-19-25-32-40-50 mm	from 15 to 160 mm
	▼ Thicknesses ▼	▼ Height ▼	
<b>K-FLEX® AL CLAD - Sheets</b>	6-9-13-16-19-25-32-40-50 mm	1000/1500 mm	
<b>K-FLEX® AL CLAD - Adhesive sheets</b>	6-9-13-16-19-25-32-40-50 mm	1000/1500 mm	

## ACCESSORIES



Preformed K-FLEX® AL CLAD elbows



Preformed elastomeric K-FLEX® elbows coupled with AL CLAD foil



Preformed "T" connections with AL CLAD foil



Preformed elastomeric K-FLEX® "T" connections coupled with AL CLAD foil



Preformed elastomeric K-FLEX® elbows



Preformed elastomeric K-FLEX® "T" section in standard sizes



AL CLAD foil, with or without adhesive



AL CLAD adhesive tape



K-FLEX® AL CLAD system pipe insulated supports



K-FLEX® AL CLAD system pipe insulated supports with collar



K-SIL Silicone

# K-FLEX® AL CLAD - ACCESSORIES



## K-FLEX® PREFORMED ELBOWS AND “T-PIECES”

Preformed elastomeric K-FLEX® elbows and “T-pieces” coupled with AL CLAD foil



## K-FLEX® K-SIL

Specific weatherproof sealant.



## K-FLEX® AL CLAD FOIL

with or without adhesive



## K-FLEX® ADHESIVES

K-FLEX® adhesives are specifically designed for use with K-FLEX® products and provides secure bonding. The glue hardens on drying and is thus resistant to ageing and is weatherproof.



## K-FLEX® AL CLAD TAPE

Adhesive tape



## K-FLEX® INSULATED PIPE SUPPORTS

Specifically designed to ensure that thickness of the insulating material is absolutely correct, especially in the fixing points.



## K-FLEX® FASTENING PRODUCTS

Plastic rivets (white and grey) and punch.



## K-FLEX® THINNER

It is recommended that surfaces to be insulated should first be cleaned with K-FLEX® thinner, which is suitable for use with K-FLEX® adhesives. The glue will adhere perfectly to surfaces cleaned with the proprietary thinner. K-FLEX® thinner can also be used to clean tools (brush, spatula, etc.).

# K-FLEX® - USING PRODUCTS AND ACCESSORIES

## CLEANING SURFACES

The surfaces to be glued must be perfectly clean and free of grease (use K-FLEX® thinner).  
Ensure that the surface of the K-FLEX® insulating material is also clean, otherwise it will not stick properly.

## COATED SURFACES

Where surfaces have previously been painted, ensure that the glue is compatible and will adhere to the paint.  
Do not use the glue on surfaces that have been treated with products containing asphalt, bitumen or linseed oil.  
Use only chrome-zinc rust inhibitors and removers.

## USING THE GLUE

Preparation and storage. Before use, stir the K-FLEX® glue thoroughly.  
To store the glue, close the lid tightly to prevent the solvents evaporating.  
If the glue should become too hard (eg. when stored in contact with the air), dilute with K-FLEX® thinner. At low ambient temperature, don't dilute but heat it up to approx 20°C.  
Method of application. When using a large quantity (eg. a tin of 2.6 litres), pour a small amount out into a separate container and top off when necessary.  
When applying K-FLEX® insulation to metallic or other surfaces, the glue must first be applied to the insulating material, then to the corresponding surface.  
Conditions for use. Do not apply to systems that are in use.  
Do not use in sunlight. Weather protect where is possible.  
The insulation should be left to dry for 36 hours before turning the system back on.  
The ideal working temperature of the glue is +20° C.  
Do not use the glue at temperatures below +5° C as drying times are excessive.  
At temperatures above +30° C, the glue dries very rapidly.  
Dilute K-FLEX® glue using K-FLEX® Thinner only.  
In case of spray application, dilute K-FLEX® glue up to max 5%.

HARDENING TIME : 36 hours

STORAGE : in cool conditions, away from cold and heat

SHELF LIFE : one year

QUANTITIES USED : with insulation sheets, approx 7m<sup>2</sup> per liter

## CHOOSING K-FLEX® INSULATING MATERIAL

Before starting, choose the right type of K-FLEX® insulation for the parts to be lagged. Use the thicknesses and sizes which are most suitable for the individual parts of the installation. Don't forget - your K-FLEX® dealer can give expert advice.

## USING K-FLEX® INSULATING MATERIAL

Insulating tubing that is oval or flattened (eg. the larger cross-sections) should be cut along the flattened surface

## USING REFRIGERATION PLANTS AND AIR -CONDITIONING SYSTEMS

- Treat steel surfaces with rust inhibitor prior to applying insulation.

The paint should be left for a minimum of 24 hours to dry.

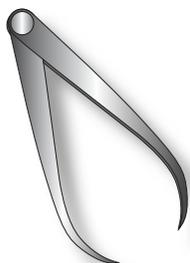
- Take special care over glueing critical areas such as curved sections, flanging and support brackets. Ensure that the ends of the insulating material are always firmly attached to the piping.

- Do not apply insulation where parts are too close together, as this will result in the insulation becoming squashed and losing some of its properties.

When carrying out particularly complicated installations on nickel steel, refer to our Technical Office.

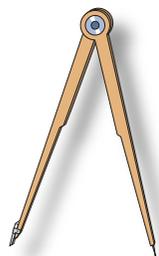
# K-FLEX® AL CLAD - THE APPLICATION TOOLS

## TOOLS NEEDED FOR THE MANUAL INTERVENTIONS OF THE INSTALLER



### THICKNESS GAUGE

to measure diameters to be transferred on insulating sheets.



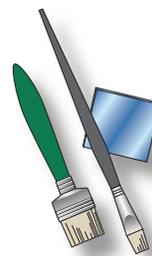
### COMPASS

to trace cutting circles.



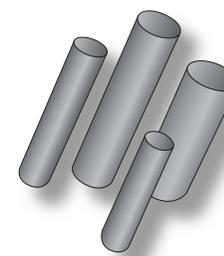
### SCISSORS

for cutting shapes.



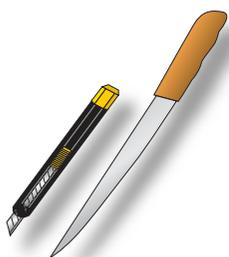
### BRUSHES AND SPATULAS

for spreading adhesives.



### STAMPS

for accurately performing insulating material.



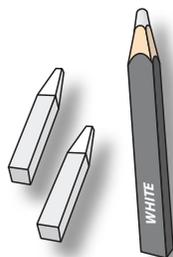
### KNIFE AND CUTTER

for different types of cutting.



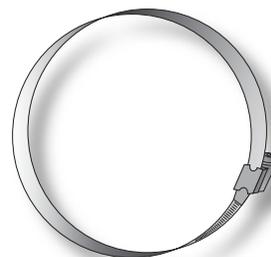
### FLEXIBLE TAPE MEASURE AND RIGID RULER

for measuring and as a guide for cutting and tracing. As a guide for straight cuts one can also use T or L shaped aluminium sections, which give useful hand protection.



### PENCILS AND CHALK

to map out cutting lines.



### METAL TAPE

to trim the ends of installed tubes and elbows.

**MATERIALS**



**KEY**



K 420 adhesive

Sealant

Actions

# K-FLEX® AL CLAD - TUBES

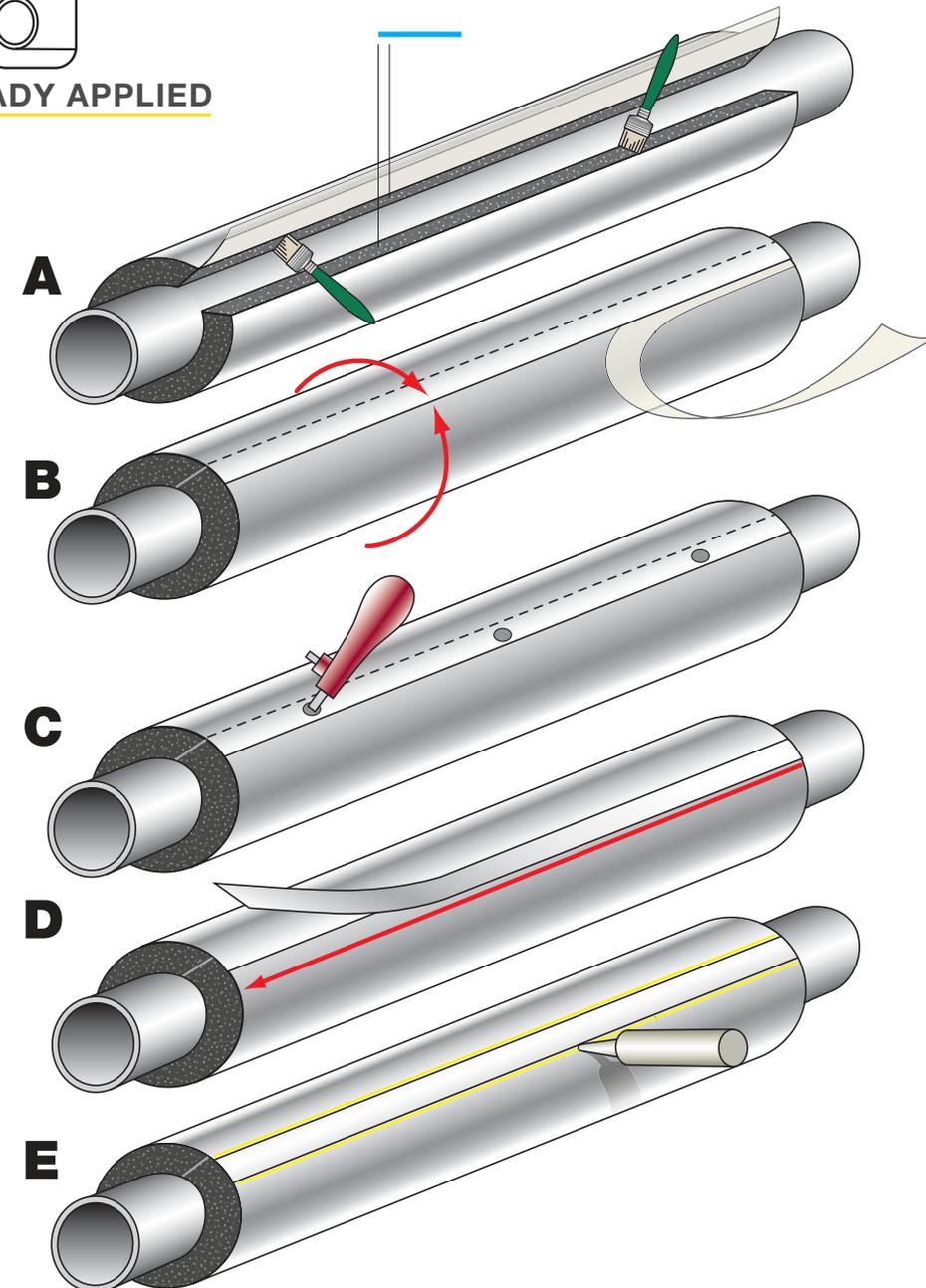


## PRE-CUT TUBE WITH AL CLAD FINISHING ALREADY APPLIED

- A)** Install K-FLEX® AL CLAD pre cut pipe on the tubing.  
Apply K-FLEX® glue with a brush on the edges of the elastomer.
- B)** Joining the edges of the elastomer. Close the joints by the self adhesive overlap, once removed the siliconized strip.
- C)** Fix the overlap with plastic rivets.
- D)** Cover the joint with AL CLAD self adhesive tape with a minimum width of 50mm.
- E)** For outdoor installation, both the edges of the overlap and of the self adhesive tape must be sealed using K-Sil 1209 Alu silicone sealant.

NOTE: for best adhesion of AL CLAD self adhesive tapes keep them at minimum temperature of 15 °C before installation.

AL CLAD pipes can be cut with an ordinary knife with long and sharp blade.



**MATERIALS**



**KEY**



K 420 adhesive

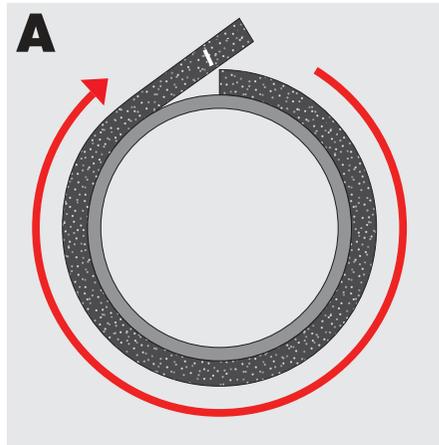
Sealant

Actions

# K-FLEX® AL CLAD - TUBES



## INSULATION WITH K-FLEX® SHEET WITH AL CLAD FINISHING ALREADY APPLIED



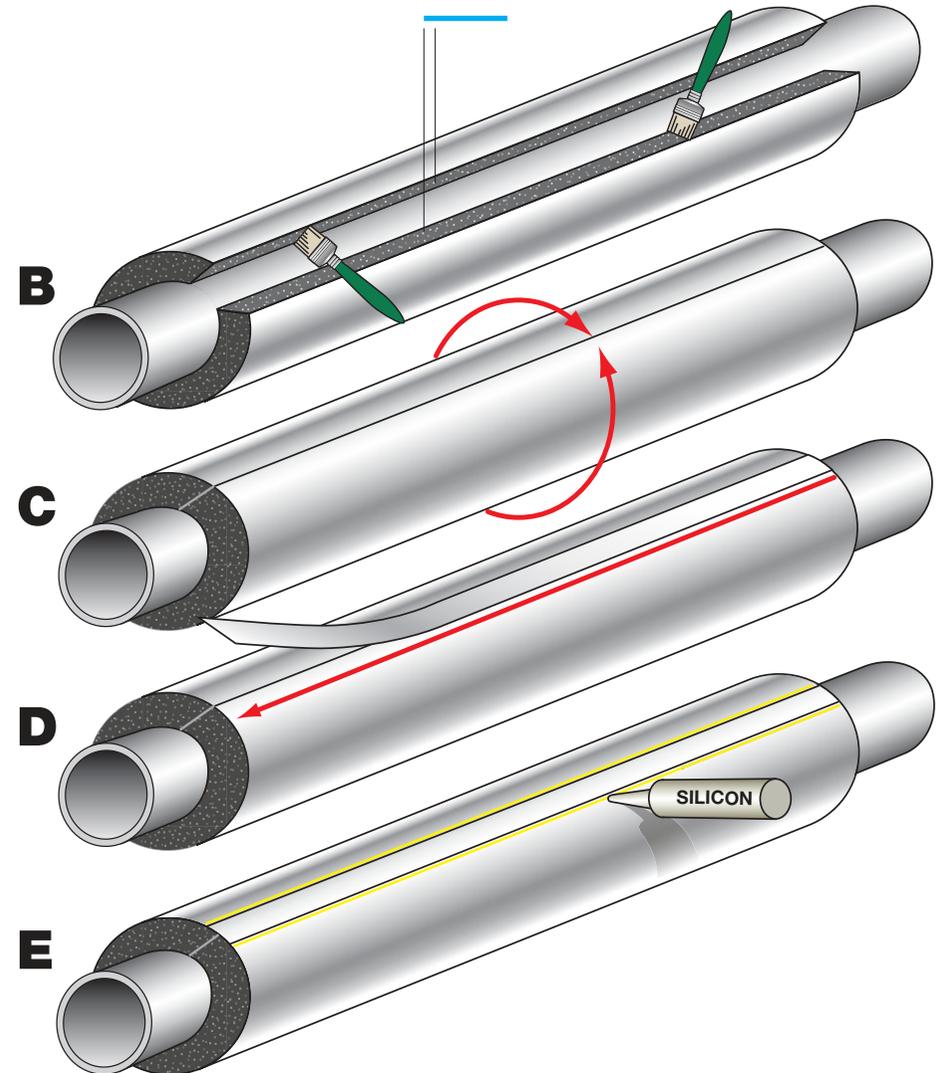
**A)** The measurement is obtained by using a strip of K-FLEX® of the same thickness to be used as the insulation. This gives you the measurement of the circumference, including the thickness of the insulating material itself. Do not stretch the strip when encircling the pipe, as this will alter the measurement. Mark the strip with chalk where the two edges overlap.

**B)** Install the K-FLEX® AL CLAD cut sheet on the piping. Apply K-FLEX® glue with a brush on both edges of the elastomer.

**C)** Join the edges of the elastomer.

**D)** Fix the closure with AL CLAD self adhesive tape, minimum 50 mm wide.

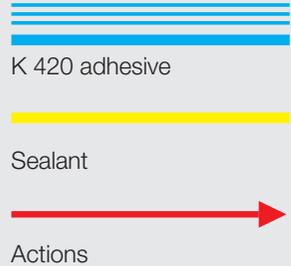
**E)** For outdoor installation, the edges of the self adhesive tape must be sealed using K-Sil 1209 Alu silicone sealant.



**MATERIALS**



**KEY**



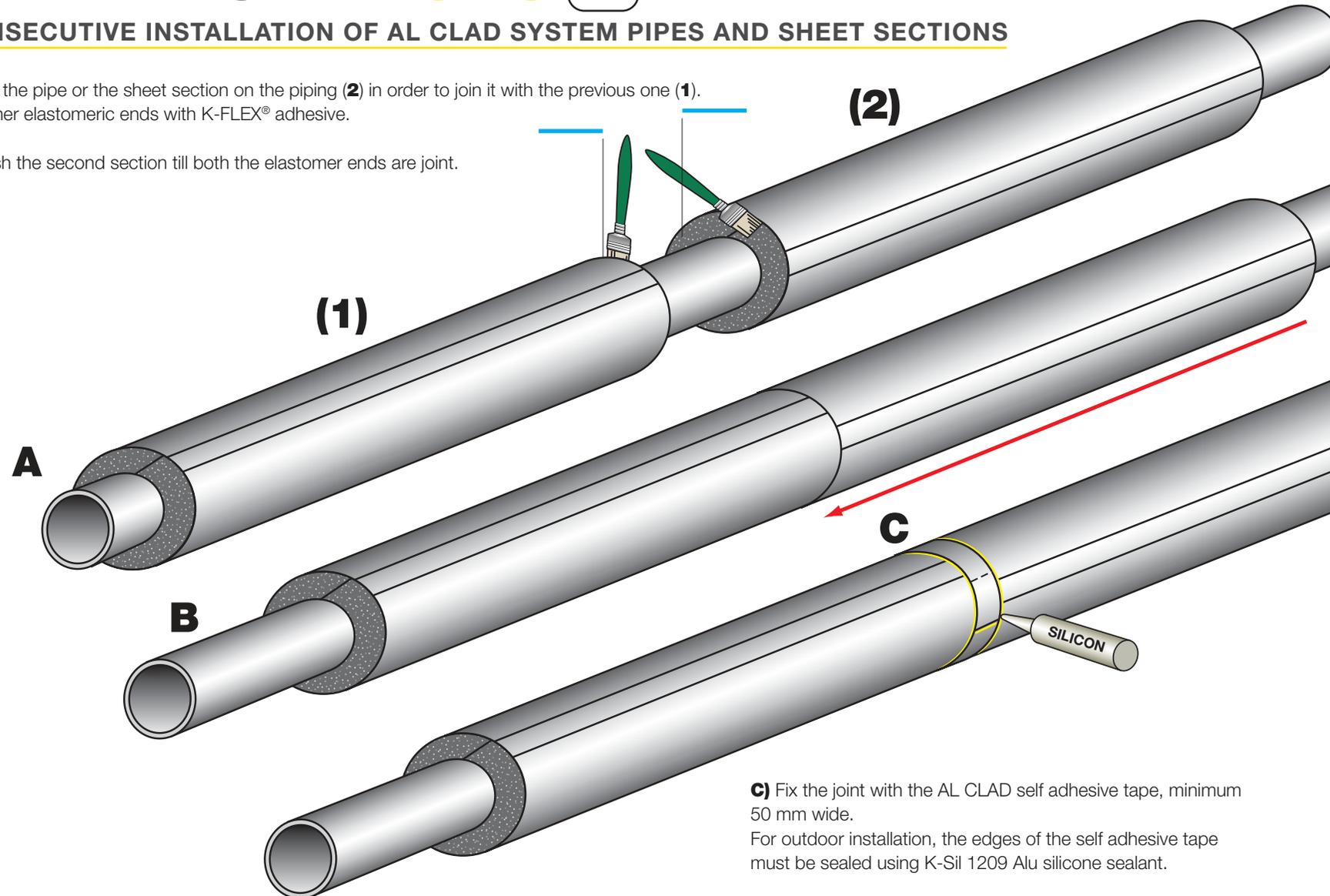
# K-FLEX® AL CLAD - TUBES



## CONSECUTIVE INSTALLATION OF AL CLAD SYSTEM PIPES AND SHEET SECTIONS

**A)** Put the pipe or the sheet section on the piping **(2)** in order to join it with the previous one **(1)**.  
Glue ther elastomeric ends with K-FLEX® adhesive.

**B)** Push the second section till both the elastomer ends are joint.



**c)** Fix the joint with the AL CLAD self adhesive tape, minimum 50 mm wide.

For outdoor installation, the edges of the self adhesive tape must be sealed using K-Sil 1209 Alu silicone sealant.

**MATERIALS**



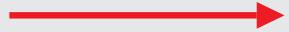
**KEY**



K 420 adhesive



Sealant



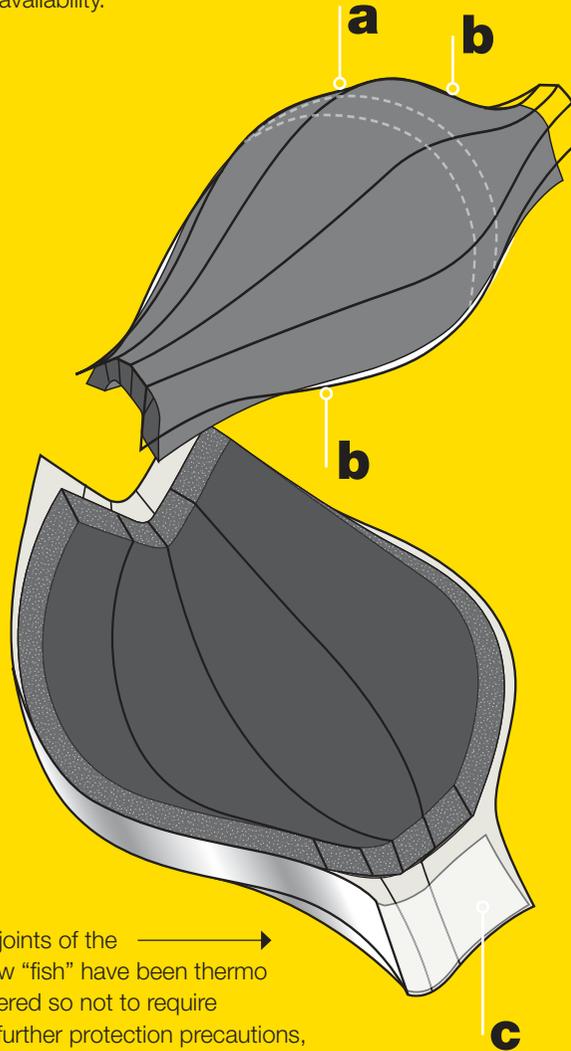
Actions

# K-FLEX® AL CLAD - ELBOWS



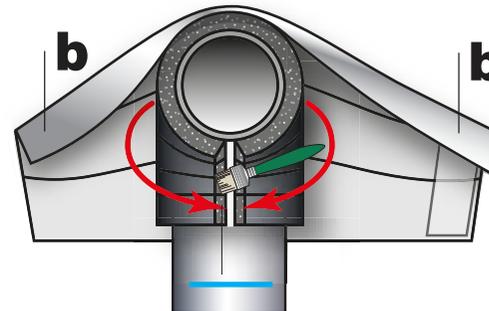
## INSTALLATION OF PRE-SHAPED K-FLEX® AL CLAD ELBOWS

Elbows could be provided as "open" fishtale or "closed" segment version, according to size and availability.

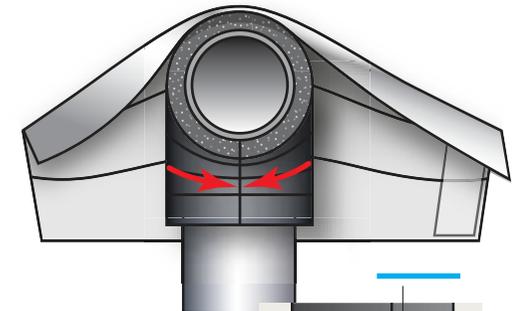


The joints of the elbow "fish" have been thermo soldered so not to require any further protection precautions, except for outdoor installation.

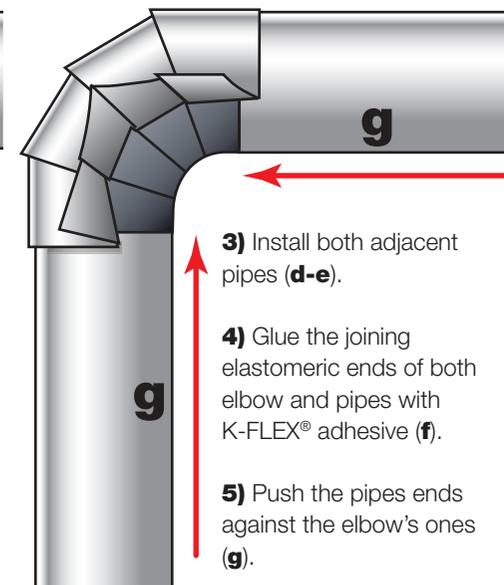
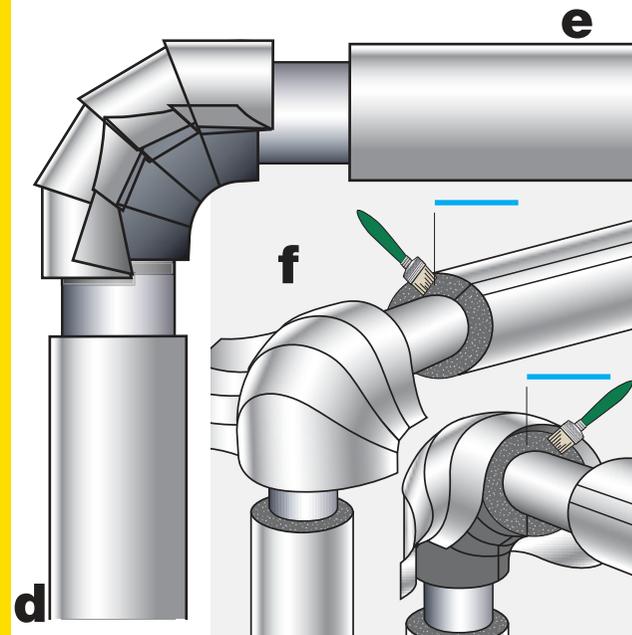
### ADJACENT ELBOW AND PIPES



**1)** Place the elastomeric elbow on the piping elbow. Glue the edges of the elastomeric joint with K-FLEX® adhesive.



**2)** Close the joining edges of the elastomeric elbow. Only when the elbow is fastened, fix it on the piping with K-FLEX® adhesive, spreading the glue between the parts for some mm.



**3)** Install both adjacent pipes (d-e).

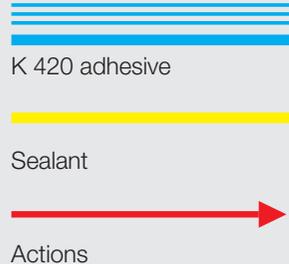
**4)** Glue the joining elastomeric ends of both elbow and pipes with K-FLEX® adhesive (f).

**5)** Push the pipes ends against the elbow's ones (g).

**MATERIALS**



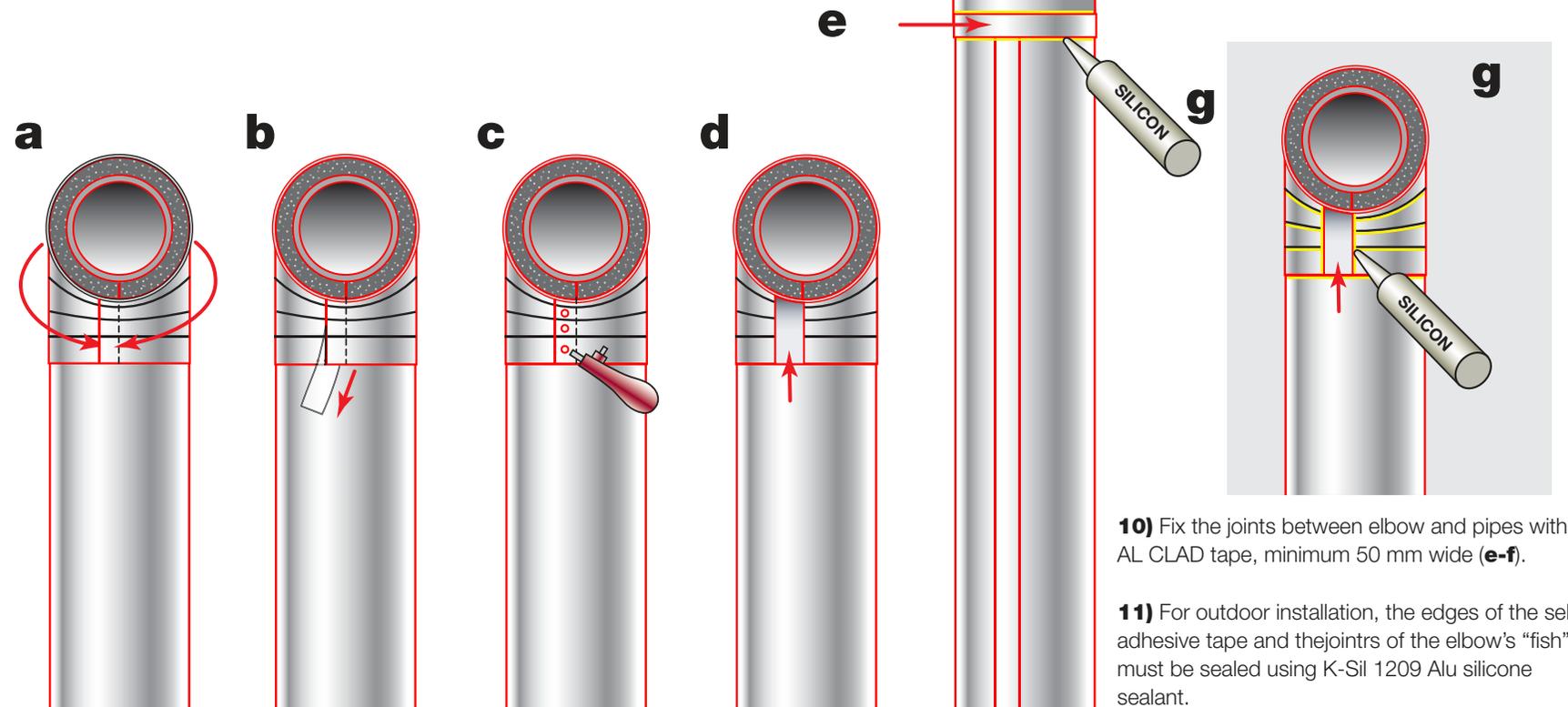
**KEY**



# K-FLEX® AL CLAD - ELBOWS

## INSTALLATION OF PRE-SHAPED K-FLEX® AL CLAD ELBOWS

- 6)** Pull the finishing against the elastomeric elbow leaving the overlap overlapping (**a**).
- 7)** Remove the siliconized strip from the overlap (**b**) and press the joining parts to grant adhesion.
- 8)** Fix the joints with plastic nails or metallic clips (**c**) (see accessories catalogue).
- 9)** Cover the joint with AL CLAD tape, 50 mm wide (**d**).



**MATERIALS**



**KEY**



K 420 adhesive



Sealant



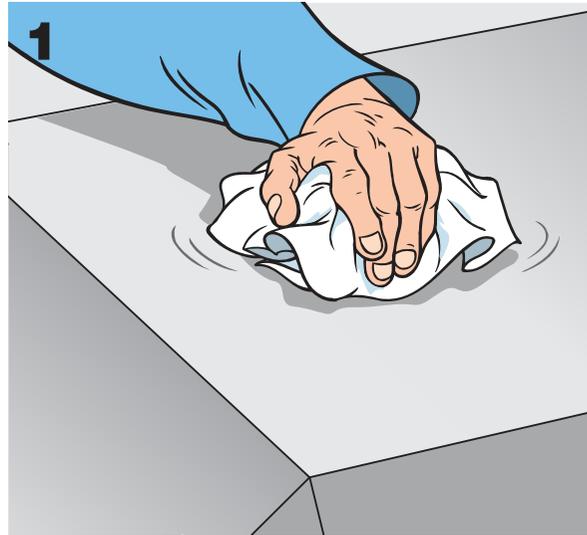
Actions

# K-FLEX® AL CLAD - DUCTS

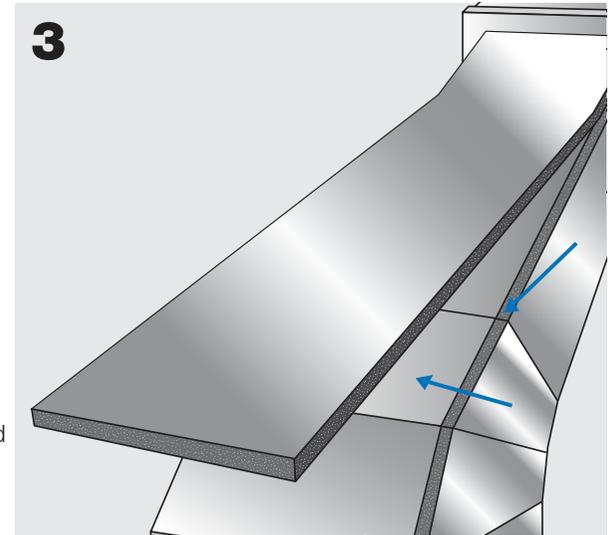


## INSULATING DUCTINGS WITH STANDARD SHEET

Use K-FLEX® thinner to thoroughly clean the surface to be insulated. Insulation is not recommended where there is incrustation or other flaws which could prevent the sheeting from sticking perfectly.



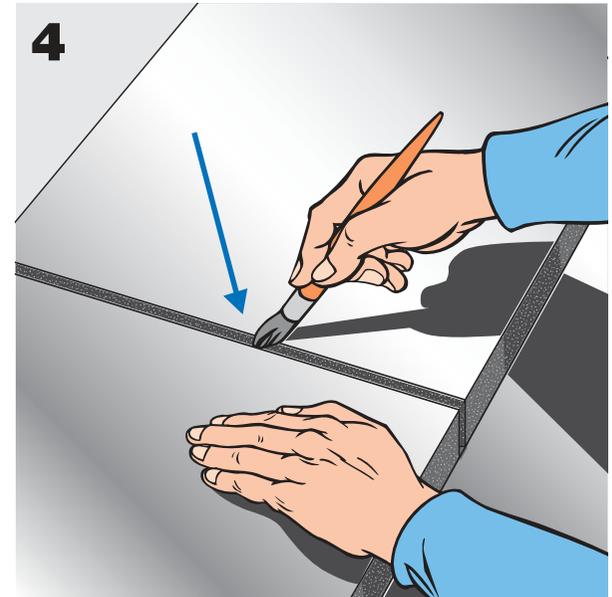
Apply K-FLEX® glue to the surface which has to adhere to the conduit, and to the conduit surface. Use K-FLEX® glue to join the edges together. In the example given, for the best results we recommend first to insulate the lower surface of the conduit, then the side walls and lastly the top. This will prevent the penetration of humidity.



Mark the measurements of the surface to be insulated on the sheeting and cut the required size out of the roll.



Use K-FLEX® glue to join the edges together.



For **outdoor applications** it is necessary to avoid water stagnation along the horizontal sections for which the material must therefore be installed so as to guarantee a slope of not less than **3° - 5°**

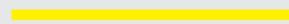
**MATERIALS**



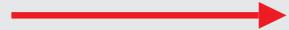
**KEY**



K 420 adhesive



Sealant



Actions

# K-FLEX® AL CLAD - DUCTS



## INSULATING DUCTINGS WITH ADHESIVE SHEET

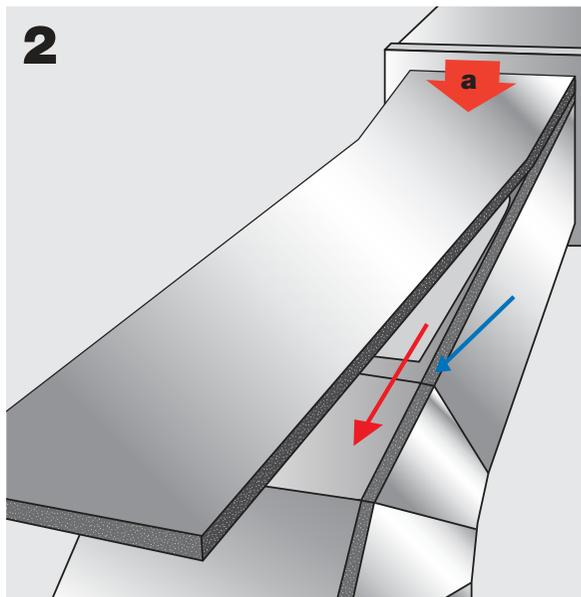
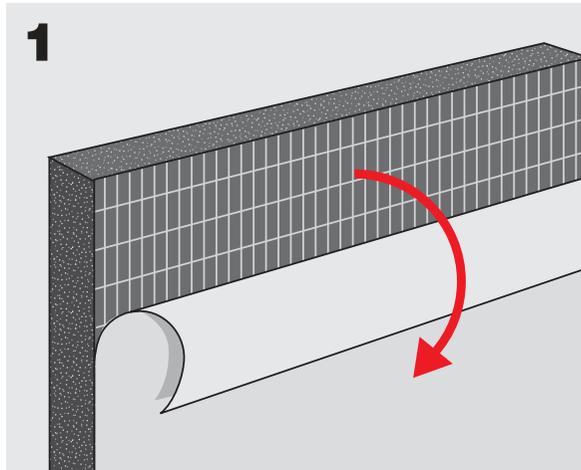
Using self-adhesive sheeting, carry out the same cleaning and cutting procedures as indicated for standard sheeting.

The backing paper must be removed from the adhesive side before sticking it to the conduit surface.

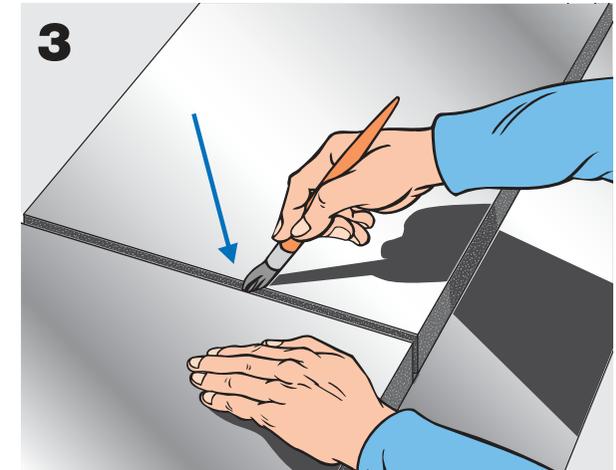
Position the uncovered edge at the starting point (a). Pull the backing paper off gradually, pressing the material down as you go.

Use K-FLEX® glue to join the edges together.

In the example given, for the best results we recommend first to insulate the lower surface of the conduit, then the side walls and lastly the top. This will prevent the penetration of humidity.



Use K-FLEX® glue to join the edges together.



For **outdoor applications** it is necessary to avoid water stagnation along the horizontal sections for which the material must therefore be installed so as to guarantee a slope of not less than **3° - 5°**