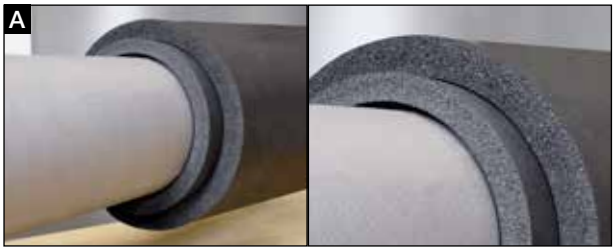
Halogen-free materials – such as Kaiflex HFplus s2 – are more sensitive and less mechanically robust than standard FEF, as they are lacking the stabilizing effect of halogen containing ingredients. Thus, the skin of the insulation materials is slightly weaker and may exhibit tiny fissures when being under tension or tensile strain. In order avoid such fissures, the processing of the insulation material must be carried out with less tension or tension-free.

Using sheets for the insulation

When using sheet material one may not fall below the minimum inner diameter as indicated in the following table! “Fitting” or bending into shape of incorrectly (too small) cut sheet material has to be avoided. A standard insulation thickness of 32 mm (1¼ “) needs to be built by using Kaiflex HFplus s2 sheets in the dimensions 13 mm (inner layer!) and 19 mm (see pic. A).

Insulation thickness (sheet) mm	OD (pipe) mm			
	≥ 88,9	≥ 114	≥ 139	≥ 159
6	•	•	•	•
10	•	•	•	•
13	•	•	•	•
19	•	•	•	•
25			•	•
32 [1]			•	•
50 [2]				•

• = suitable
1) Multi layered insulation: 13 mm (inner layer) + 19 mm (outer layer)
2) Multi layered insulation: 13 mm (inner layer) + 19 mm + 19 mm (outer layer)



Using tubes for the insulation

Insulation of pipes

A bigger inner tube diameter should be selected for pipe insulation in case of doubt (see pic. B). Pushing tubes onto pipework using force or against friction has to be avoided in any case!

Insulation of angles and elbows

Accordingly pushing tubes around elbows and angles using force or against friction has to be avoided in any case (see pic. C)!

SAINT-GOBAIN

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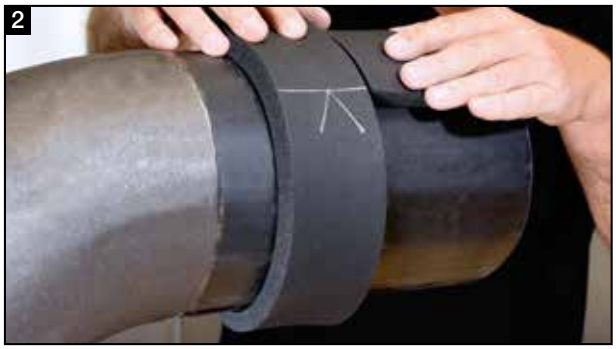
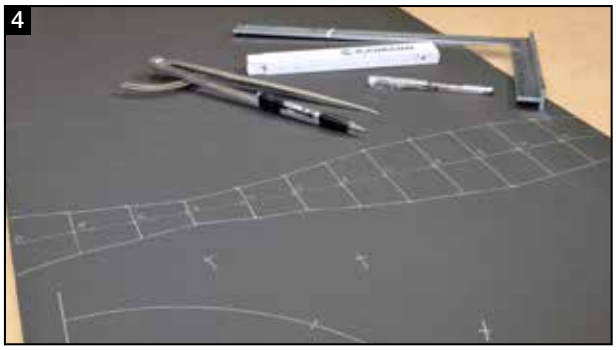
Prefabricated parts should be used for the proper and tension-free insulation of elbows and angles with halogen-free materials:

To insulate an elbow bend, it is necessary to find out the radius of the bend. This is measured at the neutral axis.

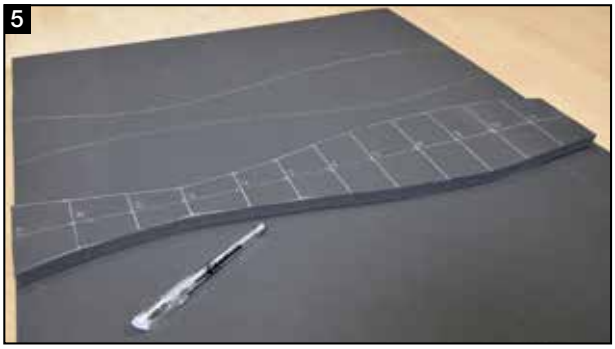


Determine the exact circumference with a strip of the relevant Kaiflex material. To avoid unnecessary tension, increase the determined circumference by 10 mm, or by 20 mm for cuts over 3,000 mm in length.

The elbow insulation is developed with the help of drawings. In doing so, first take the elbow radius and divide it by the corresponding elbow sections. Mark the centres of the insulated elbow diameter and divide them into six equal parts.



Divide the circumference into twelve equal parts and cut out along the upper and lower outlines.



This “fish” shape serves as a model for the middle sections of the elbow bend. Sketch half a „fish“ onto the two beginning or end sections with the corresponding length.

Use a Kaiflex ceramic knife to cut out the drawn elbow bend insulation parts.

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Put the outer edges of the beginning section together and apply Kaiflex special adhesive 494 HHF.

After the flash-off time, place the beginning section on the elbow bend, glue the two outer ends of the edges together, and then glue the centre section together.

Repeat steps 7 and 8 for the centre and end sections accordingly and also glue the contact surfaces together.

Insulated pipe elbow without tension.

If a second layer is required to increase the overall insulation layer thickness (according to the “Using sheets for insulation” table), repeat steps 2 to 9.

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