Closing instructions for ROTH fabric expansion joints

1. General notes

Tools and materials required depend on the construction of layers as well as the installation situation. Generally we recommend to purchase all working materials together with the expansion joint to make sure that all necessary adhesives and connecting items are at your disposal. Use two pieces of board and screw-clamps to press the glued spots at the joint. Upon delivery, all layers in the flange area are fastened, sewed, or glued. A specific flange reinforcement, made of coated or uncoated fabrics, covers the various bellow types and is also connected to them. Experience and technical skills are required to achieve a tight and firm joint fitting. Inside and outside of ROTH fabric expansion joints are unmistakably marked. These marks must be observed in order to grant correct installation!

☞ The inside and outside of ROTH-fabric expansion joints are unmistakably marked. For a faultless installation please obey these markings !

☞ **ROTH does not take any liability in case of installation by third parties!**

2. Location of the joint spot

Before starting the closing process, preassembly of the belt is necessary. Expansion joints, especially those of larger size, should be positioned at approximately 2/3 of their circumference around the pipe. According to the type of construction this is done by screw-fixing of the attachment-strips or temporarily by using screw-clamps. The correct location of the joint spot is very important. Installed vertically, the joint spot may be located anywhere, whereas horizontal installation requires location on the upper side of the pipe (see fig.1)

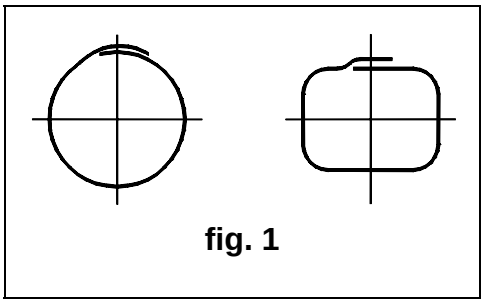

fig. 1

3. Location of single ply joints

The single ply joints of the various layers must be staggered (see fig. 2). We recommend a distance of 100-200mm between joints, depending on size and mounting conditions. Open-ended ROTH expansion joints are usually delivered with staggered single plies. Often, however, it is necessary to fit the expansion joints on site; please shorten the single plies in such way that the single ply joints remain staggered.

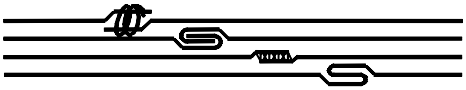

fig. 2

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4. Closing process

The closing of expansion joints is done from inside to outside. Depending on function and material, the closing process quoted in section 5 has to be employed for the various types of layers.

Insulations, if any, must be fit in and screwed or clamped before starting to close the layers of the expansion joint (sect. 5.5).

The layer construction of an expansion joint heavily depends on its operational purpose. According to temperature, pressure, medium and other constructional parameters, different layer constructions are being used.

Thus, some of the layers described below may not apply to rather simple types of construction.

The inside layers usually serve the reduction of temperatures, under certain circumstances an insulation layer (see 5.4) is additionally provided for. These inside layers are made of uncoated fabrics and are closed as described in section 5.1.

Then, the sealing layers must be closed. Please mind the procedures as given in section 5.2. The layers must be closed very carefully to achieve absolute tightness of the expansion joint.

The outside layers are a protection against environmental pollution and serve as pressure bearers. For these areas, coated as well as uncoated fabrics are used and closed as described in section 5.1 and 5.3.

5. Closing procedures

5.1 Uncoated fabrics (glass, silicate, aramide, etc.)

According to the diameter of the expansion joint, uncoated fabrics overlap between 50 and 200mm and are preferably sewed together with two seams. Constructions with more than one layer require staggered seams.

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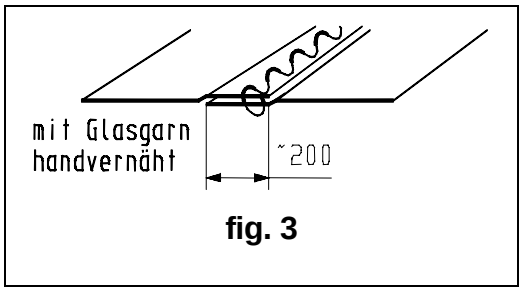

fig. 3

Flat seam:

both layer ends overlap 50-200mm and are sewed together with glass thread (fig. 3)

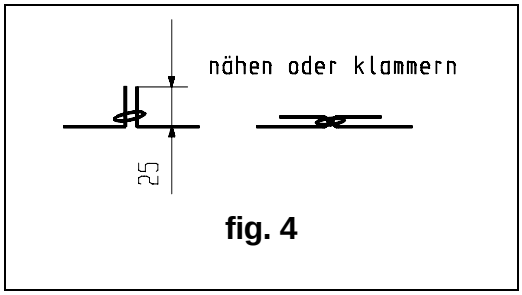

fig. 4

Overlapping seam:

as shown in the fig. 4 the ends are sewed or clamped

5.2 Tightening layers made of synthetic materials and elastomers (PTFE, etc.)

Both joint ends must be absolutely clean. Fold one end in L-shape, the other in Z-shape and form them into a labyrinth. The labyrinth may be reinforced by self-adhesive PTFE-tape.
Silicone glue -if permissible- may additionally be used to tighten the labyrinth. Fold and bubbles which might occur must be removed with suitable tools.

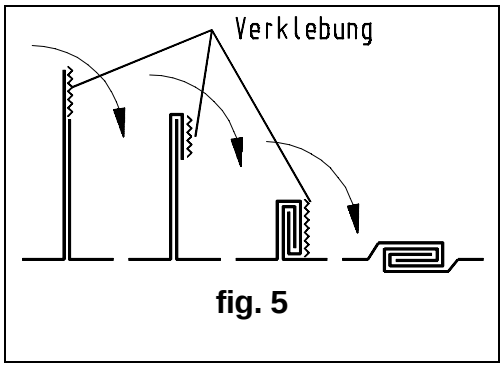

fig. 5

- Lock seam: layer ends must be spreaded with sealing compound (i.e.silicone glue) and afterwards be folded carefully according to our illustration (fig. 5)

particularly well suited for welding with PFA welding foils (fig. 6)

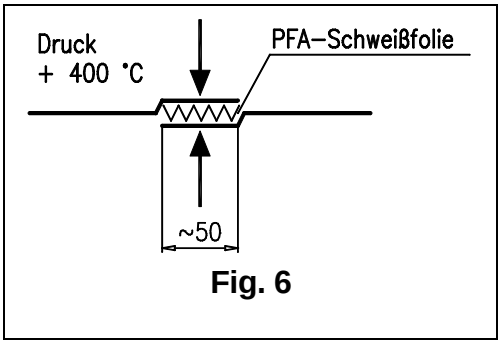

Fig. 6

5.3 Coated fabrics (Silglas, Silaramid, Hypalon etc.)

Silicone-coated glass or aramid fabrics and hypalon-coated polyester fabrics must be cleansed in the joint area (i.e.with acetone). Spread the joints with silicone or hypalon glue and press them together, using a roller. Avoid bubbles. Finally, seal the outer seam with glue.

- overlapping seam:
  both layer ends overlap
  50-200mm and are sealed
  with suitable adhesive (fig. 7)

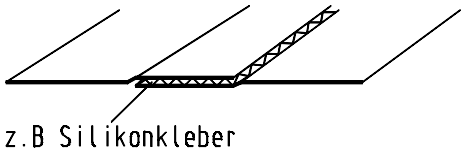

fig. 7

For hypalon, we recommend to roughen the joint spots with sandpaper.

5.4 Felt and mats (Isoglas, ceramics, etc.)

- blunt joint (see fig. 8)

fig. 8

5.5 Insulation pillows (insulating materials covered by fabrics)

- Insulating and fabric layers are mutually overlapped at the joint. Fabrics are then sewed with glass thread. Stainless steel wire mesh, if any, must be sewed with stainless steel wire (fig. 9).

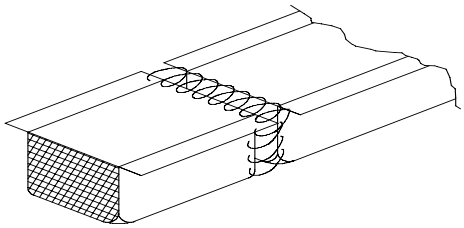

fig. 9

☞ **Please take also account of our "ROTH Installation and servicing instructions for fabric expansion joints", containing important notes on storage, installation and maintenance!**