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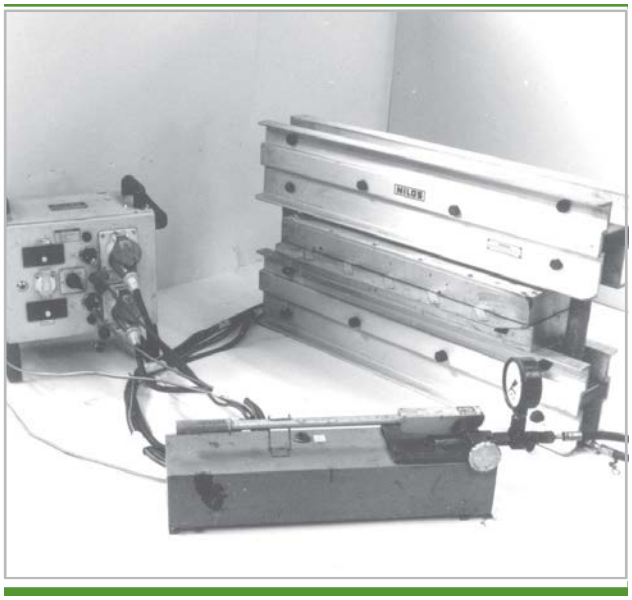
Legal directives and regulations have placed special demands on exhaust gas systems and chimneys in the fields of industry and power plants.

This is especially pertinent for chimneys behind flue gas desulphurisation (FGD) plants. These chimneys are made of an outer hull, a ferro-concrete tube and an inner acid-proof exhaust pipe, called the lining. This lining consists of individual sections of piping. The expansion joints between the individual piping sections must be sealed to be gas-tight and fluid-tight to avoid damage to the concrete tube. Elastomer tracks made from fluor-terpolymer rubber [Trade name and registered trademark: Fluorel (3M company) Tecnoflon (Montefluos), Viton (Du Pont)] have shown superior performance in sealing such lining joints.



Construction

Our lining joint seals are produced from strips of fluor-terpolymer rubber. The sealing strip standard design is equipped with a wire-fabric interlining made from material no. 1.4539. Both clamping strips made from 1.4539 or 1.4571 with a vulcanised fluor rubber coating and ceramic clamping strips have demonstrated good performance in this application.

The special tie bolts are made of high-grade steel in A4 quality.

Special tie bolts made from material 1.4359 may be used upon the customer's request.

Connection techniques

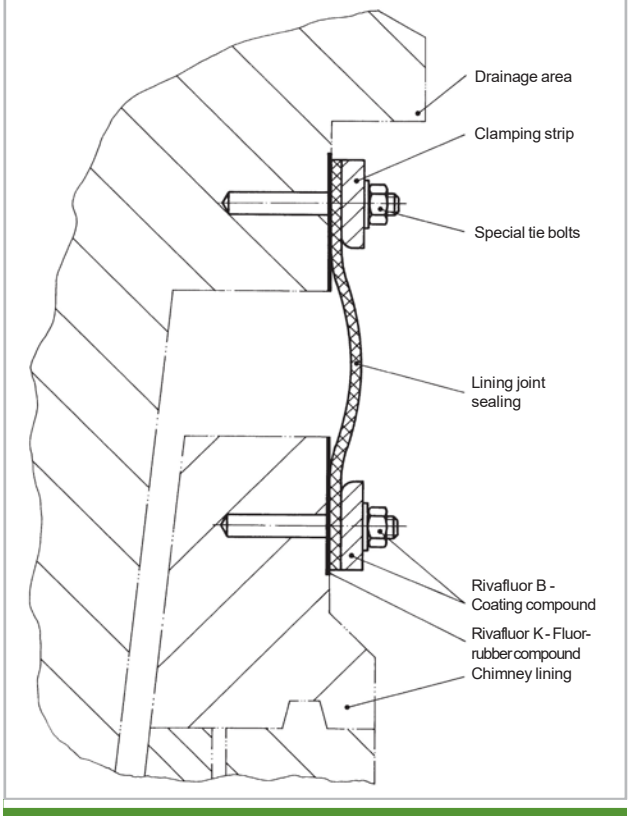
Lining joint sealings can be connected to the acid-proof lining in several different ways.

1. Connection with tie bolts

The standard method of connecting the lining joint sealing is the use of tir bolts and clamping strips. This method is suitable both for existing chimneys requiring subsequent installation as well as for new plants. Illustration 1 shows the connection principle.

This type of connection guarantees high capacity for the lining joint sealing and simple assembling. It is universally applicable, including for the reconstruction of existing plants.

Illustration 1



2. Connection without steel parts

Assembling using this method requires specially shaped blocks on both sides of the lining joint sealing. As shown in Illustration 2, both blocks are equipped with a dowel pin made from PTFE. The pre-perforated sealing strip (the strip can also be perforated on-site) is attached over the dowel pin.

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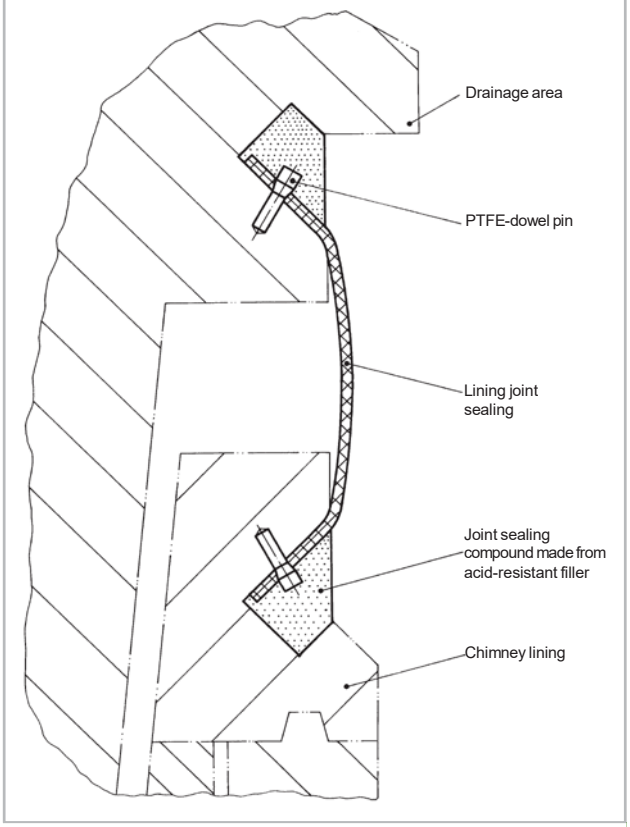
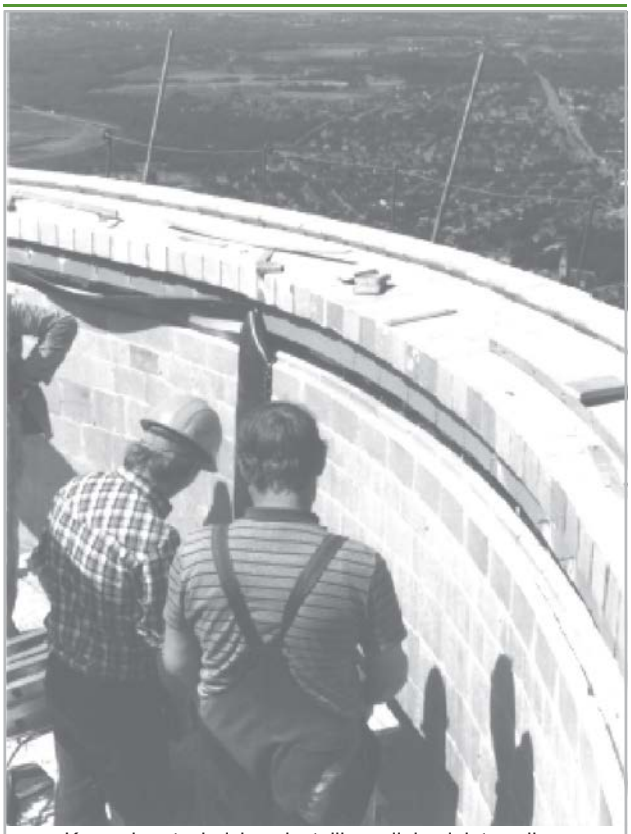
The remaining gap is then filled with acid-resistant filler. Simple disassembling is made possible by first applying a layer of foam plastic. The blocks are best arranged when the acid-resistant filler is protected by a drainage area. This method of connection without metal parts is particularly advantageous in areas with strong acid exposure. With the proper planning, this method can provide a cost-effective and technologically beneficial solution.

Illustration 2



Installation takes places in two directions towards the joint. The connection procedure stops a few metres away from the joint so that the sealing strip can be trimmed to its finished dimension. The joint is produced using a portable hydraulic vulcanising press. Any remaining gaps are then filled with a self-vulcanising highly viscous fluor rubber surface.



Kempchen technicians installing a lining joint sealing.

Assembling

Installation of lining joint sealing is professionally performed by our experienced technicians. The lining should be as even as possible in the support area to be sealed. Small unevennesses or blemishes in the block which may inevitably appear should be smoothed out.

During standard assembling, holes for the ties are drilled together with the sealing strip and the clamping strips. First, the support surface is prepared and then coated with the fluor rubber compound Rivafluor K at a thickness of 0.5 mm. The coating compound evaporates during coating, so the sealing strip can be directly attached using the coated clamping strips and ties.