

# Vulcanizing instruction

## FMS-waterstops



### **Step 1**

The vulcanization unit and the moulds are preheated for about 30 minutes. The moulds must reach approx. 150 °C - 155 °C, before the material is clamped. During the heat-up phase the FMS waterstops can be prepared.

### **Step 2**

The two FMS waterstop ends to be joined must be cut rectangularly with a sharp knife. The burr of the steel plates must be removed with a file. Subsequently the waterstop ends are layed into the clamping device, protruding on each side about 10 cm.

### **Step 3**

The ends and end faces of the waterstop as well as the steel plates are roughened uniformly all around by means of a grinding wheel. The grinding wheel can be clamped in a commercial drill.

### **Step 4**

The roughened ends are cleaned from the grinding dust and the elastomere part is coated thin with coating solution. This coating solution must become touch dry about 5 minutes. Ensure that the coated surfaces are kept clean and are not touched by hands.

### **Step 5**

Now, the middle tube of the FMS waterstop is closed with a rubber stopper, this is pressed about 5 cm into the opening, so that it is flush with the cut surface. Subsequently, the elastomeric end face is stuck with a raw rubber strip 50 x 0.8 and supernatant folded over to the rear. The protective film is then peeled off.

### **Step 6**

Now, the ends to be joined are exactly abutted with their faces together and fixed with the help of threaded screws and the clamping device.

### **Step 7**

Both steel plates of the FMS waterstop are welded together using a suitable welding machine (MIC or MAC). Pay attention that the weld does not start directly at the elastomer but a distance of approx. 1 to 1.5 cm is maintained. It is also important to dissipate the resulting heat during welding by placing a copper plate underneath so that the elastomer does not burn.

### **Step 8**

After cooling the welding seams, the steel sheets are coated on both sides with Chemosil A, followed by a coat of Chemosil B after flash-off.

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### **Step 9**

Now, a raw rubber layer 50 x 3 mm is applied on both sides, which also bears on the steel sheet about 3 cm. This layer must be pressed on very well, then the protective film is peeled off. This process is repeated with a layer of raw rubber strips 80 x 3 mm. The total thickness of the raw rubber applied must be at least 6 mm.

### **Step 10**

Now open the preheated vulcanizer. Then place the prepared connection in the matrix and close the device. Tighten the tensioning screws until the mould is on top of each other. In general, the mould cannot immediately close entirely because of raw rubber does not yet have the proper viscosity. After approx. 5 to 10 minutes, tighten the clamping screws again. Depending on the weather conditions, the raw rubber is completely vulcanized after 20 to 35 minutes (in strong wind or low temperatures, the device should be covered with foils, blankets or formwork panels), and the device can be opened.

### **Step 11**

The vulcanized connection must be treated with care until complete cooling, as full strength is only then achieved. If the surface is still plastically deformable (fingernail test), the connection is not yet completely vulcanized and must be rescored again. If the surface looks porous or pitted, insufficient pressure has been built or the raw rubber layer has not been sufficiently thick. In this case the seam has to be manufactured again.