

# Method Statement Waterproofing Systems

## Corporate Construction

### Scope:

Sika® Waterbars:

Procedure for the thermal welding of waterbar connections



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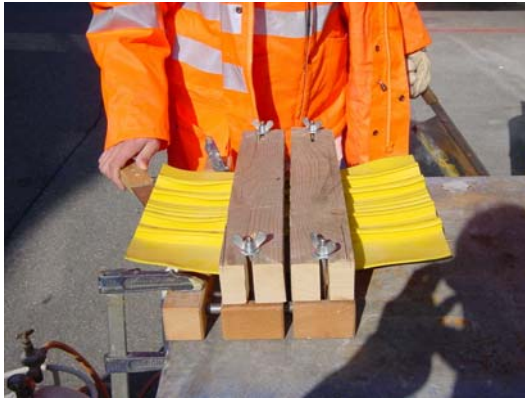


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# Sika® Waterbars: Thermal Welding of Waterbar Connections

## 1 Welding Methods



1. Butt welding using jig and copper „sword“



2. Overlap welding using electric “axe”



3. Overlap welding using hot air welder

Professionally executed, all 3 methods are of equal quality.

Whenever possible give preference to “jig and copper sword” method since it is very easy and few mistakes can be made.

Electric axe hot air welder methods are used when only a small number of welds are required, or where space is restricted.

## 2 Butt welding using welding jig and copper sword (1/2)



1. Cut straight the waterbar sections to be welded.  
This is extremely important since the waterbar ends are butt welded.



2. Clamp waterbar ends into the appropriate welding jig.



3. Heat copper sword with a gas burner.

### *Important*

It is very important that the copper sword is heated to the correct temperature. If the sword is too hot, the waterbar (PVC) will be burnt. If the sword is not hot enough, the material will not be properly welded.

### *Hint*

Heat copper sword until the flame appears greenish.

## 2 Butt welding with welding jig and copper sword (2/2)



4. Place heated copper sword between the waterbar ends to be welded and lightly press together the welding jig until the waterbar ends are touching the sword.

Move the copper sword backward and forward slowly for approx. 10 seconds.

Pull copper sword slowly out, and immediately and forcefully press the waterbar ends together with the clamping device (part of the welding jig).



5. Press the clamping device forcefully together for approx. 10 seconds.

Remove the waterbar carefully from the welding jig.

The welding seam may only be stressed after having completely cooled down!



6. Across the whole welding seam, a welding bead must be visible.

If there is no continuous welding bead, the welding must be improved spot-wise:  
The copper sword is heated again with the gas burner and the faulty areas worked over.



7. Finally, the copper sword is cleaned with a wire brush.

### 3 Overlap welding with electric axe (1/2)

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1. If necessary, cut the waterbar ends to be joined.



2. Remove the ribs to approx. 3 cm on the inside of the waterbar ends which are to be welded.



3. Place the waterbar ends which are to be welded on top of each other. Overlap must be approx. 3 cm.

Using the electric axe, and exerting pressure on them, weld the waterbar ends together until a welding bead is produced (possibly using a roller and protective gloves).

Before the welding process is started, the electric axe is connected to the mains for approx. 5-10 minutes until the required temperature has been reached.

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### 3 Overlap welding with electric axe (2/2)

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4. On the backside of the waterbar ends, welding must also be performed as described under 3.



5. All welding seams are chamfered with the electric axe.

The welding seam may only be stressed after having completely cooled down!



6. Finally, the welding axe is cleaned with a wire brush.



### 3 Overlap welding with a hot air welder (1/2)



1. If necessary, cut the waterbar ends to be joined.



2. Remove the ribs on the inside of the waterbar ends which are to be welded to the width of the hot air welder nozzle (approx. 3 cm).



3. Place the waterbar ends on top of each other (overlap = nozzle width of the hot air welder).

Using the hot air welder and exerting pressure on them, weld the waterbar ends together until a welding bead is produced (possibly using a roller and protective gloves).

Depending on the welding speed, the hot air welder is set at level 4-6.

### 3 Overlap welding with hot air welder (2/2)



4. On the back side of the waterbar ends, welding must also be performed as described under 3.



5. All welding seams are chamfered with the hot air welder.

The welding seam may only be stressed after having completely cooled down!



6. Finally, the hot air welder is cleaned with a wire brush.