

Masonry Arch Circumferential Beaming and Pinning using HeliBars and CemTies

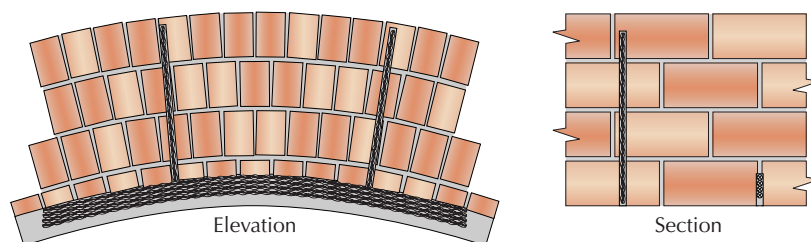
Method Statement

1. Mark locations for the CemTies on the underside of the arch at the required spacing.
2. Drill 14mm clearance holes (16mm if the CemTie is longer than 450mm) to the required depth and at the specified spacing.
3. Using a twin-bladed, diamond-tipped wall chaser and vacuum attachment, cut slots into the horizontal mortar joints, to the specified depth and at the required vertical spacing. Ensure that **NO** mortar is left attached to the exposed brick surfaces in order to provide a good masonry/grout bond.
4. Clean out ALL dust and mortar from the slots and holes and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use Helifix WB Primer. Ensure the slots and holes are damp or primed prior to commencing steps 9 and 10.
5. Attach the required length of CemTie pinning nozzle to the gun.
6. Mix HeliBond cementitious grout with a power mixer and load into the Helifix Pointing Gun Kit HD.
7. Pump grout to fill the nozzle.
8. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
9. Insert the nozzle to the full depth of the drilled hole and pump the grout.
10. Inject a bead of HeliBond cementitious grout, approx. 15mm deep, into the back of the slot using the mortar nozzle.
11. Push the first 6mm HeliBar into the grout to obtain good coverage.
12. Inject a second bead of HeliBond grout over the exposed HeliBar.
13. Continue to install reinforcing rods as per 10 above until the required number of HeliBars have been installed and iron the final bead into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
14. Make good all CemTies holes with brick dust and point up the remaining slots with matching mortar to suit.

N.B. Pointing may be carried out as soon as is convenient after the HeliBond has started to gel.

NOTE: For details on the circumferential beam end fixing see Repair Detail MA04.

For structural bridge or tunnel repairs refer to the Helifix Technical Department.



Recommended Tooling

For cutting slots more than 40mm deep: Twin bladed cutter with vacuum attachment.

For drilling: SDS rotary hammer drill 650/700w.

For mixing HeliBond: 3-jaw-chuck drill with mixing paddle.

For injection of HeliBond into slots: Helifix Pointing Gun Kit HD with mortar nozzle.

For insertion of the CemTies: Helifix Pointing Gun Kit HD with pinning nozzle.

For smoothing pointing: Standard finger trowel.

General Notes

If your application differs from this repair detail or you require specific advice on your particular project, call the Helifix Technical Sales Team on 020 8735 5222. Our Technical Department can provide you with a full support service including:

- Advice, assistance and recommendations on all structural repair matters
- Devising and preparing complete repair proposals for specific situations
- An insurance-backed warranty via our Approved Installers scheme

SPECIFICATION NOTES

The following criteria are to be used unless specified otherwise:

- A** Location and spacing of the CemTies must be agreed with the Helifix Technical Department. For initial guidance a maximum spacing of 450mm x 450mm is suggested.
- B** Depth of hole to be CemTie length +25mm.
- C** Nominal spacing between slots for HeliBars to be 450mm.
- D** Depth of slot to be 65 to 75mm and full width of the mortar joint.
- E** Number of HeliBars per slot to be 4.
- F** Where HeliBars have to be joined in long runs, a minimum of 500mm overlap should be allowed and joints should be staggered.
- G** Any fractures in the masonry within the 'beam zone' MUST be stabilised by Crack Stitching, CrackBond TE or replacement of the masonry.
- H** Any missing or very poor quality masonry MUST be replaced.
- I** In hot conditions ensure the masonry is well wetted or primed to prevent premature curing of the HeliBond due to rapid de-watering. Ideally additional wetting of the slots and holes or priming with Helifix WB primer should be carried out just prior to inserting the HeliBars and CemTies.
- J** Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the hole must be thoroughly damp or primed prior to injection of the HeliBond grout.

The above specification notes are for general guidance only and Helifix reserves the right to amend details/notes as necessary.