

Repair of Failed Brick Arch Lintels using HeliBars and CemTies

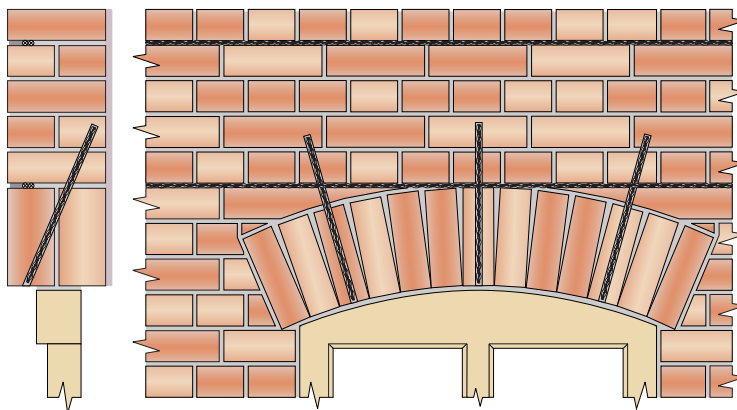
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Method Statement

1. 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.
2. Mark the positions for the CemTie holes on the underside of the soldier course.
3. Drill 14mm clearance holes (16mm if the CemTie is longer than 450mm) at the required angle and to the specified depth. The angle of drilling should be such that the hole will pass behind the lower HeliBars (where installed) and penetrate at least 50mm into the course of masonry above the reinforcing.
4. Remove 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 slot and holes are damp or primed prior to commencing steps 6 and 14.
5. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun Kit HD.
6. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
7. Push the first 6mm HeliBar into the grout to obtain good coverage.
8. Inject a second bead of HeliBond grout over the exposed HeliBar.
9. Push the second 6mm HeliBar into the grout to obtain good coverage.
10. Inject a third bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond grout as necessary leaving 10-15mm for new pointing.
11. Repeat steps 6 to 10 for the lower slot.
12. Attach the required length of CemTie pinning nozzle to the gun and pump grout to fill the nozzle.
13. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
14. Insert the nozzle to the full depth of the drilled hole and pump the grout.
15. Make good the CemTie holes and point up the remaining slots with a suitable matching mortar. Make good the cracks with an appropriate Helifix bonding agent depending on the width of the crack.

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

This repair is to be undertaken by a Helifix Approved Installer only.



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 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** Depth of slot into the masonry to be 40mm to 55mm.
- B** Height of slot to be equal to full mortar joint height, with a minimum of 8mm. For thin mortar joint specifications refer to the Helifix Technical Dept.
- C** Top and bottom reinforcements should be positioned as far apart as practicable, up to a maximum distance equivalent to 12 brick courses (approx. 900mm). The upper course should be reinforced first.
- D** HeliBar to be long enough to extend a minimum of 500mm beyond each side of the opening.
- E** Any fractures in the masonry within the 'beam zone' MUST be stabilised by Crack Stitching, CrackBond TE or replacement of the masonry.
- F** Depth of hole to be CemTie length +25mm.
- G** Any missing or very poor quality masonry MUST be replaced.
- H** 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 holes and slots, or priming with Helifix WB primer, should be carried out just prior to injecting the HeliBond grout.
- I** Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the holes and slots 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.