



Gads Hill School, Gads Hill Place. Gravesend Road. Higham. Rochester. ME3 7PA

Project ref: 5516

**Retaining Wall
Between Mansion House and EYFS Area**

Photographic Record of Retaining Wall Condition 26/03/26

Schedule of repair work

Please refer to drawing D-05



P00 – number 2 repair required



P002 – number 2 repair required



P003 – number 3 repair required



P004 – number 4 repair required



P005 – retaining wall looking north

SCHEDULE OF WORK

Movement Joints

Install Helifix movement joints as indicated on drawing D-05.

Leviat
A CRH COMPANY

HELIFIX

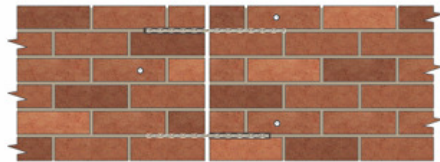
PRODUCT SHEET PS/MJ01

Creating Movement Joints

HeliBar stainless steel helical bars in plastic sleeves for the creation of remedial movement joints

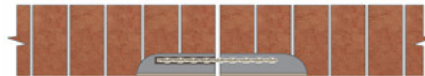
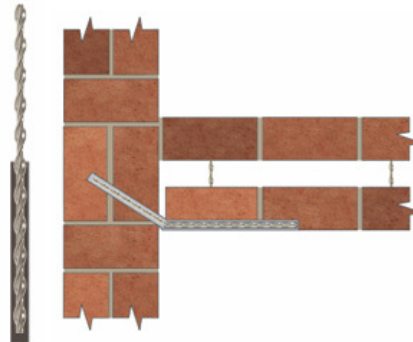
FEATURES

- Rapid economical solution to lack of expansion joints
- Stainless steel helical reinforcing bars
- Accommodates differential building movement
- Fully concealed once installed
- Avoids expensive taking down and rebuilding
- Minimal disruption to building's fabric



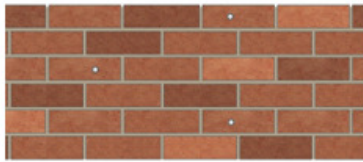
Over 100 standard repair specifications are available online, covering all common structural faults.

Relevant Repair Details: MJ01 to MJ03



INSTALLATION PROCEDURES

1. With a cavity wall, install the specified number of appropriate Helifix wall ties both sides of the intended new movement joint.
2. Using a twin-bladed, diamond-tipped wall chaser and vacuum attachment, cut slots into the horizontal mortar joints either side of the movement joint, to the specified depth and at the required vertical spacing. Ensure NO mortar is left attached to the exposed brick surfaces in order to provide a good masonry/resin bond.
3. Cut the vertical movement joint to the specified width and at the required location.
4. Clean out slots and inject a bead of PolyPlus resin or HeliBond grout, approx. 10mm deep, to back of slot.
5. Fit the de-bond sleeve over one half of the 6mm HeliBar and push the complete assembly into the resin ensuring a good bond between the PolyPlus / HeliBond and the sleeve within the slot. Ensure that no resin / grout comes into contact with the end of the HeliBar covered by the sleeve, as this end must be free to move.
6. Inject a second bead of PolyPlus resin or HeliBond grout up against the HeliBar and tube assembly to obtain good coverage of both.
7. Repeat steps 5 & 6, inserting the debond sleeve to the left and right of the movement joint in the cut slots.
8. Point up the open slot with a matching mortar to suit.
9. Seal the joint with a suitable flexible mastic type material.



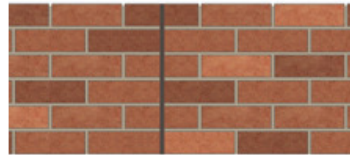
1. Install wall ties both sides of the intended vertical movement joint in a grid pattern.



2. Cut horizontal slots in the mortar beds. Cut the vertical movement joint.



3. Inject resin or grout into the slot and insert the HeliBar/sleeve assembly.



4. Make good the slots and wall ties holes. Seal the joint with a flexible mastic material.

TECHNICAL SPECIFICATIONS

MOVEMENT JOINTS

Material	HeliBar	Austenitic stainless steel Grade 304 (1.4301) or 316 (1.4401)
	Debond sleeve	Clear plastic sleeve
Diameter	HeliBar	6mm
	Debond sleeve	9mm
Length	HeliBar	400mm
	Debond sleeve	200mm
Height of slot	Full height of bed joint. For thin joints contact Helifix.	
Depth of slot	40mm - to accommodate HeliBar and sleeve assembly	
Vertical spacing	As specified on site with maximum spacing of 300mm	
Bonding agent	PolyPlus resin or HeliBond cementitious grout	
Wall tie spacing	To be installed on each side of the newly formed movement joint not more than 225mm away from the joint and at a maximum of 300mm vertical spacing.	

RECOMMENDED TOOLING

For cutting slots up to 40mm deep	Twin-bladed cutter with vacuum attachment
For drilling pilot hole	Rotary percussion 3-jaw-chuck drill
For installing Dryfix	Dryfix power-driver attachment fitted to SDS rotary hammer drill 650w/200w
For injection of PolyPlus into slots	PolyPlus Applicator Gun and extension nozzle
For injection of HeliBond into slots	Crack Stitching Pointing Gun and mortar nozzle
For smoothing pointing	HeliBond Insertion Tool

Crack Repair

Crack repair to be treated with Helifix crack stitching embed stainless steel HeliBars into horizontal mortar joints across cracks in retaining walls to restore structural integrity. Rake out mortar, apply HeliBond grout, insert bars, and repoint with lime mortar.

All such work to be carried out in accordance with manufacturers specification.

PRODUCT DATA SHEET – PDS/CS01

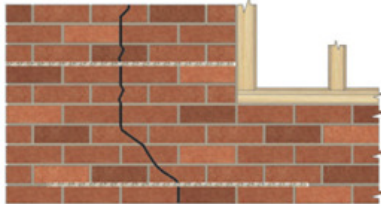


Crack Stitching

A reliable and cost-effective means of repairing and stabilizing cracked masonry

Applications

- Rapid and permanent solution to cracked masonry
- Suitable for all forms of masonry structures



Features

- Fully concealed, non-disruptive repair solution
- More reliable than crack injection methods
- HeliBond cementitious grout is injectable and rapidly produces high compressive strength
- HeliBars and HeliBond grout combine to create excellent tensile strength within the masonry
- No additional stresses are introduced during installation
- Masonry remains flexible enough to accommodate normal building movement
- Tensile loads are redistributed
- Reduces likelihood of further cracking nearby
- Avoids costly and disruptive taking down and rebuilding



HeliBar is inserted into the HeliBond grout within the cut slot



For full Product Information, Case Studies and downloadable Repair Details, giving specifications for many common structural faults, go to:
www.helifix.com/products/retrofit-products/crack-stitching-2/

PRODUCT DATA SHEET – PDS/CS01

Installation Procedures

1. HeliBar to be long enough to extend a minimum of 20" either side of the crack or 20" beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
2. Where a crack is less than 20" from the end of a wall or an opening the HeliBar is to be continued for at least 4" around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any Damp Proof Course.
3. For solid masonry in excess of 12" and in a cavity wall where both wythes are cracked, the wall must be crack stitched on both sides.
4. If there is stucco, this thickness must be added to the depth of slot. Crack stitching must be installed in the masonry and never in the stucco.
5. In hot conditions ensure the masonry is well wetted or primed to prevent premature drying of the HeliBond due to rapid de-watering. Ideally additional wetting of the slot should be carried out just prior to injecting the HeliBond grout.
6. Do not use HeliBond when the air temperature is 40°F and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.



1. Rake out or cut slots into the horizontal mortar beds, a minimum of 20" either side of the crack.



4. Using the brick jointer, or similar, push one HeliBar into the grout to obtain good coverage.



2. Clean out slots and flush with clean water and thoroughly soak the substrate within the slot.



5. Insert a further bead of HeliBond over the exposed HeliBar, finishing 1/2" from the face, and 'iron' into the slot using the brick jointer.



3. Using the HeliFix Pointing Gun Kit, inject a bead of HeliBond along the back of the slot.



6. Re-point the mortar bed and make good the vertical crack with CrackBond TE3.

Slot Depth and Spacing

	Single skin/ Cavity wall	Solid Masonry		
		Up to 4"	4" to 9"	Over 9"
Depth of slot	1" – 1 1/4"	1" – 1 1/2"	1" – 1 1/2"	1" – 1 1/2"
Vertical Spacing	Every 4 – 6 courses, 12" – 18"			

Technical Specifications

Material:	Austenitic stainless steel Grade 304 or 316
Diameter:	6mm (or 4.5mm for thin mortar joints)
Tensile strength:	192ksi (1325 N/mm ²)
0.1% Proof stress:	140ksi (965 N/mm ²)
0.2% Proof stress:	159ksi (1100 N/mm ²)
Length:	Cut lengths up to 80"
Width of slot:	1/2"
Bonding agent:	HeliBond cementitious grout. 1 x 3ltr HeliBond = 32 linear feet of crack stitching
RECOMMENDED TOOLING	
For cutting slot up to 1 1/2" deep:	Twin-bladed cutter with vacuum attachment or angle grinder or hammer and mortar chisel
For mixing HeliBond grout:	3-jaw-chuck drill with mixing paddle
For injection of HeliBond into slots:	HeliFix Pointing Gun CS with mortar nozzle
For smoothing pointing:	Standard finger trowel
For inserting HeliBar:	HeliBar Insertion Tool

Weep Holes

Drill weep holes in retaining wall with low-impact drilling (avoiding hammer action) to prevent cracking fragile brickwork. 2.5cm diameter holes at the lowest course above ground spaced apart, typically in vertical joints (perpendicular joints)

Specification & Best Practices:

- **Spacing:** Every 2metres or as advised by SE.

- along the bottom course, or every second brick.
- **Location:** Position in vertical mortar joints (perpend) if possible; if drilling through bricks, ensure it is on the lowest course above ground.
- **Drilling Technique:** Use a standard rotary drill only. Do not use hammer action, as it can loosen historic Victorian bricks and crack lime mortar. Use a masonry bit size of 20-25mm, or drill multiple holes to create a larger void.
- **Height:** Position at least above the ground level or the top of the paving to avoid blockage by debris.
- **Methodology:**
 - **Preparation:** Remove existing soft lime mortar from the target area using a handheld plugging chisel or drill.
 - **Drilling:** Drill through the outer leaf of brickwork.
 - **Cleaning:** Clear dust and debris out of the hole. A wire brush can leave iron fragments that rust, so use a stiff nylon brush.
 - **Dampening:** Dampen the surrounding area before applying any new mortar, as lime mortar requires moisture to cure.
- **Drainage Path:** Ensure the hole penetrates fully through the wall into the rear drainage material (gravel/rubble) and insert protection tube stainless steel or mesh tube inserts to prevent debris blockage over time

SPECIFICATION

Mortar

NHL3 hydraulic lime mortar to be used. Joints to be square to the face of the brick and slightly recessed 2-3mm with a brushed finish to expose the aggregate.

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