



40A Wilbury Way Hitchin, SG4 0AP
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Project:
 158-160 Walton Road, Surrey KT8 0HR

Job Ref.
 SH230814

Section
 Structural Survey Report

Sheet no./rev.
 1

Calc. by
 AC

Date
 Aug 2023

Chk'd by
 NK

Date
 Aug 2023

App'd by
 NK

Date
 Aug '23

STRUCTURAL SURVEY REPORT FOR




alton Road, East Molesey, Surrey KT8 0HR



Client:

Date: 14th August 2023


Report By:	Ahmad Chaudhry BEng, MSc, CEng, MIStructE	14 th August 2023
Reviewed By:	Nasar Khan BEng. MSc.	14 th August 2023
Approved By:	Nasar Khan BEng. MSc	14 th August 2023

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PREAMBLE

The following report is based on a visual inspection only. No intrusive works have been carried out for the purposes of this report unless noticed otherwise. We have inspected those parts of the structure requested in the brief, with the exception of any areas that were covered, unexposed or inaccessible. No comments can be made on any defects covered by recent decorations, renewed finishes or concealed areas.

The report is provided for sole use of the named client. It is confidential to the client and their professional advisers. The information within this report should not be relied upon by third parties for any use without a written consent from the author.

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1. INTRODUCTION


Subsequent to a request by our client, we visited the above property on 10th August 2023 at approximately 1330 hours to carry out a structural survey to investigate the reported internal and external cracks at various locations primarily within the walls of side and front elevations. The following report is based on a visual inspection only. No intrusive investigations or excavations were carried out for the purposes of this report. We have inspected those parts of the structure requested in the brief with the exception of any areas that were covered, unexposed or inaccessible. No comments can be made on any defects covered by decorations, finishes or concealed areas.

2. DESCRIPTION OF STRUCTURE

158-160 Walton Road is a three-storey and of terrace property with ground floor in commercial use and residential apartments above. It is located in an established commercial/residential area of similar properties. The building appeared to be of traditional construction comprising of solid masonry brickwork external walls, a combination of timber studwork and masonry brickwork internal partition walls, a ground bearing concrete slab throughout, suspended timber floor at the first and second floors, and a timber roof finished with asphalt finish over the flat part of the rear extension and clay tiles over the pitched roof of the main building. The external areas surround the property are a combination of concrete paving slabs and concrete surfaces.

The area where the property is built is generally found on the London Clay Formation as identified by the British Geological Maps.

The purpose of the structural survey is to investigate the reported cracking to the side flank wall internally and externally.


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3. OBSERVATIONS AND RECOMMENDATIONS

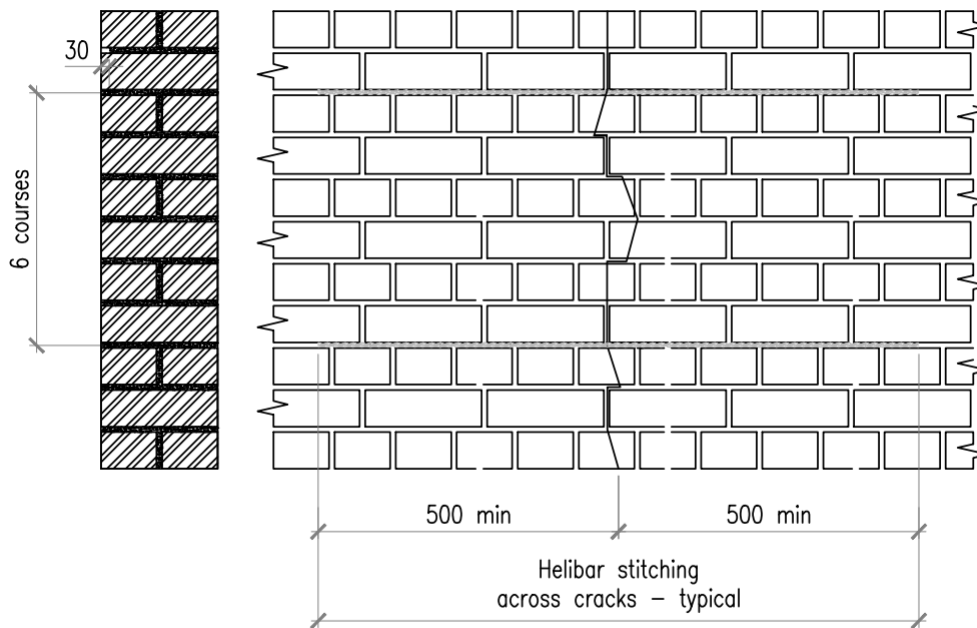
The property as observed from the outside was generally in a serviceable condition with localised areas of minor defects and signs of structural movement. The non-structural defects should be reviewed and commented by a RICS qualified building surveyor whereas only the structural defects are discussed herewith. The following observations were made for the structural defects of the accessible and visible areas during the survey along with the relevant recommendations:

SIDE ELEVATION CRACKS AT THE JUNCTION OF MAIN BUILDING AND REAR EXTENSION:

Refer to the photographs 9-12 of Appendix A to identify the nature and location of these cracks. The vertical and diagonal cracks were observed at the junction of the main building and single-storey rear extension to the side elevation. The pattern and nature of these cracks suggest a differential movement between the original and the extension building, likely to be caused by variable foundation depths. Such movement is usually a result of seasonal ground movement causing the shallower foundations to move in excess of the deeper foundations. Furthermore, the extension wall might not have been constructed using appropriate wall ties to the original building that would have allowed for tension to be accommodated to safeguard against such cracks. On the far side, the extension wall is constructed on top of the original staircase wall which would have inadequate foundations to take the extra load from the extension, leading to potential movement. There were a few mature trees observed in the near vicinity with the nearest being approximately 5-6m away from the side elevation. The fact that the roots of such trees are usually located at depths greater than the foundations, and create a larger spread for the zone of influence; these can result in the desiccation of the soil, especially for shrinkable sub-strata, e.g. clay which is the substrata for the property. Such desiccation can result in seasonal movement for any substructures located within shallow depths. It is not possible to deduce a specific conclusion at this stage without any information available about the existing foundations or the ground conditions. However, such can be concluded after further geotechnical investigations including the tree roots influence, type of the soil, size and extent of the existing foundations etc from a specialist geotechnical investigation. Leaking drains releasing excess water into the ground causing the clay to either heave or shrink can also

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lead to similar movements. This can be concluded from a CCTV drainage survey. It is therefore recommended that these further investigations are conducted in order to establish the above causes. Further strengthening or repair recommendations can be made once the data from these investigations is available which might include underpinning of the existing shallow foundations or structural repairs to the walls incorporating brickwork stitching, ties and restraints. If it is desired to proceed with the repairs without further investigations, then an interim solution would be to stitch the cracks using HeliBars or similar approved brick joint reinforcement in accordance with manufacturer guidelines and specifications. Refer to Appendix C and below diagram for reference.




CS 05

Typical Crack Stitching using HeliBars

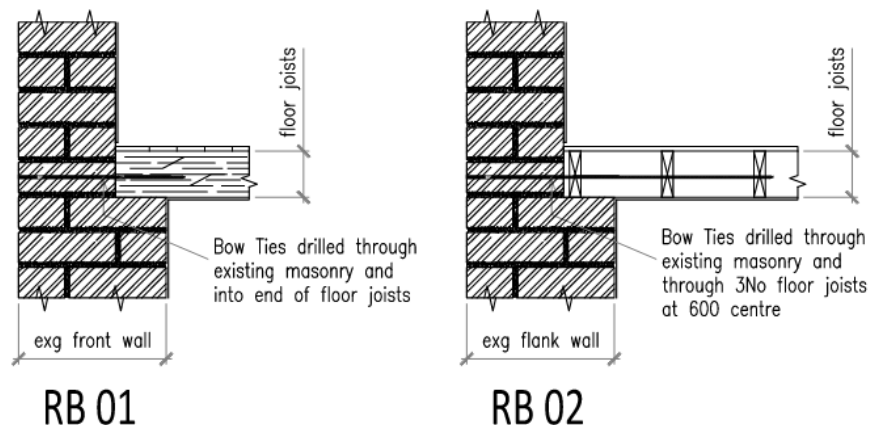
SIDE ELEVATION CRACKS TO MAIN WALL:

Refer to the photographs 13-20 of Appendix A to identify the nature and location of these cracks. The cracks were observed to the full height of the wall of the side elevation mainly towards the middle. These cracks were also observed internally at the second floor level where access was available. These cracks are most likely caused by differential thermal movement with temperature differences to the inside and the outside leading to contraction and expansion of the brickwork. In the modern design, it is usual practice to

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design movement joints in the large brickwork elevations similar to this to cater for such a phenomenon. The cracks are further exacerbated by seasonal movement of the foundations as mentioned in the above section. Furthermore, slight bowing was also observed suggesting lack of lateral restraint ties between the wall and the floors. It is recommended that the cracks are stitched using Helical bars or similar approved brick reinforcement in accordance with manufacturer's data sheets and method statements. These are provided within Appendix C for reference and as depicted in the above diagram.

In general, no lateral restraint straps or ties were observed between the roof, ceiling and the walls which is not uncommon for the type and age of the property. These ties and straps should be installed to stop further outwards bulging from roof spread or lateral movement of the walls. The information about the use of tension straps at not less than 2 metre centres tying the top of the gable wall and also the bottom of the roof rafters can be obtained from the Approved Document Part A of the Building Regulations. The following diagram is provided for reference.



Bow ties details to tie the external walls and the floor from the outside, RB01 for joists spanning perpendicular to the walls and RB02 for joists spanning parallel to the wall

OTHER CEILING/MINOR CRACKS: There were non-structural cracks observed in various locations within the plaster of the ceilings. These should be decorated incorporating EML mesh during planned renovation or decorations.

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4. CONCLUSION

The defects identified within this report are commensurate with age, nature of original construction and level of maintenance received during the life of the building. Although, there were isolated areas of defects as noted in section 3 above, however, the property was observed to be generally in a serviceable condition. It is recommended that further investigations are carried out in order to confirm the foundations, ground conditions and drainage. It is further recommended to repair the cracks using brick joint reinforcement using Helifix or similar approved techniques for which manufacturer's documents are provided within Appendix C for further reference.

We would anticipate the following budget estimates for the further investigation works and reports:

CCTV Drainage: allow for £600-£1000.

Geotechnical Investigation including trial pits: allow for £6000-£7000.

Repairs to cracks to the walls/ceilings/floor: subject to the findings of the investigations, allow for a budget estimate of £15000-£18000.

Decorations: subject to a separate survey by building surveyors and contractors.

We hope that we have satisfactorily concluded our opinion regarding the above matter. Please do not hesitate to contact us should you wish to discuss any contents of this report in further detail.



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Appendix A

Record Photographs


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Photo 1 – General view of the front elevation



Photo 2 – General view of the rear elevation



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Photo 3 – Close-up on Photo 2



Photo 4 – Close-up on rear access steps – Rear Extension constructed on top of older brickwork



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Photo 5 – Rear Extension roof



Photo 6 – Ventilation shaft and mechanical equipment

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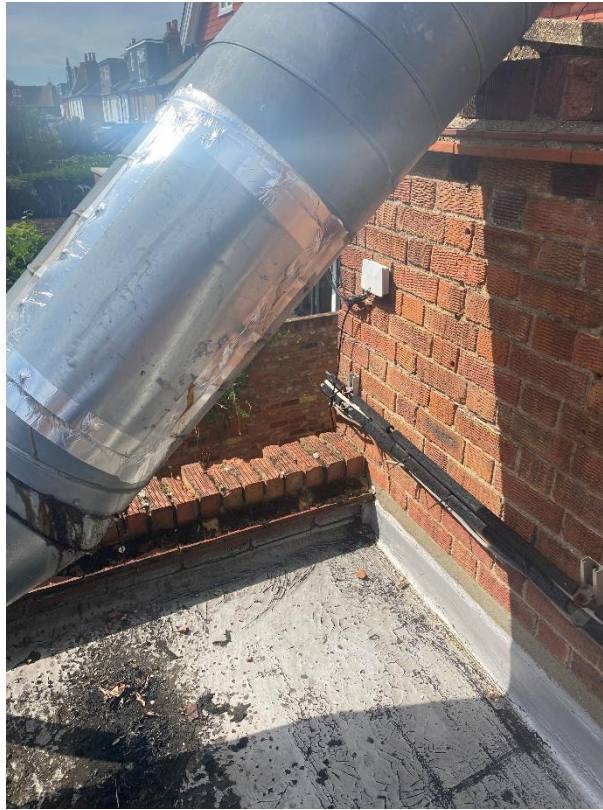


Photo 7



Photo 8 – General view of the side access to the rear of property


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Photo 9 – Junction of original building and rear extension



Photo 10 – Close-up on Photo 9 showing cracks at the junction



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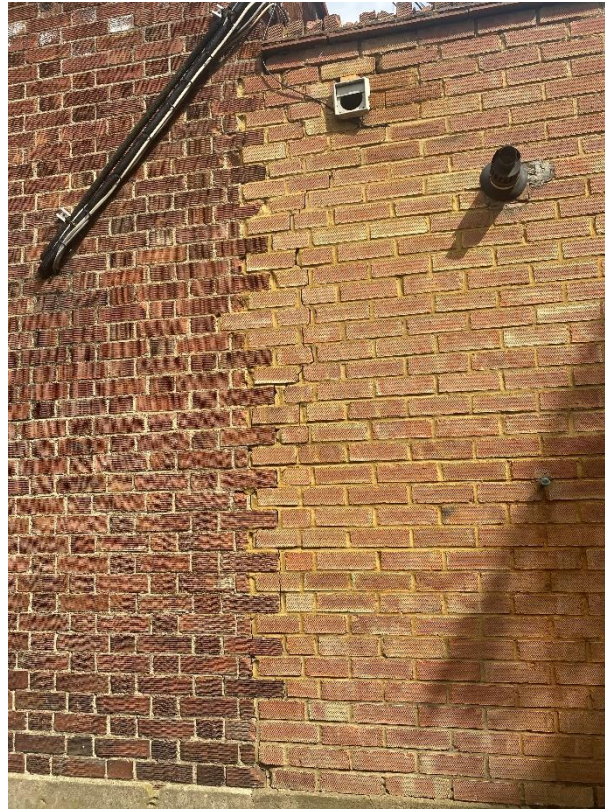


Photo 11 – As Photo 10



Photo 12


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Photo 13 – General view of the side elevation brickwork

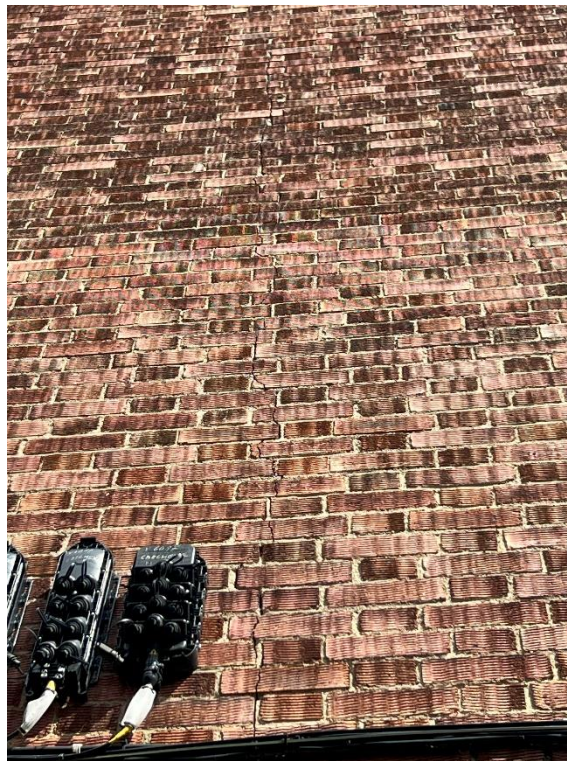


Photo 14 – Close-up on brickwork cracks in various locations



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Photo 15

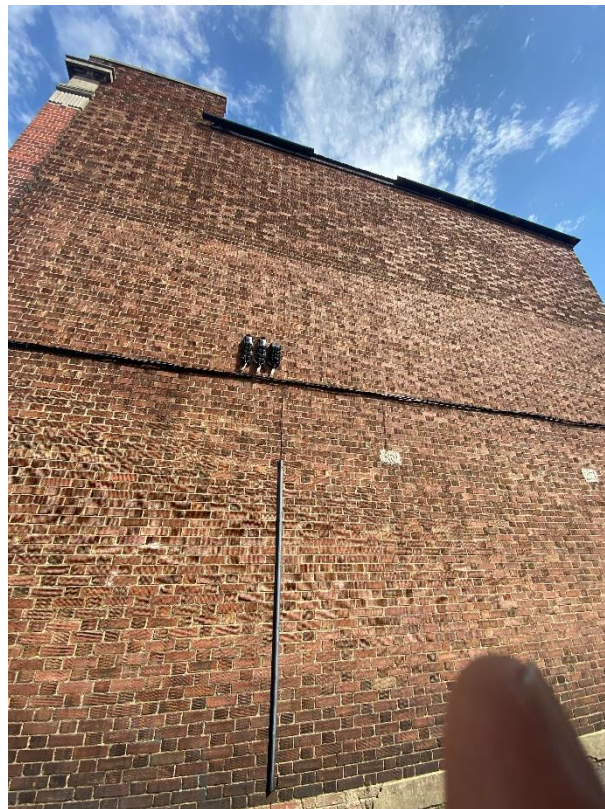


Photo 16


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Photo 17 – View from inside at 1st floor level looking out of front elevation – Note crack to top of window



Photo 18 – Note crack at the bottom of the window


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Photo 19 – Crack in the side elevation wall – front room at 2nd floor level



Photo 20 – Crack above the door opening


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Photo 21 – Ceiling crack in the ground floor corridor



Photo 22 – General view of the ground floor restaurant


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Photo 23 – General view of the tree looking rom the extension roof



Photo 24 – General view of the trees at the boundary towards the rear


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Photo 25 – General view of the tree to the front elevation

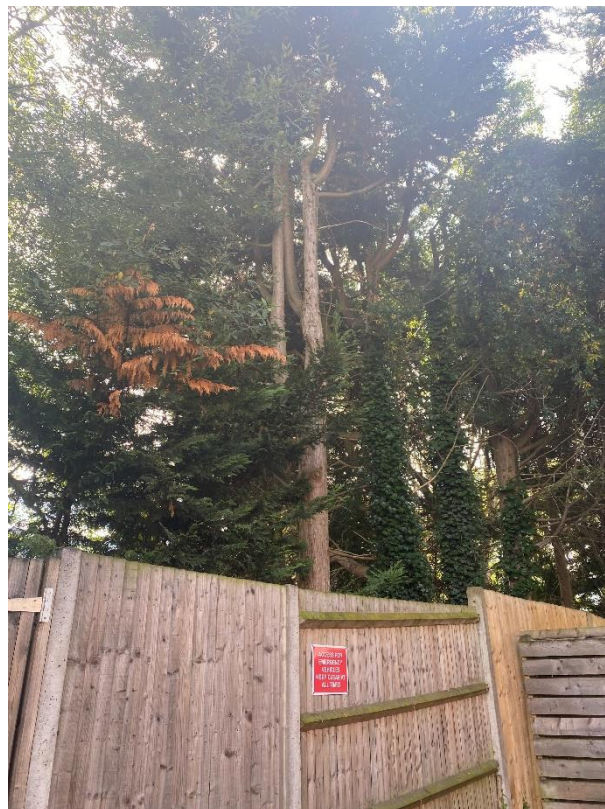


Photo 26 – Close – up Photo 24


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Photo 27 – Tree to the boundary to the side



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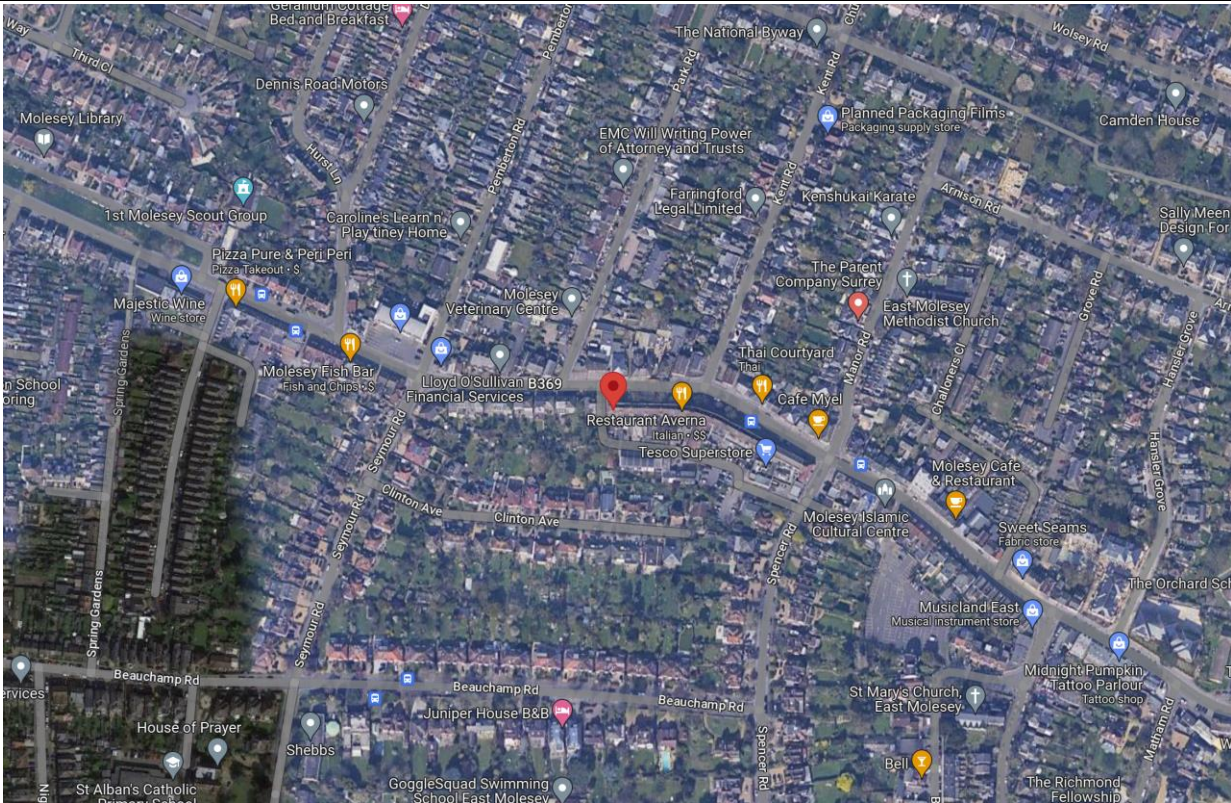
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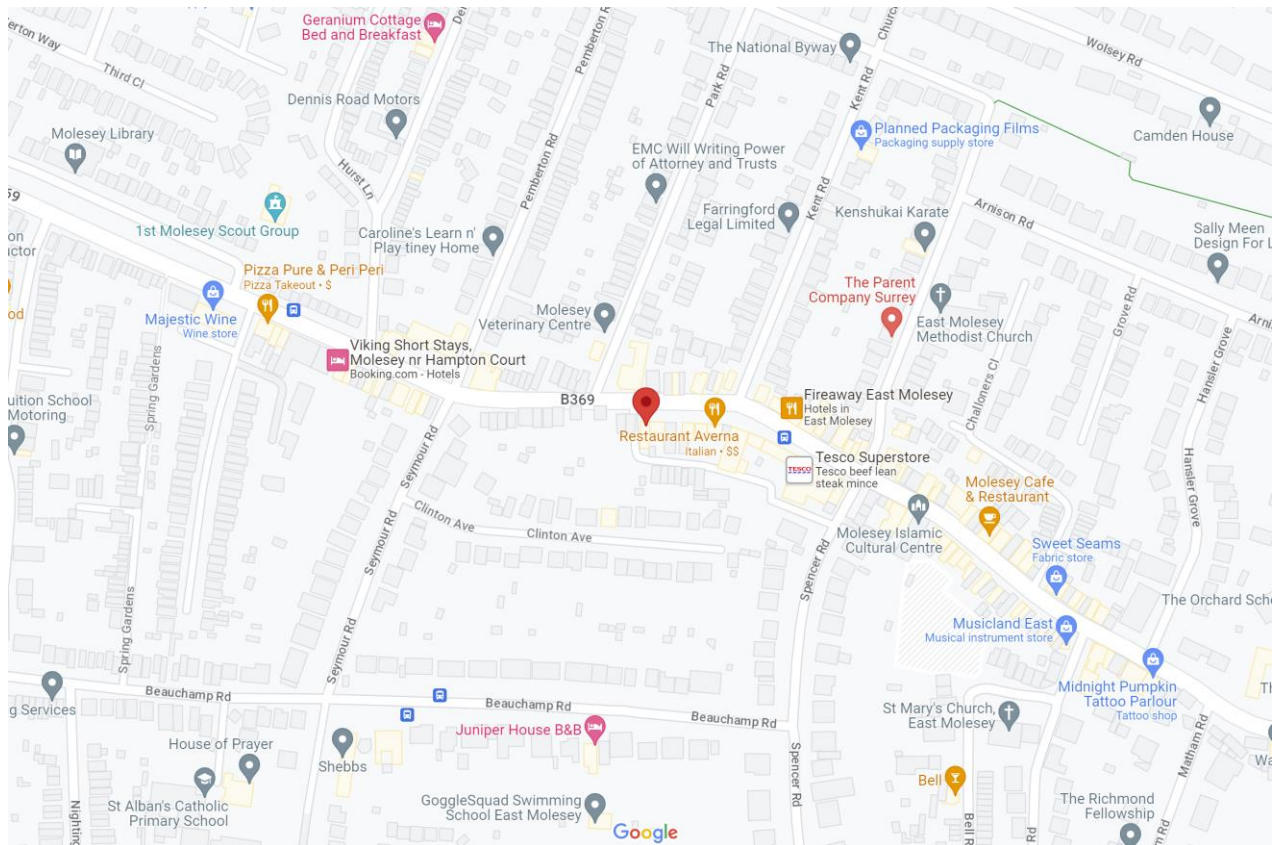
Appendix B

Location Map

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Location map (satellite view – property highlighted in red – source: [\(Google Maps\)](#))



Location map (map view – property highlighted in red – source: [\(Google Maps\)](#))



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Appendix C

Crack Stitching Data Sheets and Method Statements

Crack Stitching

- **CS01** – Cavity Wall using HeliBars
- **CS02** – Rendered Cavity Wall using HeliBars
- **CS03** – Crack Near a Corner in a Cavity Wall using HeliBars
- **CS04** – Crack Near a Corner in a Cavity Wall using CemTies
- **CS05** – Solid Wall using HeliBars
- **CS06** – Rendered Solid Wall using HeliBars
- **CS07** – Solid Wall using CemTies
- **CS08** – Crack Near a Corner in a Solid Wall using HeliBars
- **CS09** – Crack Near a Corner in a Solid Wall using CemTies
- **CS10** – Crack Near a Corner in a Stone Wall using HeliBars
- **CS11** – Crack Near a Corner in a Stone Wall using CemTies
- **CS12** – Internal and External Cracks Near a Corner in a Stone Wall using CemTies
- **CS13** – Cracks at Joins in Solid and Cavity Walls using HeliBars
- **CS14** – Repair of a Crack Near an Internal Corner in a Solid Wall using HeliBars
- **CS15** – Stitching a cracked solid wall using SockFix
- **CS16** – Stitching a cracked rubble filled wall using SockFix
- **CS17** – Reconnecting a Cracked Internal Corner of a Solid Wall using HeliBars



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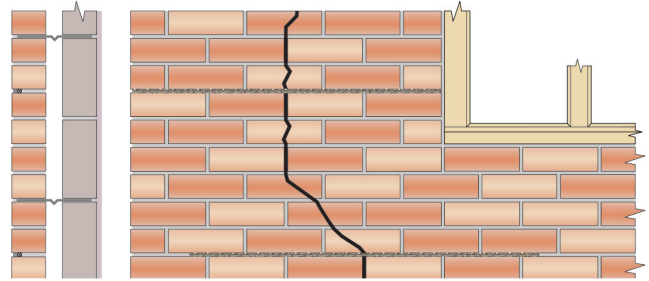
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Crack Stitching a Cavity Wall using HeliBars

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. Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
4. Fit appropriate mortar nozzle.
5. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
6. Push the 6mm HeliBar into the grout to obtain good coverage.
7. Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
8. Point up the remaining slot with a suitable matching mortar and make good the crack using an appropriate Helifix bonding agent depending on the width of the crack.
9. Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

- For cutting slots up to 40mm deepTwin-bladed cutter with vacuum attachment
- For mixing HeliBond3-jaw-chuck drill with mixing paddle
- For injection of HeliBond into slotsHelifix Pointing Gun CS with mortar nozzle
- For smoothing pointingStandard finger trowel

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of slot into the masonry to be 25mm to 40mm.
- 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. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- D. Normal vertical spacing is 450mm (6 brick courses).
- E. Where a crack is less than 500mm from the end of a wall or an opening the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC.
- F. 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, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- G. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot 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.

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:

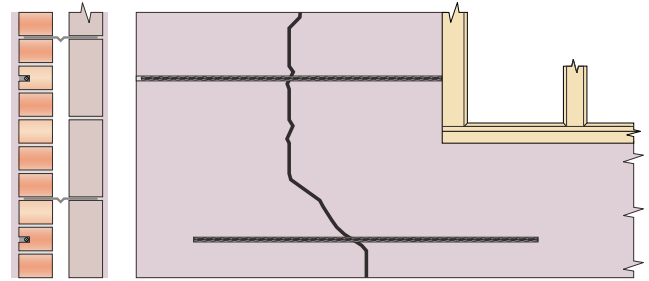
- Advice, assistance and recommendations on all structural repair matters
- Devising and preparing complete repair proposals for specific situations
- An insurance-backed warranty via our Approved Installers scheme

Crack Stitching a Rendered Cavity Wall using HeliBars

METHOD STATEMENT

1. Using a twin-bladed, diamond-tipped wall chaser with vacuum attachment, cut horizontal slots into the brickwork to the specified depth and at the required vertical spacing.
2. Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
4. Fit the appropriate mortar nozzle.
5. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
6. Push the 6mm HeliBar into the grout to obtain good coverage.
7. Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for making good the render.
8. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
9. Clean tools with clean, fresh water.

N.B. Making good of the render may be carried out as soon as is convenient after the HeliBond has started to gel.



RECOMMENDED TOOLING

- For cutting slots up to 40mm deepTwin bladed cutter with vacuum attachment
- For mixing HeliBond3-jaw-chuck drill with mixing paddle
- For injection of HeliBond into slotsHelifix Pointing Gun CS with mortar nozzle
- For smoothing pointingStandard finger trowel

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. The slot in the masonry is to be 25mm to 40mm, plus the thickness of the render, by 10mm high.
- B. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- C. Normal vertical spacing is 450mm (6 brick courses).
- D. Where a crack is less than 500mm from the end of a wall or an opening the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC.
- E. 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 slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- F. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

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GENERAL NOTES

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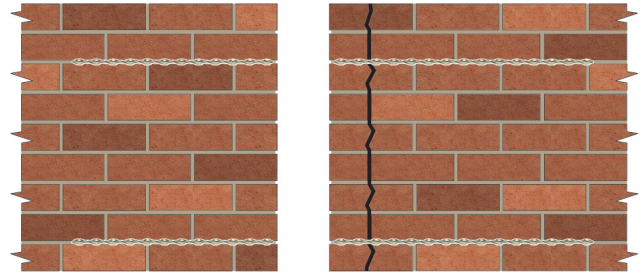
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Repair of a Crack Near a Corner in a Cavity Wall using HeliBars

METHOD STATEMENT

- Using a twin-bladed, diamond-tipped wall chaser with 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.
- Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 6.
- Cut the 6mm HeliBar to the required length and bend to fit in the slots.
- Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
- Fit the appropriate mortar nozzle.
- Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
- Push the 6mm HeliBar into the grout to obtain good coverage.
- Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
- The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
- Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

- For cutting slots up to 40mm deep**Twin bladed cutter with vacuum attachment
- For mixing HeliBond**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

Specification Notes

The following criteria are to be used unless specified otherwise:

- Depth of slot into the masonry to be 35mm to 40mm.
- 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.
- HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- Normal vertical spacing is 450mm (6 brick courses).
- Where a crack is less than 300mm from the end of a wall or an opening the HeliBar is to be continued for at least 250mm around the corner and bonded into the adjoining wall.
- 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 slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

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GENERAL NOTES

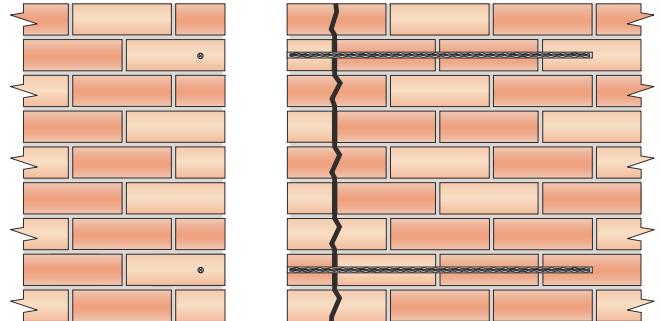
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Repair of a Crack Near a Corner in a Cavity Wall using CemTies

METHOD STATEMENT

1. Mark positions for holes on the outer face of the wall.
2. Drill a 16mm clearance hole through the outer wall and to the required depth.
3. Clean out ALL dust from the hole and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the hole is damp or primed prior to commencing step 8.
4. Attach the required length of CemTie pinning nozzle to the gun.
5. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun HD.
6. Pump grout to fill the nozzle.
7. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
8. Insert the nozzle to the full depth of the drilled hole and pump the grout.
9. Make good all holes at the surface with matching mortar. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
10. Clean tools with clean, fresh water.



RECOMMENDED TOOLING

- For drilling**SDS Rotary hammer drill 650/700w
For mixing HeliBond3-jaw-chuck drill with mixing paddle
For insertion of the CemTiesHelifix Pointing Gun HD with pinning nozzle

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. CemTies are to be installed at a vertical spacing of 450mm.
- B. CemTies are to extend at least 500mm past the crack.
- C. Depth of hole to be CemTie length +25mm
- D. CemTies are to be installed within the centre third of the wall.
- E. If cracking has occurred on both elevations consider using HeliBar crack stitching around the corner. If CemTies have to be used, they should be staggered between each elevation.
- F. 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 hole, or priming with HeliPrimer WB, should be carried out just prior to inserting the CemTie.
- G. 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.

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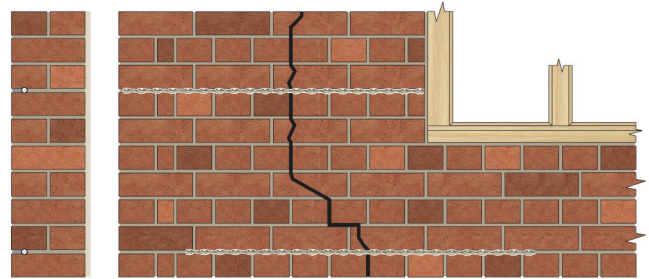
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Crack Stitching a Solid Wall using HeliBars

METHOD STATEMENT

1. Using a twin-bladed, diamond-tipped wall chaser with 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. Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
4. Fit the appropriate mortar nozzle.
5. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
6. Push the 6mm HeliBar into the grout to obtain good coverage.
7. Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
8. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
9. Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

- For cutting slots up to 40mm deep**Twin bladed cutter with vacuum attachment
- For mixing HeliBond**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

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of slot into the masonry to be 35mm to 40mm.
- 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. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- D. Normal vertical spacing is 450mm (6 brick courses).
- E. Where a crack is less than 500mm from the end of a wall or an opening, the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC.
- F. 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 slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- G. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

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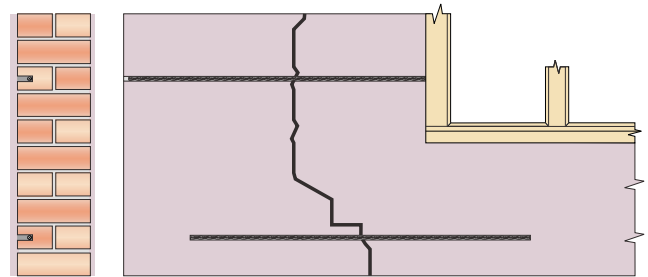
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Crack Stitching a Rendered Solid Wall using HeliBars

METHOD STATEMENT

1. Using a twin-bladed, diamond-tipped wall chaser with vacuum attachment, cut slots into the brickwork to the specified depth and at the required vertical spacing.
2. Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
4. Fit the appropriate mortar nozzle.
5. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
6. Push the 6mm HeliBar into the grout to obtain good coverage.
7. Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for making good the render.
8. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
9. Clean tools with clean, fresh water.

N.B. Making good the render may be carried out as soon as convenient after the HeliBond has started to gel.



RECOMMENDED TOOLING

- For cutting slots up to 40mm deep**Twin bladed cutter with vacuum attachment
- For mixing HeliBond**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

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of slot into the masonry is to be 35mm to 40mm deep, **plus** the thickness of the render, by 10mm high.
- B. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- C. Normal vertical spacing is 450mm (6 brick courses).
- D. Where a crack is less than 500mm from the end of a wall or an opening the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC.
- E. 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 slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- F. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

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GENERAL NOTES

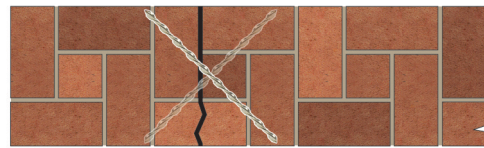
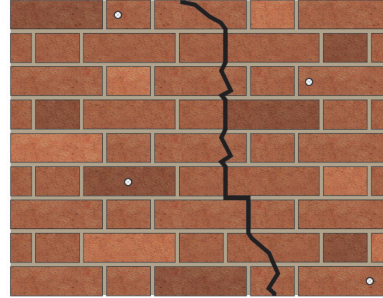
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Cross Stitching a Cracked Solid Wall using CemTies

METHOD STATEMENT

1. Mark positions for holes on the outer face of the wall.
2. Drill a 14mm clearance hole (16mm if the CemTie is longer than 450mm) at the required location and angle and to the specified depth.
3. Clean out ALL dust from the hole and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the hole is damp or primed prior to commencing step 8.
4. Attach the required length of CemTie pinning nozzle to the gun.
5. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun HD.
6. Pump grout to fill the nozzle.
7. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
8. Insert the nozzle to the full depth of the drilled hole and pump the grout.
9. Make good all holes at the surface with matching mortar and make good the crack using an appropriate Helifix bonding agent depending on the width of the crack or leave ready for any decoration.
10. Clean tools with clean, fresh water.



RECOMMENDED TOOLING

- For drillingSDS Rotary hammer drill 650/700w
 For mixing HeliBond3-jaw-chuck drill with mixing paddle
 For insertion of the CemTiesHelifix Pointing Gun HD with pinning nozzle

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. CemTies are to be installed perpendicular to the direction of the plane of the crack (e.g. in the horizontal plane for vertical cracks and in the vertical plane for horizontal cracks).
- B. CemTies are to start a minimum of 225mm away from the crack.
- C. Depth of hole to be CemTie length +25mm.
- D. Angle of drilling to be such that the CemTies will pass through the crack within the centre third of the wall.
- E. CemTies are to start from alternate sides of the crack and to be at 225mm spacing measured along the length of the crack.
- F. 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 hole, or priming with HeliPrimer WB, should be carried out just prior to inserting the CemTie.
- G. 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.

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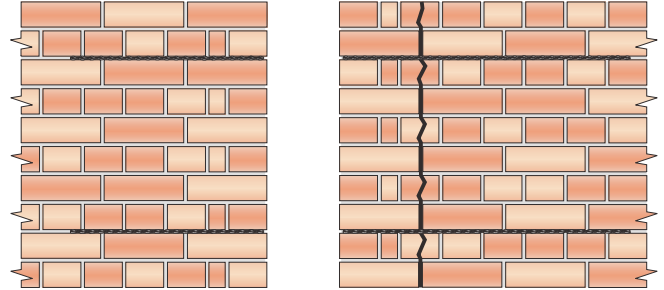
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Repair of a Crack Near a Corner in a Solid Wall using HeliBars

METHOD STATEMENT

- Using a twin-bladed, diamond-tipped wall chaser with 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.
- Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
- Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
- Fit the appropriate mortar nozzle.
- Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
- Push the 6mm HeliBar into the grout to obtain good coverage.
- Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
- The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
- Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

- For cutting slots up to 40mm deep**Twin bladed cutter with vacuum attachment
- For mixing HeliBond**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

Specification Notes

The following criteria are to be used unless specified otherwise:

- Depth of slot into the masonry to be 35mm to 40mm.
- 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.
- HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- Normal vertical spacing is 450mm (6 brick courses).
- Where a crack is less than 300mm from the end of a wall or an opening the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall.
- 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 slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

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GENERAL NOTES

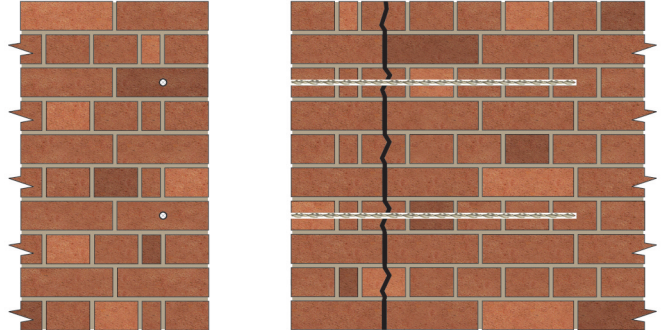
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Repair of a Crack Near a Corner in a Solid Wall using CemTies

METHOD STATEMENT

1. Mark hole positions on the outer face of the wall.
2. Drill 16mm clearance holes through the outer wall and to the required depth.
3. Clean out ALL dust from the hole and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the hole is damp or primed prior to commencing step 8.
4. Attach the required length of CemTie pinning nozzle to the gun.
5. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun HD.
6. Pump grout to fill the nozzle.
7. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
8. Insert the nozzle to the full depth of the drilled hole and pump the grout.
9. Make good all holes at the surface with matching mortar. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
10. Clean tools with clean, fresh water.



RECOMMENDED TOOLING

- For drilling**SDS rotary hammer drill 650/700w
For mixing HeliBond3-jaw-chuck drill with mixing paddle
For insertion of the CemTiesHelifix Pointing Gun HD with pinning nozzle

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. CemTies are to be installed at a vertical spacing of 450mm.
- B. CemTies are to extend at least 500mm past the crack.
- C. Depth of hole to be CemTie length +25mm.
- D. CemTies are to be installed within the centre third of the wall.
- E. If cracking occurs on both elevations consider using HeliBar crack stitching around the corner. If CemTies have to be used, they should be staggered between each elevation.
- F. 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 hole, or priming with HeliPrimer WB, should be carried out just prior to inserting the CemTie.
- G. 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.

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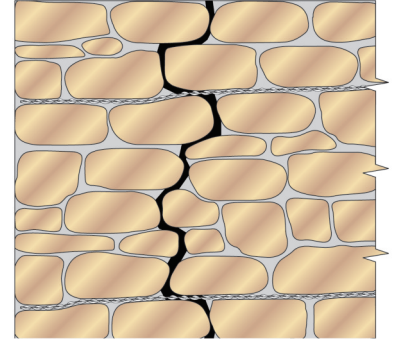
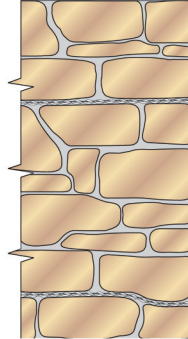
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Repair of a Crack Near a Corner in a Stone Wall using HeliBars

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 stone surfaces in order to provide a good masonry/grout bond. This operation may require the use of hand tools to remove the mortar due to the random nature of the stone.
2. Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
4. Fit appropriate mortar nozzle.
5. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
6. Push the 6mm HeliBar into the grout to obtain good coverage.
7. Inject a second 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.
8. Point up the remaining slot with a suitable matching mortar and make good the crack using an appropriate Helifix bonding agent depending on the width of the crack.
9. Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

- For cutting slots up to 40mm deep**Twin-bladed cutter with vacuum attachment
- For mixing HeliBond**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

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of slot into the masonry to be 35mm to 40mm.
- 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. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- D. Normal vertical spacing is 450mm.
- E. Where a crack is less than 300mm from the end of a wall or an opening the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall.
- F. 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, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- G. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

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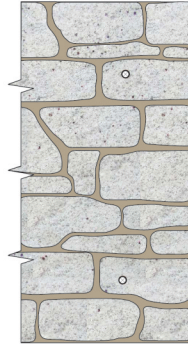
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Repair of a Crack Near a Corner in a Stone Wall using CemTies

METHOD STATEMENT

1. Mark positions for holes on the outer face of the wall.
2. Drill a 16mm clearance hole through the outer wall to the required depth.
3. Clean out ALL dust from the hole and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the hole is damp or primed prior to commencing step 8.
4. Attach the required length of CemTie pinning nozzle to the gun.
5. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun HD.
6. Pump grout to fill the nozzle.
7. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
8. Insert the nozzle to the full depth of the drilled hole and pump the CemTie and grout.
9. Make good all holes at the surface with matching mortar and make good the crack using an appropriate Helifix bonding agent depending on the width of the crack or leave ready for any decoration.
10. Clean tools with clean, fresh water.



RECOMMENDED TOOLING

- For drilling**SDS rotary hammer drill 650/700w
For mixing HeliBond3-jaw-chuck drill with mixing paddle
For insertion of the CemTiesHelifix Pointing Gun HD with pinning nozzle

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. CemTies are to be installed at a vertical spacing of 450mm.
- B. CemTies are to extend at least 500mm past the crack.
- C. Depth of hole to be CemTie length +25mm.
- D. Ensure the CemTies are installed into solid stone and not the mortar joints or loose rubble within the wall.
- E. If cracking occurs on both elevations consider using HeliBar crack stitching around the corner. If CemTies have to be used, they should be staggered between each elevation.
- F. 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 hole, or priming with HeliPrimer WB, should be carried out just prior to inserting the CemTie.
- G. 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.

GENERAL NOTES

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- 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

Repair of Internal and External Cracks Near a Corner in a Stone Wall using CemTies

METHOD STATEMENT

1. Mark hole positions on the wall.
2. Drill 16mm clearance holes through the wall to the required depth.
3. Clean out ALL dust from the hole and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the hole is damp or primed prior to commencing step 8.
4. Attach the required length of CemTie pinning nozzle to the gun.
5. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun HD.
6. Pump grout to fill the nozzle.
7. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
8. Insert the nozzle to the full depth of the drilled hole and pump the grout.
9. Make good all holes at the surface with matching mortar. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
10. Clean tools with clean, fresh water.



RECOMMENDED TOOLING

- For drilling**SDS rotary hammer drill 650/700w
For mixing HeliBond3-jaw-chuck drill with mixing paddle
For insertion of the CemTiesHelifix Pointing Gun HD with pinning nozzle

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. CemTies are to be installed at a vertical spacing of 450mm.
- B. CemTies are to extend at least 500mm past the crack.
- C. Depth of hole to be CemTie length +25mm.
- D. Ensure the CemTies are installed into solid stone and not the mortar joints or loose rubble within the wall.
- E. If cracking occurs on both elevations consider using HeliBar crack stitching around the corner. If CemTies are to be used, they should be staggered between each elevation.
- F. 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 hole, or priming with HeliPrimer WB, should be carried out just prior to inserting the CemTie.
- G. 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.

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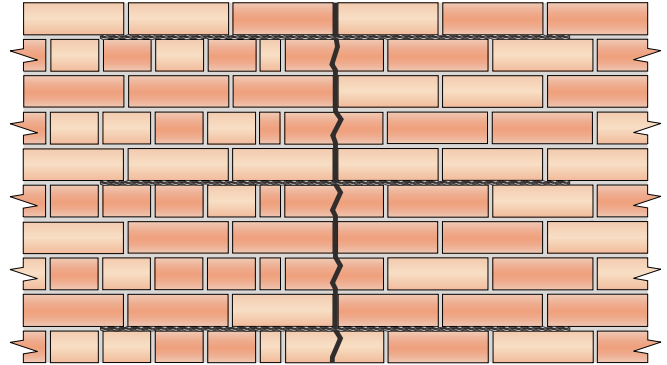
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Repair of Cracks at Joints in Solid and Cavity Walls using HeliBars

METHOD STATEMENT

1. Using a twin-bladed, diamond-tipped wall chaser with 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. Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
4. Fit the appropriate mortar nozzle.
5. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
6. Push the 6mm HeliBar into the grout to obtain good coverage.
7. Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
8. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
9. Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

- For cutting slots up to 40mm deepTwin bladed cutter with vacuum attachment
- For mixing HeliBond3-jaw-chuck drill with mixing paddle
- For injection of HeliBond into slotsHelifix Pointing Gun CS with mortar nozzle
- For smoothing pointingStandard finger trowel

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of slot into the masonry to be 35mm to 40mm.
- 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. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- D. Normal vertical spacing is 450mm (6 brick courses).
- E. Where a crack is less than 500mm from the end of a wall or an opening the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC membrane.
- F. 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 slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- G. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot 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.

GENERAL NOTES

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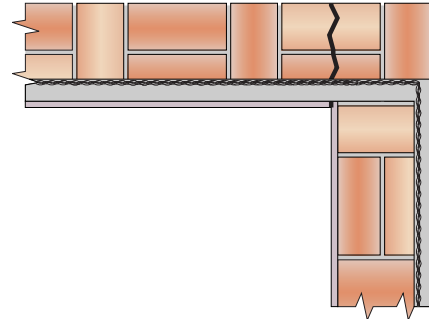
- Advice, assistance and recommendations on all structural repair matters
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- An insurance-backed warranty via our Approved Installers scheme

Repair of a Crack Near an Internal Corner in a Solid Wall using HeliBars

METHOD STATEMENT

1. Using a twin-bladed, diamond-tipped wall chaser with vacuum attachment, followed by a hand or power chisel, cut slots into the internal horizontal mortar joints to the specified depth and at the required vertical spacing. Use a power/hand chisel to continue slots up to the internal corner. Ensure that NO mortar is left attached to the exposed brick surfaces in order to provide a good masonry/grout bond.
2. At the corner drill 10mm diameter holes, in line with the channeled-out mortar beds, through the wall to the exterior face.
3. On the exterior wall, use the wall chaser to remove mortar from the appropriate joints to the specified depth and at the required vertical spacing.
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 HeliPrimer WB. Ensure the slots are damp or primed prior to commencing step 6.
5. Feed the 6mm HeliBar through the drilled holes, bend to fit the external slot and cut to correct length.
6. Fit the appropriate mortar nozzle.
7. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
8. Inject HeliBond grout into the holes at the corner.
9. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the interior slot using the mortar nozzle.
10. Push the 6mm HeliBar into the grout to obtain good coverage.
11. Inject a second 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.
12. Bend the external section of HeliBar to fit the exterior slot and cut to the appropriate length.
13. Repeat steps 8 to 11 as above on the external wall.
14. Point up the remaining internal and external slots with a matching mortar to suit or leave ready for any decoration.
15. Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

- For cutting slots up to 40mm deepTwin bladed cutter with vacuum attachment
- To achieve final depth of slot beyond 40mmHand or power chisel
- For drillingSDS rotary hammer drill 650/700w
- For mixing HeliBond3-jaw-chuck drill with mixing paddle
- For injection of HeliBond into slotsHelifix Pointing Gun CS with mortar nozzle
- For smoothing pointingStandard finger trowel

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of slot into the masonry to be 55mm to 70mm plus the thickness of any plaster.
- 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. If HeliBars are to be joined in a straight run, overlap the bars by a minimum of 500mm.
- D. Top and bottom reinforcements should be positioned as far apart as practicable, up to a maximum distance equivalent to 12 brick courses (approx. 900mm).
- E. Any fractures in the masonry within the 'beam zone' MUST be stabilised by Crack Stitching, injecting CrackBond TE or replacement of the masonry.
- F. Any missing or very poor quality masonry MUST be replaced.
- G. 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 slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- H. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

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GENERAL NOTES

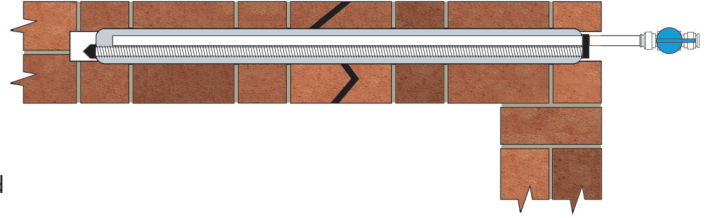
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Stitching a cracked solid wall using SockFix

METHOD STATEMENT

1. Mark the positions for the holes on the outer face of the wall.
2. Core drill the hole, to the specified diameter and depth, taking care to ensure the correct inclination and direction of the hole. Retain the entry hole core where possible.
3. Set up the pressure pot and compressor for installation.
4. Flush pressure pot and associated components with fresh water.
5. Prime the injection tube with water. Wet each SockFix prior to installation by flushing with fresh water.
6. Mix the SockFix Grout using a power mixer until a smooth fluid consistency is achieved, then pour through a sieve into the pressure pot container.
7. Insert SockFix in the hole, ensuring that the sock is evenly distributed along the full length. Do not twist or force as it is pushed into the hole (any tears in the sock will lead to premature grout leakage).
8. SockFix assemblies over 1000mm in length should be flushed with water again once inserted.
9. Connect SockFix valve with the pressure pot.
10. Inflate the SockFix sleeve with SockFix Grout from the pressure pot at a maximum of 3 bar pressure. In low strength masonry, inject under lower pressure to avoid damaging the masonry.
11. When inflating, slowly rotate in the hole to assist the grout flow and to ensure the bar is centralised on completion.
12. Maintain the pressure until the sock is fully inflated in the drilled hole and all the grout milk has been expelled.
13. Close the shut off valve and disconnect from the pressure pot.
14. Once the grouted anchor has cured sufficiently to resist any residual pressure, cut off the end of the grout tube below the surface of the masonry.
15. Make good the entry hole, using the retained core where possible.



RECOMMENDED TOOLING

- For Drilling**Rotary Percussion / Wet Diamond / Dry Diamond
For Mixing Grout3 jaw-chuck drill with mixing paddle or powered grout mixer. Large catering sieve
For InflatingLarge 20 ltr pressure pot max working pressure 110 PSI

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of clearance hole to be length of SockFix + a minimum of 25mm
- B. Diameter of clearance hole to be determined on site depending on the substrate and the diameter of SockFix to be used.
- C. Length of SockFix to be 100mm less than the materials being tied. Any cracks should be approximately at the centre of the SockFix.
- D. Each SockFix should be wetted with fresh water prior to installation.

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

SockFix Grout Mixing Instructions

Each 20kg bag requires 5.5litres of clean cold water

1. Place 4.5 litres of clean cold water into a clean mixing container. While mixing, slowly add approximately ¾ of a bag of Helifix SockFix Grout
2. Continue mixing until all the above grout has been mixed
3. Add a further 1 litre of clean cold water (to make up the required 5.5 litres in total)
4. Add the remaining grout while continuing to mix
5. Continue to mix for a minimum of 5 minutes ensuring all the dry grout from the side of the container is removed and mixed
6. Leave to stand for 4 minutes
7. Pour into pressure pot through sieve
8. If possible, continue to agitate grout in pressure pot in-between installations

GENERAL NOTES

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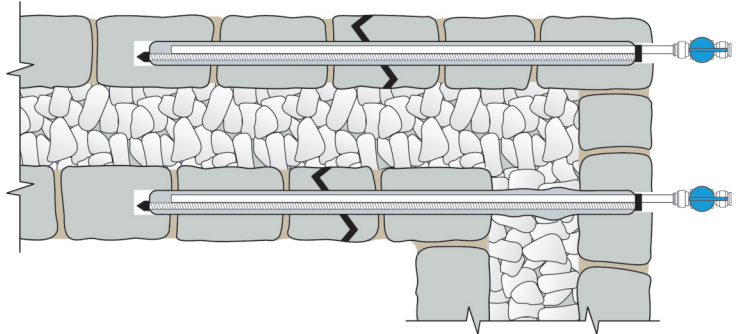
This repair is to be undertaken by a SockFix trained installer only.



Stitching a cracked rubble filled wall using SockFix

METHOD STATEMENT

1. Mark the position for the holes on the outer face of the wall.
2. Core drill the hole, to the specified diameter and depth, taking care to ensure the correct inclination and direction of the hole. Retain the entry hole core where possible.
3. Set up the pressure pot and compressor for installation.
4. Flush pressure pot and associated components with fresh water.
5. Prime the injection tube with water. Wet each SockFix prior to installation by flushing with fresh water.
6. Mix the SockFix Grout using a power mixer until a smooth fluid consistency is achieved, then pour through a sieve into the pressure pot container.
7. Insert SockFix in the hole, ensuring that the sock is evenly distributed along the full length. Do not twist or force as it is pushed into the hole (any tears in the sock will lead to premature grout leakage).
8. SockFix assemblies over 1000mm in length should be flushed with water again once inserted.
9. Connect SockFix valve with the pressure pot.
10. Inflate the SockFix sleeve with SockFix Grout from the pressure pot at a maximum of 3 bar pressure. In low strength substrates, inject under lower pressure to avoid damaging the masonry.
11. When inflating, slowly rotate in the hole to assist the grout flow and to ensure the bar is centralised on completion.
12. Maintain the pressure until the sock is fully inflated in the drilled hole and all the grout milk has been expelled.
13. Close the shut off valve and disconnect from the pressure pot.
14. Once the grouted anchor has cured sufficiently to resist any residual pressure, cut off the end of the grout tube below the surface of the masonry.
15. Make good the entry hole, using the retained core where possible.



RECOMMENDED TOOLING

- For Drilling**Rotary Percussion / Wet Diamond / Dry Diamond
For Mixing Grout3 jaw-chuck drill with mixing paddle or powered grout mixer. Large catering sieve
For InflatingLarge 20 ltr pressure pot max working pressure 110 PSI

Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of clearance hole to be length of SockFix + a minimum of 25mm
- B. Diameter of clearance hole to be determined on site depending on the substrate and the diameter of SockFix to be used.
- C. Length of SockFix to be 100mm less than the materials being tied. Any cracks should be approximately at the centre of the SockFix.
- D. Each SockFix should be wetted with fresh water prior to installation.

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

SockFix Grout Mixing Instructions

Each 20kg bag requires 5.5litres of clean cold water

1. Place 4.5 litres of clean cold water into a clean mixing container. While mixing, slowly add approximately $\frac{3}{4}$ of a bag of Helifix SockFix Grout
2. Continue mixing until all the above grout has been mixed
3. Add a further 1 litre of clean cold water (to make up the required 5.5 litres in total)
4. Add the remaining grout while continuing to mix
5. Continue to mix for a minimum of 5 minutes ensuring all the dry grout from the side of the container is removed and mixed
6. Leave to stand for 4 minutes
7. Pour into pressure pot through sieve
8. If possible, continue to agitate grout in pressure pot in-between installations

GENERAL NOTES

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This repair is to be undertaken by a SockFix trained installer only.

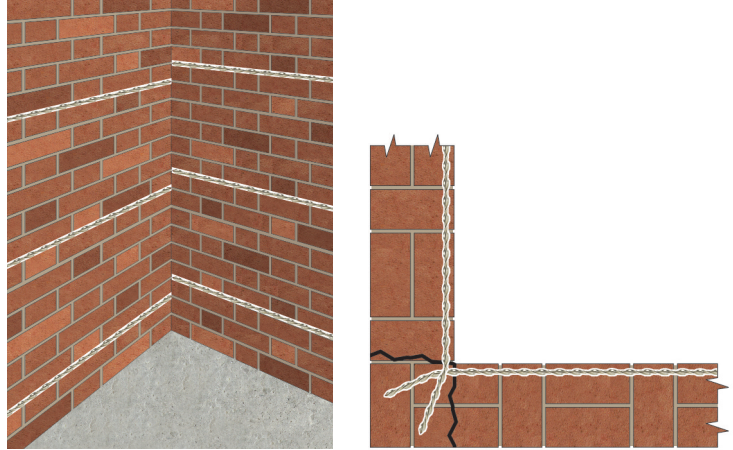


Reconnecting a Cracked Internal Corner of a Solid Wall using HeliBars

METHOD STATEMENT

- Using a twin-bladed, diamond-tipped wall chaser and vacuum attachment followed by a hand or power chisel, cut slots into the horizontal mortar joints, to the specified depth and at the required vertical spacing. Use a power/hand chisel to continue slots up to the internal corner. Ensure that **NO** mortar is left attached to the exposed brick surfaces in order to provide a good masonry/grout bond.
- Where the slot ends at an internal corner drill a clearance hole into the adjoining wall as shown. (14mm if using HeliBond grout – recommended; 10mm if using PolyPlus resin). The angle of the hole is required to be at 25°/35° (minimum 200mm long).
- 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 HeliPrimer WB. Ensure the slots and holes are damp or primed prior to commencing steps 6 and 7.
- Cut the 6mm HeliBar to the required length and bend the end to fit to the full depth of the hole, then remove.
- Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
- Fill the hole with HeliBond grout using the pinning nozzle (PolyPlus resin may be used if preferred).
- Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot using the mortar nozzle.
- Push the HeliBar into the grout filled hole and slot, to obtain good coverage.
- Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
- Point up or fill the remaining slot, make good the crack and leave ready for any decoration.
- Clean tools with clean, fresh water.

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



RECOMMENDED TOOLING

For cutting slots up to 40mm deep.....	Twin bladed cutter with vacuum attachment
To achieve final depth of slot beyond 40mm.....	Hand or power chisel
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 CS with mortar nozzle
For injection of HeliBond into holes.....	Helifix Pointing Gun CS with pinning nozzle
For smoothing pointing.....	Standard finger trowel
For injecting PolyPlus Resin.....	Metal nozzle extension Pro Sealant Applicator

Specification Notes

The following criteria are to be used unless specified otherwise:

- Depth of slot into the masonry to be 25 to 35mm **plus the thickness of any plaster/render.**
- 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.
- HeliBar to be long enough to extend a minimum of 500mm past the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- Normal vertical spacing is 450mm, staggered both sides of the crack.
- 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, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- Do not use HeliBond grout when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed with HeliPrimer WB prior to injection of the HeliBond grout.

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