Restraining a Bowed Solid Wall using BowTies into Joist Ends

METHOD STATEMENT

1. Mark the positions of the joists on the external wall.
2. Drill clearance holes for the BowTies (normally 12mm), **through the masonry only**, in line with the centre of the joists.
3. Clean out the hole to clear any dust or debris.
4. Insert the BowTie into the support tool. If a power support tool is to be used, first fit it into an SDS rotary hammer drill.
5. Drive the BowTie into the timber to the required depth (75mm minimum).
6. Place the sleeve over the tie and push it to the back of the hole in the masonry (use the support tool).
7. Inject Helifix PolyPlus resin into the hole to fill it completely.
8. Allow the resin to gel (normally 15 to 20 minutes).
9. Make good all holes at the surface with brick dust or matching mortar or leave ready for any decoration.

GENERAL NOTES

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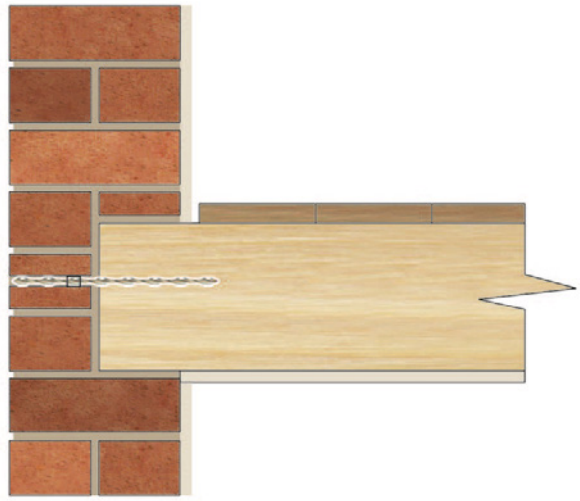

RECOMMENDED TOOLING

- **For drilling and insertion of BowTies**
  SDS rotary hammer drill 650/700W with roto stop
- **For installation of BowTies**
  BowTie support tool
- **For injection of PolyPlus resin**
  Applicator gun

Specification Notes

The following criteria are to be used unless specified otherwise:

A. BowTie penetration into the end grain of the timber joist must be a minimum of 75mm.

B. Each joist in the area of concern is to be secured with a BowTie (i.e. spacing of BowTies is to correspond with the original joist spacing).

C. Ensure that all joists into which BowTies are to be installed are both sound and secure.

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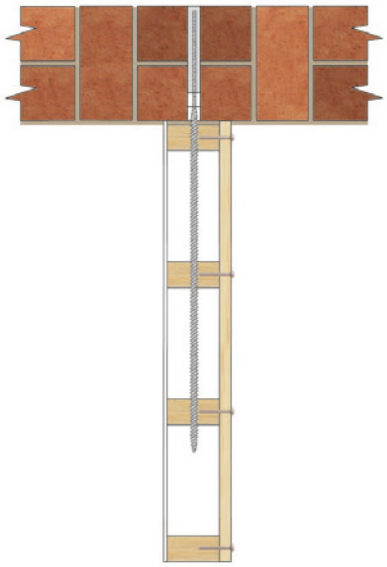
Restraining a Bowed Solid Wall Using BowTie HDs into Timber Stud Wall

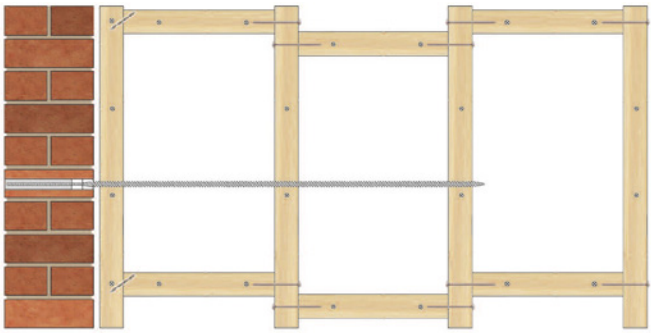
METHOD STATEMENT

1. Remove one side of the partition plastering to expose existing studs including top and bottom plate. Visually check condition and size of timber studs and connections. Replace rotten or defective timberwork and reinstate connections.
2. Install full depth timber noggins between the studs and secure using 100mm long screws. Slightly staggered installation to accommodate for the end grain screws.
3. Install noggins to connect three consecutive timber studs at 600mm vertical spacing across the whole partition height.
4. Mark the positions of the BowTie HD clearance hole on the external wall in between noggins.
5. Drill the clearance hole (normally 16mm) through the masonry in line with the centre of the internal partition wall.
6. Fit the driver into an SDS hammer drill, set to rotary only. Insert the BowTie HD into the driver.
7. Screw the BowTie HD through a minimum of two timber studs, not counting the first facing stud.
8. Place the sleeve over the BowTie HD and push it to the inner face of the wall achieving a minimum 100mm depth for the injection of Resin.
9. Inject Helifix PolyPlus Resin into the hole to fill it completely.
10. Allow the resin to gel (normally 20 minutes).
11. Clean PolyPlus tools with a suitable solvent.
12. Install full height plywood panels on the exposed side making sure to glue and screw back to all noggins, top and bottom plate and all timber studs. Standard screw length 60mm. In most cases the entire panel needs to be covered to avoid variation in stud wall thickness.
13. Make good all the holes at the surface with brick dust or matching mortar or leave ready for any redecoration.

N.B. Be sure to isolate and avoid any pipes or cables within the stud wall.



Plan View



Side View

RECOMMENDED TOOLING

- **For drilling and insertion of BowTie HD's**
  SDS rotary hammer drill 650/700W
- **For installation of BowTies HD's**
  BowTie HD driver
- **For injection of PolyPlus resin**
  Applicator gun

Specification Notes

The following criteria are to be used unless specified otherwise:

A. Minimum existing timber studs size 50 x 100mm, minimum ply thickness 20mm.

B. Maximum vertical spacing of noggins and BowTies 600mm.

C. Maximum screw fixings spacing 200mm, to connect ply to all timber elements.

D. Minimum timber stud wall width 2400mm, ply and noggins to be installed across the full height of the wall. For smaller widths, please contact Helifix technical department.

E. Ensure the BowTie HD is of sufficient length to fully penetrate two timber studs, past the facing stud at the inner face of the brick wall.

F. Ensure every ply panel edge falls on a stud or noggin.

G. Between joists/noggins the BowTie HD must be installed at low speed to avoid 'whip' leading to deviation in line.

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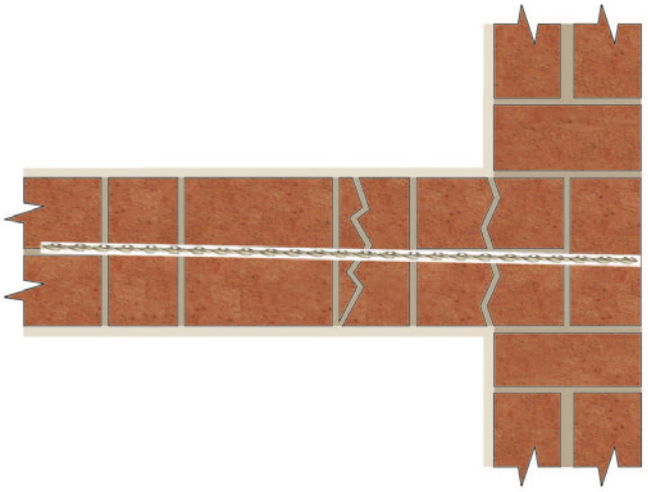
Tel: 020 8735 5200 / Email: info.helifix.uk@leviat.com
The Mille / 1000 Great West Road / Brentford / London / TW8 9DW
Helifix.co.uk / Leviat.com

Reconnecting a Cracked Party Wall to an External Solid 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 bottom of the drilled hole and pump the grout.
9. Make good all holes at the surface with matching mortar and brick dust 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.

N.B. If diamond core drilling is used, the internal surface of the hole must be roughened to ensure a good bond.



RECOMMENDED TOOLING

- **For drilling**
  SDS rotary hammer drill 650/700W or diamond core drill
- **For mixing HeliBond**
  3-jaw-chuck drill with mixing paddle
- **For insertion of the CemTies**
  Helifix Pointing Gun HD with pinning nozzle
- **For smoothing pointing**
  Standard finger trowel

Specification Notes

The following criteria are to be used unless specified otherwise:

A. CemTies are to be installed at a vertical spacing of 450mm.

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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. 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 should be carried out just prior to inserting the CemTie.

F. 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 with HeliPrimer WB prior to injection of the HeliBond grout.

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Restraining a Bowed Solid Wall using BowTie HDs into Joist Side

METHOD STATEMENT

1. Mark the positions for the BowTie HD clearance holes on the external wall.
2. Drill the clearance hole (normally 16mm) through the masonry to line up with the joist in the middle third of the timber away from the edges.
3. Clean out the hole to clear any dust or debris.
4. Fit the driver into an SDS hammer drill, set to rotary only. Insert the BowTie HD into the driver.
5. Screw the BowTie HD through the first and second joists (and the third if specified).
6. Place the sleeve over the tie and push it to the back of the hole in the outer leaf masonry.
7. Inject Helifix PolyPlus resin into the hole to fill it completely.
8. Allow the resin to gel (normally 15 to 20 minutes).
9. Make good all holes at the surface with brick dust or matching mortar or leave ready for any decoration.
10. Clean PolyPlus tools with a suitable solvent.

N.B. Ensure ceiling void is free of pipes and cables.

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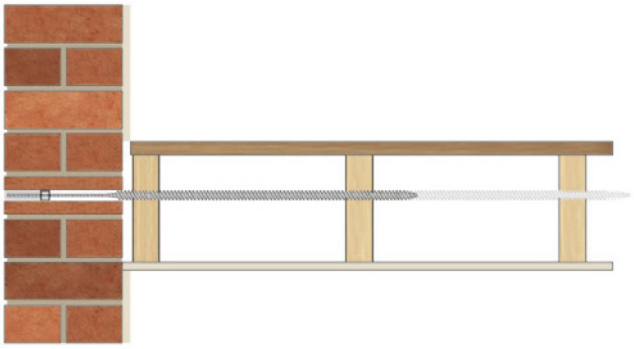

RECOMMENDED TOOLING

- **For drilling and insertion of BowTies**
  SDS rotary hammer drill 650/700W
- **For installation of BowTies**
  BowTie HD driver
- **For injection of PolyPlus resin**
  Applicator gun

Specification Notes

The following criteria are to be used unless specified otherwise:

A. Ensure the BowTie HD is of sufficient length to penetrate 75mm through the noggin/dwang that is furthest from the external elevation.

B. The maximum horizontal spacing between BowTies is 600mm.

C. Floor covering to be fixed to joists when reinstated.

D. Between joists/noggins the BowTie HD must be installed at low speed to avoid 'whip' leading to deviation in line.

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