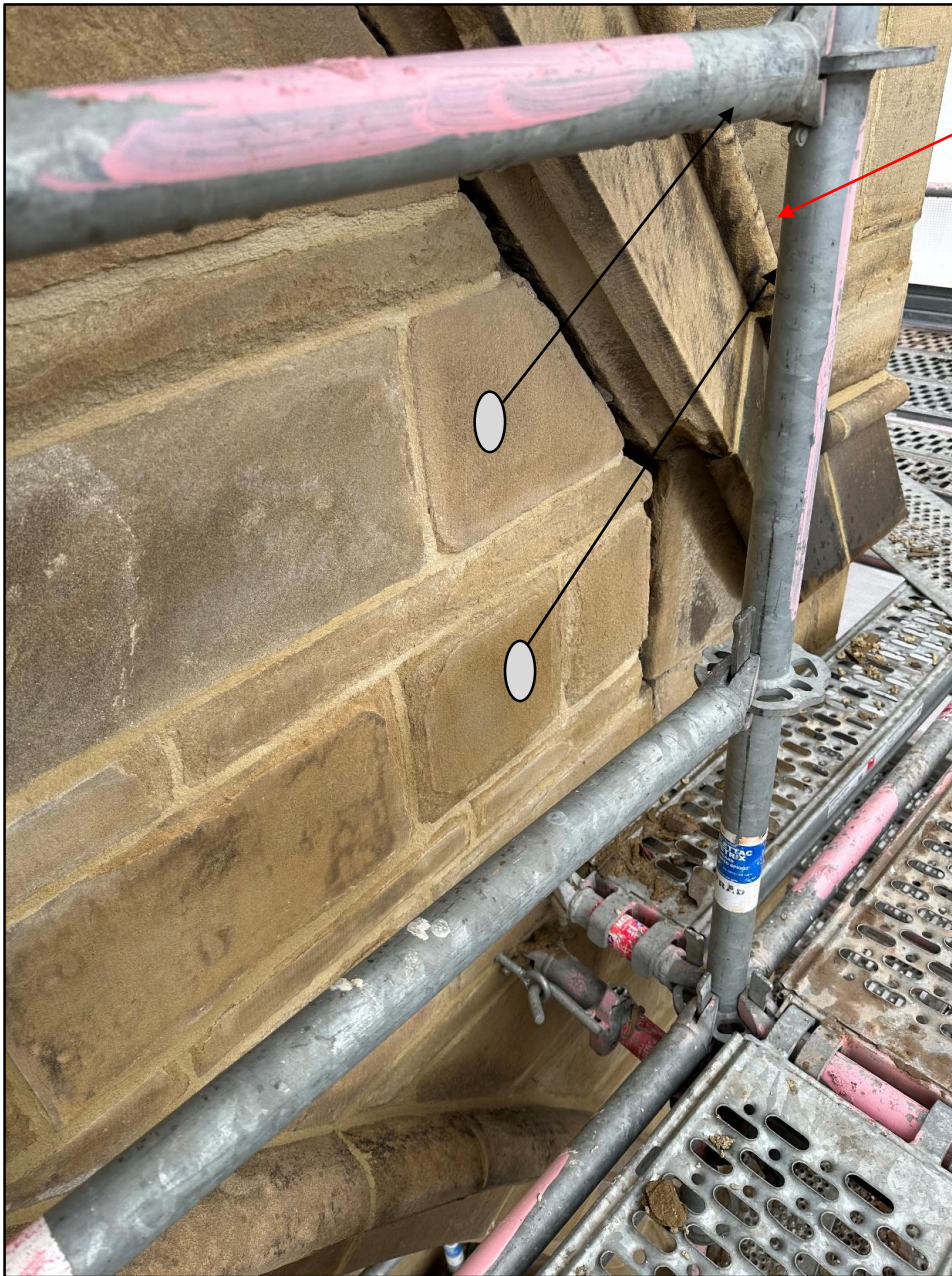




Install M12 x 1000mm  
SockFix Anchors. SFA to  
be installed into 40mm  
o/d hole at approx. 30°  
angle.

Notes:

**Project:**

**Grosvenor Building M15**

**Title:**

Stonework reconnection  
details

**Date:**  
05.04.23

**By:** JP

**HELIFIX**  
SUSTAINABLE STRUCTURAL SOLUTIONS

**Drawing No:**



Install 10mm CemTies (2 per stone section) at approx. 45° angle

Notes:

**Project:**

**Grosvenor Building M15**

**Title:**

Stonework reconnection details

**Date:**  
05.04.23

**By:** JP

**HELIFIX**  
SUSTAINABLE STRUCTURAL SOLUTIONS

**Drawing No:**



Notes:

Install 10mm CemTies (2 p

**Project:**  
Grosvenor Building M15

**Title:**  
Stonework reconnection  
details

**Date:**  
05.04.23

**By:** JP



**Drawing No:**

# SockFix

Extensive range of mechanical grouted sock anchor systems for stabilising damaged masonry

## APPLICATIONS

- For heavy duty, high load, applications
- For securing external walls to hollow concrete
- For stitching cracked solid and multi-leaf walls
- For stabilising rubble-filled walls
- For securing unstable parapet walls and arches
- Where high levels of performance are required in bending
- Where drilling lengths in excess of 1m are required

## FEATURES

- Engineered project-specific solutions
- Cementitious anchor system forms part of the structure
- Fast, efficient, proven installation technique
- Stabilises masonry and restores structural integrity
- Installed in the fabric of the structure providing permanent, non-disruptive, fully concealed repairs
- Retains the building's original appearance
- More economical and sustainable than demolition and rebuilding
- End cap options to suit a range of materials
- Shut off valve simplifies installation and prevents excessive grout use
- Post-tensioning is possible
- Full technical support and Approved Installer network

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

**Relevant Repair Details: RDs CS15, CS16, RW07**



Stitching a cracked solid wall.



Securing an external wall to a hollow concrete floor slab.



## VERTICAL SUPPORT FOR MASONRY PANELS

In circumstances where poor construction tolerances have led to concerns over the support of panels, or the additional weight caused by retrofitted external wall insulation panels, provision may be required for retrofitted vertical support. SockFix anchors provide a simple, reliable method of supporting the weight of a masonry panel in bending or shear. Helical ties have limited bending and shear capacity; so are often not suitable for these applications. Calculation based design can be provided by Helifix Structural Engineers. Load testing can be carried out on site to demonstrate the fixing into the concrete; which can be used alongside laboratory testing to check the shear and bending capacities of the anchor. In some cases a plate may need to be fixed to an exposed threaded end of an anchor. The anchors are designed on a bespoke basis per project, so can easily accommodate this.



## RUBBLE FILLED WALL TIES

Rubble Filled Walls are an extremely variable construction type to work on. They are often 100 years old or more; and suffer from multiple defects such as delamination, cracking and bulging. It is often essential to provide a reliable fix across the full thickness of the wall to extend its serviceable life. SockFix anchors allow grout injection to be controlled when used as an anchor through the full thickness of the wall; including through voided sections of rubble fill. On site testing can be carried out to ensure that effective adhesion is being achieved into the inner and outer leaves of the rubble filled wall. Plates can also be used where necessary in poor substrates.



Stabilising a cracked rubble-filled wall.

## ROOF/ARCH THRUST RESISTANCE

Where roof space timber structures have been altered or inadequate tying was constructed across the roof space, roof thrust is a common issue that occurs. Similarly the lack of adequate buttressing can lead to arch failure. SockFix anchors can be retrofitted across a roof void (or arched opening) to ensure that the rafter feet cannot slip any further (or the opening piers cannot move laterally) as a result of the weight of the tiles (or load acting on the arch). The anchors can be post tensioned (using a turnbuckle) to apply a positive restraining force to the rafters. Using SockFix enables the anchors to be tied into either masonry or timber effectively, as required. Once the anchors are fully inflated and the tension applied then the turnbuckle can be permanently fixed in place to maintain the tension.

## SECURING PARAPET WALLS

Parapet walls frequently lean and can become unstable and dangerous. Every situation must be looked at carefully, but in many cases a hidden reliable connection between the parapet and building structure can extend the life of a parapet and ensure its safety. SockFix anchors can provide a reliable and justifiable connection in shear and bending. Holes are normally drilled from the top after removal and before replacement of coping stones. If no coping stones are on the parapet the masonry cores can generally be retained and replaced after completion. It is common for a combination of rebuild and reinforcement to be used depending on the severity of lean along the line of a parapet wall.

## SPECIFICATIONS

### SOCKFIX

**HDA, LDA, TSA - Grade 304 (1.4301) austenitic stainless steel threaded bar, heavy duty mesh fabric sleeve**

| Bar Diameter | Hole Size    | Sock Size |
|--------------|--------------|-----------|
| 8mm to 10mm  | 20mm - 25mm  | 25mm      |
| 10mm to 12mm | 25mm - 40mm  | 40mm      |
| 12mm to 16mm | 40mm - 80mm  | 80mm      |
| 16mm +       | 80mm - 110mm | 110mm     |

### CCA - Grade 304 circular hollow section, heavy duty mesh fabric sleeve

| Circular Hollow Section Size | Hole Size   | Sock Size   |
|------------------------------|-------------|-------------|
| 10mm                         | 20mm - 25mm | 25mm        |
| 12mm                         | 25mm - 32mm | 25mm - 40mm |
| 16mm                         | 32mm - 40mm | 40mm - 80mm |
| 18mm                         | 40mm - 60mm | 40mm - 80mm |

### SSA - Grade 304 square hollow section, heavy duty mesh fabric sleeve

| Square Hollow Section Size | Hole Size   | Sock Size   |
|----------------------------|-------------|-------------|
| 15mm x 15mm                | 32mm - 40mm | 25mm - 40mm |
| 20mm x 20mm                | 40mm - 50mm | 40mm - 80mm |
| 30mm x 30mm                | 60mm        | 80mm        |

|                            |                                                |
|----------------------------|------------------------------------------------|
| Length to be used          | As specified                                   |
| Standard lengths           | Up to 3m. Couplers used to form longer lengths |
| Diameter of clearance hole | As determined on site, depending on substrate  |

### SOCKFIX GROUT

|                       |                                                                                                                                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material              | Specially formulated cementitious Portland cement mix                                                                                                             |
| Packaging             | 20kg bags                                                                                                                                                         |
| Water content at 20°C | By weight, 33% minimum to 35% maximum (6.6 to 7 litres per 20kg bag)                                                                                              |
| Yield                 | Approx. 13 litres of mixed material at water dose rate of 35% per 20kg bag                                                                                        |
| Placement             | SockFix Grout should be pumped into place. The grout should be pumped within 20 minutes of mixing. SockFix Grout may be used at temperatures between 5°C and 35°C |
| Storage & shelf life: | 6 months for unopened bag kept in dry conditions between 5°C and 35°C                                                                                             |

### COMPRESSIVE STRENGTH

|                             |                              |                              |                               |
|-----------------------------|------------------------------|------------------------------|-------------------------------|
| 1 Day: 18 N/mm <sup>2</sup> | 3 Days: 40 N/mm <sup>2</sup> | 7 Days: 55 N/mm <sup>2</sup> | 28 Days: 65 N/mm <sup>2</sup> |
|-----------------------------|------------------------------|------------------------------|-------------------------------|

### RECOMMENDED TOOLING

|                               |                                                                                                                     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------|
| For drilling                  | SDS Drill or Core Drilling Equipment                                                                                |
| For mixing SockFix Grout      | 3 jaw-chuck drill with mixing paddle or powered grout mixer. Large catering sieve                                   |
| For inflating SockFix Anchors | Large 20 ltr pressure pot. Maximum working pressure 110 psi with regulator capable of limiting the output to 3 Bar. |

## INSTALLATION PROCEDURES

1. Mark the position for the holes on the outer face of the wall.
2. Core drill clearance holes, 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 ready for installation.
4. Flush the pressure pot and associated components with fresh water.
5. Wet each SockFix and prime the injection tube with fresh water prior to installation.
6. Mix the SockFix Grout using a power mixer for a minimum of 3 minutes or until a smooth fluid consistency is achieved, then pour through a sieve into the pressure pot container.
7. Insert the SockFix into the drilled hole, ensuring that the sock is evenly distributed along its full length. Do not twist or force (any tears in the sock will lead to premature grout leakage).
8. If SockFix assembly is over 1000mm in length it should be wet again once inserted.
9. Connect the 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.

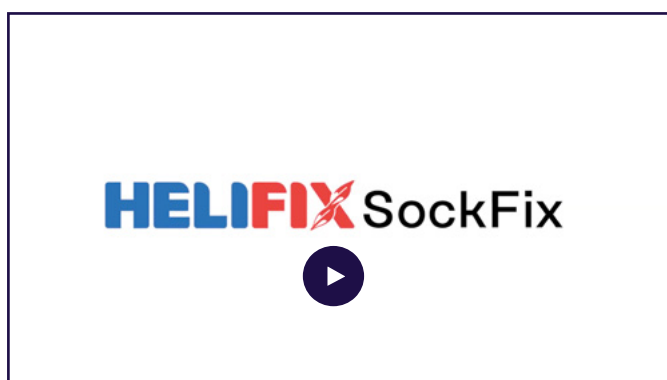
SockFix is installed through pre-drilled hole in structure.



Grout is pumped slowly, expanding the sock to fill the hole. Fluid permeates through the sock to provide a bond with the substrate while a solid aggregate bar/grout composite is formed in the sock.

11. When inflating, slowly rotate in the hole to assist the grout flow and to ensure that 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. Close the shut off valve and disconnect from the pressure pot.
13. Once the grout has cured sufficiently to resist any residual pressure, cut off the end of the grout tube below the surface of the masonry.
14. Make good the entry hole, using the retained core where possible.

## EXAMPLE APPLICATION VIDEO



**Click to watch an instructional video.**

Or scan the QR code with your phone's camera.

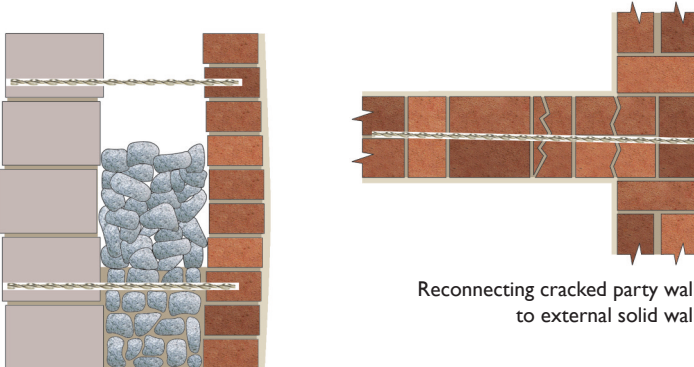


# CemTie

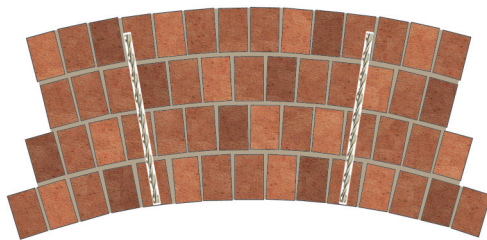
A fully grouted remedial tie for stabilising solid masonry

## Applications

- Stabilising solid or rubble filled walls
- Reinstating failed lintels (when combined with Helibeam techniques)
- Securing multi-layer brick rings in bridges, tunnels and arches
- Reconnecting separated internal and external building walls
- Securing delaminated masonry
- Repairing and securing cornices and decorative fascias
- Securing parapet walls and copings



Stabilising bulging rubble-filled wall



Re-pinning separated brick arch rings

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

**Relevant Repair Details:** RDs CS04, CS07, CS09, CS11, CS12, LR03, LR10, MA02, MA03, MA06, MA08, PW01 to PW03, RF01 to RF09, RW02, RW04, RW05



For full Product Information, Case Studies and downloadable Repair Details go to:

[www.helifix.co.uk/products/remedial-products/cemtie/](http://www.helifix.co.uk/products/remedial-products/cemtie/)



## Features

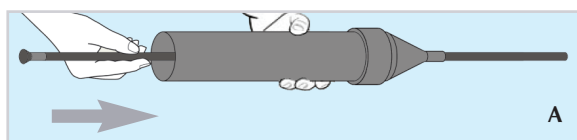
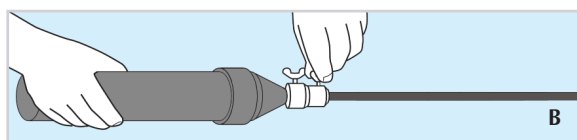
- Grade 304 (1.4301) or 316 (1.4401) stainless steel tie up to 1m long as standard
- Quick, easy, non-disruptive installation
- Tie and grout installed simultaneously
- Ideal for overhead installations
- Highly cost-effective masonry stabilisation technique
- Much quicker and simpler than alternative methods
- Fully concealed for sympathetic repairs
- CemTie plus HeliBond grout produces great tensile strength
- Flexible to allow normal structural movements



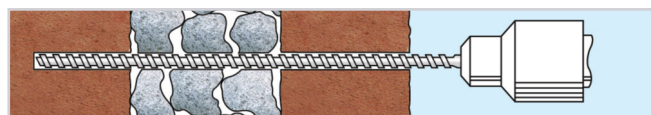
Inserting the grout-filled pinning nozzle, containing the CemTie, into the clearance hole

# Installation Procedures

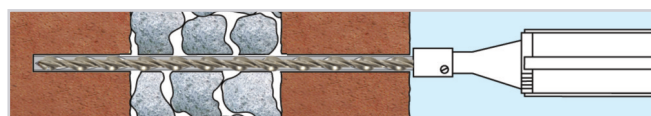
1. Drill clearance hole to required diameter and depth and thoroughly clean and wet down with water.
2. Attach the required length of CemTie pinning nozzle to the gun (see diagrams A and B below).
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun HD.
4. Pump grout to fill the nozzle.
5. Wind the CemTie into the nozzle and ensure that it is fully covered in grout.
6. Insert the nozzle to the end of the drilled hole and pump the grout until the CemTie is fully embedded.



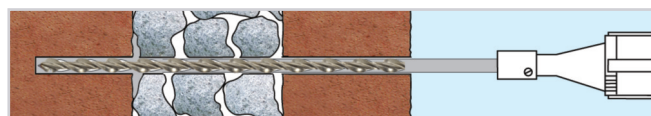
Note: CemTie pinning nozzles are available in 12.7mm and 15.0mm diameters and the length is made to suit the CemTie. The 12.7mm pinning nozzle fits the cone nozzle. The cone nozzle must be drilled out to accept the 15mm pinning nozzle.



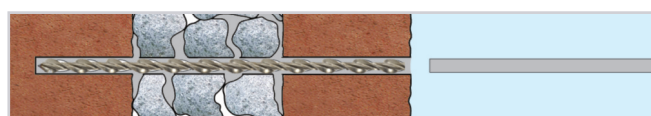
1. Drill clearance hole to required diameter and depth and flush clean



2. Push CemTie fully into grout-filled pinning nozzle of grout gun and insert nozzle to the back of the hole



3. As grout is injected the CemTie is carried with it



4. Back pressure pushes nozzle out of hole to leave fully grouted tie

## Fitting the CemTie pinning nozzle

1. Loosen the locking screws device and slide off the far end of the pinning nozzle
2. Insert the pinning nozzle tube through the cone (as in A) and secure the flared end into position at the bottom of the cone
3. Replace the locking screws device and secure to both the pinning nozzle tube and the cone (as in B)

# Technical Specifications

|                               |                                                                                                                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material:                     | Austenitic stainless steel Grade 304 (1.4301) or 316 (1.4401)                                                                                                                         |
| Diameter:                     | 8mm and 10mm                                                                                                                                                                          |
| Length to be used:            | 50mm less than the materials being tied                                                                                                                                               |
| Standard lengths:             | 400mm, 500mm, 600mm, 700mm, 800mm, 900mm and 1000mm – in packs of 10                                                                                                                  |
| Diameter of clearance hole:   | 8mm tie: length up to 600mm – 16mm; length 600mm to 1m – 18mm<br>10mm tie: 18mm                                                                                                       |
|                               | For CemTies over 1m long call the Helifix Technical Dept                                                                                                                              |
| Depth of clearance hole:      | Length of CemTie + 25mm                                                                                                                                                               |
| Bonding agent:                | HeliBond Cementitious Grout                                                                                                                                                           |
| HeliBond consumption:         | In a 16mm diameter hole; 10 linear metres from one 3ltr HeliBond tub (subject to voiding)<br>In a 18mm diameter hole; 7 linear metres from one 3ltr HeliBond tub (subject to voiding) |
| RECOMMENDED TOOLING           |                                                                                                                                                                                       |
| For drilling:                 | SDS rotary hammer drill 650/700w                                                                                                                                                      |
| For mixing HeliBond:          | 3-jaw-chuck drill with mixing paddle                                                                                                                                                  |
| For insertion of the CemTies: | Helifix Pointing Gun Kit HD with pinning nozzle                                                                                                                                       |