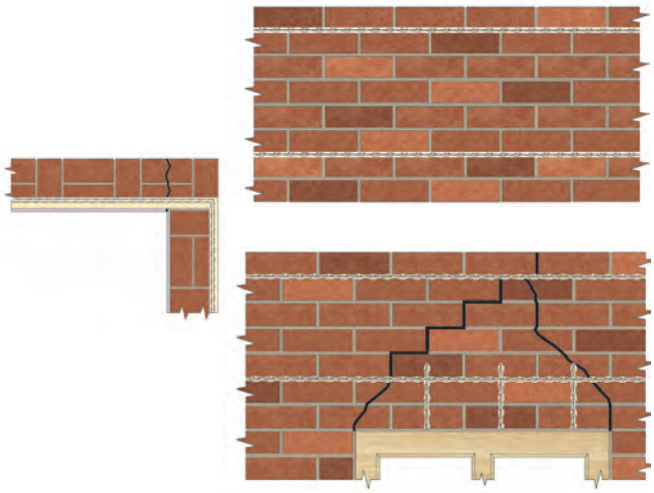
The Helibeam System

Helical stainless steel reinforcing bar for structural reinforcement and repair

APPLICATIONS

- Forming deep masonry beams
- Subsidence superstructure repairs
- Crack stitching
- Lintel repair and creation
- Horizontal structural restraint
- Support existing masonry when creating new openings
- For reinforcing new build masonry
- Seismic upgrades for existing masonry
- To reinstate bridges, tunnels and arches



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

Relevant Repair Details: BW01 to BW03; CS01 to CS14 (except 4, 7, 9, 11 & 12); LB01 to LB05; LR01 to LR11; MA03 to MA05; MJ01 to MJ03; PW01 to PW03; RF07 & RF09; RW01, RW03 & RW06

Pairs of long HeliBars are bonded into cut slots to form deep masonry beams (Helibeam) that reinforce and stabilise the existing masonry and redistribute structural loads. In combination with other Helifix ties and fixings, the Helibeam System provides a comprehensive, reliable and economic system of repair and stabilisation for many commonly occurring structural faults.

FEATURES

- Provides lateral restraint and masonry reinforcement combined with tying, pinning and grouting techniques
- Austenitic stainless steel helical reinforcing bars
- Cost-effectively restores structural integrity
- Deep masonry beams support and distribute structural loads
- Greatly simplifies lintel and window replacement
- Combines great strength with flexibility
- Accommodates normal building movement
- Introduces no additional stresses into the structure
- Removes or reduces the need for mass underpinning
- Fully concealed once installed
- Avoids expensive taking down and rebuilding
- Minimal disruption to building's fabric or occupants

TECHNICAL SPECIFICATIONS

SLOTH DEPTH AND SPACING				
	Single skin/ Cavity wall	Solid Masonry		
		Up to 102.5mm	102.5mm to 225mm	Over 225mm
Depth of slot	40mm		40 – 55 mm	40 – 55mm on both sides
Vertical spacing	As detailed on the job specification			

HELIBEAM SYSTEM	
Material	Austenitic stainless steel Grade 304 (1.4301) or 316 (1.4401)
Diameter	4.5mm, 6mm, 8mm, 10mm and 12mm
Tensile strength (6mm HeliBar)	10kN
0.2% Proof stress (6mm HeliBar)	900 N/mm^2 (304 / 1.4301) 840 N/mm^2 (316 / 1.4401)
Standard lengths	1m, 1.5m & 2m – in packs of 10. Longer lengths available via Approved Installers
Width of slot	Full height of bed joint (10mm in render/plaster)
Bonding agent	HeliBond cementitious grout. 1 x 3ltr HeliBond = 10 linear metres of crack stitching or 7 linear metres of twin bar installation

RECOMMENDED TOOLING	
For cutting slot up to 40mm deep	Twin-bladed cutter with vacuum attachment or angle grinder or hammer and mortar chisel
For mixing HeliBond grout	3-jaw-chuck drill with mixing paddle
For injection of HeliBond into slots	Helifix Pointing Gun CS with mortar nozzle
For smoothing pointing	Standard finger trowel
For inserting HeliBar	HeliBar Insertion Tool

HeliBar is inserted into HeliBond grout within a cut slot. Used in pairs to form a masonry beam (Helibeam)

HELIBAR MASONRY BEAM INSTALLATION PROCEDURES

1. HeliBars to be installed as detailed in the project specification.
2. Where a crack is less than 500mm from the end of a wall or an opening, the HeliBars are to be continued for at least 200mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC.
3. For solid masonry in excess of 225mm thick and in a cavity wall where both leaves are cracked, the repair must be repeated both internally and externally.
4. If there is render/plaster, this thickness must be added to the depth of slot. HeliBar installation must be within the masonry and never in the render.
5. Ensure the masonry is well wetted or primed to prevent premature drying of the HeliBond due to rapid de-watering, especially in hot conditions. Ideally additional wetting of the slot should be carried out 1 to 2 minutes prior to injecting the HeliBond grout.
6. 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.

1. Rake out or cut slots into the horizontal mortar beds as specified.

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

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

4. Using the HeliBar Insertion Tool push one HeliBar into the grout to obtain good coverage. Then repeat steps 3 and 4.

5. Insert a further bead of HeliBond over the exposed HeliBar, finishing 12mm from face and 'iron' firmly into the slot using the HeliBar Insertion Tool.

6. Re-point the mortar bed and make good the vertical cracks with CrackBond TE.