

LINTEL REPAIR AND BEAMING



LINTEL REPAIR & BEAMING SYSTEM

DESCRIPTION

- Load carrying masonry reinforcement system.
- High tensile 316 grade stainless steel helical bars with excellent bonding characteristics.
- High performance Thor grout.
- Independently performance tested and CE marked.
- BRE load/span tables available.

APPLICATION

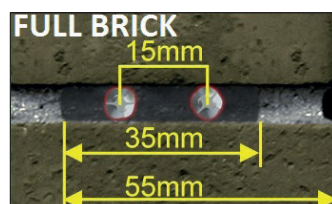
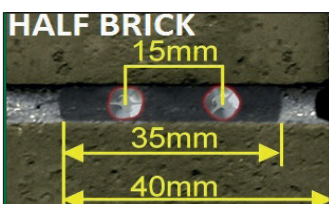
- Retrofit masonry reinforcement.
- Creates concealed deep masonry beams and lintels that resist vertical loads.
- Spans openings and unsupported areas.

BENEFITS

- Increases tensile, shear and flexural strength of masonry.
- Absorbs stress to redistribute load.
- Minimal disturbance and fully concealed repair.
- Quick, reliable and cost effective.

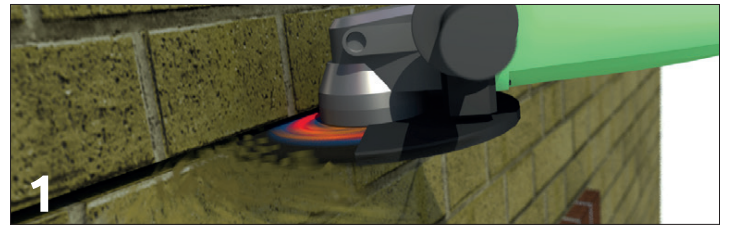
PRODUCT SPECIFICATION

Thor Helical crack stitching bars are available in: 6mm Diameter, 1m and 6m length
9mm Diameter, 1m and 2m length



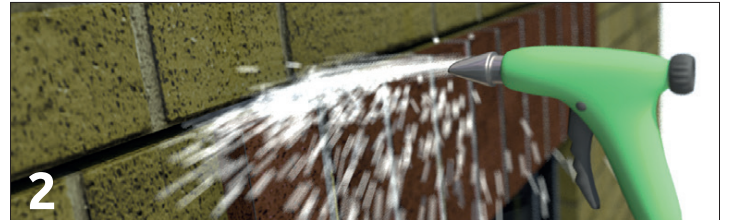
Step 1

Grind out two vertically displaced mortar beds (as appropriate) to a depth of 40mm for half brick wall or 55mm for full brick walls. Slots to extend 500mm either side of opening.



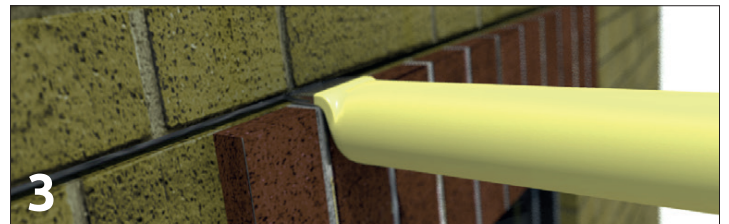
Step 2

Clear out debris and thoroughly flush out with water.



Step 3

Insert a 25mm bead of WHO-60 grout.



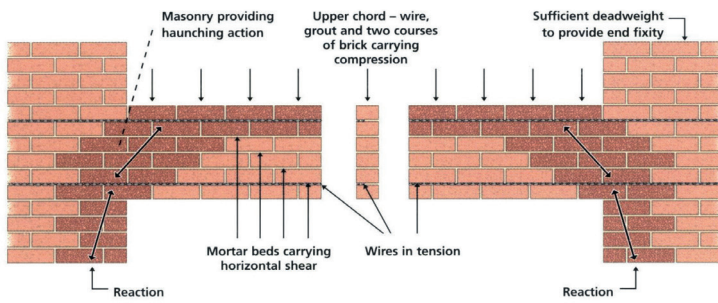
Step 4

Insert and grout bars into position as below. Finish and point with colour match mortar.



Conforms to BS EN 845-1: 2013 and conditions for CE marking

LINTEL REPAIR AND BEAMING



The upper tendon combines with the two surrounding brick courses to enhance compression and the bottom tendon acts in tension to significantly increase the tensile and flexural capacity of the masonry.

NOTES

BS EN 845-1:2013 National Annex NA states that the bars need to provide an equivalent performance to 30mm x 5mm lateral restraint straps with a declared mean tensile load capacity of at least 8kN.

TYPICAL TENSILE PERFORMANCE -CE MARK TESTING TO BS EN 845-1

Thor Helical Bed Joint Reinforcement in Thor Grout

Bar Diameter	No. of Bars/Join	Mean UTL (kN)	Mean Load at 2mm Deflection (kN)
6mm	1	8.39kN	6.26kN
9mm	1	11.50kN	9.40kN
6mm	2	16.00kN	10.86kN

Depth of test slot: 30mm for single bar - 40mm for multi-bars

Height of test slot: 3mm greater than diameter of crack stitching bars

Position of test bars: 400mm embedment with multiple bars space 10mm apart

TYPICAL PROPERTIES OF THOR HELICAL BARS

Diameter	CSA (mm ²)	0.2% Proof Stress (N/mm ²)	Ult Tensile Strength (N/mm ²)	Mean Tensile Capacity (kN)#
6mm	8mm ²	>870	1025-1225	9
9mm	16mm ²	>850	1025-1225	17

#Ultimate Tensile Strength is measured within a calibrated tolerance of +/-2%

#Mean Tensile Capacity is an indicative value derived from CSA x Mean UTS

BRE factored load/span table for 102mm & 215mm thick brickwork using 6mm Thor Helical bars encased in WHO-60 Grout (kM/m run of beam)

Span (m)	Depth of Beam (m)				
	0.30	0.45	0.60	0.75	0.90
0.80	32.8	32.8	32.8	32.8	32.8
1.20	21.8	21.8	21.8	21.8	21.8
1.60	16.4	16.4	16.4	16.4	16.4
2.00	13.1	13.1	13.1	13.1	13.1
2.40	9.7	10.9	10.9	10.9	10.9
2.80	7.1	9.4	9.4	9.4	9.4
3.20		8.2	8.2	8.2	8.2
3.60		6.5	7.3	7.3	7.3

PHYSICAL PROPERTIES

COMPREHENSIVE STRENGTH

24 Hours	20 MPa
7 Days	60 MPa
28 Days	80 MPa

NOTES

BRE tests used weak materials in 1: 3: 12 cement: lime: sand mortar to provide lower bound values.

Tables assume:

Comprehensive strength of bricks > 8.5 N/mm²

Horizontal shear strength of masonry > 0.070 N/mm²

No slip planes such as damp-proof within the beam

Tables include partial safety factors of:

1.5 for masonry in compression

1.5 for masonry in shear

1.0 for steel

For vertical shear resistance of the masonry safety factor of 1.5 has also been used to take into account variability of materials and workmanship. An additional safety factor of 2.0 has been used for the limiting serviceability conditions.

THOR NTC GROUT TUBS INDICATIVE USAGE RATES

Thor NTC 1.5 litre grout tub	Approximate usage = 5 lineal metres
Thor NTC 3.0 litre grout tub	Approximate usage = 10 lineal metres
Thor NTC 4.5 litre grout tub	Approximate usage = 15 lineal metres
Thor NTC 12.0 litre grout tub	Approximate usage = 40 lineal metres