

Crack Stitching Wall Repair

Description

Helical crack stitching rods are available in 1, 1.5 and 2 meter lengths.

The crack stitching ties are grouted into existing masonry to repair cracks in walls and to increase their flexural strength.

WHO60[®] is a thixotropic, shrink compensated cement-based grout with polymer additives. The grout sets in and around the troughs of the helix and rapidly develops compressive strength to restrict axial deflection of the rod under load conditions.

Benefits

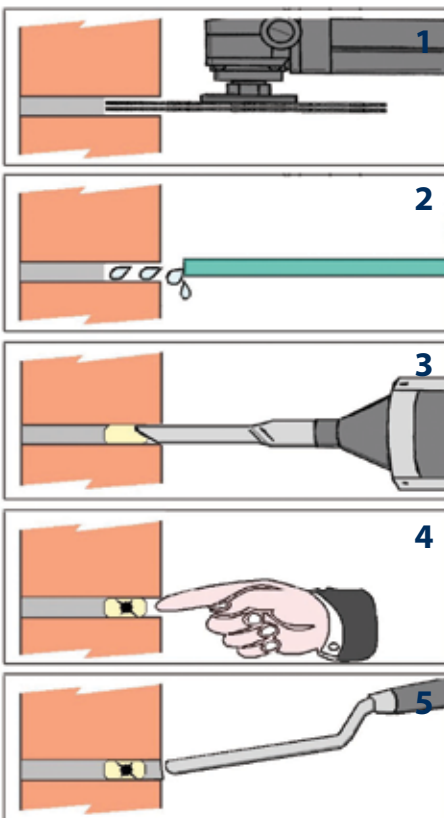
Retrospectively applied helical bed joint reinforcement enables crack repairs to be made discreetly and with minimum disturbance. The repair restores the structural integrity of masonry and provides resilience against further cracking.

Rendered walls can have crack stitch ties installed directly into masonry units to bind them together and, where shear strength is an issue, to permit use of diagonal reinforcement and/or use of heavy duty rods.

Distinction

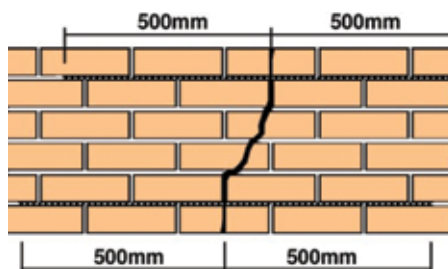
Radial fins and ribs are formed on stainless steel wire in a cold rolling process that significantly increases its tensile strength.

The profiled wire is twisted via torsional stresses that are so evenly applied that the resulting helix is formed with precise pitch accuracy, (European Patent No 1307303) making Thor Helical crack repair rods the most consistent and reliable helical wire products available



Method statement

1. Chase slots at 300mm intervals along a length of wall that extends 500mm each side of crack.
2. Clear loose detritus from slots and flush thoroughly with water,
3. Pump bead of WHO60[®] cement grout to rear of slot, filling it evenly to approximately two thirds full.
4. Push helical crack stitching tie into grout to approximately two thirds of slot depth. Trowel displaced grout to firmly encapsulate rod.
5. Make good wall chase to disguise slot. Repair cracks between the helically reinforced masonry with appropriate and discreet filler.



Product specification Reinforcing Bar

Material: Austenitic Stainless steel -(304)
Ultimate Tensile Strength:
= 1050-1200N/mm²
5mm Rod – Nom. CSA = 6 mm²
6mm Rod – Nom. CSA = 7mm²
7mm Rod – Nom. CSA = 9mm²
8mm Rod – Nom. CSA = 12mm²
9mm Rod – Nom. CSA = 15mm²

WHO60[®] Grout at 28 Days at 20°c
Compressive Strength: = 55N/mm²
Tensile Strength: = 5N/mm²
Flexural Strength: = 12N/mm²

CRACK REPAIR GUIDE

Tolerances = + 5mm / - 0mm

MASONRY	DEPTH OF		
	SLOT	GROUT	ROD
102mm	30mm	20mm	20mm
215mm	45mm	30mm	30mm

Twistfix Ltd

6th Floor, 8 Exchange Quay, Manchester M5 3EJ
Southern Office: 81 Oxford St, London W1D 2EU

www.twistfix.co.uk

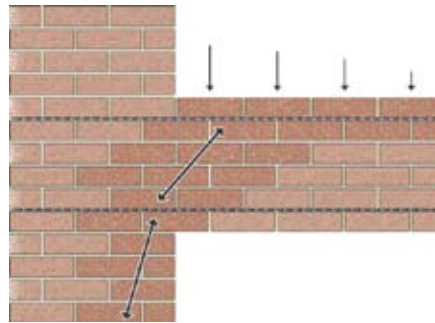
© Twistfix Ltd 2009 Doc CSW v 0801

Reinforced Brick Beam Lintel Repairs

Description

Failed brick and masonry arch lintels can be reinforced with the insertion of twin 6mm helical bars embedded in two mortar beds spaced 450-900mm apart. The highly profiled reinforcement bars extend 500mm beyond the window openings to form tendons representing the upper and lower flanges of a beam.

The upper tendon combines with the two surrounding brick courses to enhance compression and the other tendon acts in tension to significantly increase the tensile and flexural capacity of the masonry. BRE have published factored load tables that show the load capacity of the reinforced brick lintel to be 2.6 tonne for openings up to 3.2m wide

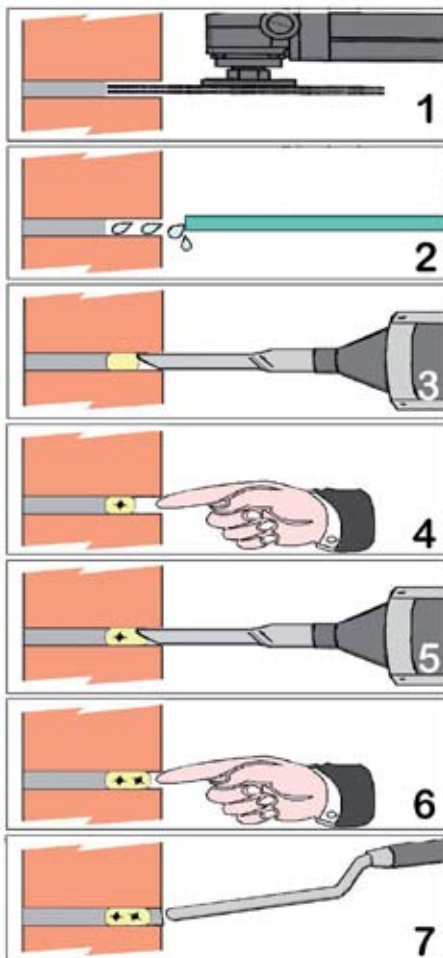


WHO60® is a thixotropic, cement-based masonry repair grout with polymer additives. The shrink-compensated grout has been formulated to bond helical reinforcement bars to masonry. The grout sets in & around the troughs of the highly deformed helix, rapidly developing compressive strength to restrict the bar from deflection under load conditions.

Benefits

Cold rolled helical bars have a nominal tensile strength that is twice that of rebar, four times that of epoxy glass-fibre and seven times that of wound helix plate. The deep and continuous helical trough ensures maximum interlock with the masonry repair grout, enabling the helical bars to progressively accumulate and redistribute stress to alleviate the incidence of any sudden or catastrophic failures.

Brick lintel repairs and masonry arch reinforcement can now be carried out effectively without the need to dismantle and rebuild, ensuring that costs are kept low and the disruption to occupants is minimized.



Method statement

1. Chase out two slots of appropriate depth along a length of wall that extends 500mm each side of window opening. Slots must be spaced apart vertically by 450mm to 900mm (4-12 brick courses).
2. Clear loose detritus from the slots and flush thoroughly with clean water.
3. Pump bead of WHO60® cement grout to rear of slot, filling it evenly to approximately two thirds full.
4. Push first helical bar into grout to approximately three quarters of slot depth. Trowel displaced grout to firmly encapsulate rod.
5. Pump second bead of WHO60® cement grout filling slot evenly to approximately 15mm of wall face.
6. Push second helical bar into grout to approximately half of slot depth, though at least 10mm from first bar. Trowel displaced grout to encapsulate rod.
7. Make good wall chase to disguise slots. Carry out crack stitching repairs to areas between the new helically reinforced brick beam lintel.

Product specification

6mm Helical Reinforcing Bar

Material: Austenitic Stainless Steel (304)

Nominal CSA = 7.4mm²

Ult. Tensile Strength = 1050-1200N/mm²

WHO60® Grout at 28 Days at 200c

Compressive Strength = 55N/mm²

Tensile Strength = 5N/mm²

Flexural Strength = 12N/mm²

Youngs Modulus = 13N/mm²

Installation Notes

Ensure 450mm-900mm between slots

No slip planes between slots (e.g. DPC)

Grout two helical bars in to each slot

Bars to extend 500mm beyond opening

Lintel Repair Guide

(Tolerances = +5mm/-0mm)

MASONRY	DEPTH OF		
	SLOT	BAR1	BAR2
102mm	40mm	30mm	20mm
215mm	55mm	45mm	25mm

Twistfix Ltd

6th Floor, 8 Exchange Quay, Manchester M5 3EJ

Southern Office: 81 Oxford St, London W1D 2EU

www.twistfix.co.uk

© Twistfix Ltd 2009 Doc RBB v 0902