



Many buildings can benefit from a program of structural repairs to reinforce dilapidated masonry walls that are cracked, bulged or otherwise weakened. **Thor Helical** masonry crack repair techniques utilise retrofit brick reinforcement to strengthen brickwork, improve load resistance and reduce the risk of cracking in brick, block and stone walls.

Structural damage has a detrimental effect on the load-carrying capacity of a component within a wall or the wall as a whole. Structural failure occurs when material is subjected to stresses beyond its limit of resistance, resulting in fracture or excessive deformation.

What causes structural movement in buildings?

- Ground movement – Subsidence, heave or slip
- Vegetation – Tree roots, etc.
- Size changes – Expansion or contraction induced by variations in moisture content or temperature
- Corroding metals – forces imparted by the corrosive expansion of mild steel reinforcement, wall ties, etc.
- Support deficiencies – brick arch or lintel failure
- Inadequate lateral restraint – Walls buckling at mid-level or around openings
- Wind, Vibration or Impact

What are the symptoms of structural damage?

- Cracks in walls
- Bowing or leaning brickwork
- Dropped brick arches

The first aspect of any masonry repair scheme is to alleviate the cause of the movement where this is possible. For example attending to any ground movement problems and removing invasive vegetation. ; One can then concentrate on strengthening and reinforcing the superstructure to provide resilience to further movement.

Using **Thor Helical** reinforcement bars, lateral restraints and remedial wall ties, sagging and bowing tendencies can be alleviated. The use of brick reinforcement is a very simple and cost-effective way of enhancing the strength and durability of masonry construction by providing both structural and crack control benefits.



Thor Helical 6mm bars are available in 1 metre and 6 metre lengths and 9mm and 12mm diameters to offer an array of structural repair solutions for cracked walls and reinforcement.

Thor Helical stainless steel bars are used for masonry crack repair to stitch fractured walls. These brick reinforcement bars are inserted into the wall to form a deep masonry beam that supports and strengthens and in pairs above brick arches and lintels. ; Bowing or leaning facades can be tied to floor structures and cross walls with wall ties to ensure structural repairs are long lasting as brickwork is stabilised and structural integrity is restored.

Where owners are concerned about structural stability or safety, or wish to reduce the amount of cracking they should consult a structural engineer to determine probable causes and advice on further action prior to installation.

Once consulted by a structural engineer it is recommended work be carried out by experienced tradesmen. If your building is of Heritage Significance it is also recommended that the engineer and tradesmen has Heritage experience.

Thor Helical remedial masonry reinforcement products can save time and money for expensive repairs and re-constructions and with little or no inconvenience to the buildings inhabitants.

. **Thor Helical** Structural Solutions Specialists

- . Remedial Wall Ties
- . Brick Reinforcement
- . Brick Repair
- . Crack Stitching Repairs
- . Masonry Lintels

