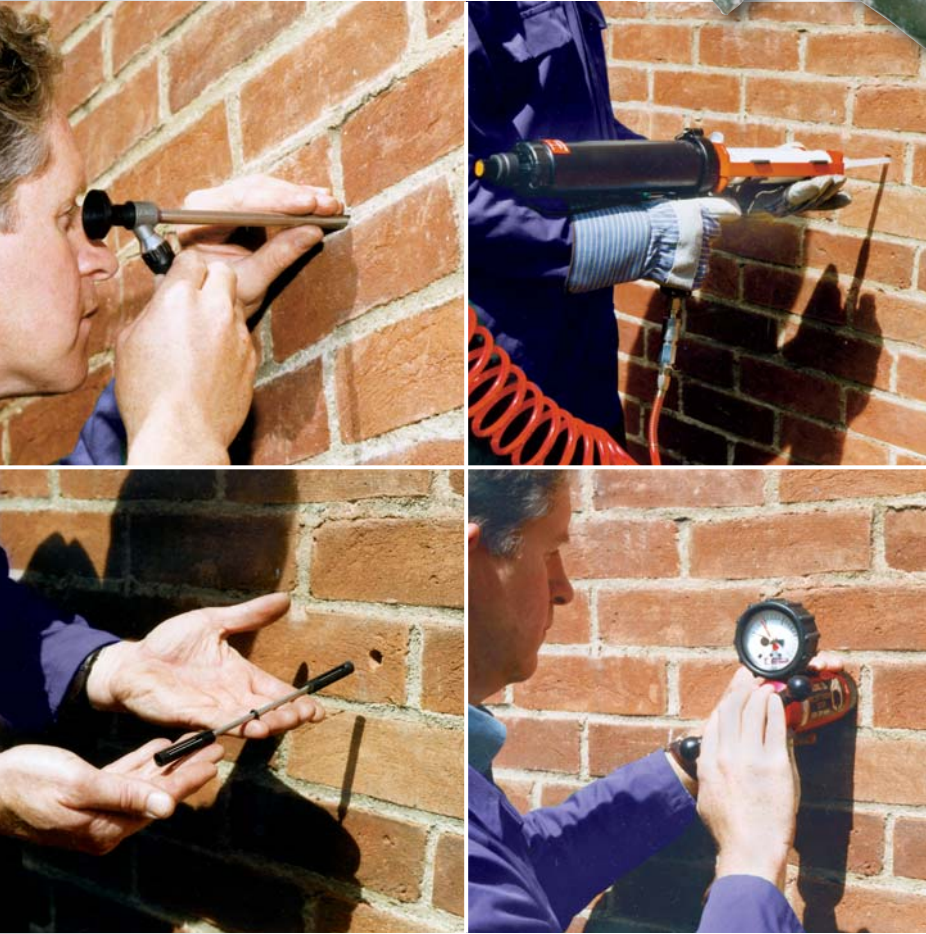




*The company you can trust...
...the name you can recommend*

Cavity Wall Tie Repair



Problem

According to BRE research out of nine million dwellings constructed with cavity walls, two million suffer wall tie corrosion or failure and are in need of specialist remedial wall tie replacement.

Causes include inadequate protection, substandard galvanising, chemical degradation and aggressive environments. Often the problem is found to be exacerbated by insufficient ties having been installed during construction.

The absence of effective wall ties will, ultimately, result in the failure of the wall's structural integrity and its probable collapse under high wind conditions.



Solution

• Specialist Survey

The first step in a repair programme is a survey to determine the extent of the problem. The position of existing wall ties is plotted using a metal detector and then an endoscope is used to examine their condition. Bricks may have to be removed for the physical examination of sample ties.

• Installation of Replacement Ties

A range of alternative wall tie designs is available - resin, mechanical or cementitious - depending on the type and condition of the masonry involved. In most cases the existing ties are isolated to prevent further corrosion.

Formed in austenitic stainless steel, replacement ties are available in differing lengths to suit cavity widths up to 110mm. All designs incorporate a centre drip to prevent transmission of water across the cavity.



Cavity Wall Tie Failure

Causes

Inadequate Protection

Prior to the 1930s when zinc coating or galvanising became accepted, ties were either left unprotected or given a thin coating of bitumen.

Substandard Galvanising

All mild steel ties will eventually corrode but the 1945 British Standard for weight of zinc galvanising was actually reduced in 1964 until 1981 when the significance of the problem was recognised.

For ties installed between 1964 and 1981 life expectancy for strip ties (eg fishtails) can vary from 61 down to 23 years while for wire ties (eg butterfly types) this can be as low as 13 years.

Chemical Action

Mortar composition can contribute to corrosion and this is a highly significant factor where black ash mortars with their high sulphate content have been used. Weak lime mortars are more porous than dense sand and cement mixes.

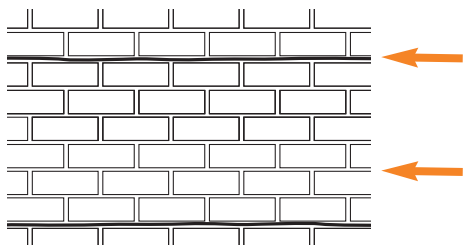
Location

Exposed elevations of a building are more prone to problems as are industrial environments or marine locations with driving rain and salt laden atmospheres.



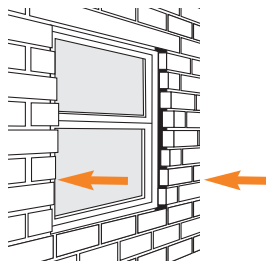
Wall Tie Failure

Horizontal Cracking



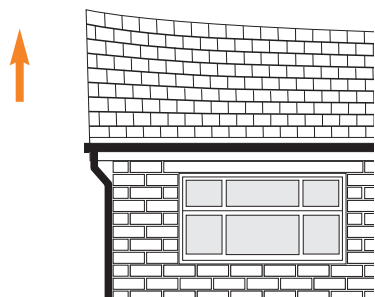
Corrosion of fishtail ties can result in horizontal cracks in external mortar joints at regular intervals of between 5 and 7 brick courses.

Outward Bulging of Wall



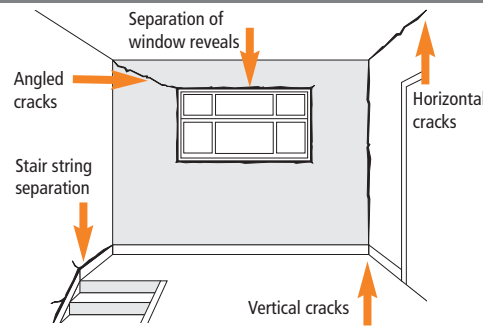
As ties corrode, bed joints widen and the outer leaf grows in height causing the wall to deflect outward, usually at first floor level. Gaps will open around window frames.

Lifting of Roof Edges



At gables the 'growth' of brickwork can lead to a 'Pagoda' effect.

Internal Cracks and Finishes



Vertical cracks may be found at internal/external wall junctions and horizontal cracks appear at internal wall/ceiling joints.

Checks should be made about past repairs or replastering which may have been carried out to disguise cracking and outward bulging.



Peter Cox Ltd, Ansa House, Aniseed Park,
Broadway Business Park, Chadderton, Manchester OL9 9XA
Tel: 0845 222 0404 E-mail: marketing@petercox.com

- Established for over 55 years
- The UK's largest team of qualified property preservation surveyors
- Experienced and skilled technicians
- Branches nationwide



0800 789 500

www.petercox.com