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Remedial Application Guide

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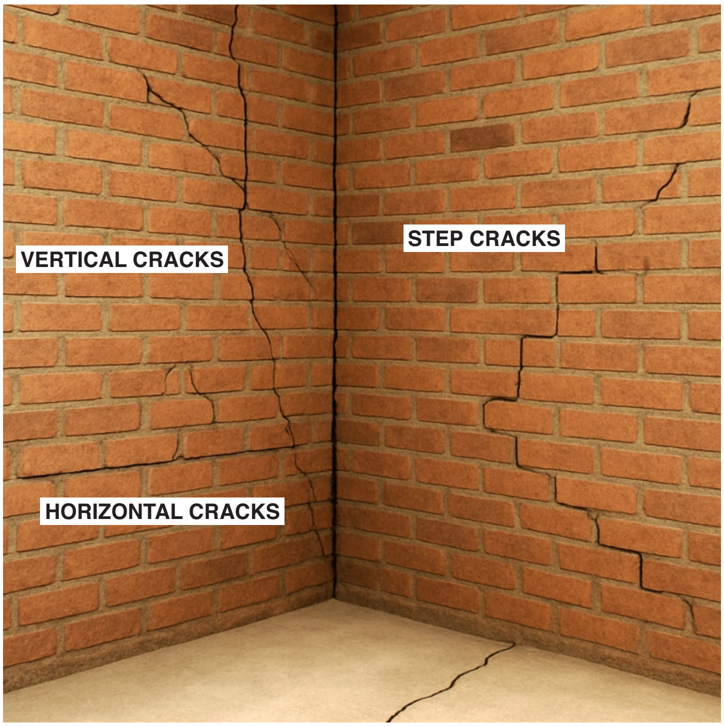
This application guide reveals how Cerra's crack stitching bars and remedial wall ties deliver reliable, modern solutions for permanently restoring and strengthening compromised masonry.

Designed specifically for **builders, structural engineers, and remedial specialists**,

Cerra systems ensure:

- Fast, Efficient Installation
- Concealed, Permanent Reinforcement
- Long-Lasting Structural Integrity

The following pages provide common applications, guaranteeing you can confidently select the exact **Cerra solution needed to deliver safer, stronger, and more resilient masonry on every challenging project**.



Applications

RCSB1 – Remedial Crack Stitching Bars

The RCSB1 is a versatile 316L stainless steel helical bar specifically engineered for repairing and reinforcing cracked masonry. Its unique helical design allows for secure bonding with grout, providing concealed reinforcement that effectively redistributes tensile loads along crack lines. This makes it ideal for stabilising horizontal, vertical, and stepped cracks in brick, block, or stone walls, with the added benefit of being easily bent on-site to suit various angles and structural needs. Its adaptability means it has a wide range of uses.

RWT1 – Remedial Wall Ties

The RWT1 is a high-quality 316L stainless steel remedial wall tie used for anchoring and reinforcing masonry structures. It is suitable for new buildings and refurbishment projects, including historic buildings, apartment complexes, bridges, and multi-leaf masonry walls. The wall tie can be used with various materials such as brick, concrete, stone, timber, and aerated concrete. It provides structural stabilization, crack restoration, and unlimited reinforcement applications where walls require secure anchorage or re-connection. Available in multiple lengths (200–300mm) and installed using power support tools, it ensures long-term corrosion resistance and durability.

CERRA METAL WORKS SINCE81

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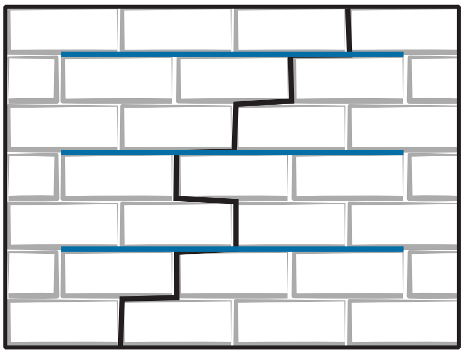
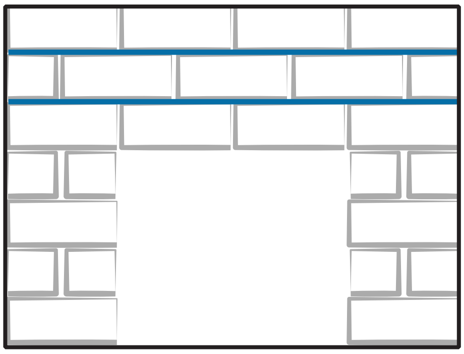


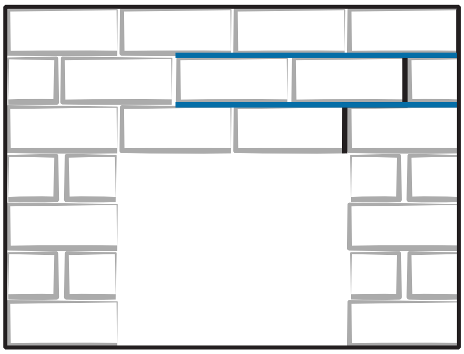
Horizontal and Stepped Crack Repairs

Crack stitching bars are used to stabilize horizontal and stepped cracks in masonry caused by settlement, thermal movement, or structural stress. By embedding the helical bars across the crack line, tensile forces are redistributed along the wall, preventing further widening and restoring structural integrity without rebuilding.



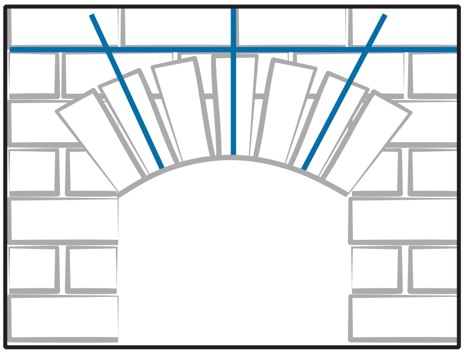
Lintel and Window Head Reinforcement

Crack stitching bars can reinforce brickwork above openings where lintels have failed or sagged. The bars distribute loads evenly across the wall, preventing cracking at window or door heads and providing a durable, long-term solution



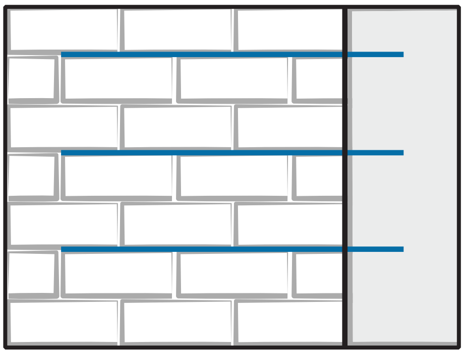
Door and Opening Crack Repairs

When cracks form around doors or other wall openings, crack stitching bars restore wall stability by tying the affected masonry together. This helps prevent further movement and ensures the integrity of surrounding structures.



Masonry Arch Reinforcement

Crack stitching bars can be used to stabilise brick or stone arches that have developed cracks due to age, settlement, or excessive load. Installed within the mortar beds above the arch line, the bars tie the masonry together and redistribute forces, preventing further separation while maintaining the original architectural form.



Junction Strengthening (New-to-Old Walls)

At the junction between existing and newly constructed walls, crack stitching bars reinforce the interface, preventing stress cracks and improving the structural continuity between old and new masonry.

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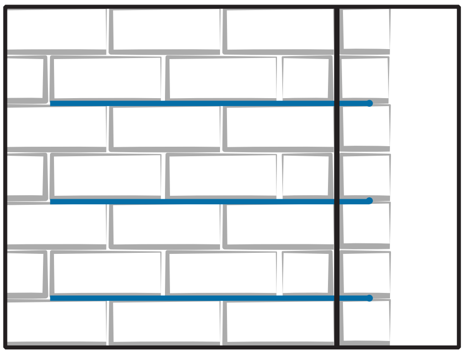
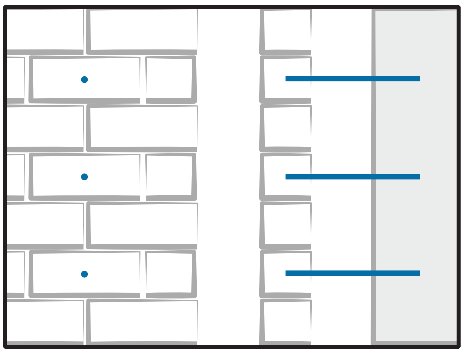


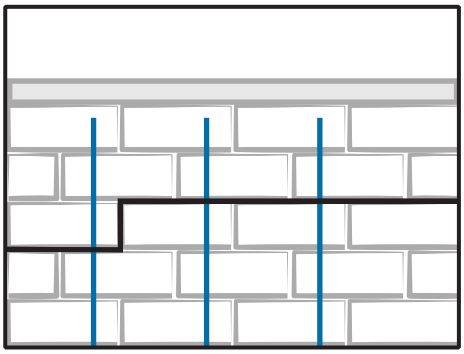
De-laminated Wall Leaf Re-connection

In cavity or multi-leaf walls where sections have separated, crack stitching bars reconnect the leaves, stabilizing the wall and restoring its overall strength without extensive demolition.



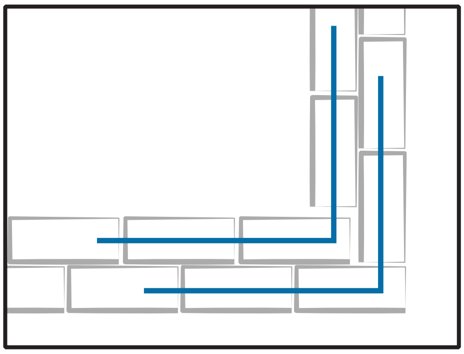
Wall Tie Failure Repair (Used with Tie Systems)

Crack stitching bars can be used in conjunction with remedial wall ties to reinforce areas where original ties have failed. This combination restores the connection between inner and outer wall leaves, preventing further cracking and structural movement.



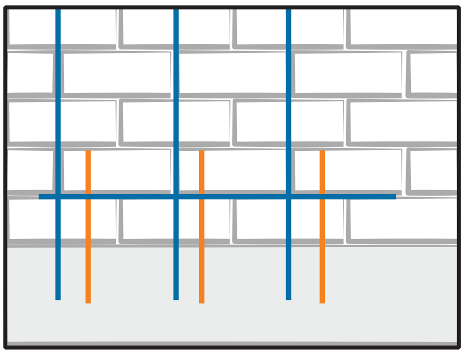
Parapet and Gable Wall Reinforcement

Crack stitching bars provide reinforcement for parapets, gables, and other exposed wall sections subject to wind or lateral loads. By integrating bars along stress lines, the masonry is strengthened and crack formation is minimized.



Corner Crack Stabilisation

Corner cracking occurs where two walls meet, usually due to differential movement, thermal expansion, or foundation rotation. Crack stitching bars can be installed around the corner, tying both wall faces together and restoring continuity across the junction. By reinforcing the bed joints on each side of the corner, the system stabilises the entire corner section of the building.



Cracks Caused by Rusted Embedded Steel

Where embedded steel elements such as shelf angles, fixing brackets, or steel lintels begin to rust, the expansion of corrosion causes cracking in the surrounding brickwork. Crack stitching bars can be used after the cause is addressed to re-establish structural continuity across the cracked brickwork. They reinforce the repaired area, restoring strength while concealing the repair.

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Subsidence and Settlement Crack Stabilisation

Crack stitching bars provide reinforcement across cracks caused by ground movement, helping stabilise masonry affected by subsidence or settlement. By bridging and redistributing tensile forces across weakened areas, the bars prevent cracking from worsening and help restore the structural integrity of the wall.

Expansion Joint Termination Reinforcement

At the ends of expansion joints, masonry can experience stress concentrations that lead to cracking. Crack stitching bars reinforce the termination zones so that movement is absorbed by the joint rather than the wall, helping maintain clean joint lines and preventing structural cracking.

Panel Strengthening for Wind Load Resistance

Large masonry panels—such as façade sections, parapets, or boundary walls—can flex or bow under strong wind loads. Crack stitching bars installed horizontally help increase the panel's tensile capacity and improve its resistance to lateral forces without altering the external appearance.

Chimney and Column Crack Repairs

Vertical structures like chimneys and masonry columns often crack due to thermal expansion, structural settlement, or weathering. Crack stitching bars can discreetly reinforce these cracks, stabilising the structure and preventing progressive failure while maintaining original aesthetics.

Decorative Façade Restoration

Older decorative or ornate facades often suffer cracking due to age, weathering, or movement. Crack stitching bars provide hidden strengthening behind the façade surface, allowing restoration work to proceed without altering the visible character of the building.

Heritage Masonry Reinforcement

Crack stitching is ideal for heritage buildings where minimal visual disturbance is essential. The system strengthens cracked or weakened masonry using concealed reinforcement, preserving original materials while improving long-term stability in a sympathetic, non-invasive manner.

Reinforcement Below Roof Trusses or Plates

Brickwork beneath roof trusses or wall plates often experiences spreading or cracking due to roof load movement. Crack stitching bars reinforce these stressed courses, helping distribute loads more evenly and preventing cracks triggered by truss uplift or horizontal thrust.

Reinforcing Soft or Friable Mortar Walls

Walls constructed with weak, weathered, or deteriorated mortar benefit from the added tensile strength provided by crack stitching bars. The system stabilises areas where mortar alone can no longer carry loads, enhancing durability without requiring full repointing or rebuilds.

Seismic or Impact Damage Repairs

Masonry affected by vibrations, seismic activity, or physical impact often displays diagonal or stepped cracking. Crack stitching bars can be installed to reconnect the cracked sections, absorbing tensile stress and restoring the wall's ability to resist future dynamic loads.

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