Corrosion Protection of Metal Connectors in Masonry

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Abstract:

The structural integrity of masonry is highly dependent on the durability of metal connectors that tie it together, anchor it to structures, and attach objects to it. Ties connect masonry wythes. Anchors connect masonry to a structure. Fasteners connect non-structural elements to masonry. Connectors are manufactured from several different steels in an array of sheets, wires, plates, bars, bolts, screws, and nails, all of which are subject to corrosion and subsequently to loss of strength that in some cases could cause catastrophic structural collapse of masonry. The purpose here is to recommend appropriate corrosion resistance for those elements.

Strength and stiffness of ties and anchors are not discussed. Connectors of stainless and galvanized steel are discussed, but connectors of other metals are not. Epoxy coated steel is not examined, because several types of connectors are not available with epoxy coating. Architects, engineers, and contractors will find here recommendations for the appropriate corrosion protection for connectors in clay brick and concrete masonry walls in a wide range of environments.

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