

## RECOMMENDATIONS OF SCAFFOLDING FIXING ON MASONRY BRICK WALLS

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There are many rehabilitation works that involve the maintenance of the building enclosure, usually made up of faced or cladded masonry brick walls [3]. To this end, it is necessary to attach a scaffolding structure to the façade wall that facilitates the access along the complete external surface of the building. These scaffolds are an efficient system, however the safety they provide is only achieved if it is possible to keep enough stability between its elements and the wall which it is subject to [7].

Current market offers a wide range of fixing solutions. They range from mechanical connections, with different types of plugs and anchors, to chemical solutions. But, as there is no regulation governing the distribution and disposition, the choice of system and its placement depends mostly, among many other factors, on criteria based on the tradition and the previous experience of the companies dedicated to carry out these connections.

At present, it is frequent the use of point anchoring systems using mechanical devices (Fig.1). The fastening is solved by a sleeve made of polyamide and a steel eyebolt embedded in it. The anchorage length is clearly marked on the plug and external end flange prevents the plug from sliding inside masonry element.



**Fig. 1: Different solutions for fastening façade using plugs.**

Masonry is a complex construction system that is composed of simple unitary pieces and mortar joined by interlocking, achieving a structural system of great anisotropy. Therefore, it is impossible to predict the behavior, preventing the

whole set modeling with a continuous distribution of stresses, due to its value is discontinuous and random [1].

On the other hand, there are many studies and tests in the scientific research of different types of anchors in reinforced concrete elements [4] [5]. In them experimental works shown have allowed to know the behavior of anchors in situ or lately perforated, subjected to different types of efforts. However, despite the daily use, there are few references to this type of fixation in brick masonry walls [6].

The present research work shows the results obtained in different tests, carried out following the methodology described in the standard regulations, in order to have a starting point of the pull-out strength of steel eye-bolt anchors, inserted in plastic sleeves, in real brick masonry walls. (Fig.2)

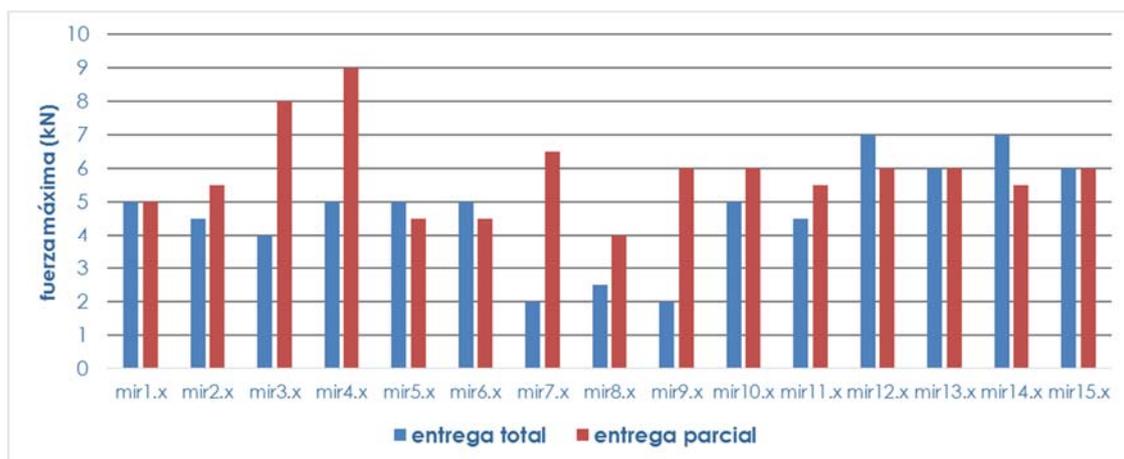


Fig. 2: Fmax values in tests with different anchorage lengths

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