

Fastening Systems Applications in Rehabilitation of Historical Buildings and Structures

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Alberto Casagrande, born 1974, received his Building Engineering Degree 2000 from the University of Trieste.

After two years of experience as structural engineer in a design firm, he joined Hilti 2002 within the Engineering Department. Managing a staff of field engineers, advice from the design phase to the execution phase through visits in the design offices or in the jobsites is provided; technical seminars in cooperation with Universities and Engineering Associations are yearly planned.

He's specialized in fastening technology and composite structure design.

Summary

Rehabilitation of old buildings is a common practice in Italy. Every year million of Euros are invested in rehabilitation works for both private and public buildings. Ancient buildings as well as monuments need to be preserved and have to be renovated. We are facing an increasing number of requests of assistance for this works. A variety of different applications is listed and briefly described. We focused our attention on the opportunity of using post-installed systems for solving fastening issues in the jobsites. Several chemical anchor applications are presented as simple and reliable solutions and support the fact that chemical anchors are widely used in rehabilitation and conservation works. Hilti has specific chemical anchors which are especially developed for these applications; designers and installers can count on the knowledge and experience of many years in products research and development.

Keywords: rehabilitation, strengthening, chemical anchors, epoxy mortar, hybrid mortar, post-installed systems, masonry, composite structure.

1. Introduction

In Italy monuments and ancient buildings clearly represent a valuable historical heritage. Pisa Tower, Assisi Church, La Scala or La Fenice Theatre are just some examples. But we should also take into consideration a lot of other buildings in our cities and in small villages that every year need to be rehabilitated. Our historical heritage needs to be preserved.

Hilti engineers are often involved in fastening applications on solid bricks masonry or natural stone. They receive very often calls for assistance from sites where the customer is facing severe fastening challenges; they are committed to find a solution to problems of this kind. Like