



## **Effect of the pre-treatment and the aggregate content on the adhesion strength of repair mortars on Miocene porous limestone**

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The adhesion between porous limestone and newly prepared repair mortars are crucial in the preservation of historic stone structures. Besides mechanical compatibility other matches such as chemical composition and porosity are also essential, but the current research focuses on the adhesion strength of repair mortars that are used in the restoration of Hungarian porous limestone. 8 mortars (4 commercial and 4 specially prepared) were selected for the tests. Mortars with different amount of aggregate were prepared and casted to stone surface. The stone substrate was highly porous Miocene limestone. The strength was tested by standardized pull-out tests which method is commonly used for concrete testing. The limestone surfaces were either used in their natural conditions or were pre-treated (pre-wetting). The strength of the stone/mortar bond was tested. The failure mechanism was documented and various failure modes were identified. Strength test results suggest that especially pre-treatment influences strongly the pull-out strength at mortar/stone interface. Increasing aggregate content also reduces pull out strength of tested repair mortars, but at various rates depending on the mortar type.

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