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Comparative tensile strength test of repair mortars used in the restoration of porous limestones

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The present paper focuses on the influence of strength parameters of repair mortars that are used in the restoration of porous limestone. Mortars with different aggregate percentages were tested. The pure product and the mixture of binder and grinded limestone aggregate of 50% were used to prepare test specimens. 6 types of mortar with 2 different mixtures (18 series) were analyzed under laboratory conditions. Ultimate tensile strength measurements were performed after 28 days of casting the specimens. Durability was measured by comparing strength test results of samples prepared on porous limestone surface with and without pre-treatment, and with different aggregate ratio. The influences of aggregate ratio, casting preparation and pre-treatment are discussed. Strength reduction has been determined due to the increased aggregate volume, and the decreased pre-treatment process. The research focused on the compatibility of repair mortars with natural stones and the importance of the proper treatment during loss compensation of stones.