

Dowel Action of Titanium Bars Connecting Marble Fragments

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Abstract:

In conservation of monuments of classical antiquity, titanium bars are quite often used to connect fragmented marble members. An experimental program was carried out with the aim of investigating the behavior of titanium bars inserted in marble and subjected to shear. Several parameters were investigated, namely: Diameter of bars, their distance from edges of the marble fragment, the angle between the axis of the dowel and the surface of the marble, as well as the loading direction (against the strong or the weak direction of marble's anisotropy). This paper summarizes the experimental results and proposes relationships for calculation of shear resistance of titanium dowels.

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