

*Epoxy resin stone adhesives: dilatation in water*

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There is a wide range of epoxy resin adhesives available for stone conservation purposes. Most have short-term cure times (24 hours or less). Recent experiments indicate there may also be a wide range of these resins responses to water – how much they absorb and how much they swell with that absorption. This presentation will show data for the dilatation of several epoxy resin adhesives used in stone conservation and for marine applications.

*The “dilatation” of Carrara marble in water*

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In 1982 Wittman and Prim developed a protocol for assessing the responses of various stone types to imbibation with water. Subsequent work provided data for the conservation community on several sandstones. Like many other materials it was demonstrated that to varying degrees the sandstones that contain clays expand upon uptake of water and the data was used to rank various sandstones with respect to their tendency to deterioration by scaling, flaking and granular disintegration. Recent work on assessing the responses of recently quarried Carrara marble to imbibation with water yielded the surprising results that samples showed a negative dilatation, *i.e.* they decreased in size. This presentation will show recent data for these experiments.