

MORTARS AND PLASTERS MIXES FOR ANCIENT BUILDINGS AND THEIR MECHANICAL CHARACTERISTICS. FIRST RESULTS OF A RESEARCH PROJECT (IN PROGRESS).

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ABSTRACT

With regard to architectural surfaces characterized by mortars and plasters, some elements of knowledge can be increased, with particular reference to the support of technical designers and conservators, in the implementation phases of the project. It would be necessary to have operational and guidance instruments, also supporting the correct interpretation of current regulations: this could produce significant advantages for the benefit of each and different intervention on buildings of historical and documentary value.

On this purpose the DISEG of Politecnico di Torino, in the wake of previous researches, presents a study aimed to define the mechanical behaviour of many types of mortar, both for "exposed" walls and for plastered surfaces.

The examinations of several applied researches, both nationally and internationally, suggested useful indications; as a consequence, the planned research includes: a) laboratory scale tests, to evaluate the ranges of values related to the mechanical behaviour of a high variety of mortar mixtures; b) *in situ* tests, in monitored building sites, to evaluate behaviour of mortars designed in laboratory. A certain number of on-going laboratory tests are conducted on specimens with a constant granulometric curve of the aggregates, different binders and different mixing ratios. The mortars are subjected to investigations to define mainly dynamic and static elastic modulus. Once the method, procedure and instrumentation have been fine-tuned, the test pieces will be continued in sufficient numbers to obtain statistical results, in order to draw up a reference register relating to certain "families" of mortars for maintenance, conservation or restoration.

Key-words: restoration, mortars, plasters, mechanical and aesthetical characteristics, compatible materials and systems.