Italian travertine in building heritage

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Travertine is one of the most common stone for building construction used in many countries starting from ancient times. It was one of the favorite stones of the Roman empire: the main example is the Colosseum in Rome. All over the world travertine is found in important monuments and in various modern structures: for example, the Conservation Center of the J. Paul Getty museum in Los Angeles and Jiangsu Provincial Art Museum in Nanjing, China and it is very appreciated and requested in the construction of recent thermal bath. In addition to Italian travertine, the other famous types of this stone are known throughout Europe (i.e. Germany, Hungary) and Asia (i.e. Turkey, China, Iran).

Travertine is considered a durable stone despite the weathering caused by air pollution. It is observed in urban areas that the facades may be covered with a black crust where gypsum and calcite are the main minerals .

Nine different types of travertine coming from Tuscany and Umbria (Italy) have been investigated. Petrographic analysis, physical mechanical and artificial ageing test have been performed.

Among the different kind of travertine different texture can be identified as: not laminated, laminated: laminated with sub parallel sheets, laminated with concentric sheets. The various travertine depositional structures have been in compared to the different answer to artificial ageing. Finally, it can be asserted that the durability is not connected only with porosity and the analysis of the complex texture of this kind of stone cannot give a simple solution related to its durability.