



Petro-physic and mechanical properties to study compact (thick) and soft calcareous rocks employed in historical apulian heritage (Southern Italy)

Maria Sileo (1), Gianni Leucci (2), Angela Calia (2), and Loredana Matera (2)

(1) PhD Student of Universita' degli Studi della Basilicata, Italy (m.sileo@ibam.cnr.it), (2) C.N.R.-I.B.A.M. (Istituto per i Beni Archeologici e Monumentali), Campus Universitario, Prov.le Lecce-Monteroni, 73100 Lecce, Italy.e-mail: g.leucci@ibam.cnr.it; a.calia@ibam.cnr.it; l.matera@ibam.cnr.it.

Calcareous stones are widely available in the Apulia region and have characteristics that make them suitable as building materials. Therefore these materials are widely used in the past and in current buildings. The abundant historical, architectural and archaeological heritage of Apulia region is largely made with both compact limestones and soft calcarenites. Many problems of conservation affect these materials, depending on their characteristics, which are essential to evaluate performance properties and susceptibility to the degradation.

Generally, factors that influence the behaviour of natural stones are fabric and structure, porosity, this last greatly influencing the water absorption.

Different kind of building stone have been concerned in this work with relation to their petrophysical and mechanical characterization.

In this work we compare data obtained on them from optical microscopy observations, mercury intrusion porosimetry, water absorption tests and measurements of ultrasonic velocities. These data are of interest for the durability study and conservation purposes.