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workability and chemical-physical degradation of limestone frequently used in historical Mediterranean architecture

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Abstract –
Sedimentary rocks are among the most used in historical buildings, as they are more readily available in the area and because they are also more easily extractable, in virtue in general of lower mechanical resistance. among these the most used are limestones and sandstones. The former are represented by a remarkable variety of lithologies, with highly variable characteristics, passing from the almost pure, massive and not very porous limestones, to those with a variable arenaceous-clayey component which instead are characterized by a low compactness and consequent high porosity (up to 35%).
In this study the calcarenites present in two geographic sectors of Sardinia are dealt with, by comparing them with similar showers present in other territorial contexts of the Mediterranean. The mineralogical-petrographic analyzes by optical microscope and XRD analysis of the "Pietra Cantone" limestone of Cagliari (south Sardinia) show, besides calcite, the presence of phyllosilicates and various other accessory minerals. SEM analyses show a very weak physical-mechanical microstructure.