

100 YEARS' OLD RENDERING MORTARS CHARACTERIZATION AND MICROSTRUCTURE

GLEIZE, Philippe (1); NAPPI, Sérgio (2); SILVA, Denise Antunes (3);

(1, 3) Núcleo de Pesquisa em Construção / Departamento de Engenharia Civil - Universidade Federal de Santa Catarina - CTC - Caixa Postal 476 - CEP 88040-900 Florianópolis - SC - BRAZIL - E-Mail: ecv1phg@ecv.ufsc.br (1); denise@npc.ufsc.br (3) - Phone: (55) 48 331 92 72 - Fax: (55) 48 331 97 70

(2) Departamento de Arquitetura - Universidade Federal de Santa Catarina - CTC - Caixa Postal 476 - CEP 88040-900 Florianópolis - SC - BRAZIL - E-Mail: nappi@arq.ufsc.br - Phone: (55) 48 331 95 50 - Fax: (55) 48 331 97 70

ABSTRACT

Rendering mortars of the *Cruz e Souza* Palace in Florianópolis - SC - Brazil, built in the beginning of the century, are subjected to serious damage like detaching, crumbling and cracking.

The purpose of this work is to identify the rendering mortars components to reproduce them, if possible, in the damaged areas. Samples from two healthy regions of the rendering were studied: the first one from an ornament, a type of console which sustains the roof eaves of the Palace and the other one from a masonry rendering. Samples were characterized by X-Rays Diffraction (XRD), Differential Thermal Analysis (DTA) and Scanning Electron Microscopy (SEM) with Energy Dispersive Analysis X-Rays (EDAX). XRD and DTA showed, in both cases, that the principal binder is a calcium carbonate coexisting as calcite and vaterite for the first sample, and only as calcite for the other one. SEM showed the two morphologies of calcium carbonate and the existence of an amorphous calcium hydrosilicate for the first case. An interpretation about the origin of these renderings is then presented.