

The Significance of the Gauging System in the Flatjack In-Situ Stress Test for Masonry: Experimental Investigation

Paola Ronca¹

Abstract:

The paper deals with the application of the in-situ stress-relief technique in a laboratory-controlled experiment. The purpose of the investigation is to clarify the meaning and significance of some parameters influencing the objectivity of test results for the flatjack test. A number of concerns with the technique are identified related to the calibration of the equipment and to the influence of subjective judgment in determining the equilibrium pressure.

The paper shows how, on the basis of the analysis of some experimental and numerical evidence, it has been possible to formulate some hypotheses on tensional behavior in the vicinity of the slot. As a practical consequence of these hypotheses, the paper proposes and justifies a different and still unusual reading of displacements able to provide a better deduction of the read equilibrium pressure.

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¹ Structural Engineering Department, Politecnico di Milano-Italy