TRANSIENT DYNAMIC LOADING ON REINFORCED CONCRETE PLATES

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The paper outlines the principles of a Schardin-Frobose (S-F) chamber. This is a device that can provide well defined transient loading histories by means of air pressure, on small-scale plate members. The S-F chamber has been applied in dynamic tests on small- scale (300x300x30 mm) reinforced concrete plates. The experience gained with the S-F chamber, regarding the performance of the equipment, and the experimental results obtained by the small-scale concrete plates, are described.

The experimental tests have been analyzed by simple methods, according to the current, US-design code TM5-1300, as well as by advanced numerical methods. The experimental and analytical results are presented by means of pressure-impulse diagrams, a simple but illustrative way to compare the findings, and thus validate the analytical tools with respect to observed behavior.