

Products and systems for the protection and repair of concrete structures — Test methods — Determination of injectability and splitting test

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National foreword

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Summary of pages

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Produkte und Systeme für den Schutz und die Instandsetzung von Betontragwerken — Prüfverfahren — Bestimmung der Injektionsfähigkeit und Prüfung der Spaltzugfestigkeit

This European Standard was approved by CEN on 27 February 2004.

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Foreword

This document (EN 1771:2004) has been prepared by Technical Committee CEN /TC 104, "Concrete and related products", the secretariat of which is held by DIN.

It has been prepared by Sub-committee 8 "Products and systems for the protection and repair of concrete structures" (Secretariat AFNOR).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

It is generally recognised that it is difficult to generate cracks of a controlled width in concrete and difficult to make objective measurements of the ease with which such cracks may be injected with various materials. This test, developed at the LCPC ¹⁾ and by RILEM ²⁾, circumvents these difficulties by measuring the rate of flow of the injection agent through a column of graded sand. The sand grading specified is carefully chosen to have interconnecting voids providing a tortuous path for a flow of the injection agent. These having a similar resistance to flow to that provided by a 0,2 mm crack in concrete (other gradings of sand could be chosen to simulate the flow in wider cracks, if desired).

The detailed method of injection uses a fixed quantity of mixed reactive injection agent in a vessel maintained at a closely controlled pressure, to provide the injection force. Thus, any limitations on the practical usage of the grout imposed by thickening/gelation of the mixed product in the injection vessel will be recorded. The method could be modified to permit the assessment of grouts dispensed and injected by twin-pump metering and mixing machines, provided the same fine degree of pressure control can be exercised.

As a supplement to the injectability test, the column of grouted sand, when fully cured, is sawn into cylinders which are then subjected to indirect tensile strength measurement (Brazilian splitting test). This can provide a useful comparison between materials, giving some indication of the strength of bond achievable.

This document includes a Bibliography.

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1) Laboratoire Central des Ponts et Chaussées.

2) Réunion Internationale de Laboratoires d'Essais et de recherches sur les Matériaux.