
**Test methods for repair materials for
water-leakage cracks in underground
concrete structures —**

**Part 6:
Test method for response to the
substrate movement**

*Méthodes d'essai pour matériaux de réparation pour fissures dues à
l'eau dans les structures en béton —*

Partie 6: Méthode d'essai de la réponse aux mouvements du substrat

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html

The committee responsible for this document is ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, Subcommittee SC 7, *Maintenance and repair of concrete structures*.

A list of all parts in the ISO 16774 series can be found on the ISO website.

Introduction

ISO/TR 16475 outlines six basic properties and the required performance levels of water-leakage repair materials, and ISO/TS 16774-1 through ISO/TS 16774-6 provide test methods designed to evaluate the respective properties of these repair materials.

These test methods are intended to serve as references for nations that have not yet developed a test method on the six proposed required performance properties of water leakage repair materials. If other forms of test methods that are simpler, more accurate or more organized are available, such methods are recommended for use instead.

Many of the dependent variables outlined in the ISO 16774 series of reference test methods are subject to change in accordance with the environmental conditions (temperature; chemical substance and concentration; relative humidity; width of movement activity; water pressure or water flow velocity, etc.) outlined in the standards and testing parameters used in respective countries.

In ISO/TS 16774-1, ISO/TS 16774-5 and ISO/TS 16774-6, for the purpose of objectively comparing the performance of injected repair materials, artificial cracks of same volume were used to control the usage of repair materials for each testing cycle and enable repetition of the same test methods under the same conditions.

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Test methods for repair materials for water-leakage cracks in underground concrete structures —

Part 6:

Test method for response to the substrate movement

1 Scope

This document specifies a laboratory test method for evaluating the substrate (crack) movement response of water-leakage crack repair materials through permeability testing.

The repair material injected into a test specimen with an artificial crack undergoes simulated movements normally caused by thermal expansion, settlement and vibrations in leakage cracks found in concrete structures under the applied conditions outlined in different national testing parameters that reflect different environmental conditions. As such, the results are only intended to provide a comparative performance evaluation of the waterproofing repair materials between different products of the same type of repair material.

This document outlines general guidelines and procedures for the test method. Specific variables that control the quantifiable parameters of the testing are filled in using relevant national standardizations and/or testing parameters.

NOTE 1 This test method classifies and categorizes materials that are tested into families of similar properties for the purpose of making relative comparisons with the data results.

NOTE 2 Each individual repair material can be further tested in an actual construction site application for a complete assessment.

2 Normative reference

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/TR 16475, *Guidelines for the repair of water-leakage cracks in concrete structures*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 16475 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org.obp>

3.1

repair material

<water-leakage cracks>material used for preventing the escape of water at cracks in concrete

EXAMPLE Injection type grouts, such as synthetic rubberized asphalt, mastic, urethane, poly-urea, etc.

Note 1 to entry: In this document, target ingredients are limited to injection materials outlined in ISO/TR 16475.