



SLOVENSKI STANDARD

SIST EN 480-6:2005

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SIST EN 480-6:1998

Admixture for concrete, mortar and grout - Test methods - Part 6: Infrared analysis

Zusatzmittel für Beton, Mörtel und Einpressmörtel - Prüfverfahren - Teil 6: Infrarot-Untersuchung

Adjuvants pour béton, mortier et coulis - Méthodes d'essai - Partie 6: Analyse infrarouge

Ta slovenski standard je istoveten z: EN 480-6:2005

ICS:

91.100.10	Cement. Mavec. Apno. Malta	Cement. Gypsum. Lime. Mortar
91.100.30	Beton in betonski izdelki	Concrete and concrete products

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EUROPEAN STANDARD
NORME EUROPÉENNE
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ICS 91.100.10; 91.100.30

Supersedes EN 480-6:1996

English Version

Admixtures for concrete, mortar and grout - Test methods - Part 6: Infrared analysis

Adjuvants pour béton, mortier et coulis - Méthodes d'essai -
Partie 6: Analyse infrarouge

Zusatzmittel für Beton, Mörtel und Einpressmörtel -
Prüfverfahren - Teil 6: Infrarot-Untersuchung

This European Standard was approved by CEN on 28 July 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This European Standard (EN 480-6:2005) has been prepared by Technical Committee CEN/TC 104 "Concrete and related products", the secretariat of which is held by DIN.

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 March 2006, and conflicting national standards shall be withdrawn at the latest by March 2006.

It has been drafted by Subcommittee 3 (SC 3) of TC 104 "Admixtures for concrete, mortar and grout".

This document is part of the series EN 480 "Admixtures for concrete, mortar and grout – Test methods" which comprises the following

Part 1 *Reference concrete and reference mortar for testing*

Part 2 *Determination of setting time*

Part 4 *Determination of bleeding of concrete*

Part 5 *Determination of capillary absorption*

Part 6 *Infrared analysis*

Part 8 *Determination of the conventional dry material content*

Part 10 *Determination of water soluble chloride content*

Part 11 *Determination of air void characteristics in hardened concrete*

Part 12 *Determination of the alkali content of admixtures*

Part 13 *Reference masonry mortar for testing mortar admixtures*

Part 14 *Admixtures for concrete, mortar and grout - Test methods - Part 14: Measurement of corrosion susceptibility of reinforcing steel in concrete - Potentiostatic electro-chemical test method ¹⁾*

This document is applicable together with the other standards of the EN 480 series.

This document supersedes EN 480-6:1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1) This part is under preparation

EN 480-6:2005 (E)**1 Scope**

This document describes a method for identifying an admixture by infrared analysis (IR).

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 480-8:., *Admixtures for concrete, mortar and grout - Test methods - Part 8: Determination of the conventional dry material content.*

3 Principle

The IR analysis is performed on dry material from an admixture dried at $(105 \pm 3) ^\circ\text{C}$, unless a different temperature is stated by the manufacturer.

The residue from the determination of the conventional dry material content according to EN 480-8 may be used.

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4 Apparatus

4.1 Infrared spectrometer with accessories (cells, pelleting press, NaCl windows, etc.);

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4.2 Evaporating dish with a flat bottom ca. diameter 75 mm, depth 45 mm;

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4.3 Desiccator;

4.4 Oven with forced ventilation²⁾, thermostatically controlled at $(105 \pm 3) ^\circ\text{C}$, fitted with a temperature indicating device. The required temperature range shall be maintained throughout the parts of the oven used for this test;

4.5 Balance with an accuracy of 0,5 g.

5 Procedure**5.1 Preparation of the dry material**

The method given in EN 480-8 shall be used³⁾.

5.2 Infrared spectrophotometry

Depending upon the consistence of the dry extract obtained, the test shall be carried out either on a thin film spread on the NaCl window (or KBr or CsI window depending upon the equipment available) using a spatula,

2) Fan circulation is necessary to ensure uniform temperature throughout the oven.

3) Any water in the dry extract will affect the resulting IR spectrum. If this occurs, the period of drying should be extended to remove all water but not to cause breakdown or evaporation of other constituents.

or a *KBr* pellet. To make the pellet the dry residue shall be pulverised and mixed with potassium bromide (*KBr*). The mixture shall be pressed into a pellet. The quantity of dry extract in the mixture shall be about 1 % by mass and shall be adjusted so that a spectrum of good quality is obtained (e.g. from 0,25 % to 1,5 %).

The spectrum shall be recorded between 4 000 cm^{-1} and 600 cm^{-1} (or if possible up to 250 cm^{-1}).⁴⁾

6 Results

The sample subjected to the test shall be regarded as conforming or non-conforming to the reference sample on the basis of whether the spectra do or do not have similar characteristic peaks with corresponding relative absorptions⁵⁾.

7 Test report

The recorded spectra shall be identified by means of:

- name or code of the material with all information relating to its marking;
- date of the test, the name of the laboratory, the type of equipment, the name of the operator;
- origin of the sample;
- drying procedure;
- preparation of the samples, e.g. film or *KBr* pellet containing x %.

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4) This procedure corresponds to the preparation of samples as generally adopted until now. The development of new instruments may affect the method of preparing the sample.

These new methods may be accepted if they ensure an accuracy similar to that of the method described above.

5) Evaluation of the characteristic of conformity requires good experience in infrared spectrophotometry.