SLOVENSKI STANDARD
SIST EN 480-6:1998

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Kemijski dodatki za beton, malto in injekcijsko maso - Metode preskuġanja - 6. del: Infrardeļ a analiza

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

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

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

Ta slovenski standard je istoveten z: **EN 480-6:1996**

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

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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

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 104 "Concrete (performance, production, placing and compliance criteria)", 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of an identical text or by endorsement, at the latest by March 1997, and conflicting national standards shall be withdrawn at the latest by March 1997.

This standard is applicable together with the other standards of the series EN 480 for testing admixtures according to the series EN 934.

This Standard series EN 480 consists of the following parts:

Part 1: Reference concrete and reference motar 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

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

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

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 480-8 Admixtures for contrete, 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 ± 3) °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.

4 Apparatus

a) Infrared spectrometer with accessories (cells, pelleting press, *NaCl* windows, etc.)

b) Evaporating dish with a flat bottom ca. diameter 75 mm, depth 45 mm

c) Desiccator

d) Oven with forced ventilation [1], thermostatically controlled at (105 ± 3) °C, fitted with a temperature indicating device. The required temperature range shall be maintained throughout the parts of the oven used for this test.

e) Balance with an accuracy of 0,5 mg

5 Procedure

5.1 Preparation of the dry material

The method given in EN 480-8 shall be used [2].

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, or a *KBr* pellet. To make the pellet the dry residue shall be pulverized 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 4000 cm^{-1} and 600 cm^{-1} (or if possible up to 250 cm^{-1}). [3]

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[1] Fan circulation is necessary to ensure uniform temperature throughout the oven.

[2] 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.

[3] 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.

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 absorptions [4]).

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 %;

[4]) Evaluation of the characteristic of conformity requires good experience in infrared spectrophotometry.