SLOVENSKI STANDARD
SIST EN 1170-2:2001

01-april-2001

Montažni betonski izdelki - Preskusna metoda za steklocementni kompozit - 2. del: Merjenje deleža vlaken v svežem steklocementnem kompozitu, "preskus z izpiranjem"

Precast concrete products - Test method for glass-fibre reinforced cement - Part 2: Measuring the fibre content in fresh GRC, "Wash out test"

Vorgefertigte Betonerzeugnisse - Prüfverfahren für Glasfaserbeton - Teil 2: Bestimmung des Fasergehaltes in frischem GFB, Auswaschverfahren

Produits préfabriqués en béton - Méthode d'essai des composites ciment-verre - Partie 2: Mesure de la teneur en fibres d GRC, Wash out test u CCV frais, méthode dite Séparation par lavage u CCV frais, méthode dite "Séparation par lavage"

Ta slovenski standard je istoveten z: **EN 1170-2:1997**

ICS:

91.100.30	Beton in betonski izdelki	Concrete and concrete products

SIST EN 1170-2:2001 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1170-2

November 1997

ICS 91.100.30

Descriptors: concrete products, prefabricated elements, composite materials, cements, glass, verification, conformity tests, measurements, fibres, homogeneity, computation

English version

Precast concrete products - Test method for glass-fibre reinforced cement - Part 2: Measuring the fibre content in fresh GRC, "Wash out test"

Produits préfabriqués en béton - Méthode d'essai des composites ciment-verre - Partie 2: Mesure de la teneur en fibres du CCV frais, méthode dite "Séparation par lavage"

Vorgefertigte Betonerzeugnisse - Prüfverfahren für Glasfaserbeton - Teil 2: Bestimmung des Fasergehaltes in frischem GFB, Auswaschverfahren

This European Standard was approved by CEN on 29 October 1997.

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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 1170-2:1997 E

Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 229 "Precast concrete products", the secretariat of which is held by 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 May 1998, and conflicting national standards shall be withdrawn at the latest by May 1998.

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

1 Scope

This European Standard specifies a test method for verifying the fibre content and the uniformity of distribution in the finished products and for monitoring the consumption of fibres.

2 Definition, symbols and abbreviation

2.1 Definition

For the purposes of this standard, the following definition applies :

matrix : Composition of the glassfibre reinforced cement without the fibres. It is made up of the mixture of sand, cement, water and any admixtures and additives.

2.2 Symbols

G_c : fibre content, in percentage by mass ;

m : mass, in grammes.

2.3 Abbreviation

GRC : Glass-fibre reinforced cement.

3 Apparatus

The apparatus comprises :

- 1 scale with a measuring range 0 kg to 2 kg, accurate to 0,1 g ;

- 1 drying oven, capable of maintaining a temperature of (105 ± 5) °C or a set of three infrared lamps, or a muffle furnace capable of maintaining (500 ± 20) °C ;

- 3 wire sieves with minimum dimensions of (175 x 100 x 25) mm or minimum diameter of 200 mm comprising stainless steel wire of approximately 0,3 mm diameter with an aperture size of 3 mm. The sieves can be marked "T" (top), "M" (middle) and "B" (bottom).

  Soldered sieves can not be used at temperatures exceeding (105 ± 5) °C ;

- a test board of approximately (800 x 800) mm made of smooth, easy clean material ;

- a knife and, if required, a template of inside dimensions (151 ± 2) mm x (51 ± 2) mm to facilitate cutting out ;

- a rule accurate to 0,5 mm.

4 Procedure

On the flat board, make a sample panel with no facing layer i.e. made entirely of solid GRC under the same conditions as actual production (premix or spray).

Wait 15 min to 30 min.

Cut out of the panel, (100 ± 10) mm from the edges, three samples with dimensions of approximately (150 ± 2) mm x (50 ± 2) mm corresponding to the positions represented in figure 1.

Weigh each sieve i.e. m_1 (in grams).

Place each sample in its corresponding sieve and weigh, i.e. m_2 (in grams).

Wash the sample under a stream of water until all the matrix has been removed.

Dry the sieves in the oven set to (105 ± 5) °C or under the infrared lamps for about 4 h. If a muffle furnace set to (500 ± 20) °C is used, 10 min are sufficient.

Reweigh the sieves and fibre i.e. m_3 (in grams).

Record the result in the test record sheet (see clause 7).

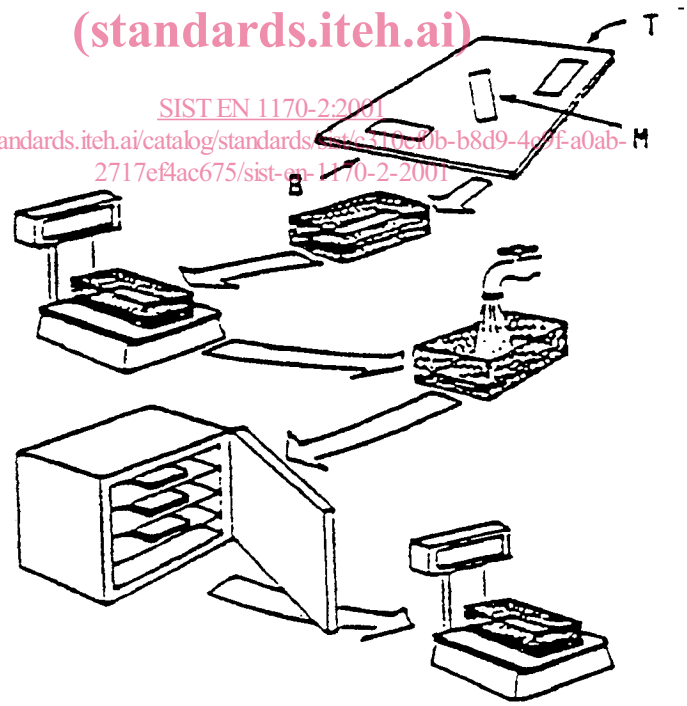

Figure 1 : Procedure

5 Calculations

The fibre content G_c, expressed as a percentage by mass, is given by the following equation :

$$G_c = \frac{m_3 - m_1}{m_2 - m_1} \times 100$$

Round the result to the nearest 0,1 %.

6 Interpreting the test

The optimum value is determinedby the specification and is a function of the end use.

If the result obtained does not comply with the specified value, carry out a second test to validate the information before making adjustments to the process.

NOTE : The deviation between the measured values may be evaluated for each of the three sieves as shown in annex B.

7 Test report sheet

The report sheet shall comprise the following elements :

- the date of test ;
- the identification of manufacture ;
- the specified composition of the GRC ;
- the intermediate results m_1, m_2, m_3 ;
- the fibre content results.

NOTE : An example of the test report sheet is given in annex A.

Annexe A (informative)

Example of test report sheet

PRODUCTION CONTROL OF : ..... BY : .....

Order and marking of parts	Specified composition: Sand : ..... kg Water : ..... l Cement : ..... kg Plasticizer : ..... kg Polymer : ..... kg Fibres : ..... kg Other : ..... kg Consistency (No. of circle) : ..... Fibre content : ..... %

CONSISTENCY TEST (indicate No. of the circle)

Morning no. ☐☐☐ Afternoon no. ☐☐☐

Comments and actions taken if results unacceptable :

FIBRE CONTENT OF FRESH GRC (wash out test)

	Samples	"T" (top)	"M" (middle)	"B" (bottom)
Masses (g)	Sieve m_1	...	...	...
	Sieve and sample m_2	...	...	...
	Sieve and dry fibres m_3	...	...	...
Fibre content (%)	$\frac{m_3 - m_1}{m_2 - m_1} \times 100$	...	...	...

Average fibre content (%) =
Comments and actions taken if results unacceptable

SPRAYING TEST **Machine: ..... Operator: .....**

Time	Empty bucket m_1 (g)	Fibre roll m_2 (g)	Bucket + 30 s spray m_3 (g)	Fibre roll m_4 (g)	Fibre content (%) $\frac{m_2 - m_4}{m_3 - m_1} \times 100$	Setting of air pressure

Comments and actions taken if results unacceptable :

Samples taken for: density - bending strength - water absorption(*)
(*) delete term which does not apply