



National Standards Authority of Ireland

STANDARD

**I.S. EN 1169:2000**

ICS 91.100.30

**PRECAST CONCRETE PRODUCTS - GENERAL  
RULES FOR FACTORY PRODUCTION  
CONTROL OF GLASS-FIBRE REINFORCED  
CEMENT**

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English version

**Precast concrete products - General rules for factory production  
control of glass-fibre reinforced cement**

Produits préfabriqués en béton - Règles générales de  
contrôle de production des composites ciment-verre

Vorgefertigte Betonerzeugnisse - Allgemeine Regeln für die  
werkseigene Produktionskontrolle von Glasfaserbeton

This European Standard was approved by CEN on 4 December 1998.

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.



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## 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of an identical text or by endorsement, at the latest by April 2000, and conflicting national standards shall be withdrawn at the latest by April 2000.

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 is applicable to glass-fibre reinforced cement products manufactured in factories. It defines the general rules for production control of GRC material.

It constitutes the common "production" part of the control plan, for which guidelines are given in annex A.

It does not specify :

- the conformity control procedure for the finished products, for which reference should be made to the specification of European products Standards or, if none exist, to the technical requirements defined and agreed between the manufacturer and his customer ;
- the means and methods to be used to control the whole production process (moulds, curing, storage, etc.).

## 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.

prEN 197-1	Cement - Part 1: Composition, specifications and conformity criteria for common cements
EN 450	Fly ash for concrete - Definitions, requirements and quality control
EN 1170-1	Precast concrete products - Test method for glass-fibre reinforced cement - Part 1 : Measuring the consistency of the matrix "Slump test" method
EN 1170-2	Precast concrete products - Test method for glass-fibre reinforced cement - Part 2 : Measuring the fibre content in fresh GRC, "Wash out test"
EN 1170-3	Precast concrete products - Test method for glass-fibre reinforced cement - Part 3 : Measuring the fibre content of sprayed GRC
EN 1170-4	Precast concrete products - Test method for glass-fibre reinforced cement - Part 4 : Measuring bending strength - "Simplified bending test" method
EN 1170-5	Precast concrete products - Test method for glass-fibre reinforced cement - Part 5 : Measuring bending strength, "Complete bending test" method
EN 1170-6	Precast concrete products - Test method for glass-fibre reinforced cement - Part 6 : Determination of the absorption of water by immersion and determination of the dry density

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EN 1170-7	Precast concrete products - Test method for glass-fibre reinforced cement - Part 7 : Measurement of extremes of dimensional variations due to moisture content
ENV 1170-8	Test method for glass-fibre reinforced cement - Part 8 : Cyclic weathering type test
EN 45001	General criteria for the operation of testing laboratories

### **3 Definitions and abbreviation**

#### **3.1 Definitions**

For the purposes of this standard, the following definitions apply :

##### **3.1.1 additive**

Product that may be added to the matrix composition to improve some properties. It can be reactive (e.g. silica fumes) or inert, mineral or organic (e.g. polymer dispersions).

##### **3.1.2 admixture**

Product added in quantity less than 5 % of the mass of cement, before or during mixing and giving expected modifications to the initial properties (e.g. plasticiser, air entraining agents).

##### **3.1.3 AR glass-fibre (Alkali-Resistant)**

Glass-fibre resistant to the alkaline environment of matrices made from hydraulic binder. This resistance is due particularly to a specific composition of glass.

##### **3.1.4 E glass-fibre (Electrical)**

Glass-fibre usually used in the composites with organic binder. Due to the composition of glass, this type of fibre is degraded in alkaline environment.

##### **3.1.5 basic strand**

Glass fibre obtained by stranding 100 to 200 filaments having 10 µm to 30 µm individual diameter.

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