Precast concrete products - Classification of glassfibre reinforced concrete performance

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 15191:2024 sisaldab Euroopa standardi EN 15191:2024 ingliskeelset teksti.	This Estonian standard EVS-EN 15191:2024 consists of the English text of the European standard EN 15191:2024.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.12.2024.	Date of Availability of the European standard is 18.12.2024.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Precast concrete products - Classification of glassfibre reinforced concrete performance

Produits préfabriqués en béton - Classification des performances des composites ciment-verre

Betonfertigteile - Klassifizierung der Leistungseigenschaften von Glasfaserbeton

This European Standard was approved by CEN on 1 December 2024.

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European foreword

This document (EN 15191:2024) 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of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15191:2009.

EN 15191:2024 includes the following significant technical changes with respect to EN 15191:2009:

a) typical composition and performance moved to an informative annex;

b) introduction of a criterion on the ratio between the bending stress at limit of proportionality and the bending stress at modulus of rupture;

c) update and simplification of the table of characteristic values for the classification of GRC;

d) modification of the provisions related to the application specific parameters, with the introduction of default values.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

Introduction

The classification covers all glassfibre reinforced concrete (GRC) formulation and production processes.

The properties of GRC depend on:

a) the constituent materials used;

b) the composition of glassfibre reinforced concrete;

c) the production processes.

The classification of GRC is based on the material properties that can be achieved.

1 Scope

This document deals with the classification of glassfibre reinforced concrete. This classification conforms to the needs of the design process of glassfibre reinforced concrete components. This document applies only if EN 1169 is followed.

This document does not deal with design methods.

2 Normative references

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.

EN 1170, *Precast concrete products — Test methods for glassfibre reinforced concrete*

EN 14649:2005, *Precast concrete products — Test method for strength retention of glass fibres in cement and concrete*

EN 15422, *Precast concrete products - Specification of glassfibres for reinforcement of mortars and concretes*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Terms and definitions

3.1.1
additive
product that may be added to the matrix composition to improve some properties

Note 1 to entry: It can be reactive (e.g. silica fumes) or inert, mineral or organic (e.g. polymer dispersions).

Note 2 to entry: inorganic additives are called additions in EN 206:2013.

3.1.2
admixture
constituent added during the mixing process in small quantities related to the mass of cement to modify the properties of fresh or hardened concrete

[SOURCE: EN 206:2013]

3.1.3
strand
glassfibre reinforcement element formed by binding together individual filaments of a nominal diameter between 10 µm to 30 µm