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**Klaastekstiiliga sarrusplastid.  
Eelimpregneeritud materjalid,  
presskompaunid ja laminaadid.  
Klaastekstiili ja mineraaltäiteaine sisalduse  
määramine. Kuumutamismeetodid**

Textile-glass-reinforced plastics - Prepregs,  
moulding compounds and laminates - Determination  
of the textile-glass and mineral-filler content -  
Calcination methods

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 1172:2000 sisaldab Euroopa standardi EN ISO 1172:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 10.05.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 1172:2000 consists of the English text of the European standard EN ISO 1172:1998.</p> <p>This document is endorsed on 10.05.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> Käesolev standard määrab kindlaks kaks kuumutamismeetodit klaastekstiili ja mineraaltäiteaine sisalduse määramiseks klaassarrusplastides. Meetod A on klaastekstiili sisalduse määramiseks, kui mineraaltäiteaine puudub. Meetod B on klaastekstiili ja mineraaltäiteaine sisalduse määramiseks mõlema komponendi esinemise korral.</p>	<p><b>Scope:</b></p>
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**ICS** 83.120

**Võtmesõnad:** eelimpregneeritud materjalid, füüsikalised testid, klaaskiud, klaassarrusplastid, klaastekstiil, kuumutustestid, laminaadid, mineraalaine, sarrusplastid, sisalduse määramine, testimine

English version

Textile-glass-reinforced plastics – Prepregs,  
moulding compounds and laminates

Determination of the textile-glass and mineral-filler content –  
Calcination methods  
(ISO 1172 : 1996)

Plastiques renforcés de verre textile –  
Préimprégnés, compositions de  
moulage et stratifiés – Détermination  
des taux de verre textile et de charge  
minérale – Méthodes par calcination  
(ISO 1172 : 1996)

Textilglasverstärkte Kunststoffe –  
Prepregs, Formmassen und Lamine –  
Bestimmung des Textilglas- und  
Mineralfüllstoffgehalts – Kalzinie-  
rungsverfahren (ISO 1172 : 1996)

This European Standard was approved by CEN on 1998-08-03.

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.

The European Standards exist 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**

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

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

## Foreword

International Standard

ISO 1172 : 1996 Textile-glass-reinforced plastics – Prepregs, moulding compounds and laminates – Determination of the textile-glass and mineral-filler content – Calcination methods,

which was prepared by ISO/TC 61 'Plastics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 'Plastics', the Secretariat of which is held by IBN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by February 1999 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 1172 : 1996 was approved by CEN as a European Standard without any modification.

**WARNING — This International Standard does not give details of the precautions that should be taken to meet health and safety requirements. The test methods described require the use of high temperatures and concentrated acids. It is the responsibility of the user of this International Standard to follow the appropriate health and safety procedures.**

## 1 Scope

This International Standard specifies two calcination methods for the determination of the textile-glass and mineral-filler content of glass-reinforced plastics:

Method A: for the determination of the textile-glass content when no mineral fillers are present.

Method B: for the determination of the textile-glass and mineral-filler content when both components are present.

This International Standard is applicable to the following types of material:

- prepregs made from yarns, rovings, tapes or fabrics;
- SMC, BMC and DMC moulding compounds;
- textile-glass-reinforced thermoplastic moulding materials and granules;
- filled or unfilled textile-glass laminates made with thermosetting or thermoplastic resins.

The methods are not applicable to the following types of reinforced plastic:

- those containing reinforcements other than textile glass;
- those containing materials which do not completely burn off at the test temperature (for example, those based on silicone resin);
- those containing mineral fillers which degrade at temperatures below the minimum calcination temperature.

For these materials, ISO 11667, *Fibre-reinforced plastics — Moulding compounds and prepregs — Determination of resin, reinforcement-fibre and mineral-filler content — Dissolution method*, may be used.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 472:1988, *Plastics — Vocabulary*.

ISO 4793:1980, *Laboratory sintered (fritted) filters — Porosity grading, classification and designation*.

ISO 8604:1988, *Plastics — Prepregs — Definitions of terms and symbols for designations*.

## 3 Definitions

For the purposes of this International Standard, the definitions given in ISO 472 and ISO 8604 apply.

## 4 Principle

A test specimen is weighed and subsequently calcinated at a defined temperature. The specimen is then reweighed and the non-combustible matter content (glass + filler) obtained by determining the difference in mass of a test specimen before and after calcination in one of the following ways:

- a) In the case of materials containing no fillers the glass content is calculated directly from the difference in mass (method A);
- b) In the case of materials containing both glass and filler, the glass and filler remaining after calcination are separated by dissolution of the filler in hydrochloric acid. The difference between the mass of the specimen before calcination and the mass of the dried specimen after reaction with acid is used to measure the glass content. The filler content is obtained by calculating the difference between the mass of the specimen after calcination and the mass of the dried specimen after reaction with acid (method B).

The test method requires that all weighings be made at constant mass after repeated calcination and/or drying. In those cases where known materials are being tested regularly, a minimum time for the calcination and drying stages may be determined by experiment to ensure that constant mass has been reached.

### NOTES

- 1 If the material tested contains a resin which is combustible under the test conditions and/or fillers which do not degrade by calcination, then the loss on ignition is equal to the resin content. It should be noted that the resin content calculated in this way includes the combustible part of the other components in the composition (glass size, pigments, etc.) but this is usually small compared to the resin content.
- 2 In those cases where fillers are present that are degraded at the test temperature, it is not possible to obtain an accurate determination of the glass, resin or filler content.

## 5 Sampling

**5.1** The determination of the glass and filler contents is shall be carried out in parallel on two specimens which are as near identical as possible. The result of the test is the average of the measurements on the two specimens, provided that the difference between the two measurements is less than 5 %. If this is not the case, a third specimen shall be tested which is as near identical to the other two as possible. The three values shall then be used to calculate the test result.

**5.2** In order to carry out an evaluation test the result of which is as representative as possible of the glass and filler content of the elementary unit or laboratory sample, this test procedure may need to be repeated a certain number of times, at specific locations in the elementary unit examined. The number of times and the actual