

Methods of test for masonry units - Part 22:
Determination of freeze/thaw resistance of clay
masonry units

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 772-22:2018 sisaldab Euroopa standardi EN 772-22:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 772-22:2018 consists of the English text of the European standard EN 772-22:2018.
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English Version

Methods of test for masonry units - Part 22: Determination of freeze/thaw resistance of clay masonry units

Méthodes d'essai des éléments de maçonnerie - Partie
22: Détermination de la résistance au gel/dégel des
éléments de maçonnerie en terre cuite

Prüfverfahren für Mauersteine - Teil 22: Bestimmung
des Frost-Tau-Widerstandes von Mauerziegeln

This European Standard was approved by CEN on 26 October 2018.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European Foreword

This document (EN 772-22:2018) has been prepared by Technical Committee CEN/TC 125 “Masonry”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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 CEN/TS 772-22:2006.

The most significant changes compared to the previous edition include:

- definition for sand grading for mortar has been tightened;
- rubber joints between units are only permitted for product development and factory production control testing;
- a clause for partial saturation at 80 °C is added;
- only flush finish joints are permitted;
- monitoring of temperature is taken from 30 mm from the face not 40 mm;
- classification as F2 is given if not more than 10% of units exhibit damage of Type 4 or above, rather than no units of type 4 or above;
- classifications of F1(n) and F2(80°C) are added;
- a detailed description of a heat flow meter is provided.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies a method for determining the freeze/thaw resistance of clay masonry units in one of two categories F1 or F2.

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 771-1, *Specification for masonry units — Part 1: Clay masonry units*

EN 772-21, *Methods of test for masonry units — Part 21: Determination of water absorption of clay and calcium silicate masonry units by cold water absorption*

EN 197-1, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 13139, *Aggregates for mortar*

3 Terms and definitions

No terms and definitions are listed in this document.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Principle

A panel of clay masonry units is assembled from units and rapid hardening mortar which when sufficiently hardened is immersed in water for a prescribed period of time. The panel is subsequently cooled for a specified period and the water in the units near to one face is repeatedly thawed and refrozen while the rear of the panel remains permanently frozen (achieving a so called pinch effect). Damage caused by the freezing and thawing action is assessed and used to determine the freeze/thaw resistance of the bricks.

5 Apparatus

An appropriate **testing machine** capable of generating the freeze-thaw cycles specified in 9.2 and ensuring unidirectional freezing and thawing through one face of the units.

Several different designs of testing machines are suitable all of which use a fan to circulate air in the machine. It is important that the machine circulates the air such that the flow is essentially parallel to the face of the panel under test.

A **water tank for soaking**, made of plastic or steel.

A **heat flow meter**. The heat flow meter is an insulated device for extracting heat over the central area of the surface of what during a test would be the exposed face of the panel. The area is matt black and shall be capable of extracting heat such that when the air temperature is recorded as -15°C as in 9.2.2 and the centre of the plate is maintained at 0°C the average rate of heat extraction can be measured. A typical example is described in Annex A and a suitable calibration procedure in Annex C.