National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 13495:2002

ICS 91.100.60

THERMAL INSULATION PRODUCTS FOR BUILDING APPLICATIONS - DETERMINATION OF THE PULL-OFF RESISTANCE OF EXTERNAL THERMAL INSULATION COMPOSITE SYSTEMS (EPICS)(FOAM BLOCK TEST)

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EUROPEAN STANDARD

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English version

Thermal insulation products for building applications - Determination of the pull-off resistance of external thermal insulation composite systems (ETICS)(foam block test)

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de la résistance à l'arrachement des systèmes composites d'isolation thermique par l'extérieur (systèmes I.T.E) (essai au bloc de mousse)

Wärmedämmstoffe für das Bauwesen - Bestimmung der Abreißfestigkeit von außenseitigen Wärmedämm-Verbundsystemen (WDVS)(Schaumblock-Verfahren)

This European Standard was approved by CEN on 19 August 2002.

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 Management Centre 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 Management Centre 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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

Foreword

This document (EN 13495:2002) has been prepared by Technical Committee CEN /TC 88, "Thermal insulating materials and products", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by April 2003, and conflicting national standards shall be withdrawn at the latest by April 2003.

This European Standard is one of a series of standards which specify test methods for determining dimensions and properties of thermal insulating materials and products. It supports a series of product standards for thermal insulating materials and products which derive from the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (Directive 89/106/EEC) through the consideration of the essential requirements.

This European Standard has been drafted for applications in buildings but may also be used in other areas where it is relevant.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies equipment and a procedure for determining of the pull-off resistance of external thermal insulation composite systems (ETICS) which are mechanical fixed or mechanical fixed and bonded. The method described is known as "foam block test".

NOTE This test is not intended to measure the pull-off resistance of the ETICS to the substrate.

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 (including amendments).

EN 206-1, *Concrete — Part 1:Specification, performance, production and conformity*.

EN 822, *Thermal insulating products for building applications — Determination of length and width*.

EN 823, *Thermal insulating products for building applications — Determination of thickness*.

EN 1015-1, *Methods of test for mortar for masonry — Part 1: Determination of particle size distribution (by sieve analysis)*.

EN 1602, *Thermal insulating products for building applications — Determination of the apparent density*.

EN 1607, *Thermal insulating products for building applications — Determination of tensile strength perpendicular to faces*.

prEN 13499:1999, *Thermal insulation products for buildings — External Thermal Insulation Composite Systems (ETICS) based on expanded polystyrene — Specification*.

prEN ISO 3251, *Paints, varnishes and plastics — Determination of non-volatile matter content (ISO/DIS 3251:2000)*.

EN ISO 3386-1, *Polymeric materials, cellular flexible — Determination of stress-strain characteristics in compression — Part 1: Low-density materials (ISO 3386-1:1986)*

EN ISO 3451-1, *Plastics — Determination of ash — Part 1: General methods (ISO 3451-1:1997).*

prEN ISO 9229:1997, *Thermal insulation — Definitions of terms (ISO 9229:1997)*

3 Terms and definitions, symbols and units

3.1 Terms and definitions

For the purposes of this European Standard the terms and definitions given in prEN ISO 9229:1997 and prEN 13499:1999 apply.

3.2 Symbols and units

Symbols used in this standard:

σ is the pull-off resistance, in kPa;

F is the maximum tensile load, in kN;

A is the cross-sectional area of the test specimen, in m^2.

4 Principle

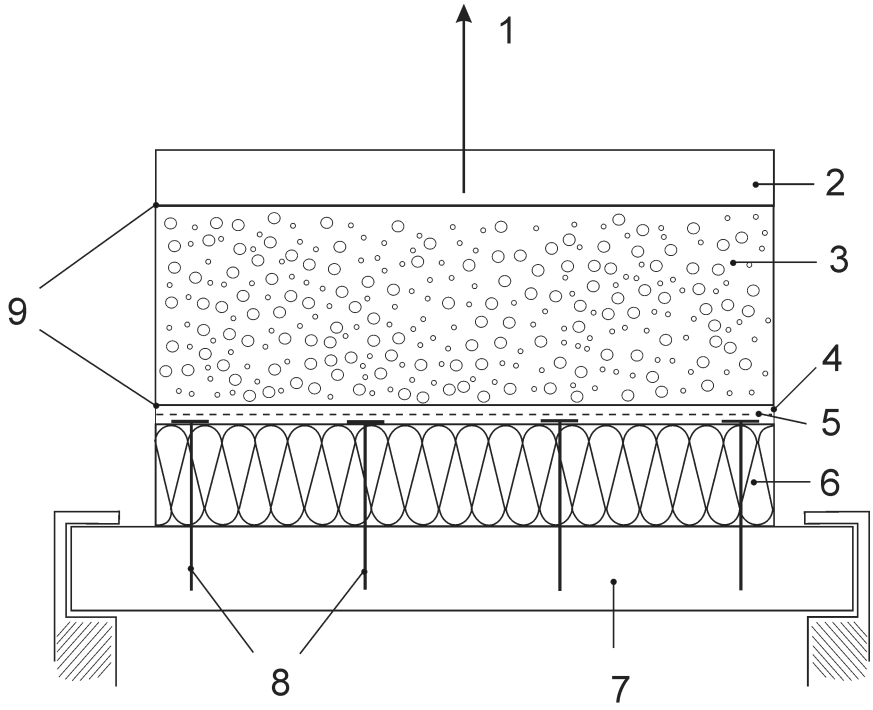
The pull-off resistance of external thermal insulation composite systems is determined by conducting the static foam block test. The pull-off resistance is calculated from the maximum tensile load.

5 Apparatus

5.1 Test apparatus

Apparatus with which the testing load is generated by a hydraulic jack and transferred via a load cell to crossed steel joists. The joists are fixed with timber screws to the plywood panel in such a way, that the load application is in the middle of the plywood panel.

An example of test apparatus and test specimen is given in Figure 1.



Key

1 Tension force F
2 Timber panel
3 Foam block
4 Base coat
5 Reinforcement
6 Thermal insulation material
7 Reinforced concrete slab
8 Anchors
9 Glue

Figure 1 — Example of a test apparatus and test specimen for the static foam block test