SLOVENSKI STANDARD
SIST EN 539-1:1998

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Opeļ ni streġniki - Ugotavljanje fizikalnih lastnosti - 1. del: Preskus neprepustnosti za vodo

Clay roofing tiles for discontinuous laying - Determination of physical characteristics - Part 1: Impermeability test

Tondachziegel für überlappende Verlegung - Bestimmung der physischen Charaktere - Teil 1: Prüfung der Wasserundurchlässigkeit

Tuiles en terre cuite pour pose en discontinu - Détermination des caractéristiques physiques - Partie 1: Essai d'imperméabilité

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English version

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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

Contents

Foreword

This European Standard has been prepared by CEN/TC 128 "Roof covering products for discontinuous laying", the secretariat of which is held by ON.

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of an identical text or by endorsement, at the latest by November 1994, and conflicting national standards shall be withdrawn at the latest by November 1994.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 Scope

This Part of this European standard describes two test methods for testing the impermeability to water of clay roof tiles and fittings which can be considered as equivalent.

Note: The methods are not applicable to all fittings, because of their different shapes

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.

EN 1304 : Clay Tiles - Product definitions 1).

3 Symbols and abbreviations

Xi	:	Length of time in hours, before the first drop of water falls.
$\bar{X}i$	:	Average length of time, in hours before the first drop of water falls.
V1	:	Volume of water passing through in 48 hours.
V2	:	Volume of water evaporated in 48 hours.
A	:	Projected area of test piece in cm².
d	:	One day.
h	:	hour.
IF	:	Impermeability factor (Method 1).
IC	:	Impermeability coefficient (Method 2).
HR	:	Relative Humidity.

4 Samples

If the tiles or fittings are supplied with a surface coating then the test shall be carried out on samples which include the surface coating. Where tiles or fittings are taken from a site or building, they shall be tested in the condition that they were in at the time of sampling.

5 Test method 1

5.1 Principle

The amount of water passing in 48 h through the ceramic body of the tile or fitting per cm^2 of surface area, under a load of 10 cm of water kept constant throughout the test is determined.

5.2 Apparatus

(See figure 1)

5.2.1 A glass tube (or other rigid transparent material) with an inside diameter of 38 mm ± 1 mm, and a height of 150 mm ± 2 mm for each test piece and one for the measurement of the evaporation level.

5.2.2 A container to hold the test pieces after preparation.

5.2.3 A device at a constant level consisting of a graduated test tube or measuring cylinder with a capacity of at least 100 cm^3 graduated in steps not greater than 2 cm^3.

5.3 Size of Sample 2)

Ten tiles or fittings shall be tested. For routine testing, the size of the sample can be different.

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2) The rules for sampling are described in the standard EN 1304

5.4 Preliminary treatment

Preliminary treatment consistes of the following operations :

-the tiles shall be immersed in tap water at room temperature for 48 h ± 4 h;

-the tiles shall then be dried at a temperature of 110°C ± 5°C until the difference between two successive weighings at 24 hour intervals is less than 0,5 % of the reading before last;

-the tiles shall then be cooled at room temperature for at least 4 h;

If the test is carried out on kiln fresh tiles they shall be held at room temperature for a period of time after their immersion in water for 48 h [3].

5.5 Test Pieces

Cut from the thinnest part of each tile or fitting, a square test piece 45 mm ± 2 mm x 45 mm ± 2 mm or a round test piece with a diameter of 50 mm ± 2 mm.

5.6 Procedure

Measure the dimensions (length and width) of the test pieces, and calculate their projected area.

Place the tube on the surface of the test pieces normally exposed to the weather.

Smear the cut surfaces of the test piece and the joint between the tube and the test piece with paraffin wax or a watertight sealant.

Leave the tube and test piece for 48 hours in a vessel containing sufficient water for the exposed surface to be 1 cm below the water level. The surface opposite the exposed surface restes on two thin non-porous supports placed at the bottom of the container. When this period has been completed, pour water into the glass tube so that the water is 10 cm higher than that in the container.

The water level in the tube is kept constant using a glass gauge with a bevelled tube (see figure 1).

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3) There is nothing to be gained from holding tiles at room temperature for longer than 14 days.

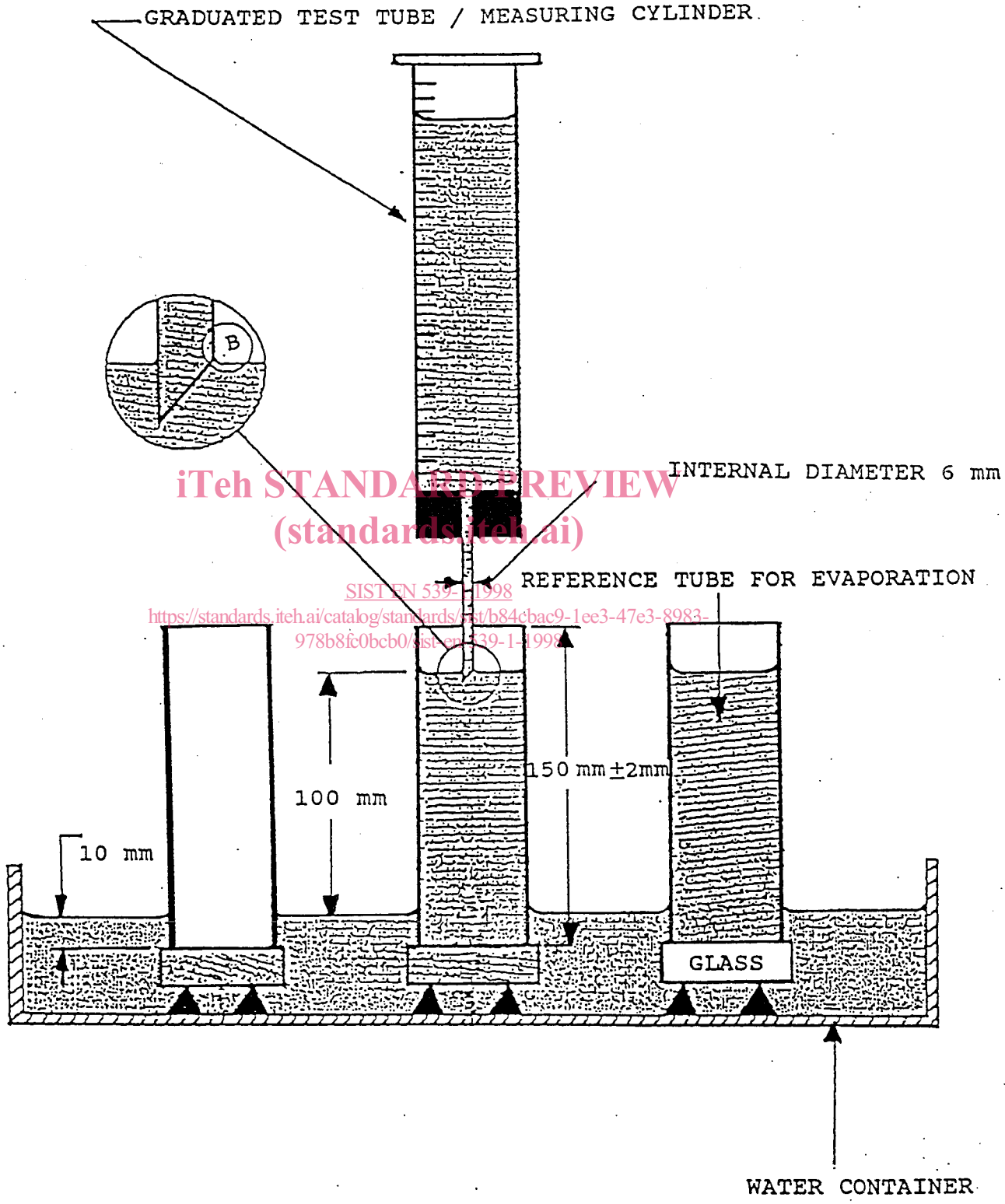

Figure 1: Apparatus for Test Method 1