

# INTERNATIONAL STANDARD



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## **Floor tiles of agglomerated cork — Methods of test**

*Dalles d'aggloméré de liège pour revêtements des sols — Méthodes d'essai*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3810 was prepared by Technical Committee ISO/TC 87, *Cork*.

This second edition cancels and replaces the first edition (ISO 3810 : 1977), of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

# Floor tiles of agglomerated cork — Methods of test

## 1 Scope and field of application

This International Standard specifies methods of test for determining the following characteristics of agglomerated cork floor tiles : dimensions and squareness, apparent density, tensile strength, initial and residual indentation, ash content and resistance to boiling hydrochloric acid.

## 2 References

ISO 3813, *Floor tiles of agglomerated cork — Characteristics, sampling and packing.*<sup>1)</sup>

ISO 9366, *Floor tiles of composition cork — Determination of dimensions and of deviation from rectilinearity and from sides perpendicularity.*<sup>2)</sup>

## 3 Reagent

Hydrochloric acid,  $\rho_{20} \approx 1,18$  g/ml, of technical grade.

## 4 Apparatus

- 4.1 **Balance**, accurate to  $\pm 0,5$  g.
- 4.2 **Balance**, accurate to  $\pm 0,1$  mg.
- 4.3 **Crucible**, made of porcelain, nickel or platinum.
- 4.4 **Stop-watch**.
- 4.5 **Desiccator**.
- 4.6 **Conditioning chamber**, temperature and humidity controlled.
- 4.7 **Electrically heated oven**, capable of being controlled at  $103 \pm 2$  °C.

4.8 **Electric muffle furnace**, capable of being controlled at  $450 \pm 20$  °C.

4.9 **Tensile testing machine**, accurate to  $\pm 1$  N, with one fixed jaw and one movable jaw, initially 12 mm apart. The movable jaw shall move unloaded at a speed of 300 mm/min.

4.10 **Static load press**, with flat parallel platens of dimensions greater than those of the test pieces and equipped with the following items :

4.10.1 **Cylindrical indenter**, made of steel, of diameter 28,7 mm (cross-sectional area 645 mm<sup>2</sup>) fitted on the movable head.

4.10.2 **Dial micrometer**, accurate to  $\pm 0,05$  mm, attached to the movable head and giving by direct reading the thickness of the compressed material.

4.10.3 **Weights**, for applying the load to the movable head.

4.11 **Device for testing resistance to boiling hydrochloric acid**, equipped with

4.11.1 **Round bottom flask**, of min. capacity 500 ml.

4.11.2 **Reflux condenser**.

4.11.3 **Heating device**, to maintain temperature.

4.12 **Punch**, to prepare test piece.

## 5 Sampling and conditioning

Tests shall be carried out at ambient temperature, on test specimens taken from a sample obtained in accordance with ISO 3813 and conditioned in the conditioning chamber (4.6) for 24 h at  $20 \pm 2$  °C and at a relative humidity of  $65 \pm 5$  %, unless otherwise specified.

1) At present at the stage of draft. (Revision of ISO 3813-1977.)

2) At present at the stage of draft.



## 6.6 Ash content<sup>1)</sup>

### 6.6.1 Preparation of test piece

From one of the tiles in the sample, take one piece of mass approximately 10 g and break it up so that the fragments can be placed in the crucible (4.3).

### 6.6.2 Procedure

Place the fragments (6.6.1) in the crucible (4.3). Dry the crucible and contents in the electric oven (4.7), controlled at  $103 \pm 2$  °C, allow to cool in the desiccator (4.5), then weigh using the balance (4.2). Repeat the drying, cooling and weighing operations till constant mass is reached. Place the crucible and contents in the muffle furnace (4.8), controlled at  $450 \pm 20$  °C, to ignite the agglomerated cork; allow to cool in the desiccator, then re-weigh. Repeat the procedure till constant mass is reached.

### 6.6.3 Expression of results

The ash content of the test piece is given, as a percentage by mass, by the formula

$$\frac{m_2 - m_0}{m_1 - m_0} \times 100$$

where

$m_0$  is the mass, in grams, of the crucible, rounded off to the nearest 1 mg;

$m_1$  is the mass, in grams, of the crucible with the dried test piece, rounded off to the nearest 1 mg;

$m_2$  is the mass, in grams, of the crucible with the residue, rounded off to the nearest 1 mg.

Express the result to the nearest 0,1 %.

## 6.7 Resistance to boiling hydrochloric acid

### 6.7.1 Preparation of test pieces

Take three tiles at random from the sample. Cut from each a test piece measuring 5 cm × 4 cm and having the thickness of the tile.

### 6.7.2 Procedure

Fit together the different parts of the device (4.11), connecting the reflux condenser to a flow of water.

Heat the flask (4.11.1), containing the hydrochloric acid (clause 3) and the test pieces until the acid reaches boiling point and maintain it at this temperature for 30 min. Then remove the test pieces and make a visual examination.

### 6.7.3 Expression of results

Express the result of the test by stating the presence or absence of disintegration in the agglomerated cork.

NOTE — A specimen is said to disintegrate if it splits open and/or if it shows substantial loss of particles during the test.

## 7 Test report

The test report shall include the following information :

- a) reference to this International Standard;
- b) all details necessary for complete identification of the sample;
- c) reference to the method used;
- d) the results obtained and the form in which they are expressed;
- e) all details of procedure not specified in this International Standard or in the International Standards to which reference is made, or regarded as optional;
- f) any occurrences that may have affected the results.

1) This test is only used to distinguish the tiles of pure agglomerated cork from those of composition cork; so it is facultative.

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