



## SLOVENSKI STANDARD

### SIST EN 13373:2003

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Natural stone test methods - Determination of geometric characteristics on units

Prüfverfahren für Naturstein - Bestimmung der Maße und anderer geometrischer Merkmale von Gesteinen

Méthodes d'essai pour pierres naturelles - Détermination des dimensions et autres caractéristiques géométriques

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#### **ICS:**

73.020	Rudarstvo in kamnolomsko izkopavanje	Mining and quarrying
91.100.15	Mineralni materiali in izdelki	Mineral materials and products

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**en**

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English version

## Natural stone test methods - Determination of geometric characteristics on units

Méthodes d'essai pour pierres naturelles - Détermination des dimensions et autres caractéristiques géométriques

Prüfverfahren für Naturstein - Bestimmung der Maße und anderer geometrischer Merkmale von Gesteinen

This European Standard was approved by CEN on 2 January 2003.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 13373:2003) has been prepared by Technical Committee CEN/TC 246 "Natural stones", the secretariat of which is held by UNI.

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 October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This draft standard is one of the series of draft standards for tests on natural stone.

Test methods for natural stone consist of the following parts:

EN 1925, *Natural stone test methods - Determination of water absorption coefficient by capillarity.*

EN 1926, *Natural stone test methods - Determination of compressive strength.*

EN 1936, *Natural stone test methods - Determination of real density and apparent density and of total and open porosity.*

EN 12370, *Natural stone test methods - Determination of resistance to salt crystallisation.*

EN 12371, *Natural stone test methods - Determination of frost resistance.*

EN 12372, *Natural stone test methods - Determination of flexural strength under concentrated load.*

EN 12407, *Natural stone test methods - Petrographic examination.*

EN 13161, *Natural stone test methods - Determination of flexural strength under constant moment.*

EN 13364, *Natural stone test methods - Determination of the breaking load at dowel hole.*

EN 13755, *Natural stone test methods - Determination of water absorption at atmospheric pressure.*

EN 13919, *Natural stone test methods - Determination of resistance to ageing by SO<sub>2</sub> action in the presence of humidity.*

EN 14066, *Natural stone test methods - Determination of resistance to ageing by thermal shock.*

prEN 14146, *Natural stone test methods - Determination of the dynamic modulus of elasticity (by measuring the fundamental resonance frequency).*

prEN 14147, *Natural stone test methods - Determination of resistance to ageing by salt mist.*

prEN 14157, *Natural stone test methods - Determination of the abrasion resistance..*

prEN 14158, *Natural stone test methods - Determination of rupture energy.*

prEN 14205, *Natural stone test methods - Determination of Knoop hardness.*

EN 14231, *Natural stone test methods - Determination of the slip resistance by means of the pendulum tester.*

prEN 14579, *Natural stone test methods - Determination of sound speed propagation.*

prEN 14580, *Natural stone test methods - Determination of static elastic modulus.*

prEN 14581, *Natural stone test methods - Determination of thermal dilatation coefficient*.

It is intended that other ENs should call up this EN 13373 as the basis of evaluation of conformity. (Nevertheless it is not intended that all natural stones products should be subjected regularly to all the listed tests. Specifications in other standards should call up only relevant test methods).

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This European standard describes methods for verifying the geometric characteristics of products of natural stone such as blocks, rough slabs, finished products for cladding, flooring, stairs and modular tiles. These methods are to be applied in the case of a dispute between two parties, they are not compulsory for production control, where simplified methods can be applied provided a correlation with the methods of this standard could be demonstrated.

## 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 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).

prEN 1467, *Natural stone products- Rough blocks - Requirements.*

prEN 1468, *Natural stone products- Rough slabs - Requirements.*

prEN 1469, *Natural stone products - Slabs for claddings - Requirements*

prEN 12057, *Natural stone products - Modular tiles – Requirements.*

prEN 12058, *Natural stone products - Slabs for floors and stairs – Requirements*

prEN 12059, *Natural stone products - Dimensional stone work - Requirements.*

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## 3 Measurement of the dimensions of rough blocks

### 3.1 General

These methods are to be used for the measurement of the gross dimensions and the net dimensions of rough blocks that conform with prEN 1467.

### 3.2 Measurement of the gross dimensions of rough blocks

#### 3.2.1 General

Measurement of the dimensions of the smallest parallelepiped ( $P_1$ ) that contains a rough block.

#### 3.2.2 Apparatus

- A rigid rule of appropriate size graduated in 10 mm.
- Two flat metal reference straight-edges

#### 3.2.3 Procedure of measurement

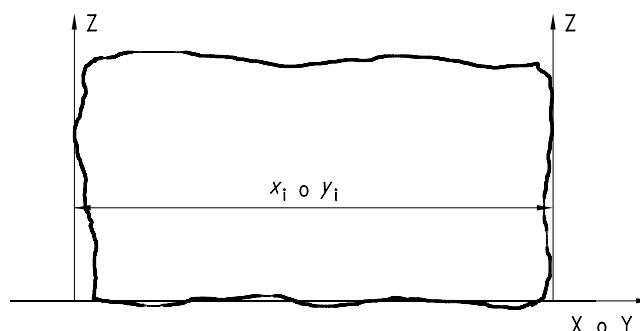
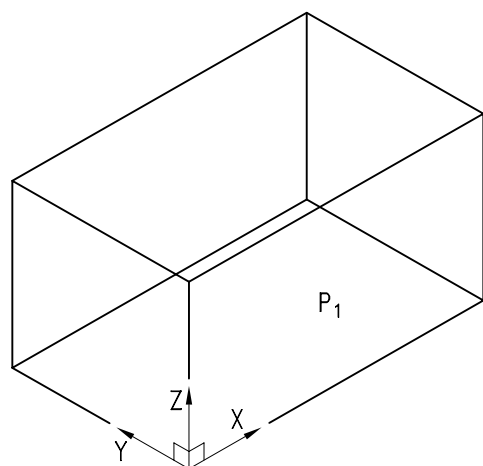
An orthogonal reference system is chosen ( $x, y, z$ ) (Figure 1).

The height  $z_i$  and the length  $x_i$  (or the width  $y_i$ ) of each face  $i$  of the block are measured in the following manner:



The straight-edges show the two parallel sides of the smallest rectangle containing the face of the block. Measurements are taken in the plane of the corresponding face of the parallelepiped  $P_1$ . The distance between the straight-edges is measured to the nearest 10 mm (Figure 2).

The gross dimensions of the block are the smallest value of  $x_i$ ,  $y_i$  and  $z_i$  expressed in metres.



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**Figure 1 — Orthogonal reference system defining the planes of measurement (parallelepiped  $P_1$ )**

**Figure 2 — Measurement of the gross length  $x_i$  (or of the gross width  $y_i$ ) of a face of a rough block**

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### 3.3 Measurement of net dimensions of rough blocks

#### 3.3.1 General

Measurement of the dimensions of the largest parallelepiped ( $P_2$ ) that can be inscribed within a rough block.

#### 3.3.2 Apparatus

- A rigid rule of appropriate size graduated in 10 mm.
- Two flat metal reference straight-edges.

#### 3.3.3 Procedure of measurement

An orthogonal reference system is chosen ( $x, y, z$ ) (Figure 3).

The height  $z_i$  and the length  $x_i$  (or the width  $y_i$ ) of each face  $i$  of the block are measured in the following manner :

- the straight-edges show the two parallel sides of the largest rectangle that can be inscribed within the face of the block. Measurements are taken in the plane of the corresponding face of the parallelepiped  $P_2$ . The distance between the straight-edges is measured to the nearest 10 mm (Figure 4);
- the net dimensions of the block are the smallest values of  $x_i, y_i, z_i$ , expressed in metres.

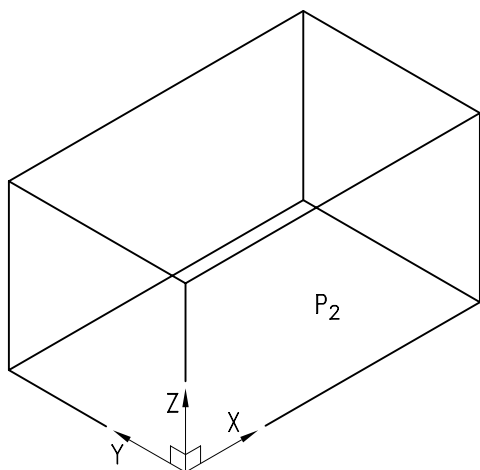


Figure 3 — Orthogonal reference system defining the planes of measurement (parallelepiped  $P_2$ )

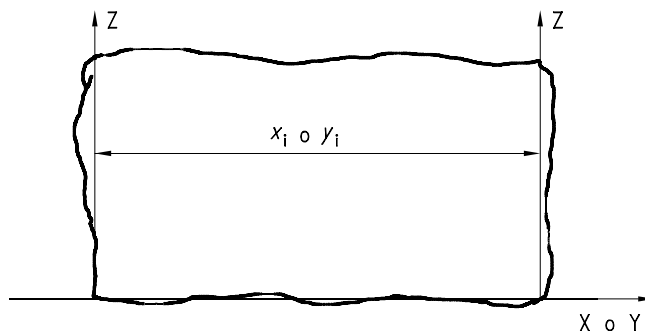


Figure 4 — Measurement of the net length  $x_i$  (or of the net width  $y_i$ ) of a face of a rough block

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### 4 Measurement of the dimensions of rough slabs

#### 4.1 General

These methods are to be used for the measurement of the gross dimensions and net dimensions of rough slabs that conform with prEN 1468.

#### 4.2 Measurement of the gross dimensions of rough slabs

##### 4.2.1 General

Measurement of the dimensions of the smallest rectangle that contains a slab.

##### 4.2.2 Apparatus

- A rigid rule of appropriate size graduated in 10 mm.
- Two flat metal reference straight-edges.

##### 4.2.3 Procedure of measurement

An orthogonal reference system is chosen ( $x, z$ ).

The height ( $z_i$ ) and the length ( $x_i$ ) of the slab are measured in the following manner :

- with the straight-edges show the two parallel sides of the smallest rectangle containing the slab, the distance between the straight-edges is measured to the nearest 10 mm (Figure 5);
- the gross dimensions of the rough slab are: the smallest values of  $x_i$  and  $z_i$ , expressed in millimetres.

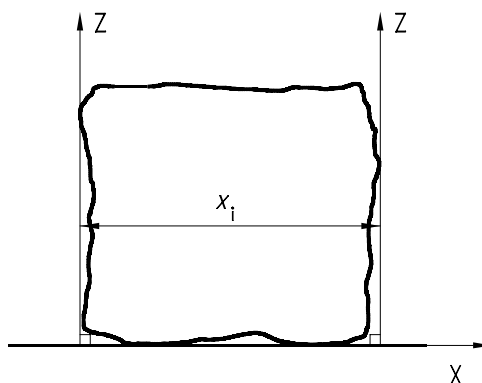


Figure 5 — Measurement of the gross length  $x_i$  of a rough slab

### 4.3 Measurement of the net dimensions of rough slabs

#### 4.3.1 General

Measurement of the dimensions of the largest rectangle that can be inscribed within a slab.

#### 4.3.2 Apparatus

- A rigid rule of appropriate size graduated in 10 mm.
- Two flat metal reference straight-edges.

#### 4.3.3 Procedure of measurement

An orthogonal reference system is chosen ( $x$ ,  $z$ ).

The height ( $z_i$ ) and the length ( $x_i$ ) of the slab are measured in the following manner:

- with the straight-edges show the two parallel sides of the largest rectangle that can be inscribed within the slab; the distance between the straight-edges is measured to the nearest 10 mm (Figure 6). The net dimensions of the rough slab are: the smallest values of  $x_i$  and  $z_i$  expressed in millimetres.

#### 4.3.4 Measurement of the thickness of a rough slab

See clause 5.3.