4.2.10 Frost resistance... 81
4.2.11 Thermal shock resistance... 81
4.2.12 Water vapour permeability... 81
4.2.13 Abrasion resistance... 81
4.2.14 Slip resistance... 81
4.2.15 Tactility... 81

5 MARKING AND PACKAGING 81

6 EVALUATION OF CONFORMITY AND FACTORY PRODUCTION CONTROL 82
6.1 General rules... 82
6.2 Initial type testing... 82
6.3 List of properties of modular tiles for initial type testing... 82
6.4 Control frequency for factory production control... 82

ANNEX A (normative) 82

A.1 General... 82
A.2 Principles of sampling... 83
A.3 Taking bulk samples... 83
A.4 Preparing a sampling plan... 83
A.5 Sampling apparatus... 83
A.6 Sampling methods... 83
A.6.1 General... 83
A.6.2 Sampling from quarries... 83
A.6.3 Sampling from plants... 83
A.6.4 Sampling from buildings... 83
A.7 Marking, packaging and dispatch of the samples... 83
A.8 Sampling report... 83
A.9 Example of a sampling report... 83

ANNEX ZA (informative) 83

ZA.1 Relevant Clauses for natural stone modular tiles for internal floorings and stairs... 84
ZA.2 Relevant Clauses for natural stone modular tiles for external floorings... 84
ZA.3 Procedures for the attestation of conformity of products... 84
ZA.3.1 CE Marking... 84
ZA.3.2 Reference model for marking and labelling... 84
ZA.3.3 CE Declaration of conformity... 85

ANNEX ZB (informative) 85

ZB.1 Scope and relevant characteristics... 85
ZB.2 Relevant Clauses for natural stone modular tiles for internal wall and ceiling finishing... 85
ZB.3 Relevant Clauses for natural stone modular tiles for external wall and ceiling finishing... 85
ZB.4 Procedures for the attestation of conformity of products... 85
ZB.5 Attestation of conformity systems... 86
ZB.6 CE Marking and labelling... 86
ZB.7 Reference model for marking and labelling... 86
ZB.8 EC Declaration of conformity... 86

International Natural Stone Specifications
FOREWORD
This document (EN 12057:2004) has been prepared by Technical Committee GEN/TC 248 "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of, an identical text or by endorsement, at the latest by April 2005, and conflicting national standards shall be withdrawn at the latest by July 2006.
This document has been prepared under a mandate given to GEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).
For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are an integral part of this document.
This document is one of a series of standards for specifications of natural stone products which includes the following:

EN 1467  Natural stone - Rough blocks - Requirements
EN 1468  Natural stone - Rough slabs - Requirements
prEN 1469  Natural stone products - Slabs for cladding - Requirements
EN 12057  Natural stone products - Modular tiles - Requirements
EN 12058  Natural stone products - Slabs for floors and stairs - Requirements
prEN 12059  Natural stone products - Dimensional stone work - Requirements

Other standards on natural stones are produced by:
GEN/TC 178  Paving units and kerbs
EN 1341  Slabs of natural stone for external paving - Requirements and test methods
EN 1342  Sets of natural stone for external paving - Requirements and test methods
EN 1343  Kerbs of natural stone for external paving - Requirements and test methods
GEN/TC 128  Roof covering products for discontinuous laying and products for wall cladding
EN 12362-1  Slate and stone products for discontinuous roofing and cladding - Part 1: Product specification
EN 12362-2  Slate and stone products for discontinuous roofing and cladding - Part 2: Methods of test
GEN/TC 125  Masonry
EN 771-6  Specification for masonry units - Part 6: Natural stone masonry units

Note: Besides the documents for test methods mentioned in Clause 2 there exist further standards which can be used for scientific examinations, but which are not relevant for the application in practice according to this standard.

TERMS AND DEFINITIONS
For the purpose of this document, the terms and definitions in given in EN 12670:2001 and the following apply.

modular tile: Flat piece of natural stone square or rectangular in standard sizes, normally ,·:610 mm obtained by cutting or splitting at a nominal thickness ,·:12 mm.

dimensions of modular tiles: Length l, width b and thickness d are the dimensions of a modular tile. The dimensions are given in the stated sequence in millimetres (see Figure 1).

requirements for geometric characteristics

1. SCOPE
This document specifies requirements for flat modular tiles of natural stone which are made for use as flooring, stairs, cladding and ceiling finishes. It does not cover mineral aggregates and artificial agglomerated stone material and does not cover installation.

2. NORMATIVE REFERENCES
The following referenced documents are indispensable for the application 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 1925  Natural stone test methods - Determination of water absorption coefficient by capillarity
EN 1936  Natural stone test method - Determination of real density and apparent density, and of total and open porosity
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 12440  Natural stone - Denomination criteria
EN 12524  Building materials and products - Hygrothermal properties Tabulated design values
EN 12670:2001  Natural stone - Terminology
EN 13161  Natural stone test methods - Determination of flexural strength under constant moment
EN 13373  Natural stone test methods - Determination of geometric characteristics on units
EN 13501-1  Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests
EN 13755  Natural stone test methods - Determination of water absorption at atmospheric pressure
EN 14066  Natural stone test methods - Determination of resistance to ageing by thermal shock
EN 14157  Natural stone test methods - Determination of the abrasion resistance
EN 14231  Natural stone test methods - Determination of the slip resistance by means of the pendulum tester
EN ISO 12572  Hygrothermal performance of building materials and products - Determination of water vapour transmission properties (ISO 12572:2001)

3. REQUIREMENTS
Requirements for geometric characteristics

General
All measurements shall be carried out in accordance with EN 13373 and all measured values of individual units shall fall within the required tolerances.

Requirements for dimensions, flatness and squareness
The tolerances for sizes, flatness and squareness shall be as given in Table 1. Table 1 is not valid for modular tiles having cleft/riven faces, for which tolerances on dimensions, flatness or squareness shall be declared by the manufacturer.
4.2.1 Requirements of natural stone for modular tiles

General

Due to natural variations of the stone materials, deviations from the declared values may occur.

<table>
<thead>
<tr>
<th>Property</th>
<th>Tolerances on dimensions and shape</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not calibrated tiles</td>
</tr>
<tr>
<td>Dimensions</td>
<td>$\pm 1\text{ mm}$</td>
</tr>
<tr>
<td>Flattening (for honed and polished surface only)</td>
<td>$\pm 1,5\text{ mm}$</td>
</tr>
<tr>
<td>Squareness</td>
<td>0,15%</td>
</tr>
</tbody>
</table>

*Calibrated tiles indicate a product submitted to specific mechanical finishing in order to obtain more precise dimensions; they are suitable to be fixed by thin mortar bed or adhesives.*

4.2.3 Requirements for surface finish

4.2.3.1 General

Surface finishes shall extend uniformly to the edges of the modular tiles. The surface finishing of some types of stones may typically involve the use of patching, fillers or other similar products for natural holes, faults or cracks; this is to be considered as part of the normal processing. In such cases the type of treatment as well as the type and nature of additional materials shall be declared.

4.2.3.2 Requirements for surfaces after surface finishing

Surfaces shall be worked to achieve the specified finish and shall have a regular appearance as a result of the finishing process (e.g. making reference to samples, see 4.2.3).

Note 1 Surfaces obtained by grinding are, for example: rough ground surfaces obtained, e.g. by means of a grinding disk of grain size F 60; medium ground surfaces obtained, e.g. by means of a grinding disk of grain size F 120; fine ground surfaces obtained, e.g. by means of a grinding disk of grain size F 220; matt finished surfaces obtained, e.g. by means of a grinding disk with grain size F 400; highly polished surfaces obtained, e.g. by means of a polishing disk or felt.

Note 2 Surfaces obtained by means of percussion tools are, for example: bush hammered surfaces (see EN 12670:2001, 2.3.8); trimmed surfaces: finish obtained by using pointed chisel and mallet or a grooving machine; striated surfaces: finish obtained by using a claw chisel (percussion tool for roughening a surface, with the cutting edge consisting of several teeth of various size) or a ruling machine.

Note 3 Surfaces obtained by other finishing operations are, for example: flamed finish (see EN 12670:2001, 2.3.22); sand blasted finish (see EN 12670:2001, 2.3.46); water jet streamed finish: a matt textured surface finish, accomplished by exposing the surface to a jet of water under pressure; machine tooled finish (see EN 12670:2001, 2.3.54); even cut finish: rugged surface produced by splitting stone with a guillotine or chisel finish obtained by using a bush hammer (percussion tool for roughening a surface, with a square head and with few pyramidal percussion teeth or points) or a bush hammering machine (machine consisting of feed rolls and a overhanging beam, supporting a pneumatic bush hammer). Surface texture obtained by thermal treatment of the stone using a high temperature flame. A matt finishing resulting from the impact of sand or other abrasive grains expelled by a sand jet.

"""*"""'this term has two different meanings:

1) finish resulting from a mechanical surface treatment with tools;
2) dressed finish clearly showing tool marks.

4.3 Reference sample, visual inspection and acceptance criteria

A reference sample shall be an adequate number of pieces of natural stone of sufficient size to indicate the general appearance of the finished work. The dimensions of individual pieces shall be at least 0,01 square metres (typical values are between 0,01 and 0,25 square metres in face area but may be more), and shall indicate the range of appearance regarding the colouring, the vein pattern, the physical structure and the surface finish. In particular the reference sample shall show specific characteristics of the stone, such as holes for travertine, worm holes for marble, glass seams, spots, crystalline veins.

The reference sample does not imply strict uniformity between the sample itself and the actual supply; natural variations may always occur. If the processing of the stone involves the use of patching, fillers or other similar products for natural holes, faults or cracks, then the reference sample shall similarly display the impact of the same on the finished surface. All the characteristics as shown by the reference sample shall be considered typical of the stone and not as flaws, therefore they shall not become a reason for rejection, unless their concentration becomes excessive and the typical character of the stone is lost. The name and address of the producer or the supplier, as well as the denomination of the stone in accordance with 4.2.2 above, shall be indicated on the reference sample.

Any comparison between production sample and reference sample shall be carried out by placing the reference sample against the production sample and viewing them at a distance of about two metres under normal daylight conditions and recording any visible differences in the characteristics of the stones (see Figure 2).

**Comparison between production sample and reference sample**

Key
1 Reference sample
2 Production sample
3 Daylight
4.2.12 Water absorption by capillarity
This characteristic shall always be declared.
The water absorption by capillarity shall be determined using the test method in EN 13755 and the results expressed accordingly.

4.2.13 Reaction to fire
This characteristic shall be declared upon request, for example when the tile is to be used for elements in contact with a horizontal surface where water may be present.

4.2.14 Frost resistance
This characteristic shall always be declared.
The frost resistance shall be determined using the test method in EN 13373 and the results expressed accordingly.

4.2.15 Abrasion resistance
This characteristic shall be declared upon request, when the tile is to be used in a location subject to harsh conditions and the surface finish of the back face, e.g., in contact with abrasive materials or similar, or by mechanical reworking of the surface, or by inserting anti-slip products e.g., rubber profiles, carborundum strips, metal bars or similar.

4.2.16 Tactility
This characteristic shall be declared upon request, for tiles for flooring and stairs only, subject to regulatory requirements or upon request. The tactility is expressed by a description of surface characteristics or by testing using tactile paving surface indicators. The last version of this draft standard can be found in document "CEN/TC 178/WG 5 N 29 - Specification for tactile paving surface indicators" dated 30th November 2003.

5 MARKING AND PACKAGING
As a minimum of identification, each consignment shall carry the following indications:

a) denomination of the natural stone, in accordance with EN 12440;
b) quantities and dimensions of the modular tiles.

c) mass of the modular tiles;
d) dimensions and mass of packaging.
These indications shall be given on labels, packaging or on accompanying documents. The modular tiles packaging shall allow adequate, solid and durable protection for packed tiles, both during transport and during handling and storage. Movement of tiles inside the packaging has to be prevented. The modular tiles shall be clean before packaging. Packaging and tapes which are likely to stain shall not be used. Sensitive polished surfaces shall be protected by appropriate means (e.g. plastic foil). Products with caustic properties shall not be used.

6 EVALUATION OF CONFORMITY AND FACTORY PRODUCTION CONTROL

6.1 General rules
The compliance with the requirements of this document and with the stated values or classes of reaction to fire shall be demonstrated by carrying out initial type testing. Additionally the manufacturer shall exercise a permanent factory production control (FPC) and keep record of the results at least until the next control. Declared values shall be representative of the current production.

6.2 Initial type testing
Initial type testing of a natural stone tile, as given in Table 2, shall be carried out on:

- first application of this document or at the beginning of the production of a new type of stone;
- when significant variations occur in the material, determined visually or by significant changes in FPC results.

Tests previously performed in accordance with the provisions of this document (same type of stone, same characteristic measured with the same test method, same sampling procedure and system of attestation of conformity) may be taken into account.

The declared values may be supported by a test report supplied with the block or raw slabs, provided that the tests have been performed according to the requirements and test methods of this document.

6.3 Factory production Control

6.3.1 A factory production control system (FPC) shall be established and documented. The factory production control system shall consist of procedures for the internal control of production. The results of the tests carried out during FPC shall demonstrate that products placed on the market conform to this document and with the manufacturer’s declared values or classes in accordance with 4.1 and 4.2.

In cases when the processing of the stone is likely to change the characteristics of the finished product relative to the initial material (e.g. as a consequence of the type of processing or because of the use of patching, fillers or other similar products for natural holes, faults, cracks and similar), then this has to be considered within FPC as requested by this document.

The internal control shall consist of regular inspection checks and tests and the utilisation of the results to control incoming materials, equipment, the production process and the finished product.

The tests and inspection checks shall be in accordance with Table 3. The results of the tests carried out during FPC shall demonstrate the conformity to the requirements declared in accordance with 4.1 and 4.2.

---

### Table 2

#### List of properties of modular tiles for initial type testing

<table>
<thead>
<tr>
<th>Reference to Clause for applicability</th>
<th>Properties/characteristics</th>
<th>Test method in accordance with</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2.2</td>
<td>Petrographic description</td>
<td>EN 12407</td>
</tr>
<tr>
<td>4.2.3</td>
<td>Appearance</td>
<td>Visual</td>
</tr>
<tr>
<td>4.2.4</td>
<td>Fractural strength</td>
<td>EN 12372 or EN 13161</td>
</tr>
<tr>
<td>4.2.5</td>
<td>(void)</td>
<td></td>
</tr>
<tr>
<td>4.2.6</td>
<td>Water absorption</td>
<td>EN 13755</td>
</tr>
<tr>
<td></td>
<td>(natural state)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(only where testing in raw)</td>
<td>Water absorption by capillarity</td>
</tr>
<tr>
<td>4.2.7</td>
<td></td>
<td>EN 13001-1</td>
</tr>
<tr>
<td>4.2.8</td>
<td></td>
<td>EN 13925</td>
</tr>
<tr>
<td>4.2.9</td>
<td>Apparent density</td>
<td>EN 1906</td>
</tr>
<tr>
<td>4.2.10</td>
<td>Frost resistance</td>
<td>EN 12371</td>
</tr>
<tr>
<td>4.2.11</td>
<td>Thermal shock resistance</td>
<td>EN 14066</td>
</tr>
<tr>
<td>4.2.12</td>
<td>Water vapor permeability</td>
<td>EN 12504 and EN ISO 12572</td>
</tr>
<tr>
<td>4.2.13</td>
<td>Abrasion resistance</td>
<td>EN 14157</td>
</tr>
<tr>
<td>4.2.14</td>
<td>Slip resistance</td>
<td>EN 14251</td>
</tr>
<tr>
<td>4.2.15</td>
<td>Tackiness</td>
<td>Visual</td>
</tr>
</tbody>
</table>

(a) Reference to Clause for applicability:

(b) Test method in accordance with:

---

### Table 3

#### Control frequency for factory production control

<table>
<thead>
<tr>
<th>Reference to Clause for applicability</th>
<th>Characteristics</th>
<th>Control frequency</th>
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<tr>
<td>4.2.4</td>
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<td>4.2.15</td>
<td>Tackiness</td>
<td>Visual</td>
</tr>
</tbody>
</table>

(a) Reference to Clause for applicability:

(b) Control frequency:

---

### Table 4

#### Control frequency for factory production control

<table>
<thead>
<tr>
<th>Reference to Clause for applicability</th>
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<th>Control frequency</th>
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<td>Water vapor permeability</td>
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<td>4.2.14</td>
<td>Slip resistance</td>
<td>EN 14251</td>
</tr>
<tr>
<td>4.2.15</td>
<td>Tackiness</td>
<td>Visual</td>
</tr>
</tbody>
</table>

(a) Reference to Clause for applicability:

(b) Control frequency:

---

### ANNEX A SAMPLING

#### General

This Annex specifies methods for obtaining samples of natural stone from quarries, plants and buildings. Sampling from buildings may be necessary if the delivered natural stone product is already applied in a building.

The aim of sampling is to obtain a bulk sample that is representative of the average properties of the batch and of its variability. The methods described are based on manual procedures. The methods described are limited to building and civil engineering purposes. It is important that samplers are accurately trained in the application of the methods set out in this document. In case of dispute or if tests are to be done by more than one organization, all interested parties shall have the opportunity to observe the sampling and shall agree upon the number of sampling increments to be taken.

---

## Manufacturers’ records shall include at least the following:
- Identification of the product tested;
- Information on sampling: place and date of sampling;
- Identification of the production lot sampled; frequencies of sampling; size and number of samples;
- Test methods applied;
- Results of the tests carried out;
- Calibration records of apparatus.

---

#### A.1 General

This Annex specifies methods for obtaining samples of natural stone from quarries, plants and buildings. Sampling from buildings may be necessary if the delivered natural stone product is already applied in a building.

The aim of sampling is to obtain a bulk sample that is representative of the average properties of the batch and of its variability. The methods described are based on manual procedures. The methods described are limited to building and civil engineering purposes. It is important that samplers are accurately trained in the application of the methods set out in this document. In case of dispute or if tests are to be done by more than one organization, all interested parties shall have the opportunity to observe the sampling and shall agree upon the number of sampling increments to be taken.

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## Manufacturers’ records shall include at least the following:
- Identification of the product tested;
- Information on sampling: place and date of sampling;
- Identification of the production lot sampled; frequencies of sampling; size and number of samples;
- Test methods applied;
- Results of the tests carried out;
- Calibration records of apparatus.
A.2 Principles of sampling
Proper and careful sampling and sample transport is a prerequisite for an analysis that will give reliable results. An adequate number of samples have to be taken to obtain a good estimation of the natural heterogeneity of the batch. The sampler shall be informed of the aim of the sampling.

A.3 Taking bulk samples
The number and sizes of samples depend on the test methods for which they are taken. The number and shapes of specimens required are given in the relevant test methods.

A.4 Preparing a sampling plan
A sampling plan shall be prepared, prior to sampling, taking into account the following:
- type of natural stone (following EN 12440 and EN 12670);
- aim of the sampling, including a list of the properties to be tested;
- identification of sampling points;
- approximate size of samples;
- number of samples;
- sampling apparatus to be used;
- methods of sampling;
- marking, packaging and dispatch of the samples.

A.5 Sampling apparatus
Any suitable cutting equipment for natural stone may be used for sampling. In addition, drills, which are suitable for taking drill cores, may be used.

A.6 Sampling methods
A.6.1 General
The sampling methods will inevitably involve the samplers working at a quarry, plant or building. Regulations for safety and ergonomics shall be followed.

A.6.2 Sampling from quarries
A.6.2.1 General
The sample shall be taken by a qualified specialist, experienced in the examination of rock deposits. The main objective of sampling from such deposits is to establish, where possible, the average, the range of variations and the differences in the structure and properties of the rock, taking account of the fabric and geological structure and the anticipated quarrying conditions.

A.6.2.2 Sampling of solid rock
- a) Identification of anisotropy and orientation of samples
  If the exploratory work reveals a pronounced fabric or geological structure which is not necessarily visible at the sample scale (e.g. stratification, massive bedding, lamination, cleavage or rift), the sample shall be marked accordingly.
  - b) Sampling for petrographic analysis
    For petrographic analysis, hand specimens shall be taken from all distinct types and varieties which characterize the rock in terms of mineral composition, fabric and geological structure. Samples from drilling (cores and pieces) may also be used. In addition to samples of fresh material, samples shall also be taken to illustrate the effects of weathering.
  - c) Sampling for physical testing
    For physical testing, sample blocks and hand specimens shall be used as samples, their number and location depending on the results of the petrographic analysis and the test methods required. The sample blocks shall measure approximately 0.40 m x 0.25 m x 0.25 m, or more where a coarse-grained and/or a large-pored rock is to be sampled.
    It is recommended that they are taken from larger natural stones which have been least affected by blasting. Care has to be taken to ensure that neither the sample blocks nor the hand specimens show any hairline cracks resulting from the removal process.

A.6.3 Sampling from plants
A representative sample of adequate size and characteristic of the natural stone in terms of mineral composition, fabric and geological structure, shall be taken from the material to be tested (e.g. slabs, dimension stones), taking into account the intended use of the material.

A.6.4. Sampling from buildings
Sampling points shall be selected according to the rules for obtaining a representative sample taking into consideration any differences in properties visible to the naked eye. Where necessary, taking a single tile to assess the mechanical properties of tiles in situ will be sufficient.

The location of the sample in the building shall be reported.

A.7 Marking, packaging and dispatch of the samples
The samples or containers shall be clearly and durably marked. Marking shall include:
- a) unique code; or
- b) identification of the laboratory samples, place of sampling, date of sampling and denomination of the material.

The laboratory samples shall be packed and transported in such a way that they are protected from damage.

A.8 Sampling report
The sampler shall prepare a sampling report for each laboratory sample or for each group of laboratory samples from a single source. The sampling report shall refer to this document and state:
- a) sampling report identification (serial number);
- b) sampling point or identification of the batch sampled;
- c) date and place of sampling;
- d) laboratory sample identification mark(s);
- e) reference to the sampling plan prepared according to A.4;
- f) name of the sampler(s).

Depending on the circumstances, other information might be relevant. Table A.1 shows an example of a comprehensive sampling report.

<table>
<thead>
<tr>
<th>A.8.1 Table A.1 Example of a sampling report</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sampling report identification (serial no.)</strong>:</td>
</tr>
<tr>
<td><strong>Laboratory sample identification mark(s):</strong></td>
</tr>
<tr>
<td><strong>Description of the natural stone and sampling place(s):</strong></td>
</tr>
<tr>
<td><strong>Sample</strong>:</td>
</tr>
<tr>
<td><strong>Sample number</strong>:</td>
</tr>
<tr>
<td><strong>Sample size (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample type (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample condition (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample description (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample location (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample purpose (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample method (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample equipment (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample personnel (if applicable)</strong>:</td>
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<tr>
<td><strong>Sample date (if applicable)</strong>:</td>
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<tr>
<td><strong>Sample place (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample remarks (if applicable)</strong>:</td>
</tr>
<tr>
<td><strong>Sample reference (if applicable)</strong>:</td>
</tr>
</tbody>
</table>

ANNEX ZA (informative)
Clauses of this European Standard addressing the provisions of the EU construction products directive
Scope and relevant characteristics
With reference to Clause 1, this Annex ZA applies to natural stone modular tiles for use in construction for finishing of flooring and stairs (internal and external), fixed with adhesives, mortar or other supporting element, or mechanically fixed. This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The Clauses of this European Standard, shown in this Annex, meet the requirements of the Mandate M/119 on flooring given under the EU Construction Products Directive (89/106/EC). Compliance with these Clauses confers a presumption of fitness of the construction products covered by this European Standard for their intended use(s).

WARNING: Other requirements and other EU Directives, not affecting the fitness of intended use(s), may be applicable to the construction products falling within the scope of this European Standard. Note: In addition to any specific Clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g., transposed European legislation and national laws, regulations and administrative provisions).

In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply. An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through http://europa.eu.int/com/enterprise/construction).

Construction products: Natural stone modular tiles.

Intended use(s): Internal and external floorings and stairs.

### Relevant Clauses for natural stone modular tiles for internal floorings and stairs

<table>
<thead>
<tr>
<th>Table ZA.1.1</th>
<th>Relevant Clauses for natural stone modular tiles for internal floorings and stairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Characteristic</td>
<td>Requirement Clauses in the European Standard</td>
</tr>
<tr>
<td>Reaction to fire (intended use subject to reaction)</td>
<td>EN 12057 or EN 12058</td>
</tr>
<tr>
<td>Slip resistance for production circulation area only</td>
<td>EN 1136</td>
</tr>
<tr>
<td>Durability (for static wetness or static wetness)</td>
<td>EN 12004 or EN 12004</td>
</tr>
</tbody>
</table>

#### Table ZA.1.2

<table>
<thead>
<tr>
<th>Table ZA.1.2</th>
<th>Relevant Clauses for natural stone modular tiles for external floorings and stairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Characteristic</td>
<td>Requirement Clauses in the European Standard</td>
</tr>
<tr>
<td>Thermal strength</td>
<td>EN 12004 or EN 12004</td>
</tr>
<tr>
<td>Slip resistance for pedestrian circulation areas only</td>
<td>EN 12004</td>
</tr>
<tr>
<td>Durability</td>
<td>EN 12004</td>
</tr>
</tbody>
</table>

Some requirements, considered in the above-mentioned tables, are not applicable in those Member States (MSs) where there are no regulatory requirements on that characteristic for the intended use of the product. In this case, manufacturers placing their products on the market of these MSs are not obliged to determine or declare the performance of their products with regard to this characteristic and the option “No performance determined” (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

### CE marking and labelling

#### CE marking

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE conformity marking consists exclusively of the letters “CE” in the specified form of the Directive 93/68/EC. The CE marking shall appear on the packaging and/or the accompanying commercial documentation and shall be accompanied by the information shown below: reference to this EN 12057, name or identifying mark of the producer or responsible of placing on the market; last two digits of the year in which the marking was affixed; product classification and end uses; indications to identify the characteristics of the products on the basis of the Tables ZA.1.1 and ZA.1.2.
In addition, the product shall also be accompanied, when and where required and in the appropriate form, by documentation listing legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation. European legislation without national derogations need not be mentioned.

### EC Declaration of conformity

When compliance with this Annex ZA is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which authorizes the affixing of the CE marking. This declaration shall include:

- name and address of the manufacturer, or his authorized representative established in the EEA, and place of production;
- description of the product (type, identification, use ...), and a copy of the information accompanying the CE marking;
- provisions to which the product conforms (i.e. Annex ZA of this EN);
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);
- name and position held by the person empowered to sign the declaration on behalf of the manufacturer or of his authorized representative;
- name and address of the notified laboratory(ies), where relevant.

The above mentioned declaration shall be presented in the official language or languages of the Member State in which the product is to be used.

### Annex ZB (informative)

#### Clauses of this European Standard addressing the provisions of the EU construction products directive

#### ZB.1 Scope and relevant characteristics

With reference to Clause 1, this Annex ZB applies to natural stone modular tiles for use in construction for finishing of walls and ceilings (internal and external), fixed with adhesives or mortar.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The Clauses of this European Standard, shown in this Annex, meet the requirements of the Mandate M/121 Internal and external wall and ceiling finishes given under the EU Construction Products Directive (89/106/EC).

Compliance with these Clauses confers a presumption of fitness of the construction products covered by this European standard for their intended use(s).

**WARNING:** Other requirements and other EU Directives, not affecting the fitness of intended use(s), may be applicable to the construction products falling within the scope of this European Standard.

Some requirements, considered in the above tables, are not applicable in those Member States (MSs) where there are no regulatory requirements (on that characteristic) for the intended use of the product. In this case, manufacturers placing their products on the market of these MSs are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option "No performance determined" (NPD) in the information accompanying the CE marking (see Clause ZB.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

#### ZB.2 Procedures for the attestation of conformity of products

Natural stone modular tiles, for the intended uses listed below, shall follow the systems of systems of attestation of conformity shown in Table ZB.2.
For products falling under attestation system 3, for initial type testing, the tasks of the notified test laboratory are limited to reaction to fire, flexural tensile strength and dangerous substances (where relevant).

Natural stone modular tiles for cladding are considered as reaction to fire Class A1, without testing, according to Decision 96/603/EC, as amended, therefore system 4 applies (provided that flexural tensile strength is not relevant and that there are no dangerous substances requirements). Only for reaction to fire for natural stone containing asphalt or processed with addition of organic patching, fillers or other similar products will system 3 be adopted, the task for the notified body being limited to test reaction to fire.

The evaluation of conformity of the modular tiles for cladding covered by this European Standard in respect of the relevant characteristics listed in Tables ZB.1.1 and ZB.1.2 shall be carried out in accordance with Clause 6.

**ZB.3 CE marking and labelling**

**ZB.3.1 CE marking**

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE conformity marking consists exclusively of the letters “CE” in the specified form of the Directive 93/68/EC. The CE marking shall appear on the packaging and/or the accompanying commercial documentation and shall be accompanied by the information shown below:

- reference to this EN 12057;
- the name or identifying mark of the producer or the importer, if the latter is responsible for ensuring the conformity of the product;
- the last two digits of the year in which the marking was affixed; the product classification and end uses;
- the indications to identify the characteristics of the products on the basis of the Tables ZA.1.1 and/or ZA.1.2 as shown in ZA.3.2 (for frost resistance, see 4.2.10).

**ZB.3.2 Reference model for marking and labelling**

Example according to Table ZB.1.1 - Modular tiles for wall finishes, internal use

**ZB.4 EC Declaration of conformity**

When compliance with this Annex ZB is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which authorises the affixing of the CE marking. This declaration shall include:

- name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;
- description of the product (type, identification, use ...), and a copy of the information accompanying the CE marking;
- provisions to which the product conforms (i.e. annex ZB of this EN);
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions, etc.);
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative;
- name and address of the notified laboratory(ies), where relevant.

The above mentioned declaration shall be presented in the official language or languages of the Member State in which the product is to be used.

In addition, the product shall also be accompanied, when and where required and in the appropriate form, by documentation listing legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

Note: European legislation without national derogations need not be mentioned.