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NATURAL STONE TEST METHODS - DETERMINATION OF FLEXURAL STRENGTH UNDER CONCENTRATED LOAD

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Natural stone test methods - Determination of flexural strength under concentrated load

Méthodes d'essai pour pierres naturelles - Détermination de la résistance à la flexion sous charge centrée

Prüfverfahren für Naturstein - Bestimmung der Biegefestigkeit unter Mittellinienlast

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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 Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 12372:2006) 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of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

This document supersedes EN 12372:1999.

The change of the specimens’ dimensions requested a revision of this European Standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies a test method for determination of flexural strength under a concentrated load for natural stone. Both an identification and a technological product testing procedure are included.

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 12390 (all parts), *Testing hardened concrete*

3 Principle

The principle of this method is to place a specimen on two rollers and to progressively load the specimen in the middle. The breaking load is measured and the flexural strength calculated.

4 Symbols

For the purposes of this document, the following symbols apply.

R_{tf} flexural strength, in Megapascals

F breaking load, in newtons

a load rate, in Megapascals/second

V loading rate, in newtons/second

l distance between the supporting rollers, in millimetres

b width of the specimen adjacent to the plane of fracture, in millimetres

h thickness of the specimen adjacent to the plane of fracture, in millimetres

L total length of the specimen, in millimetres

5 Apparatus

5.1 A balance capable of weighing the specimen with an accuracy of 0,01 % of the mass of the specimen.

5.2 A ventilated oven capable of maintaining a temperature of (70 ± 5) °C.

5.3 A linear measuring device with an accuracy of 0,05 mm.

5.4 A testing machine of appropriate force, in accordance with the EN 12390 and calibrated according to this European Standard.