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Irish Standard  
I.S. EN 14066:2013

# Natural stone test methods - Determination of resistance to ageing by thermal shock

## I.S. EN 14066:2013

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English Version

## Natural stone test methods - Determination of resistance to ageing by thermal shock

Méthodes d'essai pour les pierres naturelles -  
Détermination de la résistance au vieillissement accéléré  
par choc thermique

Prüfverfahren für Naturstein - Bestimmung des  
Widerstandes gegen Alterung durch Wärmeschock

This European Standard was approved by CEN on 19 January 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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## Foreword

This document (EN 14066:2013) 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of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14066:2003.

The following modifications have been made:

- The new standard requires the evaluation of the produced decay through both non-destructive and destructive methods.
- Specimens' dimensions have been modified.
- The normative references have been updated.

Test methods for natural stone consist of the following European Standards:

- EN 1925, *Natural stone test methods – Determination of water absorption coefficient by capillarity*
- EN 1926, *Natural stone test methods – Determination of uniaxial 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 13373, *Natural stone test methods – Determination of geometric characteristics on units*
- EN 13755, *Natural stone test methods – Determination of water absorption at atmospheric pressure*
- EN 14146, *Natural stone test methods – Determination of the dynamic modulus of elasticity (by measuring the fundamental resonance frequency)*
- EN 14147, *Natural stone test methods – Determination of resistance to ageing by salt mist*

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- EN 14157, *Natural stone test methods – Determination of the abrasion resistance*
- EN 14158, *Natural stone test methods – Determination of rupture energy*
- EN 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*
- EN 14579, *Natural stone test methods – Determination of sound speed propagation*
- EN 14580, *Natural stone test methods – Determination of static elastic modulus*
- EN 14581, *Natural stone test methods – Determination of linear thermal expansion coefficient*

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

## 1 Scope

This European Standard specifies a method to assess possible changes of natural stones under the effect of sudden changes in temperature (thermal shock).

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

EN 12670:2001, *Natural stone – Terminology*

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

EN 14579, *Natural stone test methods – Determination of sound speed propagation*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12670:2001 apply.

## 4 Symbols and abbreviations

$F_r$	Flexural strength tested on the reference specimens, in MPa
$F_f$	Flexural strength tested on the specimens subjected to thermal cycles, in MPa
$\Delta F$	Change in flexural strength between reference and exposed specimens, in %
$E_0$	Dynamic elastic modulus of the specimens before the thermal cycles, in MPa
$E_f$	Dynamic elastic modulus of the specimens after the thermal cycles, in MPa
$\Delta E$	Change in dynamic elastic modulus of the specimen, in %
$\rho_0$	Open porosity before the test, in %
$\rho_f$	Open porosity after the test, in %
$\Delta \rho$	Change in open porosity of the specimen, in %
$v_0$	Ultrasound pulse velocity (UPV) before the test, in km/s
$v_f$	Ultrasound pulse velocity (UPV) after the test, in km/s
$\Delta v$	Change in Ultrasound pulse velocity of the specimen, in %

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