



# SLOVENSKI STANDARD

## SIST EN 14618:2005

01-julij-2005

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### Aglomeriran kamen - Terminologija in razvrstitev

Agglomerated stone - Terminology and classification

Künstlich hergestellter Stein - Terminologie und Klassifizierung

Pierre agglomérée - Terminologie et classification

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## Agglomerated stone - Terminology and classification

Pierre agglomérée - Terminologie et classification

Künstlich hergestellter Stein - Terminologie und  
Klassifizierung

This European Standard was approved by CEN on 3 February 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This document (EN 14618:2005) 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of an identical text or by endorsement, at the latest by September 2005, and conflicting national standards shall be withdrawn at the latest by September 2005.

This document is one of a series of standards for agglomerated stone products including terminology, test methods and product standards.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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**EN 14618:2005 (E)****1 Scope**

This document specifies the terminology and classification of the agglomerated stone products. Agglomerated stone products are industrial products mainly made of hydraulic cement, resin or mixture of both, stones and other additions. They are industrially manufactured in geometrical shapes at a fixed plant by means of moulding techniques. They are put on the market in the form of dimensional shapes and cut to size material.

NOTE All other products with resin concrete techniques (using common aggregates and not finalised to flooring, wall finishes and assimilated uses), like drainage channels, structural elements, etc., are excluded from the field of this standard.

**2 Normative reference**

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 197-1:2000, *Cement - Part 1: Composition, specifications and conformity criteria for common cements*

EN 206-1:2000, *Concrete - Part 1: Specification, performance, production and conformity*

EN 12670:2001, *Natural stone – Terminology*

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**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 12670:2001, EN 206-1:2000 and EN 197-1:2000 and the following apply.

**3.1****agglomerated stones**

industrial products manufactured from a mixture of aggregates (mainly coming from natural stones), additions and binder. The binder could be resin, hydraulic cement or mixture of both (in various percentages). The products are realised in form of blocks or slabs, which can be transformed in finished slabs, tiles, vanity tops or similar elements. Under the agglomerated stones term fall architectural elements, complementary to products for flooring and wall finishes, obtained by moulding technique which can or cannot be subsequently cut to size. Products realised with the technology of the agglomerated stones could be impregnated by suitable chemicals in order to impermeabilize the open pores.

**3.2****classification of agglomerated stones**

agglomerated stone products consist of natural stone elements (which will be termed aggregates) bound via resin and filler or cement and water (which will be termed paste components). The manufacturing process is irreversible and the stone elements can be of various size and nature, sometime mixed with other compatible materials.

The agglomerated stone products are classified according to the manufacturing technology, the type of the binder and the nature of the stone elements.

NOTE If the volume of the binding material is greater than the volume of the stone elements, the resulting material cannot be classified as agglomerated stone.

**3.2.1****classification according to the type of the binder**

agglomerated stone products can be bound by unsaturated polyester resin or other cross-linking resin

Agglomerated stone products can be bound by cement (white or grey).

Agglomerated stone products can be bound by mixture of resin and cement.

**3.2.2****classification according to the mineral nature of the stone elements**

agglomerated stone products can be constituted of stone elements of carbonate nature

Agglomerated stone products can be constituted of stone elements of silica nature.

Agglomerated stone products can be constituted of stone elements both of carbonate and silica nature.

**4 Terminology of agglomerated stones****4.1 Terms of fragmented natural stone elements****4.1.1****aggregate**

mixture of natural stone fragments derived from incoherent rocks (sand) or from fragmented coherent carbonate - type rocks (marble and limestone) or silica - type rocks (granite, quartzite, etc.); the maximum linear size of these fragments may vary up to 150 mm, or more

NOTE 1 Calcium Carbonate: a solid, formula  $\text{CaCO}_3$ , occurring in nature as calcite and its polymorphous minerals.

NOTE 2 Carbonate: a chemical compound containing  $\text{CO}_3^{2-}$  group.

**4.1.2****continuous grain size distribution**

mixture of stone fragments with a continuous grain size distribution scale up to a maximum value, depending on the nature of the material and the comminution method

**4.1.3****depowdered continuous grain size distribution**

continuous grain size distribution without the fraction smaller than 0,2 mm

**4.1.4****granite (commercial definition)**

natural stone, compact and polishable, mainly consisting of minerals with a hardness between 5 and 7 on the Mohs scale

**4.1.5****filler**

finely ground powder usually below 45  $\mu\text{m}$  used as a component in the formulation, to be coupled with the binding material to form the binding paste

**4.1.6****grain size**

predominant average diameter of particles in a mixture of natural stone fragments

**4.1.7****grit**

sedimentary rock with coarse and sharp edged grains

**EN 14618:2005 (E)****4.1.8****intermediate aggregate**

mixture of natural stone fragments which forms a restricted intermediate grain size fraction between the maximum selected size and generally 45  $\mu\text{m}$

**4.1.9****limestone**

sedimentary rock consisting chiefly of calcite

**4.1.10****marble (commercial definition)**

natural stone compact and polishable, mainly consisting of minerals with hardness between 3 and 4 of the Mohs scale

**4.1.11****quartz**

silicate mineral of the formula  $\text{SiO}_2$

**4.1.12****quartzite**

metamorphic rock consisting essentially of quartz

**4.1.13****sand**

mineral sediment of size range 0,06 to 4 mm, commercially intended constituted by  $\text{SiO}_2$

**4.1.14****sandstone**

sedimentary rock composed of grains from quartz, feldspar, mica, and little fragments from older rocks

**4.1.15****selected aggregate**

mixture of natural stone fragments selected by classification with a grain size distribution subdivided into preselected size ranges

**4.1.16****sieve analysis**

measurement of the grain size distribution by sieve selection and classification.

**4.1.17****silica**

silicon dioxide compounds of formula  $\text{SiO}_2$

**4.2 Terms of paste components****4.2.1****accelerator**

chemical additive used to make faster the hardening or, in general, the setting of the binder

**4.2.2****additive**

chemical product added to a mixture in small amount to obtain particular aesthetical or technical characteristics

**4.2.3****binder**

organic or inorganic chemical product used to bind via an irreversible process the aggregates and the filler in an agglomerated stone

**4.2.4****gel**

semi-solid or jellylike state of a thermoset resin due to the partial cross-linking of the polymer chains



**4.2.5****impregnating polymer**

organic material by which the stone agglomerate may be impregnated to improve the physical - mechanical product properties

**4.2.6****inhibitor**

chemical additive used to make slower the radical decomposition in a thermoset resin, so increasing its pot life (see 5.18)

**4.2.7****initiator**

chemical additive able to produce free radicals by which to activate the curing of a thermoset resin

**4.2.8****inorganic binding paste**

mixture of inorganic binding material (generally Portland cement, white or grey), the filler and the mixing water

**4.2.9****matrix**

mixture of organic or inorganic binding paste, sometimes including the intermediate aggregates

**4.2.10****mixture**

mixture of the binding paste, and of the aggregates, including the additions of chemicals, and sometime pigments and compatible materials

**4.2.11****mortar**

mixture of water, cement and sand (sometimes with the addition of chemical additives)

**4.2.12****organic binding paste**

mixture of organic binding material (generally unsaturated polyester resin) and the filler

**4.2.13****pigment**

chemical product of organic or inorganic nature able to give a colour to the binding paste

**4.2.14****cement**

hydraulic binder used to form the inorganic binding paste, with water (see EN 197-1)

**4.2.15****putty**

stiff paste sometimes used to fill cracks or holes (when present) in agglomerated stones

**4.2.16****resin**

liquid cross-linkable chemical product, generally constituted by a solution of a polymer in a monomer, used to form the organic binding paste

## 5 Terminology of the manufacturing process

**5.1****block squaring**

operation by which raw blocks are brought to regular shape and nominal dimensions

**5.2****bush hammer finish**

finish obtained by using a bush hammer or a bush hammer machine