

Technical Construction File

File No.: AQSTCF0715-CPR

Type of Equipment:	Artificial quartz slab
Model No.:	MC1101-1499,MM2101-2499,MA3101-3799,MR4101-MR4399
Issued Date:	2024-07-15
Brand Name/Trade mark:	---
Directive(S)	Construction products Regulation (EU) No 305/2011
standard(s):	EN 15286:2013, EN 15285:2008/AC:2008

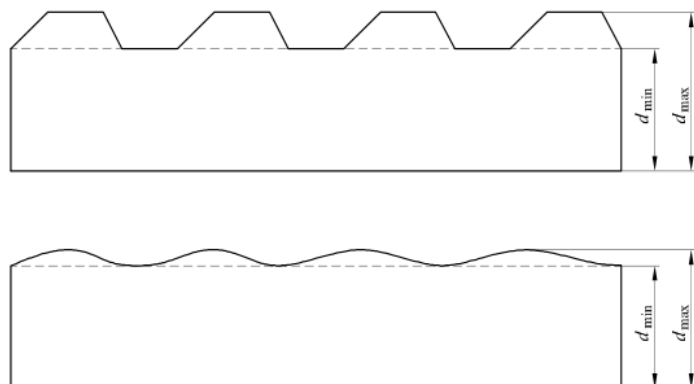


Presented by

Modern stone Co .,ltd
No.15-16, Building 3-2, Zone A, FICUS, Jihua West Road, Chancheng,
Foshan, The Peoples Republic of China.

Modern stone Co .,ltd
No.1, Huangmentang, Lashi Village, Huilong Town, Xinfeng County,
Shaoguan City, China

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
1	Scope		P
	<p>This European Standard specifies requirements and appropriate test methods for cladding slabs and tiles of agglomerated stone of length or width up to 3 500 mm which are made for use as internal and external wall finishes and are either fixed mechanically or glued by adhesive or mortar. It also provides provisions for the evaluation of conformity and marking of these products.</p> <p>This standard does not cover cladding slabs and tiles of agglomerated stone used for internal and external ceiling finishes. In addition, it does not cover slabs and tiles of agglomerated stone intended to be used in suspended ceilings.</p> <p>Products covered by the standards EN 1 4992, EN 1 31 98, EN 1 3748-1 and EN 1 3748-2 are also excluded from the scope of the present standard</p>		P
2	Normative references		P
	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		P
3	Terms and definitions		P
	For the purposes of this document, the terms and definitions given in EN 1 461 8:2009 and the following apply.		P
4	Requirements		P
	<p>4.1 Geometric characteristics</p> <p>4.1.1 Dimensions</p> <p>Measurements of dimensions (see Figure 2) of cladding tiles shall be carried out in accordance with EN 1 461 7-1 6 and those of cladding slabs with Annex A</p>		P
	<p>4.1.2 Tolerances in dimensions</p> <p>Deviations in dimensions of cladding slabs and tiles shall not exceed values given in Table 2. The dimensions (i.e. length, width and thickness) of cladding tiles shall be determined according to EN 1 461 7-1 6 and those of cladding slabs with Annex A.</p>		P

EN 15286:2013																												
Clause	Requirement-Test		Result-Remark	Verdict																								
	<div> <div>Table 2 — Tolerances in dimensions of cladding slabs and tiles</div> <table> <tr> <th rowspan="2"></th> <th colspan="4">Tolerances in dimensions of cladding slabs and tiles</th> </tr> <tr> <th colspan="3">Class A</th> <th>Class B</th> </tr> <tr> <th>Length (l) Width (b)</th> <th>< 600 mm</th> <th>≥ 600 mm and ≤ 1 000 mm</th> <th>> 1 000 mm and ≤ 3 500 mm</th> <th>≤ 3 500 mm</th> </tr> <tr> <td>Tolerances in length and width</td> <td>± 0,5 mm</td> <td>± 0,7 mm</td> <td>± 1,0 mm</td> <td>± 0,2 %, but max. ± 2,0 mm</td> </tr> <tr> <td>Tolerances in thickness^a (d)</td> <td colspan="3">± 0,7 mm</td> <td>(-1/+3) mm</td> </tr> </table> <div> ^a Tolerances for thickness shall not apply for cladding slab and tile with textured upper surface where $d_{\max} - d_{\min} > 1$ mm (see Figure 2). </div> <div>  <div> <p>Key</p> <p>d_{\min} minimum thickness</p> <p>d_{\max} maximum thickness</p> </div> </div> <div>Figure 2 – Cross section examples of the textured upper surface cladding slabs and tiles</div> </div>				Tolerances in dimensions of cladding slabs and tiles				Class A			Class B	Length (l) Width (b)	< 600 mm	≥ 600 mm and ≤ 1 000 mm	> 1 000 mm and ≤ 3 500 mm	≤ 3 500 mm	Tolerances in length and width	± 0,5 mm	± 0,7 mm	± 1,0 mm	± 0,2 %, but max. ± 2,0 mm	Tolerances in thickness ^a (d)	± 0,7 mm			(-1/+3) mm	P
	Tolerances in dimensions of cladding slabs and tiles																											
	Class A			Class B																								
Length (l) Width (b)	< 600 mm	≥ 600 mm and ≤ 1 000 mm	> 1 000 mm and ≤ 3 500 mm	≤ 3 500 mm																								
Tolerances in length and width	± 0,5 mm	± 0,7 mm	± 1,0 mm	± 0,2 %, but max. ± 2,0 mm																								
Tolerances in thickness ^a (d)	± 0,7 mm			(-1/+3) mm																								
	<p>To calculate the weight of the cladding slab or tile with the textured upper surface the maximum thickness d_{\max} shall be considered.</p> <p>To determine the breaking load of the cladding slab or tile with the textured upper surface the minimum thickness d_{\min} shall be considered.</p>			P																								
	<p>4.1.3 Tolerances in flatness</p> <p>Deviations in flatness of the surface of cladding tiles shall be determined according to EN 1 461 7-1 6 and those of cladding slabs with Annex A and shall not exceed the tolerances, either 0,3 % of the length of diagonal of a cladding slab/tile or 4 mm, whichever is lower</p>			P																								
	<p>4.1.4 Straight angles</p> <p>Straight angle of a cladding slab or a tile shall result by comparison of its two diagonal lengths measured as described in Annex B.</p> <p>The difference between the two diagonals lengths shall not deviate by more than that given in Table 3</p>			P																								

EN 15286:2013											
Clause	Requirement-Test	Result-Remark	Verdict								
	<p>Table 3 — Requirements for tolerances on diagonal lengths of cladding slabs and tiles</p> <table> <tr> <th>Length (<i>l</i>) or width (<i>b</i>) (mm)</th><th>< 600</th><th>≥ 600 and ≤ 1 000</th><th>> 1 000 and ≤ 3 000</th></tr> <tr> <td>Tolerance for diagonal lengths (mm)</td><td>± 0,9</td><td>± 1,2</td><td>± 3,0</td></tr> </table>	Length (<i>l</i>) or width (<i>b</i>) (mm)	< 600	≥ 600 and ≤ 1 000	> 1 000 and ≤ 3 000	Tolerance for diagonal lengths (mm)	± 0,9	± 1,2	± 3,0		P
Length (<i>l</i>) or width (<i>b</i>) (mm)	< 600	≥ 600 and ≤ 1 000	> 1 000 and ≤ 3 000								
Tolerance for diagonal lengths (mm)	± 0,9	± 1,2	± 3,0								
	<p>4.1.5 Surface finish Surface finish shall extend uniformly to the edges of a cladding slab or a tile. Surface after its finishing shall have a regular appearance as a function of the finishing process and shall be worked to meet the declared surface finish. This should be established on the samples of a cladding slab or a tile submitted beforehand by the manufacturer to the purchaser</p>		P								
	<p>4.2 Physical and mechanical characteristics 4.2.1 General The characteristics of the cladding slabs or tiles in 4.2.2 to 4.2.1 2 shall be declared when these products are subject to regulatory requirements and may be declared otherwise with reference to intended end use conditions. Contractual specifications may be used to establish reference values, e.g. stated in design or manufacturer's data sheet, due account being taken of any regulatory requirements applicable</p>		P								
	<p>4.2.2 Visual appearance This characteristic of a cladding slab or a tile shall be declared. The colour, surface finish and brightness of the agglomerated stone, which a cladding slab or a tile is made of, shall be identified visually according to Annex C, e.g. by a range of samples selected in agreement between manufacturer and purchaser. Any visual variations, e.g. inclusions and veins, are permissible provided that they are characteristic of the relevant type of agglomerated stone and provided that they do not adversely affect the performances of the cladding slabs or tiles. Reference samples shall be as described in Annex C.</p>		P								
	<p>4.2.3 Reaction to fire Reaction to fire performance shall be declared when cladding slabs or tiles are intended to be used in areas subjected to reaction to fire regulation and may be declared otherwise. A cladding slab or a tile may be classified without the need for testing (CWT) as the reaction to fire Class A1 1), when it is made of an agglomerated stone containing: a) an organic material as a binder, if any, of not</p>		P								

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>more than 0,1 % by mass or volume, whichever is the most onerous; and</p> <p>b) a homogenously distributed organic material as an aggregate, if any, of not more than 1 % by mass or volume, whichever is the most onerous.</p> <p>A cladding slab or a tile made of an agglomerated stone, which does not comply with the provisions a) and b) given above and having an intended use subject to the reaction to fire regulatory requirements shall be classified in accordance with EN 1 3501 -1 after being tested in accordance with the test standards given therein, including mounting and fixings in accordance with EN 1 3823.</p>		
	<p>4.2.4 Apparent density and water absorption</p> <p>The values for apparent density and water absorption shall be declared when a cladding slab or a tile is fixed (glued) by an adhesive or mortar and is intended to be used in a location subject to water contact. They shall be determined according to EN 1 461 7-1 and the results expressed accordingly.</p>		P
	<p>4.2.5 Flexural tensile strength</p> <p>The value for flexural tensile (bending) strength of a cladding slab or a tile shall be declared when required.</p> <p>The flexural tensile strength shall be determined using the test method in EN 1 461 7-2 and the results expressed accordingly.</p> <p>In case of the textured upper face cladding slabs and tiles, the textured surface shall be prepared by grinding until fully flat or use flat samples of the same material with the minimum thickness d min (see Figure 2).</p>		P
	<p>4.2.6 Thermal conductivity</p> <p>Where a cladding slab or a tile is fixed (glued) by adhesive or mortar and subject to regulatory requirements the value for thermal conductivity shall be declared.</p> <p>Thermal conductivity shall be based on the apparent density value, determined using the test method indicated in 4.2.4. This value shall be used to calculate the thermal conductivity according to EN ISO 1 0456.</p> <p>Thermal conductivity may also be obtained by testing in accordance with EN ISO 1 3787 and the results expressed in W/(m·K) rounded to the first decimal place.</p>		P
	<p>4.2.7 Thermal shock resistance</p> <p>Where subject to regulatory requirements or where a cladding slab or a tile is intended to be</p>		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	used subject to critical thermal cycles, the value for thermal shock resistance shall be declared. The thermal shock resistance shall be determined using the test method in EN 1461 7-6 and the results expressed accordingly.		
	4.2.8 Linear thermal expansion coefficient Where subject to contractual request or where a cladding slab or a tile is intended to be used subject to relevant dimensional variations due to thermal actions, the value for linear thermal expansion coefficient shall be declared. The linear thermal expansion coefficient shall be determined using the test method in EN 1 461 7-1 1 and the results expressed accordingly.		P
	4.2.9 Dimensional stability Where subject to regulatory requirements or where a cladding slab or a tile is intended to be installed by an adhesive or mortar, on which it is sensitive to, the class for dimensional stability shall be declared. The dimensional stability shall be determined using the test method in EN 1 461 7-1 2 and the results expressed accordingly		P
	4.2.10 Bond strength/adhesion When the intended use of a cladding slab or tile includes their fixation glued by adhesive or mortar the bond/strength adhesion shall be determined according to the test method of at least one of the following standards: a) for cementitious adhesives: according to EN 1 348; b) for dispersion adhesives: according to EN 1 324; c) for reaction resin adhesives: according to EN 1 2003; d) for mortar: according to EN 1 01 5-1 2. The manufacturer shall declare the test result for the specific type of adhesive(s) and/or mortar tested		P
	4.2.11 Resistance to fixings When the intended use of a cladding slab or tile includes their mechanical fixation, the resistance to fixings (Dowel hole) shall be determined using the test method in EN 1 461 7-8 and the results expressed accordingly. The performance of the chosen fixation system with regard to the resistance to fixings should be designed taking into account the declared results of the mentioned test method.		P
	4.2.12 Release of dangerous substances National regulations on dangerous substances		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	may require, verification and declaration on release, and sometimes content, of dangerous substances, when construction products covered by this standard are placed on those markets. In the absence of European harmonised test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use		
	4.2.13 Durability of flexural strength against freeze and thaw cycles Where subject to regulatory requirements or where a cladding slab or a tile is intended to be used subject to freeze/thaw cycles, the value for the freeze and thaw resistance shall be declared. The freeze and thaw resistance shall be determined using the test method in EN 1 461 7-5 and the results expressed accordingly.		P
5	Test methods		P
	Test methods are described in the specific parts of EN 1 461 7 standard and in the specific annexes of this document.		P
6	Evaluation of conformity		P
	6.1 General rules The compliance of agglomerated stone cladding slabs and tiles with the requirements of this standard and with the declared values (including classes) shall be demonstrated by: Initial Type Testing (ITT); factory production control by the manufacturer, including product assessment. The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the product. For the purposes of testing, the products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for the same characteristics for all products within that same family. A product may be in different product families for different characteristics.		P
	6.2 Initial Type Testing – Type Testing 6.2.1 General Initial Type Testing and Type Testing shall be performed to demonstrate compliance with this European Standard. All essential characteristics, in bold letters in Table 4, for which the manufacturer declares performances, are subject to Initial Type Testing. In addition, the need to perform Type Tests applies to all other characteristics included in a standard when the manufacturer claims compliance, unless the standard gives provisions (e.g. use of previously existing data, CWFT and		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>conventionally accepted performance) for declaring performances without performing tests. Tests previously performed in accordance with the provisions of this standard may be taken into account, provided that they were made to the same or a more rigorous test method, under the same system of attestation of conformity, on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question. For the purposes of testing, the manufacturer's products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristics for all products within that same family (a product may be in different families for different characteristics). Products may be in different families for different characteristics.</p> <p>In addition, Type Tests or Initial Type Testing shall be performed for all characteristics included in the standard for which the manufacturer declares performances:</p> <ul style="list-style-type: none"> at the beginning of the production of a new or modified agglomerated stone cladding slab or tile (unless a member of the same family); or at the beginning of a new or modified method of production (where this may affect the stated properties); or they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the agglomerated stone cladding slab or tile design, in the raw material or in the supplier of the components, or in the production process (subject to the definition of a family), which would affect significantly one or more of the characteristics. <p>Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of compliance with other product standards, these characteristics need not be re- assessed. The specifications of these components shall be documented, as shall be included in the inspection scheme for ensuring their compliance.</p> <p>Products marked in accordance with appropriate harmonised European specifications may be presumed to have the performances stated with the marking, although this does not replace the responsibility on the agglomerated stone cladding slab or tile designer to ensure that the agglomerated stone cladding slab or tile as a whole is correctly designed and its component products have the necessary performance values to meet the design</p>		

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>6.2.2 Test samples, testing and compliance criteria</p> <p>Initial Type Testing of essential characteristics of an agglomerated stone cladding slab or tile, as given in bold letters in Table 4, shall be carried out:</p> <p>to demonstrate compliance with this European Standard or at the beginning of production of a new agglomerated stone cladding slab or tile; or when significant variations occur in the production process, determined visually or by significant changes in FPC results.</p> <p>Tests previously performed in accordance with the provisions of this European Standard (i.e. same material/product, characteristic measured with same test method, same sampling procedure and system of attestation of conformity) may be taken into account for the purpose of ITT.</p> <p>The evaluation of the declared performances (e.g. values, classes) may be supported by a "test report" supplied with the cladding slabs or tiles, provided that the tests have been performed according to the requirements and test methods of this standard.</p> <p>The results of the selected tests shall be expressed as referred to in 4.1 and 4.2.</p> <p>All results of the Initial Type Testing shall be recorded and held by the manufacturer for at least 10 years after the date of last production of the cladding slabs or tiles to which they relate</p> <p>Whenever a change occurs in cladding slabs or tiles, the raw material or the production process (subject to definition of a product), which would change significantly the declared performances of one or more of the characteristics, the ITT shall be repeated for the appropriate characteristics.</p>		P

EN 15286:2013																																																																									
Clause	Requirement-Test	Result-Remark	Verdict																																																																						
	<p>Table 4 — Number of samples to be tested and compliance criteria</p> <table> <tr> <th>Characteristic</th><th>Requirement^{a)}</th><th>Assessment method and number of samples</th><th>Compliance criteria</th></tr> <tr> <td>Dimensions (i.e. length, width and thickness)</td><td>4.1.1</td><td rowspan="3">EN 14617-16^{b)} or Annex A^{c)}</td><td>4.1.1</td></tr> <tr> <td>Tolerances in dimensions</td><td>4.1.2</td><td>4.1.2</td></tr> <tr> <td>Tolerances in flatness</td><td>4.1.3</td><td>4.1.3</td></tr> <tr> <td>Straight angles</td><td>4.1.4</td><td>Annex B</td><td>4.1.4</td></tr> <tr> <td>Surface finish</td><td>4.1.5</td><td>Visual (see 4.1.5)</td><td>4.1.5</td></tr> <tr> <td>Visual appearance</td><td>4.2.2</td><td>Annex C</td><td>4.2.2</td></tr> <tr> <td>Reaction to fire, for an agglomerated stone containing a percentage^{d)} of an organic material, if any, in its: – binder ≤ 0,1 % and aggregate ≤ 1 %, (CWT), or – otherwise based on test results</td><td>4.2.3</td><td>– See 4.2.3^{e)}, or – See EN 13501-1</td><td>4.2.3</td></tr> <tr> <td>Apparent density and water absorption^{f)}</td><td>4.2.4</td><td>EN 14617-1</td><td>4.2.4</td></tr> <tr> <td>Flexural strength</td><td>4.2.5</td><td>EN 14617-2</td><td>4.2.5</td></tr> <tr> <td>Thermal conductivity^{f)}</td><td>4.2.6</td><td>EN 14617-1^{g)}</td><td>4.2.6</td></tr> <tr> <td>Thermal shock resistance</td><td>4.2.7</td><td>EN 14617-6</td><td>4.2.7</td></tr> <tr> <td>Linear thermal expansion coefficient</td><td>4.2.8</td><td>EN 14617-11</td><td>4.2.8</td></tr> <tr> <td>Dimensional stability</td><td>4.2.9</td><td>EN 14617-12</td><td>4.2.9</td></tr> <tr> <td>Bond strength/adhesion^{h)} for: – cementitious adhesives – dispersion adhesives – reaction resin adhesives – mortar</td><td>4.2.10</td><td>EN 1348 EN 1324 EN 12003 EN 1015-12</td><td>4.2.10</td></tr> <tr> <td>Resistance to fixings^{h)}</td><td>4.2.11</td><td>EN 14617-8</td><td>4.2.11</td></tr> <tr> <td>Release of dangerous substances</td><td>4.2.12</td><td>As relevant in accordance with 4.2.12</td><td>As relevant in accordance with 4.2.12</td></tr> <tr> <td>Durability of flexural strength against freeze and thaw cycles</td><td>4.2.13</td><td>EN 14617-5</td><td>4.2.13</td></tr> </table> <p>^{a)} Reference shall be made to Clause 4 in order to decide which characteristics need to be declared. ^{b)} For tiles only. ^{c)} For cladding slabs only. ^{d)} By mass or volume, whichever is the most onerous. ^{e)} Appropriate assessment shall be made to ensure meeting the requirements for classification without testing (CWT). ^{f)} For cladding slabs or tiles intended to be glued with adhesive or mortar. ^{g)} To give a reference allowing data to be taken from EN ISO 10456. Alternatively, cladding slabs or tiles may be tested according to EN ISO 13787. ^{h)} For cladding slabs or tiles fixed mechanically only.</p>		Characteristic	Requirement ^{a)}	Assessment method and number of samples	Compliance criteria	Dimensions (i.e. length, width and thickness)	4.1.1	EN 14617-16 ^{b)} or Annex A ^{c)}	4.1.1	Tolerances in dimensions	4.1.2	4.1.2	Tolerances in flatness	4.1.3	4.1.3	Straight angles	4.1.4	Annex B	4.1.4	Surface finish	4.1.5	Visual (see 4.1.5)	4.1.5	Visual appearance	4.2.2	Annex C	4.2.2	Reaction to fire, for an agglomerated stone containing a percentage^{d)} of an organic material, if any, in its: – binder ≤ 0,1 % and aggregate ≤ 1 %, (CWT), or – otherwise based on test results	4.2.3	– See 4.2.3 ^{e)} , or – See EN 13501-1	4.2.3	Apparent density and water absorption ^{f)}	4.2.4	EN 14617-1	4.2.4	Flexural strength	4.2.5	EN 14617-2	4.2.5	Thermal conductivity^{f)}	4.2.6	EN 14617-1 ^{g)}	4.2.6	Thermal shock resistance	4.2.7	EN 14617-6	4.2.7	Linear thermal expansion coefficient	4.2.8	EN 14617-11	4.2.8	Dimensional stability	4.2.9	EN 14617-12	4.2.9	Bond strength/adhesion^{h)} for: – cementitious adhesives – dispersion adhesives – reaction resin adhesives – mortar	4.2.10	EN 1348 EN 1324 EN 12003 EN 1015-12	4.2.10	Resistance to fixings^{h)}	4.2.11	EN 14617-8	4.2.11	Release of dangerous substances	4.2.12	As relevant in accordance with 4.2.12	As relevant in accordance with 4.2.12	Durability of flexural strength against freeze and thaw cycles	4.2.13	EN 14617-5	4.2.13	P
Characteristic	Requirement ^{a)}	Assessment method and number of samples	Compliance criteria																																																																						
Dimensions (i.e. length, width and thickness)	4.1.1	EN 14617-16 ^{b)} or Annex A ^{c)}	4.1.1																																																																						
Tolerances in dimensions	4.1.2		4.1.2																																																																						
Tolerances in flatness	4.1.3		4.1.3																																																																						
Straight angles	4.1.4	Annex B	4.1.4																																																																						
Surface finish	4.1.5	Visual (see 4.1.5)	4.1.5																																																																						
Visual appearance	4.2.2	Annex C	4.2.2																																																																						
Reaction to fire, for an agglomerated stone containing a percentage^{d)} of an organic material, if any, in its: – binder ≤ 0,1 % and aggregate ≤ 1 %, (CWT), or – otherwise based on test results	4.2.3	– See 4.2.3 ^{e)} , or – See EN 13501-1	4.2.3																																																																						
Apparent density and water absorption ^{f)}	4.2.4	EN 14617-1	4.2.4																																																																						
Flexural strength	4.2.5	EN 14617-2	4.2.5																																																																						
Thermal conductivity^{f)}	4.2.6	EN 14617-1 ^{g)}	4.2.6																																																																						
Thermal shock resistance	4.2.7	EN 14617-6	4.2.7																																																																						
Linear thermal expansion coefficient	4.2.8	EN 14617-11	4.2.8																																																																						
Dimensional stability	4.2.9	EN 14617-12	4.2.9																																																																						
Bond strength/adhesion^{h)} for: – cementitious adhesives – dispersion adhesives – reaction resin adhesives – mortar	4.2.10	EN 1348 EN 1324 EN 12003 EN 1015-12	4.2.10																																																																						
Resistance to fixings^{h)}	4.2.11	EN 14617-8	4.2.11																																																																						
Release of dangerous substances	4.2.12	As relevant in accordance with 4.2.12	As relevant in accordance with 4.2.12																																																																						
Durability of flexural strength against freeze and thaw cycles	4.2.13	EN 14617-5	4.2.13																																																																						
	<p>6.2.3 Test reports</p> <p>All type tests, and/or initial type tests and their results shall be documented in test reports. All test reports shall be retained by the manufacturer for at least 10 years after the last date of production of the cladding slabs or tiles to which they relate.</p>		P																																																																						
	<p>6.3 Factory production control (FPC)</p> <p>6.3.1 General</p>		P																																																																						

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market comply with the declared performance of the characteristics.</p> <p>The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures.</p> <p>This production control system documentation shall ensure a common understanding of conformity evaluation and enable the achievement of the required product characteristics and the effective operation of the production control system to be checked. Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the compliance of the product with this European Standard.</p>		
	<p>6.3.2 Requirements</p> <p>6.3.2.1 General</p> <p>The manufacturer is responsible for organising the effective implementation of the FPC system. Tasks and responsibilities in the production control organisation shall be documented and this documentation shall be kept up-to-date.</p> <p>The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting product conformity, shall be defined. This applies in particular to personnel that needs to initiate actions preventing product non-conformities from occurring, actions in case of non-conformities and to identify and register product conformity problems.</p> <p>Personnel performing work affecting product conformity shall be competent on the basis of appropriate education, training, skills and experience for which records shall be</p>		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>maintained.</p> <p>In each factory the manufacturer may delegate the action to a person having the necessary authority to:</p> <p>identify procedures to demonstrate conformity of the product at appropriate stages;</p> <p>identify and record any instance of non-conformity;</p> <p>identify procedures to correct instances of non-conformity.</p> <p>The manufacturer shall draw up and keep up-to-date documents defining the factory production control. The manufacturer's documentation and procedures should be appropriate to the product and manufacturing process. The FPC system should achieve an appropriate level of confidence in the conformity of the product.</p> <p>This involves:</p> <p>a) the preparation of documented procedures and instructions relating to factory production control operations, in accordance with the requirements of the technical specification to which reference is made</p> <p>b) the effective implementation of these procedures and instructions;</p> <p>c) the recording of these operations and their results;</p> <p>d) the use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the FPC to rectify the cause of non-conformity.</p> <p>Where subcontracting takes place, the manufacturer shall retain the overall control of the product and ensure that he receives all the information that is necessary to fulfil his responsibilities according to this European Standard.</p> <p>If the manufacturer has part of the product designed, manufactured, assembled, packed,</p>		

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>processed and/or labelled by subcontracting, the FPC of the subcontractor may be taken into account, where appropriate for the product in question.</p> <p>The manufacturer who subcontracts all of his activities may in no circumstances pass these responsibilities on to a subcontractor</p>		
	<p>6.3.2.2 Equipment</p> <p>6.3.2.2.1 Testing</p> <p>All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.</p> <p>6.3.2.2.2 Manufacturing</p> <p>All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.</p> <p>6.3.2.3 Raw materials and components</p> <p>The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their compliance. In case supplied kit components are used, the attestation of conformity level of the component shall be that given in the appropriate harmonised technical specification for that component.</p> <p>6.3.2.4 Design process</p> <p>The factory production control system shall document the various stages in the design of products, identify the checking procedure and those individuals responsible for all stages of design. During the design process itself, a record shall be kept of all checks, their results, and any corrective actions taken.</p> <p>This record shall be sufficiently detailed and accurate to demonstrate that all stages of the design phase, and all checks, have been carried</p>		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>out satisfactorily.</p> <p>6.3.2.5 Traceability and marking</p> <p>Individual products, product batches or packages shall be identifiable and traceable with regard to their production origin. The manufacturer shall have written procedures ensuring that processes related to affixing traceability codes and/or markings are inspected regularly.</p>		
	<p>6.3.2.6 Controls during manufacturing process</p> <p>The manufacturer shall plan and carry out production under controlled conditions.</p> <p>6.3.2.7 Product testing and evaluation</p> <p>Production control operations include some or all of the following operations:</p> <p>a) the specification and verification of raw materials and constituents;</p> <p>b) the controls and tests to be carried out during manufacture according to a frequency laid down;</p> <p>c) the verifications and tests to be carried out on finished products (further testing of samples) according to a frequency which may be laid down in the technical specifications and adapted to the product and its conditions of manufacture.</p> <p>Concerning b) and c), the manufacturer shall establish procedures to ensure that the stated values of the characteristics he declares are maintained.</p> <p>All essential characteristics, in bold letters in Table 5, and means of control for which the manufacturer declares performances, are subject to Factory Production Control. In addition, the need to perform Factory Production Control applies to all other characteristics included in a standard when the manufacturer claims compliance.</p>		P

EN 15286:2013																																																	
Clause	Requirement-Test		Result-Remark	Verdict																																													
	<p>Table 5 — Characteristics of cladding slabs or tiles for wall finishes subject to FPC</p> <table border="1"> <thead> <tr> <th>Characteristic</th> <th>Reference sub-clause for applicability</th> <th>Test method</th> <th>Frequency of control during manufacture</th> <th>Minimum frequency of control on finished products</th> </tr> </thead> <tbody> <tr> <td>Dimensions (<i>l</i>, <i>b</i> and <i>d</i>) Tolerances in dimensions Tolerances in flatness</td> <td>4.1.1 4.1.2 4.1.3</td> <td>EN 14617-16 or Annex A</td> <td>-</td> <td>Each production lot ^{a)}</td> </tr> <tr> <td>Straight angles</td> <td>4.1.4</td> <td>Annex B</td> <td>-</td> <td>Each production lot ^{a)}</td> </tr> <tr> <td>Surface finish</td> <td>4.1.5</td> <td>Visual (see 4.1.5)</td> <td>-</td> <td>Each production lot ^{a)}</td> </tr> <tr> <td>Visual appearance</td> <td>4.2.2</td> <td>Annex C</td> <td>-</td> <td>Each production lot ^{a)}</td> </tr> <tr> <td>Reaction to fire, for an agglomerated stone containing a percentage ^{c)} of an organic material, if any, in its: – binder ≤ 0,1 % and aggregate ≤ 1 %, (CWT), or – otherwise based on test results</td> <td>4.2.3</td> <td>– see 4.2.3 (CWT) ^{d)} – see EN 13501-1 ^{e)}</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 5 years</td> </tr> <tr> <td>Apparent density and water absorption</td> <td>4.2.4</td> <td>EN 14617-1</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 3 years</td> </tr> <tr> <td>Flexural strength</td> <td>4.2.5</td> <td>EN 14617-2</td> <td>Quality Control Plan ^{b)}</td> <td>At least every year</td> </tr> <tr> <td>Thermal conductivity ^{f)}</td> <td>4.2.6</td> <td>EN 14617-1</td> <td>Quality Control Plan ^{b)}</td> <td>At least every</td> </tr> </tbody> </table>			Characteristic	Reference sub-clause for applicability	Test method	Frequency of control during manufacture	Minimum frequency of control on finished products	Dimensions (<i>l</i> , <i>b</i> and <i>d</i>) Tolerances in dimensions Tolerances in flatness	4.1.1 4.1.2 4.1.3	EN 14617-16 or Annex A	-	Each production lot ^{a)}	Straight angles	4.1.4	Annex B	-	Each production lot ^{a)}	Surface finish	4.1.5	Visual (see 4.1.5)	-	Each production lot ^{a)}	Visual appearance	4.2.2	Annex C	-	Each production lot ^{a)}	Reaction to fire, for an agglomerated stone containing a percentage ^{c)} of an organic material, if any, in its: – binder ≤ 0,1 % and aggregate ≤ 1 %, (CWT), or – otherwise based on test results	4.2.3	– see 4.2.3 (CWT) ^{d)} – see EN 13501-1 ^{e)}	Quality Control Plan ^{b)}	At least every 5 years	Apparent density and water absorption	4.2.4	EN 14617-1	Quality Control Plan ^{b)}	At least every 3 years	Flexural strength	4.2.5	EN 14617-2	Quality Control Plan ^{b)}	At least every year	Thermal conductivity ^{f)}	4.2.6	EN 14617-1	Quality Control Plan ^{b)}	At least every	P
Characteristic	Reference sub-clause for applicability	Test method	Frequency of control during manufacture	Minimum frequency of control on finished products																																													
Dimensions (<i>l</i> , <i>b</i> and <i>d</i>) Tolerances in dimensions Tolerances in flatness	4.1.1 4.1.2 4.1.3	EN 14617-16 or Annex A	-	Each production lot ^{a)}																																													
Straight angles	4.1.4	Annex B	-	Each production lot ^{a)}																																													
Surface finish	4.1.5	Visual (see 4.1.5)	-	Each production lot ^{a)}																																													
Visual appearance	4.2.2	Annex C	-	Each production lot ^{a)}																																													
Reaction to fire, for an agglomerated stone containing a percentage ^{c)} of an organic material, if any, in its: – binder ≤ 0,1 % and aggregate ≤ 1 %, (CWT), or – otherwise based on test results	4.2.3	– see 4.2.3 (CWT) ^{d)} – see EN 13501-1 ^{e)}	Quality Control Plan ^{b)}	At least every 5 years																																													
Apparent density and water absorption	4.2.4	EN 14617-1	Quality Control Plan ^{b)}	At least every 3 years																																													
Flexural strength	4.2.5	EN 14617-2	Quality Control Plan ^{b)}	At least every year																																													
Thermal conductivity ^{f)}	4.2.6	EN 14617-1	Quality Control Plan ^{b)}	At least every																																													
	<table border="1"> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td>3 years</td> </tr> <tr> <td>Thermal shock resistance</td> <td>4.2.7</td> <td>EN 14617-6</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 3 years</td> </tr> <tr> <td>Linear thermal expansion coefficient</td> <td>4.2.8</td> <td>EN 14617-11</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 3 years</td> </tr> <tr> <td>Dimensional stability ^{f)}</td> <td>4.2.9</td> <td>EN 14617-12</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 3 years</td> </tr> <tr> <td>Bond strength/adhesion ^{f)} for: – cementitious adhesives – dispersion adhesives – reaction resin adhesives – mortar</td> <td>4.2.10</td> <td>EN 1348 EN 1324 EN 12003 EN 1015-12</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 3 years</td> </tr> <tr> <td>Resistance to fixings ^{g)}</td> <td>4.2.11</td> <td>EN 14617-8</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 3 years</td> </tr> <tr> <td>Release of dangerous substances</td> <td>4.2.12</td> <td>As relevant in accordance with 4.2.12</td> <td>As relevant in accordance with 4.2.12</td> <td>As relevant in accordance with 4.2.12</td> </tr> <tr> <td>Durability of flexural tensile strength against freeze and thaw cycles</td> <td>4.2.13</td> <td>EN 14617-5</td> <td>Quality Control Plan ^{b)}</td> <td>At least every 3 years</td> </tr> </tbody> </table> <p>^{a)} The dimension or amount of the "production lot" should be determined by the manufacturer having as reference a daily production quantity, the number of deliveries and the final destination of the considered quantity of cladding slabs or tiles.</p> <p>^{b)} Each of these characteristics shall be controlled with appropriate production process parameter(s) related to them (e.g. temperature, pressure, dosage, composition...), according to relevant direct or indirect measurement or assessment method(s). All these shall be specified in the manufacturer's Quality Control Plan.</p> <p>^{c)} By mass or volume, whichever is the most onerous.</p> <p>^{d)} Appropriate routine and regular check shall be carried out to maintain compliance with the requirements for CWT.</p> <p>^{e)} Appropriate routine and regular check/tests (if any) shall be carried out to maintain compliance of the manufactured cladding slabs or tiles with the ITT tested sample used for the declared reaction-to-fire classification.</p> <p>^{f)} For cladding slabs or tiles glued by adhesive or mortar only.</p> <p>^{g)} For cladding slabs or tiles fixed mechanically only.</p>							3 years	Thermal shock resistance	4.2.7	EN 14617-6	Quality Control Plan ^{b)}	At least every 3 years	Linear thermal expansion coefficient	4.2.8	EN 14617-11	Quality Control Plan ^{b)}	At least every 3 years	Dimensional stability ^{f)}	4.2.9	EN 14617-12	Quality Control Plan ^{b)}	At least every 3 years	Bond strength/adhesion ^{f)} for: – cementitious adhesives – dispersion adhesives – reaction resin adhesives – mortar	4.2.10	EN 1348 EN 1324 EN 12003 EN 1015-12	Quality Control Plan ^{b)}	At least every 3 years	Resistance to fixings ^{g)}	4.2.11	EN 14617-8	Quality Control Plan ^{b)}	At least every 3 years	Release of dangerous substances	4.2.12	As relevant in accordance with 4.2.12	As relevant in accordance with 4.2.12	As relevant in accordance with 4.2.12	Durability of flexural tensile strength against freeze and thaw cycles	4.2.13	EN 14617-5	Quality Control Plan ^{b)}	At least every 3 years	P					
				3 years																																													
Thermal shock resistance	4.2.7	EN 14617-6	Quality Control Plan ^{b)}	At least every 3 years																																													
Linear thermal expansion coefficient	4.2.8	EN 14617-11	Quality Control Plan ^{b)}	At least every 3 years																																													
Dimensional stability ^{f)}	4.2.9	EN 14617-12	Quality Control Plan ^{b)}	At least every 3 years																																													
Bond strength/adhesion ^{f)} for: – cementitious adhesives – dispersion adhesives – reaction resin adhesives – mortar	4.2.10	EN 1348 EN 1324 EN 12003 EN 1015-12	Quality Control Plan ^{b)}	At least every 3 years																																													
Resistance to fixings ^{g)}	4.2.11	EN 14617-8	Quality Control Plan ^{b)}	At least every 3 years																																													
Release of dangerous substances	4.2.12	As relevant in accordance with 4.2.12	As relevant in accordance with 4.2.12	As relevant in accordance with 4.2.12																																													
Durability of flexural tensile strength against freeze and thaw cycles	4.2.13	EN 14617-5	Quality Control Plan ^{b)}	At least every 3 years																																													

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>6.3.2.8 Non-complying products The manufacturer shall have written procedures which specify how non-complying products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures.</p> <p>6.3.2.9 Corrective action The manufacturer shall have documented procedures that instigate action to eliminate the cause of non-conformities in order to prevent recurrence.</p> <p>6.3.2.10 Handling, storage and packaging The manufacturer shall have procedures providing methods of product handling and shall provide suitable storage areas preventing damage or deterioration</p>		P
	<p>6.3.2.11 Description of the records The manufacturer's records shall include at least the following:</p> <ul style="list-style-type: none"> a) identification of the product tested; b) information on sampling: <ul style="list-style-type: none"> 1) place of sampling; 2) identification of the production lot sampled; 3) frequencies of sampling; 4) size and number of samples; c) the test methods applied; d) the results of the test carried out; e) calibration records of apparatus. 		P
	<p>6.3.3 Product specific requirements The FPC system shall: address this European Standard and ensure that the products placed on the market comply with the declared performance characteristics.</p> <p>The FPC system shall include a product specific FPC, which identifies procedures to demonstrate compliance of the product at appropriate stages, i.e.:</p> <ul style="list-style-type: none"> a) the controls and tests to be carried out prior to and/or during manufacture according to a frequency laid down in the FPC test plan, 		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>and/or</p> <p>b) the verifications and tests to be carried out on finished products according to a frequency laid down in the FPC test plan.</p> <p>If the manufacturer uses only finished products, the operations under b) shall lead to an equivalent level of compliance of the product as if FPC had been carried out during the production.</p> <p>If the manufacturer carries out parts of the production himself, the operations under b) may be reduced and partly replaced by operations under a). Generally, the more parts of the production that are carried out by the manufacturer, the more operations under b) may be replaced by operations under a).</p> <p>In any case the operation shall lead to an equivalent level of compliance of the product as if FPC had been carried out during the production.</p> <p>NOTE Depending on the specific case, it can be necessary to carry out the operations referred to under a) and b), only the operations under a) or only those under b).</p> <p>The operations under a) refer to the intermediate states of the product as on manufacturing machines and their adjustment, and measuring equipment, etc. These controls and tests and their frequency shall be chosen based on product type and composition, the manufacturing process and its complexity, the sensitivity of product features to variations in manufacturing parameters, etc.</p> <p>The manufacturer shall establish and maintain records that provide evidence that the production has been sampled and tested. These records shall show clearly whether the production has satisfied the defined acceptance criteria and shall be available for at least three years.</p> <p>Where the product fails to satisfy the acceptance measures, the provisions for non-complying products shall apply, the necessary corrective action shall immediately be taken and the products or batches not complying shall be isolated and properly identified.</p>		

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>Once the fault has been corrected, the test or verification in question shall be repeated.</p> <p>The results of controls and tests shall be properly recorded. The product description, date of manufacture, test method adopted, test results and acceptance criteria shall be entered in the records under the signature of the person responsible for the control/test.</p> <p>With regard to any control result not meeting the requirements of this European Standard, the corrective measures taken to rectify the situation (e.g. a further test carried out, modification of manufacturing process, throwing away or putting right of product) shall be indicated in the records.</p> <p>Individual products or batches of products and the related manufacturing documentation shall be completely identifiable and retraceable</p>		
	<p>6.3.4 Initial inspection of factory and of FPC</p> <p>Initial inspection of FPC for products covered by attestation of conformity system 1 shall be carried out when the production process has been finalised and in operation. The factory and FPC documentation shall be assessed to verify that the requirements of 6.3.2 and 6.3.3 are fulfilled.</p> <p>During the inspection it shall be verified:</p> <p>a) that all resources necessary for the achievement of the product characteristics required by this European Standard are in place and correctly implemented; and</p> <p>b) that the FPC-procedures in accordance with the FPC documentation are followed in practice; and</p> <p>c) that the product complies with the Initial Type Testing/Type Testing samples, for which compliance with</p> <p>this European Standard has been verified.</p> <p>All locations where final assembly or at least final testing of the relevant product is performed, shall be assessed to verify that the above conditions a) to c) are in place and implemented. If the FPC system covers more than one product, production line or production process, and it is verified that</p>		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>the general requirements are fulfilled when assessing one product, production line or production process, then the assessment of the general requirements does not need to be repeated when assessing the FPC for another product, production line or production process.</p> <p>All assessments and their results shall be documented in the initial inspection report.</p>		
	<p>6.3.5 Continuous surveillance of FPC</p> <p>For products covered by attestation of conformity system 1 , surveillance of the FPC shall be undertaken once per year. The surveillance of the FPC shall include a review of the FPC test plan(s) and production processes(s) for each product to determine if any changes have been made since the last assessment or surveillance. The significance of any changes shall be assessed.</p> <p>Checks shall be made to ensure that the test plans are still correctly implemented and that the production equipment is still correctly maintained and calibrated.</p> <p>The records of tests and measurement made during the production process and to finished products shall be reviewed to ensure that the values obtained still correspond with those values for the samples submitted to Initial Type Testing/Type Testing and that the correct actions have been taken for non-compliant devices.</p>		P
	<p>6.3.6 Procedure for modifications</p> <p>If modifications are made to the product, production process or FPC system that could affect any of the product characteristics required by this standard, then all the characteristics for which the manufacturer declares performance, which may be affected by the modification, shall be subject to Initial Type Testing/Type Testing, except as described in 6.2.1 .</p> <p>Where relevant, a re-assessment of the factory and of the FPC system shall be performed for those aspects, which may be affected by the modification.</p> <p>All assessments and their results shall be</p>		P

EN 15286:2013			
Clause	Requirement-Test	Result-Remark	Verdict
	documented in a report.		
7	Marking, labelling and packaging		P
	<p>As a minimum of identification, each consignment of cladding slabs or tiles shall specify on a label and/or packaging and/or accompanying documents the denomination of the agglomerated stone (see EN 1 461 8):</p> <p>type of binder (see 3.3.1 of EN 1 461 8:2009);</p> <p>mineral nature of the aggregate (see 3.3.2 of EN 1 461 8:2009); maximum grain size: coarse (≥ 15 mm); medium (≥ 4 mm and < 15 mm), or small (< 4 mm); type of fixings: to be mechanically fixed and/or glued using adhesive and/or glued using mortar; or to be mechanically fixed only;</p> <p>dimensions: length, width and thickness.</p> <p>The cladding slabs and tiles shall be clean before packaging and transporting.</p> <p>Sensitive polished and/or gloss surfaces shall be protected by appropriate means.</p> <p>Cladding slabs or tiles, which are susceptible to stains shall get special attention in order to protect them.</p> <p>Packing and tapes, which are likely to stain shall not be used. Products with caustic properties may not be used.</p>		P

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict

1	Scope	Informative	P
	This European Standard specifies requirements and appropriate test methods for modular tiles of agglomerated stone which are made for use as flooring and stairs for internal and external uses, fixed by mortar or adhesives. It also provides for the evaluation of conformity and marking of the products to the requirements of this European Standard.		P
	This European Standard is not applicable to terrazzo tiles covered by EN 13748-1 and EN 13748-2 (see Bibliography).		

2	Normative references	Informative	P
	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.		P
	EN 14231, <i>Natural stone test methods — Determination of the slip resistance by means of the pendulum tester</i> EN 14617-1, <i>Agglomerated stone — Test methods — Part 1: Determination of apparent density and water absorption</i> EN 14617-2, <i>Agglomerated stone — Test methods — Part 2: Determination of flexural strength (bending)</i> EN 14617-4, <i>Agglomerated stone — Test methods — Part 4: Determination of the abrasion resistance</i> EN 14617-5, <i>Agglomerated stone — Test methods — Part 5: Determination of freeze and thaw resistance</i> EN 14617-6, <i>Agglomerated stone — Test methods — Part 6: Determination of thermal shock resistance</i> EN 14617-9, <i>Agglomerated stone — Test methods — Part 9: Determination of impact resistance</i> EN 14617-10, <i>Agglomerated stone — Test methods — Part 10: Determination of chemical resistance</i> EN 14617-11, <i>Agglomerated stone — Test methods — Part 11: Determination of linear thermal expansion coefficient</i> EN 14617-12, <i>Agglomerated stone — Test methods — Part 12: Determination of dimensional stability</i> EN 14617-13, <i>Agglomerated stone — Test methods — Part 13: Determination of electrical resistivity</i> EN 14617-16, <i>Agglomerated stone — Test methods — Part 16: Determination of dimensions, geometric characteristics and surface quality of modular tiles</i> EN 14618:2005, <i>Agglomerated stone — Terminology and classification</i> EN ISO 9001:2000, <i>Quality management systems — Requirements (ISO 9001:2000)</i>		P

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict

3	Terms and definitions	Informative	P
	For the purposes of this document, the terms and definitions given in EN 14618:2005 and the following apply.		P
3.1	modular tile		P
	piece of agglomerated stone in standard sizes, with dimensions (600 mm) (600 mm) and nominal thickness from 6 mm to 20 mm		P
3.2	dimensions of modular tiles		P
	length l , width b and thickness d of a modular tile. The dimensions are given in the stated sequence in millimetres (see Figure 1)		P

4	Requirements	See appended table	P
4.1	Requirements for geometric characteristics		P
4.1.1	General		P
	All measurements of geometrical characteristics of modular tiles as given in the following clauses shall be carried out in accordance with EN 14617-16.		P
4.1.2	Dimensions		P
	The dimensions of modular tiles shall always be declared (see 3.2).		P
4.1.3	Size and shape		P
	The tolerances for size and shape of modular tiles shall be as given in Table 1.		P
	Stricter tolerances than those given in Table 1 may be declared by the manufacturer. This is particularly important when tiles are to be fixed with adhesive.		P
4.1.4	Surface finish		P
4.1.4.1	General		P
	Surface finishes shall extend uniformly to the edges of the modular tiles.		P
	If the tile is required to be bevelled (when no other specification is made), the angle of the bevel shall be 45° and the width of the bevel shall be 1,0 mm with a tolerance of 0,7 mm.		P
4.1.4.2	Surfaces after finishing		P
	Surfaces of modular tiles shall have a regular appearance as a function of the finishing process and shall be worked to meet the finish declared (e.g. by submission of samples beforehand between the manufacturer and purchaser).		P
4.2	Requirements for flooring and stairs modular tiles made of agglomerated stones		P
4.2.1	General		P

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict
	The values for the characteristics in 4.2.2 to 4.2.17 shall be declared for flooring and stairs modular tiles made of agglomerated stones when subject to regulatory requirements and may be declared otherwise with reference to the intended end use conditions.		P
	The classification of flooring and stairs tiles according to water absorption, flexural strength, abrasion resistance and chemical resistance shall be expressed with letters corresponding to their values as indicated in Table 2.		P
	Contractual specifications can be used to establish reference values, e.g. in design or manufacturer's data sheet, due account being taken of any regulatory requirements applicable.		P
4.2.2	Apparent density and water absorption		P
	The values for apparent density and water absorption of modular tiles shall be declared and determined using the test method in EN 14617-1, and the results expressed accordingly.		P
4.2.3	Flexural strength		P
	The values for flexural strength of modular tiles shall always be declared.		P
	The flexural strength shall be determined using the test method in EN 14617-2 and the results expressed accordingly.		P
	The classification of flexural strength of modular tiles is given in Table 2.		P
4.2.4	Abrasion resistance		P
	Where subject to contractual request or where the product is expected to be subject to aggressive abrasion actions, the values for abrasion resistance of modular tiles shall be declared.		P
	The resistance to abrasion shall be determined using the test method in EN 14617-4 and the results expressed accordingly.		P
4.2.5	Chemical resistance		
	Where subject to contractual request or where the product is expected to be subject to aggressive chemical actions, chemical resistance of modular tiles shall be declared.		
	The chemical resistance of modular tiles shall be determined using the test method in EN 14617-10 and the results expressed accordingly.		
4.2.6	Visual appearance		
	The colour, roughness etc. of the agglomerated stone shall be identified visually (see 4.2.7) e.g. by a range of samples selected in agreement by manufacturer		

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict
	and purchaser following the criteria given in EN 14617-16.		
	Any visual variations, for example inclusions and veins, are permissible provided that they are characteristic of the relevant type of agglomerated stone and provided that they do not adversely affect the performance of the tiles.		
4.2.7	Reference sample, visual inspection and acceptance criteria		
	A reference sample shall be an adequate number of pieces of agglomerated stone of sufficient size to indicate the general appearance of the finished work. The dimensions of individual pieces shall be at least 0,01 m ² (typical values are between 0,01 m ² and 0,25 m ² 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.		
	Evaluation of the reference sample does not imply strict uniformity between the sample itself and the actual supply; natural variations in tonality can always occur due to natural raw materials.		
	All the differences in aesthetical pattern between the tiles and the reference sample shall be considered typical of the agglomerated stone and not as flaws. Therefore they shall not become a reason for rejection, unless their presence exceeds 15 % of the surface and the typical pattern of the agglomerated stone is lost.		
	Any comparison between production tile and reference sample shall be carried out by placing the reference sample in a vertical position against the production tile, viewing them at a distance of about two metres under normal daylight conditions and recording any visible differences in the characteristics of the agglomerated stone (see Figure 2). According to this method the shading tolerance and the gloss value (in the case of fine ground, honed or highly polished surfaces) measured at six different points of the tile shall be evaluated.		
	Any features of tiles which are likely to adversely affect the flexural strength and the structural stability of the agglomerated stone, such as cracks, hairline cracks, cavities, soft inclusions or similar, are not permitted if the modular tiles are intended to be mechanically fixed.		
	The name and address of the manufacturer or supplier of the agglomerated stone, shall also be indicated on the reference test sample.		

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict
4.2.8	Reaction to fire		
	Reaction to fire performance shall always be declared when the modular tiles are intended to be used in areas subjected to reaction to fire regulation and may be declared otherwise.		
	Agglomerated stones (except those containing more than 1 % by mass or volume, whichever is the most onerous, of organic materials), may be classified without testing (CWT) as reaction to fire Class A1 _{fl 1}).		
	For agglomerated stones containing more than 1 % by mass or volume, whichever is the most onerous, of organic materials, and having an end use subject to reaction to fire regulatory requirements shall be tested and classified in accordance with EN 13501-1.		
4.2.9	Slipperiness		
	The value for slipperiness of modular tiles shall be declared when subject to regulatory requirements and may be declared otherwise.		
	The slipperiness shall be determined using tests methods in EN 14231 and the results expressed accordingly.		
4.2.10	Thermal conductivity		
	The value for thermal conductivity of modular tiles shall always be declared.		
	The thermal conductivity value shall be taken from tabulated values and based on the apparent density of the material.		

	The apparent density shall be determined using the test method indicated in 4.2.2 and the value for thermal conductivity shall be taken from EN 12524 or tested in accordance with EN 12664 and the results expressed accordingly.		
4.2.11	Thermal shock resistance		
	Where subject to regulatory requirements or where the product is expected to be subject to critical thermal cycles, thermal shock resistance of modular tiles shall be declared.		
	The thermal shock resistance shall be determined using the test method in EN 14617-6 and the results expressed accordingly.		
4.2.12	Tactility/visibility of modular tiles shall be declared when it is requested for specific purposes.		
	The tactility is expressed by a description of surface corrugation obtained by mechanical finishing.		
4.2.13	Linear thermal expansion coefficient		
	Where subject to contractual request or where the modular tiles are expected to be subject to relevant dimensional variations due to temperature changes, linear thermal expansion coefficient of modular tiles shall be declared.		

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict
	The linear thermal expansion coefficient shall be determined using the test method in EN 14617-11 and the results expressed accordingly.		
4.2.14	Electrical resistivity		
	Where subject to contractual request, electrical resistivity of modular tiles shall be declared.		
	The electrical resistivity shall be determined using the test method in EN 14617-13 and the results expressed accordingly.		
4.2.15	Impact resistance		
	Where subject to regulatory requirements or where the product is expected to be subject to impact of hard falling objects, impact resistance of modular tiles shall be declared.		
	The impact resistance shall be determined using the test method in EN 14617-9 and the results expressed accordingly.		
4.2.16	Frost resistance		
	Where subject to regulatory requirements or where the product is expected to be subject to freeze/thaw cycles, frost resistance of modular tiles shall be declared.		
	The frost resistance shall be determined using the test method in EN 14617-5 and the results expressed accordingly.		
4.2.17	Dimensional stability		
	Where subject to regulatory requirements or where the product is expected to be sensitive to the adhesive used for installation, dimensional stability of modular tiles shall be declared.		
	The dimensional stability shall be determined using the test method in EN 14617-12 and the results expressed accordingly.		

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict
5	Marking, labelling and packaging	Has complied with	P
	As a minimum of identification, each consignment shall specify on the label and/or packaging the denomination of the agglomerated stone (see EN 14618). The dimensions, quantities and/or any other information shall be reported on the accompanying documents. The number of labels shall be sufficient to identify the delivered products according to the type of packaging.		P
	The modular tiles shall be clean before packaging and transporting.		P
	Sensitive polished surfaces shall be protected by appropriate means.		P
	Tiles which are susceptible to stains shall get special attention in order to protect them.		P
	Packing and tapes which are likely to stain shall not be used. Products with caustic properties shall not be used.		P
6	Evaluation of conformity		P
6.1	General rules		P
	The compliance of agglomerated stone modular tiles with the requirements of this European Standard and with the declared values shall be demonstrated by initial type testing and additionally the manufacturer shall exercise a permanent factory production control and register the results.		P
6.2	Initial type testing (ITT)		P
	Initial type testing of a modular tiles made of agglomerated stone product, as given in Table 3, shall be carried out: a) to demonstrate conformity to this European Standard or at the beginning of production of a new material, b) when significant		P
	Tests previously performed in accordance with the provisions of this European Standard (i.e. same material/product, same characteristic measured with same test method, same sampling procedure and system of attestation of conformity) may be taken into account for the purpose of ITT.		P
	The results of the selected tests shall be expressed as referred to in 4.1 and 4.2.		P
	The results of all initial type tests shall be recorded and held by the manufacturer for at least 10 years after the date of last production of the tiles to which they relate.		P
6.3	Factory production control (FPC)		P
6.3.1	General		P

EN 15285			
Clause	Requirement-Test	Result-Remark	Verdict
	The manufacturer shall establish, document and maintain an FPC system to ensure that the modular tiles placed on the market conform to the declared values for performance characteristics. The FPC system shall consist of written procedures (works' manual), regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product. Records shall remain legible, readily identifiable and retrievable.		P
	An FPC system conforming with the requirements of EN ISO 9001:2000, and made specific to the requirements of this European Standard, shall be considered to satisfy the above requirements.		P
	The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturer's FPC procedures.		P
6.3.2	FPC requirements		P
	The tests and controls to be carried out by the manufacturer shall be part of the factory production control. The characteristics of the modular tiles for flooring and stairs, control frequencies for FPC and test methods shall be as given in the Table 4. The manufacturer shall exercise a permanent internal production control.		P
	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.		P
6.3.3	Description of the records		P
	Manufacturers' records shall include at least the following: a) identification of the product tested; b) information on sampling: 1) place of sampling, 2) identification of the production lot sampled, 3) frequencies of sampling, 4) size and number of samples; c) the test methods applied; d) the results of the test carried out; e) calibration records of apparatus.		P