TEST REPORT

No. : SHCCM130400605
Date : May. 15, 2013

AKG Yalıtım ve İnşaat Malz. Tic. A.Ş.
Kemalpaşa Cad. No:23 Işıkkent – İzmir / Turkey

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name	:	CIMSTONE
Sample Number	:	SHCCM130400605
Test Required	:	Please see the next page(s)
Test Method	:	Please see the next page(s)
Product specification	:	QUARTZ BASED, POLYESTER
Material and Mark	:	BINDER COMPOSITE STONE
Manufacturer	:	AKG YALITIM-CIMSTONE
Date of Receipt	:	Apr. 08, 2013
Test Period	:	Apr. 08, 2013 to May. 15, 2013
Test result(s)	:	For further details, please refer to the following page(s)

******** To be continued********

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd.

Sally Xie
Authorized signatory

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I. Water absorption and Apparent density

Test conducted: EN 14617-1:2005 Agglomerated stone - Test methods - Part 1: Determination of apparent density and water absorption

Test result:

No.	Water absorption (%)		Apparent density (kg/m^3)	
	Individual value	Average value	Individual value	Average value
1	0.031	0.029	2391	2391
2	0.032		2389	
3	0.033		2390	
4	0.032		2390	
5	0.023		2391	
6	0.024		2396	
Remark	Specimen nominal dimensions: 50mm×50mm×20mm, 6pcs			

II. Flexural strength

Test conducted: EN 14617-2:2008 Agglomerated stone - Test methods - Part 2: Determination of flexural strength (bending)

Test result:

No.	Failure load (N)	Flexural strength (MPa)	
		Individual value	Average value
1	5170	64.1	65.7
2	4952	65.1	
3	5042	66.6	
4	5238	67.1	
5	5078	67.8	
6	5081	63.7	
Remark	Specimen nominal dimensions: 200mm×50mm×20mm, 6pcs Test span: 180mm, Test speed: 1200N/min		

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III. Thermal shock resistance

Test conducted: EN 14617-6:2012 Agglomerated stone - Test methods - Part 6: Determination of thermal shock resistance

Test result:

Change in mass (%)		Flexural strength (MPa)		Change in flexural strength (%)	Change in surface quality
Individual value	Average value	Individual value	Average value		
0.01	0.01	57.0	57.3	12.8	No obvious change on all test specimen
0.01		57.7			
0.01		57.6			
0.01		58.9			
0.02		56.6			
0.01		54.3			
0.01		58.7			
Remark	Specimen nominal dimensions: 200mm×50mm×20mm, 7pcs The number of thermal shock cycles: 20 cycles Selected test temperature: 70°C				

IV. Resistance to fixing (dowel hole)

Test conducted: With reference to EN 14617-8:2007 Agglomerated stone - Test methods – Part 8: Determination of resistance to fixing (dowel hole)

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Test result:

Test location	Failure load (N)	Average value (N)	Distance from the hole to the face of the fracture (mm)	Average value (mm)	Distance from the centre of the hole to the edge of the fracture (mm)	Average value (mm)
1	4750	4400	8.75	8.0	41.49	35.0
2	4680		6.03		35.03	
3	4530		7.78		36.66	
4	3730		7.71		25.58	
Remark	Specimen nominal dimensions: 200mm×200mm×30mm, 1pc					

V. Impact resistance

Test conducted: EN 14617-9:2005 Agglomerated stone - Test methods - Part 9: Determination of impact resistance

Test result:

No.	h (m)	Fracture work (J)	
		Individual value	Average value
1	0.76	7.78	7.40
2	0.81	8.29	
3	0.66	6.76	
4	0.66	6.76	
Remark	Specimen nominal dimensions: 200mm×200mm×20mm, 4pcs		

Note:

The fracture work L in joule is expressed by the formula:

$L=M\times h\times g$

Where:

M is the sphere mass, 1.044kg,

h is the drop height in meters of the sphere which causes the sample to break,

g is the gravity acceleration equal to 9.806m/s^2.

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VI. Chemical resistance

Test conducted: EN 14617-10:2012 Agglomerated stone - Test methods - Part 10: Determination of chemical resistance

Test result:

Test reagents	Test time	The reflection reference value (%)	Class
Hydrochloric acid solution	1h	97.10	C_4
	8h	91.65	
Sodium hydroxide solution	1h	97.24	C_4
	8h	90.31	
Remark	Specimen nominal dimensions: 100mm×100mm×20mm, 4pcs.		

VII. Linear thermal expansion coefficient

Test conducted: EN 14617-11:2005 Agglomerated stone - Test methods - Part 11: Determination of linear thermal expansion coefficient

Test result:

Test item	Test result
Linear thermal expansion coefficient (10^{-6}°C^{-1})	31.6
	31.6
	32.3
Remark	Specimen nominal dimensions: 50mm×15mm×10mm, 3pcs Heating rate: 3°C/min, Test temperature: 130°C

VIII. Dimensional stability

Test conducted: EN 14617-12:2012 Agglomerated stone - Test methods - Part 12: Determination of dimensional stability

Test result: Vertical displacement of gauge 1 after the testing of 14 days: 0.03 mm.

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Remark: Specimen nominal dimensions: 300mm×300mm×12mm, 1pc

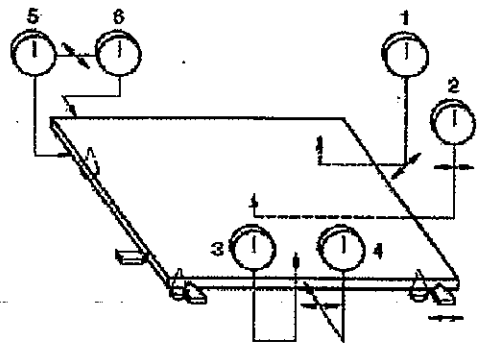

Figure 1 — Apparatus for the measurement of tile deformation

Annex:

Class	Vertical displacement of gauge 1 after the test
A	≤0.3mm
B	>0.3mm,≤0.6mm
C	>0.6mm

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IX. Compressive strength

Test conducted: EN 14617-15:2005 Agglomerated stone - Test methods - Part 15: Determination of compressive strength

Test result:

No.	Failure load (kN)	Compressive strength (MPa)	
		Individual value	Average value
1	677.3	260	264
2	666.1	255	
3	676.3	263	
4	703.8	270	
5	687.9	265	
6	696.6	268	
Remark	Specimen nominal dimensions: 50mm×50mm×20mm, 6pcs Test speed: 2.5kN/s		

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X. Dimension, geometric characteristics and surface quality of modular tiles

Test conducted: EN 14617-16:2005 Agglomerated stone - Test methods - Part 16: Determination of dimensions, geometric characteristics and surface quality of modular tiles

Test results:

a) Length of sides

No.	Test result (mm)				Average value (mm)
1	100.41	99.53	100.26	99.55	99.94
2	100.47	99.36	100.02	99.13	99.74
3	100.30	99.78	100.26	99.61	99.99
4	100.59	100.34	100.61	100.67	100.55
5	100.34	100.34	100.37	100.40	100.36
6	100.31	100.23	100.40	100.29	100.31
7	100.36	100.43	100.30	100.43	100.38
8	100.06	100.71	100.71	100.89	100.59
9	99.72	100.41	100.68	100.60	100.35
10	100.50	100.06	100.49	100.89	100.48

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b) Thickness

No.	Test result (mm)				Average value (mm)
1	20.21	20.10	19.96	20.08	20.09
2	20.05	20.17	20.10	20.08	20.10
3	20.30	20.46	20.59	20.47	20.46
4	19.05	18.94	18.98	19.05	19.00
5	18.90	18.92	18.93	18.87	18.90
6	18.84	18.90	18.89	18.85	18.87
7	18.97	19.02	18.83	18.89	18.93
8	20.43	20.33	20.32	20.40	20.37
9	19.89	19.93	20.03	19.87	19.93
10	19.81	19.93	19.83	19.74	19.83

c) Straightness of sides

No.	Test result (%)			
1	0.50	0.44	0.42	0.43
2	0.54	0.43	0.62	0.42
3	0.45	0.30	0.52	0.40
4	0.43	0.44	0.41	0.51
5	0.43	0.42	0.43	0.45
6	0.43	0.42	0.38	0.45
7	0.42	0.42	0.43	0.43
8	0.53	0.46	0.49	0.40
9	0.43	0.46	0.44	0.49
10	0.44	0.43	0.43	0.44
Maximum deviation	0.62			

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d) Rectangularity

No.	Test result (%)			
1	0.79	0.44	0.70	0.56
2	0.43	0.30	0.50	0.47
3	0.73	0.75	0.53	0.67
4	0.75	0.98	0.82	0.69
5	0.62	0.58	0.73	0.57
6	0.66	0.55	0.82	0.57
7	0.72	0.57	0.65	0.60
8	0.62	0.45	0.82	0.58
9	0.69	0.52	0.61	0.99
10	0.71	0.58	0.77	0.55
Maximum deviation	0.99			

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