



CUARZO
VINCA

Summary of test results:
(Average value)

Test item(s)	Test method(s)	Test result(s)
Absorption by weight	ASTM C97/C97M-09	0.05 %
Density		2350 kg/m ³
Abrasion resistance (polished)	ASTM C241/C241M-13	51
Flexural strength	ASTM C880/C880M-09	Dry condition: 35.8 <u>MPa</u>
		Wet condition: 38.0 <u>MPa</u>
Compressive strength	ASTM C170/C170M-09	Dry condition: 199 <u>MPa</u>
		Wet condition: 192 <u>MPa</u>
Specular Gloss(60°)	ASTM D523-08	42.5
Linear shrinkage and coefficient of thermal expansion	ASTM C531-00	36×10 ⁻⁶ /°C
<u>Mohs'</u> hardness (polished)	EN 101:1991	7~8

Linear thermal expansion coefficient	Refer to ISO 10545-8:1994	35×10 ⁻⁶ /°C
Abrasion resistance of unglazed tiles (polished)	Refer to ISO 10545-6:2010	39 mm ³
Radioactivity	GB 6566-2010	Class A

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

1. Absorption by weight and density

Test Method:

ASTM C97/C97M-09 Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone

Specimens: Agglomerated stone, 50mm×50mm×20mm, 5pcs, one face polished

Test Result:

Specimens identification No.	1	2	3	4	5
Absorption by weight (%)	0.06	0.05	0.05	0.05	0.05
Mean water absorption (%)	0.05				
Density (kg/m ³)	2350	2360	2350	2350	2350
Mean density (kg/m ³)	2350				

2. Abrasion resistance

Test Method:

ASTM C241/C241M-13 Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic

Specimens: Agglomerated stone, 50mm×50mm×20mm, 3pcs, one face polished

Test Result:

Testing face: polished

Specimens identification No.	1	2	3
Abrasive hardness	54	51	49
Mean abrasive hardness	51		

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

3. Flexural strength

Test Method:

ASTM C880/C880M-09 Standard Test Method for Flexural Strength of Dimension Stone

Specimens: Agglomerated stone, 250mm×100mm×20mm, 3pcs, one face polished

Span: 200mm

Test Result:

Dry Condition:

Specimens identification No.	1	2	3	4	5
Individual flexural strength value (MPa)	37.1	37.4	34.5	33.4	36.8
Mean flexural strength value (MPa)	35.8				
Standard deviation(MPa)	1.8				

Wet Condition:

Specimens identification No.	1	2	3	4	5
Individual flexural strength value (MPa)	38.7	37.6	34.8	41.0	37.7
Mean flexural strength value (MPa)	38.0				
Standard deviation(MPa)	2.2				

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

4. Compressive strength

Test Method:

ASTM C170/C170M-09 Standard Test Method for Compressive Strength of Dimension Stone

Specimens: 50mm×50mm×20mm, total 20pcs, one face polished, two samples 50mm×50mm×20mm were overlaid to form one specimen 50mm×50mm×40mm

Test Result:

Dry Condition:

Specimens identification No.	1	2	3	4	5
Individual compressive strength value (MPa)	196	199	197	200	202
Mean compressive strength value (MPa)	199				

Wet Condition:

Specimens identification No.	1	2	3	4	5
Individual compressive strength value (MPa)	188	194	192	195	191
Mean compressive strength value (MPa)	192				

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

5. Specular gloss

Test Method:

ASTM D523-08 Standard Test Method for Specular Gloss

Specimens: Agglomerated stone, 250mm×250mm×20mm, 5pcs, one face polished

Testing surface: polished

Test Result:

Incidence angle: 60°

Specimens identification No.	1	2	3	4	5
Individual value	43.4	40.7	40.5	43.3	44.4
Mean value	42.5				

6. Linear shrinkage and coefficient of thermal expansion

Test Method:

ASTM C531-00(2012) Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes¹

Specimens: Agglomerated stone, 250mm×20mm×20mm, 4pcs, one face polished

Test Result:

Specimens identification No.	1	2	3	4
Individual value(10 ⁻⁶ /°C)	35	36	37	38
Mean value(10 ⁻⁶ /°C)	36			

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

Specimens identification No.	1		2		3		4		5	
Individual volume (mm ³)	38	41	34	41	38	41	41	38	38	41
Mean volume (mm ³)	39									

10. Radioactivity

Sample description:

Agglomerated stone, see the photo

Test Method:

GB 6566-2010 Limit of radionuclides in building materials

Test result:

Test items	Requirement in Standard (requirements of Class A of GB 6566-2010)	Test Results
Internal exposure index I_{Ra}	$I_{Ra} \leq 1.0$	< 0.1
External exposure index I_{γ}	$I_{\gamma} \leq 1.3$	< 0.1

Specific activity of the nuclides

Nuclides	Units	Specific activity
Ra-226	Bq/kg	2.09
Th-232		1.47
K-40		5.13

Note: 1. The sample complies with requirements of GB 6566-2010 Class A decorative materials, it's unlimited in manufacture, selling and using.

2. The test was carried out by external laboratory assessed as competent.