



cerastone
stone and brick veneers

Technical Specifications

Cerastone Canada Ltd.

www.cerastone.ca

Technical Information

Cerastone® Product Specifications

1. Product Name

- a. CeraStone Stone Veneer
- b. CeraBrick Brick Veneer

2. Manufacturer

Cerastone Co. Ltd.
Yangsan, Kyungnam, Korea
www.cerastone.com

3. North American Distributor

Cerastone Global I.E. Inc.
Bay 1, 507 - 35th Avenue NE
Calgary, Alberta T2E 6W7
Canada

Phone: 1.403.230.8799
Fax: 1.403.230.8796
Toll Free: 1.888.231.8799 (Canada and U.S only)
Email: info@cerastone.ca

www.cerastone.ca

4. Product Description

Basic Use

Cerastone brand products are intended for interior and exterior non-structural use as a lightweight veneer facing on masonry, metal framed, or wood framed construction for architectural aesthetics. Products are created to reflect natural stone texture, size and shape. Cerastone products are suitable for use on residential and commercial projects. Installation is quick and no extra structural support is required. The cost is far less expensive than a natural stone installation.

Composition and Materials

Cerastone products are cast in moulds using a unique process that replicates existing colors and textures with meticulous detail. Each color and texture has its own blend of ingredients, including Portland cement, lightweight aggregates and iron oxide pigments, producing the look and feel of natural stone.

Types of Products

- Stone veneer
- Brick veneer
- Hearth stones
- Quoins
- Capstones
- Sills



Sizes and Shapes

Random sizes, shapes and textures of finished product duplicate natural stones. Stone diameter varies from 2" - 30" (51 - 762 mm). The average thickness of Cerastone wall veneers is 1 3/4" (44 mm). Thickness may vary from 1" - 2 5/8" (25.4 - 67 mm) depending on the texture.

Colours

Cerastone brand products are durable and colourfast in interior and exterior applications. See manufacturer's published literature for available colors or www.cerastone.ca.

Weight

- Maximum veneer unit weight - 15 psf (73 kg/m²)
- Shipping weight - Approximately 8 - 12 psf (39 - 59 kg/m²)

Finishes

CeraStone Series, stone veneer.

- Cobble Feeling Stone
- Coral Stone
- Drift Stone
- Easy Ledge Stone
- Edge Stone
- Fit Castle Stone
- Flat Mountain Stone
- Granite Castle Rock
- Ledge Stone
- Mountain Stone
- Provance Stone
- Quick Stone
- River Rock
- Rome Stone
- Rundle Stone
- Sand Castle Stone
- Sand Stone
- Slice Castle Rock
- Stack Ledge Stone
- Trace Rock
- Weather Edge Stone

CeraBrick Series, brick veneer

- Cera Brick
- Giant Brick
- Rome Brick

Sills

- Colour – Grey
- Sizes:
 - 500 X 90 X 40 - 60h mm
 - 500 X 140 X 40- 60h mm



Wall Capstones

- Colours – Grey, Brown
- Size - 500 X 300 X 50 - 60h mm

Pillar Capstones

- Colours – Grey, Brown
- Size – 600 X 600 X 50 – 90h mm

Trim Stones

- Colour - Grey
- Size – 200 X 150 X 40 – 50 h mm

Hearth Stones

- Colour – Grey
- Size - 350 X 300 X 40 – 50 h mm

Capstones

- Colours – Grey-BL, Grey-BM, Grey-BS, Brown-AL, Brown- AM, Brown-AS.
- Sizes:
 - 500 X 500 X 40 mm
 - 480 X 330 X 40 mm
 - 270 X 260 X 40 mm

Cera Quoins Stone

- Colours – WQ-100 (white), WQ-210 (beige), WQ-410 (drift brown), WQ-600 (dandy grey)
- Size - 200 × 300 × 200h X 20 – 35 thick mm

Limitations

Cerastone products should not be assumed to add to the load bearing capacity of a wall. Product should not be used below water level, such as in swimming pool liners. Chlorine and other chemicals may discolour the Cerastone veneer product and other masonry materials. Product should not be used in areas vulnerable to slush formed by chemicals used to melt ice or snow. Install a minimum of 4" (102 mm) above grade or 2" (51 mm) above pavement. Hearthstones are not recommended or guaranteed for exterior use or as a surface area subject to foot or auto traffic.

5. Technical Data

Description:

Lightweight building stone veneer and facing brick.

Composition:

- Lightweight Aggregate (Perlite)
- Portland Cement
- Iron Oxide Pigments
- Chemical/etc.

Cerastone Technical Data

Specific Gravity	1.4~1.6 g/cm ³
Water Absorption	13~15%



Compressive Strength	120~140 kgf/cm ²
Splitting Tensile Strength	14 kgf/cm ²
Thermal Conductivity	0.45~1.03 kcal/mh C

Cerastone manufactured stone veneers, brick veneers and hearth stones are made from non-combustible materials. They are listed by Underwriters Laboratories, Inc. (UL Listing #209T and #359Z), for use as floor protectors and wall shields with stoves and on fireplace hearths. Mortar joints must not exceed 1/2" (12.7 mm) in width and the mortar must be even with the top of the hearth surface.

Construction Material Tensile Strength Test Results

Test Method:

Bonding test of **CERASTONE** and **CERABRICK** carried out with UM resin mortar (gray, white) and UM, PG, PW

- 1) Coated UM resin mortar (gray/white) and UM PG, PW on the back of the **CERABRICK/CERASTONE**.
- 2) Cut **CERABRICK** and **CERASTONE** into the size of 40 x 40 x 40 mm with a diamond cutter after cultivated indoors for 14 days, glue it with instantaneous epoxy-resin bond on copperware and measured tensile strength by construction material tension test equipment at the day when bond was used.

Test Results Table

Subjects to be bonded	Kinds of Bonds	Test #	Tensile Capacity Kg	Area to be Bonded cm x cm	Tensile Strength Kg/cm ²	Average Kg/cm ²	Shearing Point
CERA-STONE	UM Resin Mortar Gray	1	160	4.0x3.8	10.5	9.2	CS 100
		2	155	4.0x3.9	9.9		CS 100
		3	115	4.0x4.0	7.2		CS 100
	UM Resin Mortar White	1	120	4.0x3.8	7.9	7.9	CS 100
		2	100	4.1x3.9	6.1		CS 100
		3	165	4.3x4.0	9.6		CS 100
CERA-BRICK	UM Resin Mortar Gray	1	225	4.2x4.0	13.4	12.4	JM 95 CB 5
		2	210	4.2x3.9	12.8		JM 100
		3	160	3.0x3.7	11.1		JM 100
	UM Resin Mortar White	1	240	4.1x3.9	15.0	13.6	JM 100
		2	210	4.0x4.0	13.1		JM 100
		3	210	4.2x4.0	12.5		JM 80 CB 20
	UM PG	1	140	4.0x4.0	8.8	12.5	BF 100
		2	220	4.1x3.9	13.8		BF 90 CB 10
		3	240	4.1x3.9	15.0		BF 90 CB 10
	UM PW	1	265	4.0x4.0	16.6	13.9	CB 100
		2	205	4.2x3.9	12.5		CB 50 BF 50
		3	210	4.2x4.0	12.5		BF 60 CB 40

Waterproof Tolerance Test

Test to evaluate the anti-absorption rate of CeraBrick through 2000 Hours exposure as tested by Uvcon.

1. Subject: Material for Coating: CERABRICK

2. Coating Material: 3 kinds of Aquaproof 40JP, 20JP, 10JP, coated amount: 0.3 l/m2

3. Testing Condition:

When coating Aquaproof, weather-proof test was conducted for 2000 hours by UVCON after developed for 7 days under the condition of 20 degrees C, 60% R H.

4. Absorption Test:

Absorption rates are obtained against random submergence days through conducting underwater accumulation on the basis of JIS A 1401 regarding a testing material after a weather-resistance test. After coating Aquaproof, cultivating material for 7 days was tested in the same way as above. Anthe absorption rate of each testing material was calculated based on the following formula.

$$\text{Absorption Rate (\%)} = \frac{\text{Weight of testing material after immersed} - \text{weight of testing material before immersed}}{\text{Weight of testing material before immersed}}$$

5. Results:

A visual observation was made on the appearance of the testing material after a weather-resistance test. But no abnormality was found as indicated in Table below:

Elapsed Time		0 Hours				1000 Hours				2000 Hours			
Coating Method		Un-treated	10 JP	20 JP	40 JP	Un-treated	10 JP	20 JP	40 JP	Un-treated	10 JP	20 JP	40 JP
Absorption rate of immersed days (%)	1 day	10.2	0.9	0.9	0.8	13.4	1.0	0.9	0.9	13.5	1.1	0.9	0.9
	2 days	10.9	1.3	1.0	0.9	13.5	1.3	1.0	0.9	13.8	1.2	1.0	1.0
	3 days	11.2	2.1	1.7	1.6	13.8	1.9	1.5	1.4	13.9	2.0	1.7	1.6

Consequences:

After exposure testing for 2000 hours by UVCON, the results were that the absorption rate of untreated brick increased slightly, showing a tendency of deterioration. On the other hand, the data of Aquaproof-treated **CERABICK** was almost unchanged against the initial values indicating superior weather-resistance and good anti-absorption even under its submersion.

6. Applicable Standards

ASTM International

- ASTM C39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
- ASTM C67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile
- ASTM C91 Standard Specification for Masonry Cement
- ASTM C150 Standard Specification for Portland Cement
- ASTM C177 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- ASTM C192 Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
- ASTM C207 Standard Specification for Hydrated Lime for Masonry Purposes
- ASTM C270 Standard Specification for Mortar for Unit Masonry
- ASTM C482 Standard Test Method for Bond Strength of Ceramic Tile to Portland cement
- ASTM C567 Standard Test Method for Unit Weight of Structural Lightweight Concrete
- ASTM D226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing

Uniform Building Codes

- UBC Standard 15-5 for Water Absorption
- UBC Standard 14-1 Kraft Waterproof Building Paper
- UBC Standard 26-10 Parts I and IV; Test Method for Compressive Strength of Cylindrical Concrete Specimens

Physical/Chemical Properties

- Compressive strength (ASTM C192/ASTM C39) - 1800 psi (12.4 MPa)
- Bond strength (ASTM C482) - 50 psi (345 kPa)
- Thermal resistance (ASTM C177) - 0.355 per inch (25.4 mm) of thickness
- Freeze/thaw (ASTM C67) - No disintegration and less than 3% weight loss

Fire Rating

- UL 723 (File #R7704 for Mineral Composition Units)
- Flame spread, 0
- Smoke developed, 0

ISO Certification

Quality Certified

Certificate of Registration

Cerastone Co., Ltd.

#564-36, Pyungsan-Ri, Uingsang-Eup, Yangsan-City, Kyungnam, Korea

The above licensee has been assessed and registered by TQCS International Pty Ltd as having the capability to control the quality of goods or services provided in accordance with the conditions of the Licence Agreement at or from the addresses shown above, under a quality management system complying with the requirements of:

ISO 9001:2000

The registration covers manufacture of lightweight stone and thin brick.

Exclusions: None

Issue Date: 11 Jun 2004
Expiry Date: 7 Jun 2007

Licence No: K271-QC
Original Certification: 11 Jun 2004

President
TQCS International (Group) Pty Ltd

Certification Manager
TQCS International (Group) Pty Ltd
For and on behalf of the
TQCSI Certification Approval Panel

Further specific details may be obtained from the Trade Mark Licence Agreement

TQCS International (Group) Pty Ltd
ASN 99 965 952 924

JAS-ANZ

Accreditation by the Joint Accreditation
System of Australia and New Zealand
Acc. No 2148019EAA



KS Registrar Co., Ltd.



CERTIFICATE

This certificate has been awarded to

CERASTONE Co.,LTD.

#564-36, Ungsang-eup, Yangsan-si, Gyeongsangnam-do,
Korea

in recognition of the organization's
Environmental Management System which complies with

KS A ISO 14001:2004

The Scope of activities covered by this certificate are defined below

Manufacture of Lightweight Stone

Certificate No. : KSR-E-05188

Date of Issue : 04 November 2005

Expiry Date : 03 November 2008

Certification Body of KS Registrar Co., Ltd.



Accredited by the Korea Accreditation Board for EMS Certification Reg. No. KAB-EC-01
KS Registrar Co., Ltd. #50-1, Yanggang-Dong, Mapo-Gu, Seoul, Korea(Tel. +82-2-704-0043)

Validity of this certificate must be confirmed at the KSR