

**DESCRIPTION** • *TopCrete 711* is a polymer modified, colored cement-based topping system containing decorative aggregates such as glass beads, crushed glass, MOP and marble pebbles. *TopCrete 711* is typically overlaid in 10-15 mm thickness (including adhesive layer) directly over concrete surfaces. While the topping is in the green stage, the surface is washed to expose the decorative aggregates. *TopCrete 711*'s matrix is available in a wide range of colors and aggregates, producing an endless variety of finishes and colors.

**USES** • *TopCrete 711* was specifically formulated for use as a submerged decorative render for pools and water features that is directly applied to the pool's internal concrete shell. *TopCrete 711* is suitable for spas and Jacuzzis granted the temperature does not exceed 55°C. *TopCrete 711* is also ideal as a hard-wearing, abrasion-resistant topping for interior or exterior surfaces, whether for horizontal or vertical applications.

#### ADVANTAGES •

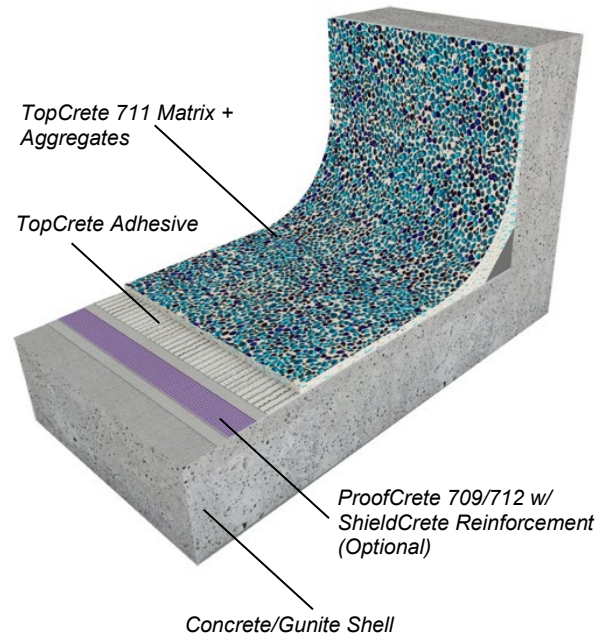
- ✓ Formulated for high chemical resistance.
- ✓ Highly decorative and rich-looking surface.
- ✓ Endless selection of colors.
- ✓ High polymer modification for crack resistance and superior adhesion.
- ✓ High strength and durability.
- ✓ Suitable for interior and exterior surfaces.
- ✓ Easy to apply on horizontal and vertical surfaces.
- ✓ Shrinkage compensated.

**COVERAGE** • Coverage will vary depending on substrate profile, thickness of installation, and aggregate size and content. Coverage rate is approximately 1.1-1.3 sqm per 25 kg pre-mixed kit containing binder and aggregates at 10 mm thickness including the 2-3 mm adhesive coat.

**LIMITATIONS** • *TopCrete 711* must be applied over a structurally sound and non-moving substrate. Do not apply in areas subject to negative hydrostatic pressure. All moving joints in the existing substrate must be extended through the full depth of the topping, allowing for the simultaneous expansion and contraction of the substrate and the topping. Moving cracks or joints in the existing substrate will reflect through the topping. Existing concrete surfaces must be cured prior to application of *TopCrete 711*. Do not apply if ambient temperature is expected to drop below 5°C during installation or in the proceeding 48 hours, or if rain is expected in the proceeding 24-hour period after application. Do not mix or apply when ambient temperature is

expected to exceed 40°C. Avoid application under hot and/or windy conditions or under direct sunlight. Tiling along the waterline is recommended at the waterline in order to avoid difficult-to-remove stains.

#### SYSTEM DETAIL •



#### PHYSICAL PROPERTIES •

Test	Result
Flexural Strength ASTM C 580 28 days	8.0 MPa
Compressive Strength ASTM C579-18 28 days	37.5 MPa
Tensile Strength ASTM C 307 28 days	5.1 MPa
Pull Off Strength ASTM D4541:2017	1.15 MPa
Coefficient of Thermal Expansion ASTM C 531:2000	5.7 x 10 <sup>-6</sup>
Drying Shrinkage ASTM C 157M:2017 @ 4 days @ 7 days @ 14 days @ 28 days	-0.012% -0.017% -0.028% -0.034%
Wetting Expansion ASTM C 157 Water storage @ 28 days Water storage @ 56 days	0.029% 0.048%
Linear Shrinkage ASTM C 531:2018	-1.34%
Chemical Resistance to Sodium Hypochlorite, ASTM D543	Pass

Water Absorption ASTM C642-2013	0.85%
Initial Surface Absorption, BS 1881, Part 208 @ 28 days Typical Concrete	0.04 ml/m <sup>2</sup> ·s < 0.1 ml/m <sup>2</sup> ·s
Water Absorption, BS 1881, Part 122 @ 28 days Typical Concrete	0.1 % 3.0 %
Rapid Chloride Permeability, ASTM C1201:2019 @ 28 days Typical Concrete	119 coulombs (very low) <500 coulombs
Depth of Water Penetration Under Pressure DIN 1048, Part 5:1991	68 mm in 150x150x150 mm sample
Water Impermeability, BSEN 14891:2017, @ 7 days	No water observed on underside
Thermal Conductivity, ASTM C518-21 w/ glass beads Typical Concrete	0.2286 W/m·K 0.6-3.3 W/m·K

**SURFACE PREPARATION** • All bases must be fully cured, sufficiently rigid, and clean of any surface contamination such as oil, dirt, grease, coatings, paint, curing compounds, and laitance that may prevent proper adhesion. Dense, smooth surfaces, and those retaining excessive amount of form release agent can cause delamination from the base and must be prepared by shot blasting or grinding. Any painted or coated surfaces should be sandblasted, shot blasted and/or grinded to remove existing coatings. Use of detergents or soap is not recommended as they may leave a film that can cause bonding failure.

Concrete surfaces must be completely dry and free of any moisture. Concrete patching and repairs must be performed with a shrinkage-compensated, high adhesion compound such as *PatchCrete 101 Multi-Purpose Patching Compound*, *CTS Rapid Set Cement All®* or equivalent. The base should be straight, true to line, and plane.

New concrete shells must be cured for a minimum of 30 days to allow the concrete to settle through most of its shrinkage cycle; 60 days is preferable. Sand blasting or abrasive grinding of the concrete surface is highly recommended to remove laitance and open the pours of the concrete. Moisten the dry and clean concrete surface just before application with a light mist spray of clean potable water. Do not saturate or allow any water to puddle.

Surrounding areas should be covered and protected from material spills and equipment contact. Rope off work area, remove surrounding vehicles, and close off to traffic.

Under all conditions, the substrate must be primed as outlined below with *TopCrete 711 Adhesive*. The *TopCrete 711* topping mixed with aggregates is then applied on top of the wet surface of the primer coat. Do not apply the topping on a dry layer of the primer surface; if the *TopCrete Adhesive* layer dries it must be removed or a new layer of *TopCrete Adhesive* must be applied. Please refer to the relevant CCC technical data sheets for installation instructions.

**MIXING** • Mixing should be completed by mechanical means by using a high-speed power drill fitted with a proper mixing blade designed for thick materials, such as a rapid set mixer. Always add clean potable water first.

*TopCrete 711 Adhesive* is provided in a dry mix powder and aggregates in a ready-to-use properly-proportioned kit. Add about 2.2 liters of clean potable water to the mixing container. Slowly add the powder while mixing at high speed and continue mixing for two minutes. Add the aggregates to the mix and mix at slower speed to prevent damage to the glass beads. Adjust the water ratio slightly up to a total water content of 2.5 liters to obtain the proper consistency if necessary, keeping in mind to maintain a thick consistency. The mix has a short pot life and must therefore be mixed and poured on the substrate quickly; mixing should not take more than 3-4 minutes.

**APPLICATION** • Application temperatures should be between 5°C and 40°C; do not apply under direct sunlight. It is highly recommended to test a small area to ensure bonding ability and satisfaction of appearance before complete application.

If required, place formwork or divider strips (as required by the architectural design) prior to placement of the topping system; the top of the formwork or strips should be at the desired finish level. Divider strips, if used, must be securely fastened to the substrate.

On the day of application lightly spray the surface of the concrete with water; do not allow the water to puddle on the surface of the substrate. Apply the *TopCrete 711 Adhesive* using a notched trowel in 3 mm thickness. After a few minutes of mixing, pour the entire contents of the binder-aggregate mix on the still tacky adhesive surface and spread around using an aluminum straight edge or steel trowel; initial application must be completed within a short period of time to avoid stiffening of the materials. Do not apply the topping on a dry coating of primer layer. Smooth out the surface with a steel trowel. Troweling will bring up the paste and help compact the mix. Scrub off excess paste from the surface whenever possible to aid in the exposure process.

Curing: *TopCrete 711* is self-curing; do not water cure.

**Aggregate Exposure:** Allow the *TopCrete 711* layer to stiffen slightly, then pass a wet sponge over the surface to remove the top layer of the paste and reveal the aggregates then repeat as necessary. The washing must be done gradually in order to avoid excessive exposure and dislodging of the aggregates. Light acid washing may be used the next day to clean up any residual paste on the aggregates; thoroughly neutralizing of the surface must be done in this case with the use of a Sodim Bicarbonate solution. Wash the surface thoroughly with clean potable water after neutralizing.

**SEALING** • For applications where the topping will be permanently immersed in water, application of a sealer is not necessary. For flooring applications, it is highly recommended to seal the topping in order to protect it against staining. Select from a wide variety of sealers offered by CCC such as *A-Z Ultra Sealer*, *A-Z Mega Sealer*, or *A-Z Penetrating Sealer OS/OW*. Please refer to the relevant CCC technical data sheets for instructions. Sealed surfaces should be inspected periodically for traffic-worn areas and re-sealed as necessary.

**CLEANING** • Clean all tools and equipment promptly with clean water.

**CURING** • *TopCrete 711* is designed to be air cured only; **DO NOT WATER CURE**. Avoid exposure to rapid drying conditions such as high winds or direct sunlight during the first 24-hour period after casting.

**START-UP PROCEDURE** • The water filtration system must be fully operational prior to filling of the pool to ensure maintenance of proper water chemistry:

1. Full pool to full capacity so that the render is completely submerged in water. The filling process must take place without interruption.
2. Turn on the pool's pump and engage the backwash mode to wash the filtration system. Allow to operate for 24 hours.
3. For a pool of 50,000 liters add 7 liters of liquid chlorine, 1 liter of hydrochloric acid, and 2 kg of stabilizer.
4. Run the filtration system for 24 hours after which add 2 kg of buffer.
5. Broom the pool with a nylon brittle brush, allow any sediments to settle over the next 8 hours, then vacuum the pool's surface.
6. Check the chemical balance of the water and make sure it is within the following range:

Parameter	Recommended Range
pH	7.2 - 7.8
Total Alkalinity mg/L	80 - 120
Calcium Hardness mg/L	150 for first 12 months 100-250 after 12 months

Free Chlorine	1.5 - 3.0 PPM
Stabilized Pools (Cyanuric Acid)	25 - 40

7. Repeat the brooming and vacuuming process after 5 days.
8. For saltwater pools: add salt as per the chlorinator manufacturer's recommendations after 28 days of operation. Broom the salt continuously until completely dissolved to prevent it from sitting on the render's surface. After 8 hours switch on the salt-chlorinator cell.
9. Regular checking of the pool's chemistry levels should take place at least once a week.

#### **DOs AND DON'Ts** •

- Do not fill the pool with soft water.
- Do not enter the pool until it is completely filled and the chemistry levels balanced.
- Do not chlorinate the pool until the water's pH and carbonate alkalinity are within the acceptable range.
- Do brush the pool three times a day for the first three days and twice daily for the next ten days, after that brush once a week. Use only nylon bristled pool brushes.
- Do wait 14 days before turning on the heating system; monitor the chemical balance closely.
- Please refer to the operational and maintenance manual for full cleaning and care procedures.

**STORAGE & SHELF LIFE** • Keep material covered and off the ground to prevent exposure to moisture. Store in a dry, covered area away from direct sunlight. Under recommended storage conditions and when stored in original unopened packaging, expected shelf life is 12 months from date of purchase.

**SAFETY PRECAUTIONS** • **KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.** CONTAINS CEMENT AND SILICA (QUARTZ). Portland cement and silica-based products present health hazards. May cause delayed lung injury (silicosis). Irritating to eyes and skin. Use neoprene gloves, safety goggles, and a dust mask when handling. **FIRST AID:** Eyes – Do not rub eyes, immediately flush with fresh water. Skin – Wash with soap and water. Inhalation – If experience difficulty breathing or if inhaled, move to fresh air. If symptoms persist, seek medical attention.

**PACKAGING** • 25 kg kit containing the binder and decorative aggregates.

**SUGGESTED SHORT FORM SPECIFICATIONS** • All architectural surfaces designated in the plans or specifications as having a crystal inlay or exposed aggregate topping finish shall have CREATIVE CONCRETE CONCEPTS TopCrete 711™ installed

## **TopCrete 711 Crystal Overlay**

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in accordance with manufacturer technical data sheet and written instructions. The substrate shall be primed with CREATIVE CONCRETE CONCEPTS TopCrete 711 Adhesive Coat™ in 2-3 mm thickness, applied with a notched tile glue trowel in accordance with manufacturer technical data sheet and instructions. The topping shall be CREATIVE CONCRETE CONCEPTS TopCrete 711™ in color [*select from CCC Standard Color Chart*] with aggregates as per approved sample. The surface shall be washed to expose the decorative aggregates. All finished surfaces that will not be permanently immersed in water must be sealed with CREATIVE CONCRETE CONCEPTS [A-Z Ultra Sealer™, A-Z Penetrating Sealer OS™, A-Z Penetrating Sealer OW™] in accordance with manufacturer technical data sheet and instructions.

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### **Creative Concrete Concepts**

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