

Trade Name
Formglas® Concree™



Common Names
Faux Concrete Gypsum Castings
Faux Concrete Castings
Simulated Concrete Finishes



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DARK GREY CONCREET™ VENEER WALL PANELS

FORMGLAS, ONTARIO

Summary

Concree™ is a system of lightweight pre-finished alpha gypsum based panels and elements that simulate the appearance of poured-in-place or trowelled concrete. Used in interiors as feature walls or for beams and column cladding, Concree™ is supplied in easy to handle and install components that require only conventional interior wall substrate and light gauge framing, thus allowing architects and designers to introduce contemporary concrete finishes where desired. Concree™ is a class A fire and smoke rated material.

Concree™ is commonly used for interior wall cladding, beams, columns, retail store fronts and displays, and other decorative elements. The material is available in a variety of natural color tones and finishes including natural pour (the Formglas standard), planked, and sandblasted. Designers may specify a custom finish to incorporate additional variations that match existing concrete surfaces in the field. Natural surface and color variations may occur within and between parts consistent with that of poured-in-place concrete.

Detailed Description

Concree™, a derivative of Formglas' proprietary QuarryCast® technology, is a solution for adding concrete finishes into existing interior spaces, or extending the use of concrete finishes where existing concrete walls and columns are exposed and featured. Concree™ elements are manufactured with integral color pigments so that the material color extends below the surface. Natural aggregates are incorporated into a matrix of alpha gypsum cement and glass fiber reinforcement. This provides the molded Concree™ elements with added strength and flexibility in addition to an enhanced aesthetic appearance. Concree™ parts may incorporate embedments of steel or wood for added strength and to provide a means for attachment, suspension and stiffening. Yet, the final material is extremely lightweight ranging from 2-5 lb/ft² ⇔ 10-24 kg/m³, depending on the design and application. Concree™ components are lighter than real concrete elements that require weeks of curing and may yield a final finish or color that does not meet the desired aesthetic intent.

Most Concree™ parts are fastened with adhesive, clips or other methods of concealed mechanical fastening. Ceiling elements are usually wire-suspended. Depending on the design, joints may be dry-buttet or caulked.

Concree™ components are custom made to project design requirements and specifications. Formglas uses a combination of 5-axis CNC technology, in-house sculpting, and expert pattern making skills to make authentic and precision master models from which molds are produced to make the required parts. In situations involving complex design elements or projects, Formglas will work with Architects and Designers to develop a practical plan for the parts and assemblies they envision through 3D modeling and/or scaled or full size mock-ups. Detailed shop drawings and material samples are prepared for approval prior to manufacture.

Concree™ is also a superior alternative to the wet, multi-step and multi-day in-the-field applications of trowelled-on faux concrete finishes. Pre-finished Concree™ components are erected in hours in a manner akin to installing finished carpentry.

Technical Data

Refer to the following standards:

ASTM International (ASTM)

- E84 Standard Test Method for Surface Burning Characteristics of Building Materials

International Standards Organization (ISO)

- ISO 1182:2010 Reaction to fire tests of products - Non combustibility Test
- ISO 1716:2010 Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value)

International Maritime Organization (IMO)

- FTP Code (IMO resolution MSC 61/67)

Physical and Mechanical Properties

Formglas uses alpha gypsum materials that are mined and processed in the USA from some of the world's purest deposits (over 99% purity of CaSO4·2H2O). Throughout the fabrication process, the gypsum material is subjected to strict inspection and testing to guarantee its high level of quality. Our prominent gypsum suppliers certify the raw materials are in compliance with the ASTM C1355 Standard.

Matrix:	Alpha Gypsum Cement and various aggregates
Finish:	Standard colors and color matching available.
Surface:	Standard textures and texture matching available.
Factory Finish:	Clear non-gloss sealer
Density:	~100 lb/ft ³ ⇔ 1600 kg/m ³
Weight: Veneer panels: Molded parts:	2-2½ lb/ft ² ⇔ 10-12 kg/m ² 2½ -5 lb/ft ² ⇔ 10-24 kg/m ²
Veneer thickness:	5/16" ⇔ 8 mm nominal**
Shell thickness:	5/16" ⇔ 8 mm nominal**
Edge thickness:	¾-1¼" ⇔ 19-32 mm typical
Embedments:	Galvanized steel or wood (if required)
Glass Fiber:	5% typical
Max. length moldings:	8' ⇔ 2.4 m
Max. size veneer panels:	48" x 36" ⇔ 1200 x 900 mm
Max. size molded parts:	40 ft ² ⇔ 3.7 m ²

* Typical weights – parts with deep surface relief, etc. may weigh more. Submit drawings for a more accurate estimate

** Subject to manufacturing tolerances. Weight and measurement conversions may be rounded.

ASTM and ISO Test Results

Flame Spread:	0
Smoke Development:	5
Behavior at 750°C:	Pass
ISO Reaction to Fire Tests Mass Loss: Temperature Difference: Duration of Ignition > 5 sec:	20% 2.7°F ⇔ 1.5°C 0
Gross Heat of Combustion:	258 Btu/lb ⇔ 0.6 MJ/kg

Manufacturing Tolerances

Veneer Thickness:	± 1/16" ⇔ 1.5 mm
Dimensional (all directions):	± 1/16" ⇔ 1.5 mm
Bowing, out of plane	3/32"/ft ⇔ 5 mm/300 mm
Molded Part Thickness:	-1/16 to + 3/16" ⇔ -1.5 to +5 mm
Dimensional (all directions):	± 3/16" ⇔ 5 mm
Bowing, out of plane	3/32"/ft ⇔ 2.5 mm / 300 mm

LEED®

Concreet™ parts are supplied with a minimum of 10% recycled content. The actual amount varies depending on the individual part design and type of reinforcement used. For more information, visit the LEED® information page on the formglas.com website.



Other credits may be available including:

LEED® MR Credit 2.1 and 2.2: Construction Waste Management
 LEED® MR Credit 5.1 and 5.2: Regional Materials

Other Classifications and Approvals

In addition to ASTM and ISO Testing, Concreet™, as a derivative of Formglas QuarryCast®, has been tested at the Centre Scientifique et Technique du Bâtiment (CSTB) in France and is classified "MO". This classification refers to building materials that are non-combustible. The material has also been tested by SINTEF, which is the largest independent research organization in Scandinavia and classified as a non-combustible material, in accordance to the IMO A.472 standard, and in Germany to DIN EN ISO 1182.

Concreet™, as a derivative of Formglas QuarryCast®, is approved for use on Cruise ships with Module "B" and "F" Certificates of Approval in accordance with the International Maritime Organization (IMO) and Marine Equipment Directive (MED) regulations.

■ Delivery, Storage and Handling

Concree™ parts shall be transported and handled in a manner that avoids damage or excessive stress. Packaging or components showing signs of damage should be marked as such on freight documents, inspected immediately, and claimed for any damage due to shipping with the freight carrier. Advise the carrier and Formglas of any damage immediately. Concree™ parts shall be protected from rain, snow, sunlight, excessive weather conditions, high levels of humidity, and job site damage. To prevent distortion, warping, and other physical damage, Concree™ parts shall be kept clean and stored on a dry surface and not stacked or leaned on each other. Use clean gloves as required to ensure oils, adhesive and other contaminants are not transferred onto the pre-finished surface.

■ Preparatory Work

Do not deliver or install Concree™ parts until the building is enclosed and weatherproof, wet work is complete, and the HVAC system maintains temperature and humidity at normal occupancy levels. Acclimatize Concree™ parts for a minimum of 48 hours to the ambient temperature and humidity levels of spaces in which they are to be installed. It is the installing contractor's responsibility to order the correct material quantities (including a waste allowance) and verify the field dimensions and conditions for inclusion into the shop drawings.

Site Conditions:

Review the site conditions for compliance with Formglas' requirements relating to environmental conditions, installation tolerances and any other conditions that may affect the installation and performance of Concree™ parts. Any unsatisfactory conditions are to be corrected prior to installation. Field measurements are to be taken to verify the dimensions, including those not shown on the drawings, and provide specific details of any changes for inclusion into Formglas shop drawings prior to it commencing the manufacture of custom molds and Concree™ parts. Formglas will produce parts in accordance with the approved shop drawings only, and is NOT responsible for any deviations between the site conditions and the approved drawings.

Substrates:

The framing and/or substrates to accept Concree™ parts shall be surfaced with suitable materials (e.g. plywood for veneer or flat surface solutions) and installed straight and true within 1/8" in 8 linear ft. ⇔ 3 mm in 2500 mm and shall be free of obstruction and interference that prevents the correct positioning and attachment of the Concree™ parts. Metal framing members shall be of the proper size and design for the intended use and shall be sufficient to properly support the installed Concree™ parts. Metal framing members shall be installed in accordance with ASTM Standards C754 or

C1007, as required. The location and incorporation of control joints is determined by the architect.

■ Installer Safety

Installers are to wear appropriate personal protection equipment when handling or installing Formglas materials. This should include eye protection, gloves and dust masks. Please adhere to local regulations and rules established at the job site. Before handling and installing Formglas materials, installers are responsible for reviewing MSDS information which is readily available at www.formglas.com, or included with the crate(s) used to ship Formglas materials, or by calling Formglas at 1.866.635.8030.

■ Installation

General:

Install Concree™ parts as indicated on the approved shop drawings, instructions and the contract documents. The installing contractor is to supply and install all brackets, and shims for the installation and proper alignment of the Concree™ parts with adjacent parts and materials. Part thicknesses may vary per manufacturing tolerances. Allow for shim spaces between the Concree™ and the substrate. Attach the molded Concree™ parts to substrates and framing with screws or other fasteners as shown on the shop drawings. Additional bracing, fastening points etc. not shown on the drawings, may be required to ensure a proper installation. Where Concree™ parts are suspended use all the suspension points indicated on the shop drawings or on the back of Concree™ parts as a minimum requirement, and use additional support(s) as required. Columns, large parts etc. are to be face fastened as shown on shop drawings. Any screw holes are to be filled with Formglas supplied patching compound. Where Concree™ veneer panels are adhered to surfaces, use a nail gun with 18 guage nails and a Formglas recommended brand adhesive only (e.g. PL400). See Installation Instructions for Formglas QuarryCast® for complete details.

Cutting:

When Concree™ parts require cutting, use the most suitable cutting method listed below. If circumstances allow, cut parts outdoors or in a well ventilated area. Always wear goggles and a dust mask.

- A miter or table saw with a diamond or "abrasive" cutting blades (e.g. 12" ⇔ 305 mm Makita A.01345). Carbide blades with 80+ teeth work well but dull quicker.
- For irregular cuts use a reciprocating saw, such as a jig saw, with tungsten carbide blades (e.g. Milwaukee 48-00-1420)
- For small cutting operations a mini grinder with a 4" ⇔ 100 mm diamond blade can be used.

Edge Finishing after Cutting:

For moldings, columns, and other molded components, lightly sand cut edges with a sanding block or mini sander with #40 - #80 grit sanding sheets or discs.

For veneer panels, use a sanding block with #40 - #80 grit sandpaper to produce a 45° bevel to match the edges supplied direct from the factory.

Attachment:

For moldings, columns and other molded components, face fasten with screws. Pre-drill with carbide bits and countersink holes approx. 1/8" ⇔ 3 mm below the surface along the embedded reinforcement and secure with #8 or similar screws on 16" ⇔ 400 mm o.c. Refer to the shop drawings for specific details and the location of the reinforcement materials. Screw holes are to be filled afterward with Formglas supplied patching compound. Use joint spacers to maintain a uniform joint spacing of 1/8" ⇔ 3 mm.

For veneer panels, apply walnut sized dabs of a Formglas recommended adhesive (e.g. PL400) on the panel back approx. 9" ⇔ 225 mm o.c. and slide into position. Keep adhesive back from panel edges to prevent the adhesive from being squeezed onto visible surfaces (remove any adhesive immediately from the face of Concreeet™ parts). To hold the panels in position until the adhesive sets, use a nail gun with 18 gauge nails (plywood is the preferred substrate for this purpose).

Joint Treatments:

For Dry Joints:

- For veneer panels, butt the Concreeet™ parts and leave the joints dry. Not recommended for columns, cornices, or trims.

For Caulked Joints:

- Formglas does not supply caulk for joints but can recommend a brand and color of caulk for use with specific Concreeet™ colors.
- Use spacers to maintain a uniform gap of approx. 1/8" ⇔ 3 mm and apply masking tape on each side of the joint. Do not use wide joints.
- Avoid smearing caulk beyond the joint - remove any excess immediately with flexible scraper.
- Veneer panels may have dry joints, open joints with accents strips (e.g. metal or laminate), or caulked joints.
- Caulk between Concreeet™ and different materials.
- Do NOT attempt a monolithic look - joints can not be hidden.

Hole Filling and Patching:

- Hole Filling: Finger fill screw holes with matching

Concreeet™ patching compound avoiding smearing it beyond the hole. Remove excess compound immediately with a flexible scraper. The compound will blend in after 24 hours.

- Cracks or Chips: Treat as screw holes (above).
- Minor Scratches and Gouges: Due to the Concreeet™ texture, minor damage usually does not detract from the general appearance.

Always use patching compound sparingly

Avoid smearing compound beyond the holes

Always remove excess compound immediately

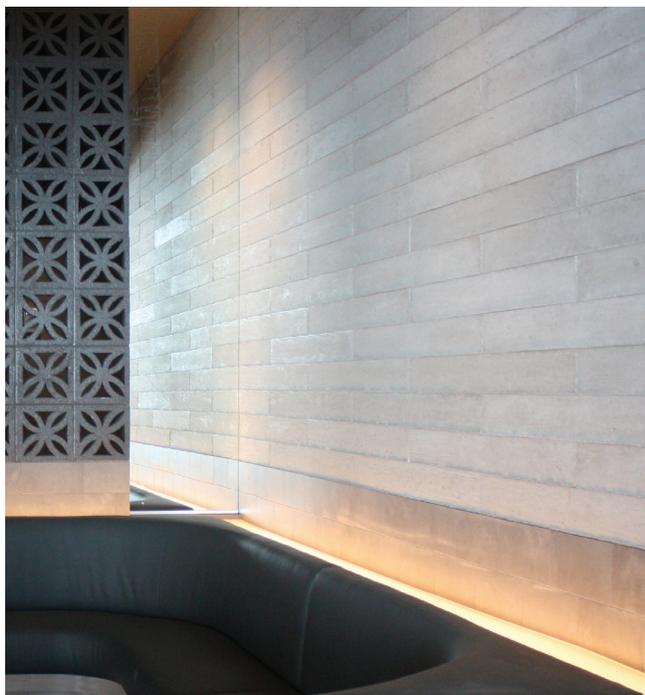
Note: Refer to the Formglas QuarryCast® Installation Instructions for more complete details.

■ **Cleaning and Maintenance**

- Concreeet™ has a factory applied clear acrylic sealer to reduce staining and make cleaning easier.
- Clean Concreeet™ parts with a water/soap solution and rinse with clean water and a sponge.
- Excessive dirt, pencil and rubber marks etc. can usually be removed with a multi-purpose spray cleaner such as "Spray Nine®" and wiping after with a damp cloth. Do not use powdered or abrasive cleansers.

Applications

To view photos of Formglas Concree™ applications, or to contact a local Formglas representative, visit www.formglas.com.



PLANKED VENEER FEATURE WALL

ONE RESTAURANT, NEW JERSEY



COLUMNS, ENTRANCEWAYS, MOLDINGS

ASELLINA RISTORANTE, NEW YORK

Samples Available

Below are four samples Formglas offers to demonstrated Concree™ in various finishes and surfaces. We maintain an inventory of these, and samples can be requested by email to either your local Formglas representative, or directly to samples@formglas.com.

Formglas is able to **custom formulate** Concree™ material to match an array of colors, textures or finishes. Please contact your local sales representative to learn more or discuss custom requirements for a specific project.



Formglas Concree™

Finish: Concrete Grey
Surface: Planking
Sample Size: 3" x 6 5/8"
Sample Code: 98113



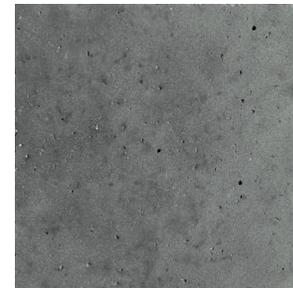
Formglas Concree™

Finish: Concrete Grey
Surface: Standard
Sample Size: 3" x 6 5/8"
Sample Code: 98134



Formglas Concree™

Finish: Smoke
Surface: Standard
Sample Size: 3" x 3"
Sample Code: 98114



Formglas Concree™

Finish: Dark Grey
Surface: Standard
Sample Size: 3" x 3"
Sample Code: 98115

Please note that colors shown on your display or printer output may NOT be an accurate representation of the actual product.