

Product
Data
Sheets

Architectural Specialty Solutions

Interiors + Exteriors

Formglas[®]

PRODUCT DATA SHEET

WOOD GRAIN TEXTURED GFRG

Molded Architectural Products and Elements

MasterFormat® 09 27 13

Woodgrane™ by Formglas®

For Interiors

Trade Name

Formglas® Woodgrane™



Common Names

Wood Grain Textured GFRG

Wood-Textured Glass Fiber Reinforced Gypsum

Manufacturer

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CURVED FEATURE WALL

ST. JOSEPH'S REGIONAL MEDICAL CENTER, NEW JERSEY

Summary

Woodgrane™ is a pre-finished alpha gypsum cement based material that replicates varieties of wood including oak, mahogany, walnut and pine. Factory-finishing is performed by a unique method of applying low VOC stains and washes that accentuate the textural detail and depth of the molded grain. Non-combustible Woodgrane™ components may be cast in a wide range of shapes allowing for design possibilities that may not be practical when using real wood due to size, shape, weight or building code limitations on the use of combustible materials. Formglas® Woodgrane™ has a Class A (or 1) flame-spread rating.

Detailed Description

Woodgrane™ is a material based on Formglas® Glass Fiber Reinforced Gypsum (GFRG). GFRG is a composite of high density, alpha gypsum cement material and glass fiber for reinforcement that is molded into architectural elements used for interior applications. Woodgrane™ parts weigh approximately 2 lb/ft² ⇔ 10 kg/m², depending on the depth of grain and profile. Composites have enhanced physical properties such as high surface hardness and flexural strength.

Woodgrane™ fabrications are installed with less supportive framing and a finished installation is almost always faster than a comparable installation of natural wood elements by finish carpenters. This provides measurable cost benefits and minimizes disruption, particularly when Woodgrane™ components are chosen for renovation of existing spaces. From an environmental perspective, the choice of Woodgrane™ yields benefits in support of sustainable construction such as a reduced use of raw materials.

Woodgrane™ is commonly used to make ceiling beams, bulkheads, coffers, vaults, feature walls and cornice moldings. These elements can be fabricated into larger shapes more quickly than elements built by finish carpenters. The ability to make large curved components and options for a vast range of wood grain simulations and colors provides tremendous design flexibility.

Lightweight Woodgrane™ ceiling elements are usually wire-suspended. Other parts are attached with concealed fastening in order to provide a superior finished appearance. Between parts, joints are finished with a closely matching caulk or are designed to conceal joints. Moldings can be supplied with pre-made corners to streamline installation. Woodgrane™ parts are factory pre-finished to match the control sample approved by the architect and designer. There may be situations where it is desirable for Woodgrane™ components to be provided unfinished such as when components need to be field-finished to match existing wood pieces at the job site.

Woodgrane™ 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.

■ Technical Data

Refer to the following standards:

ASTM International (ASTM)

- C1381 - Standard for Molded Glass Fiber Reinforced Gypsum Parts
- C1467 - Standard for the Installation of Molded Glass Fiber Reinforced Gypsum Parts
- C1355 - Standard for Glass Fiber Reinforced Gypsum Composites

International Standards Organization (ISO)

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

European Standards (EN)

- 13501-1 - Fire classification of construction products and building elements: classification using test data from reaction to fire tests

International Maritime Organization (IMO)

- FTP Code (IMO resolution MSC 61/67)

■ Physical and Mechanical Properties

Formglas® uses alpha gypsum cement that is mined and processed in the USA from some of the world's purest deposits. Throughout the fabrication process, the gypsum material is subjected to strict inspections and testing to guarantee its high level of quality. Our prominent gypsum suppliers certify the raw materials are in compliance with the ASTM Standard C1355.

Matrix:	Alpha Gypsum Cement
Finish:	Standard and custom factory-applied finishes available.
Surface:	Standard replication of oak, mahogany, walnut, teak and pine. Custom wood finishes available.
Density:	~105 lb/ft³ ⇔ 1675 kg/m³
Weight:	1½-2 lb/ft² ⇔ 7-10 kg/m² *
Shell thickness:	3/16" ⇔ 5 mm nominal **
Edge thickness:	3/4" ⇔ 19 mm typical
Embedments:	Galvanized steel or wood (if required)
Glass Fiber:	5% typical
Max. length moldings:	12' ⇔ 3.6 m
Max. size molded parts:	40 ft² ⇔ 3.7 m²

* Typical weights: parts with deep surface relief or required added thickness (e.g. for acoustic mass) will weigh more. Please submit drawings for a more accurate estimate.

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

ASTM Standard C1355 and ISO Test Results

Flexural Strength	
Ultimate strength:	4700 psi ⇔ 32 MPa
Yield strength:	1875 psi ⇔ 13 MPa
Flame Spread:	0
Smoke Development:	0
Behavior at 750°C:	Pass
Coefficient of Linear Thermal Expansion:	5.5 x 10 ⁻⁶ in/in/°F ⇔ 9.9 x 10 ⁻⁶ mm/mm/°C
Humidified Deflection:	1/8" ⇔ 3 mm
Nail Pull Resistance:	176 lbf ⇔ 782 N
Impact Resistance:	6.5 ft.lb/in. ⇔ 347 J/m
Barcol Hardness:	60
Rockwell Hardness:	72 M scale
ISO Reaction to Fire Tests	
Mass Loss:	20%
Temperature Difference:	7°F ⇔ 4°C
Duration of Ignition > 5 sec:	0
Gross Heat of Combustion:	300 Btu/lb ⇔ 0.7 MJ/kg

■ Manufacturing Tolerances

Shell Thickness:	± 1/16" ⇔ 1.5 mm
Dimensional (all directions):	± 1/8" ⇔ 3.2 mm
Parts 8" to 16":	± 3/16" ⇔ 5 mm
Warpage or Bowing:	± 1/16"/ft. ⇔ 1.5 mm/300 mm

■ LEED®



Formglas® products contribute toward LEED® credits, and have been used in LEED® projects worldwide. Since Formglas® products are usually custom-made to project specifications, their contribution to credits may vary. Contact Formglas® with specific details of your project and to clarify the version of LEED® rating system applicable.

■ Classifications and Approvals

In addition to the ASTM and ISO testing, Woodgrane™, a derivative of Formglas® GFRG, is classified as “A1” in accordance with the European Standard EN 13501-1. This standard provides the reaction to fire classification procedures for all construction products, including products incorporated within building elements. A1 is the highest classification possible. Class A1 products will not contribute in any stage of the fire including the fully developed fire.

GFRG Fabrications are approved for use on marine vessels 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

Woodgrane™ parts shall be transported and handled in a manner that avoids damage to the finished surface 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. Woodgrane™ 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, Woodgrane™ parts shall be kept clean and stored on a dry surface, ideally in the originally factory packaging until parts are ready to be installed, 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 Woodgrane™ 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 Woodgrane™ 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 other conditions affecting the installation and performance of Woodgrane™ 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 Woodgrane™ 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 substrates to accept Woodgrane™ parts shall be installed straight and true within 1/8” in 8 linear ft. ± 3 mm in 2500 mm and shall be free of obstructions and interference that prevents the correct positioning and attachment of the Woodgrane™ 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 Woodgrane™ parts. Metal framing members shall be installed in accordance with ASTM Standards C754 or C1007, as required.

■ 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 SDS 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

Install Woodgrane™ parts as indicated on approved shop drawings, other recommendations and the contract requirements. Comply with ASTM Standard C1467 for the Installation of Molded Glass Fiber Reinforced Gypsum Parts, as applicable. Woodgrane™ parts shall be carefully lifted into place using suitable devices and installed securely. The installing contractor is to supply and install all brackets and shims as required for the installation and proper alignment of the Woodgrane™ parts with adjacent parts and materials.

Attach Woodgrane™ parts to substrates and framing following the directions provided on the shop drawings. Where screws are required, they are to be countersunk and holes shall be patched and touched up with the factory-supplied stain. Where Woodgrane™ parts are suspended, use all suspension points indicated on the shop drawings or on the back of Woodgrane™ parts, as a minimum requirement. Use additional support(s) if required.

■ **Finishing**

Woodgrane™ components are commonly factory-finished. Joints are normally caulked with a closely matching caulk as recommended by Formglas, or have been concealed through the design of parts. Where patching or touch up is required, careful application of drywall compound that is applied to simulate the finished grain texture and factory-supplied wash/stain is required. Technical support from Formglas® is always available to the installing contractor.

■ **Applications**

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

■ **Samples Available**

Formglas® is able to custom-fabricate Woodgrane™ to match a variety of wood species and colors. In addition, Formglas® maintains an inventory of four standard samples to demonstrate this material. To request a sample, contact samples@formglas.com or your local Formglas® representative to discuss your specific project requirements.

Please note that images and their color(s) are for general reference and may not be accurately rendered on screen or in print.



CURVED FEATURE CEILING COMPONENTS

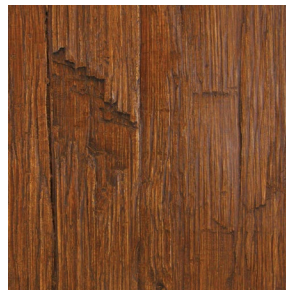
REFLECTIONS CAFE, NEW JERSEY



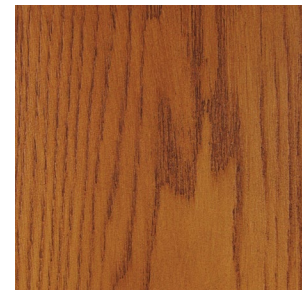
Woodgrane™
Color: Saddle Brown Stain
Surface: African Teak Grain
Sample Size: 4" x 5"
Sample Code: 98175



Woodgrane™
Color: Walnut Stain
Surface: Oak Grain
Sample Size: 4" x 5"
Sample Code: 98112



Woodgrane™
Color: Teak Stain
Surface: Rustic Pine Grain
Sample Size: 4" x 5"
Sample Code: 98003



Woodgrane™
Color: Danish Walnut Stain
Surface: Oak Grain
Sample Size: 4" x 5"
Sample Code: 98132



FAUX CEILING BEAMS & TRIM DETAILS

DIAMOND JO CASINO, IOWA



Woodgrane™

Project: Memorial Sloan Kettering Cancer Center, NYC | Design: EwingCole | Material: Woodgrane™

Shaping Possibilities™

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