

Ultra Densite® HL



INDUSTRIAL GYPSUM PRODUCTS



Glass-Reinforced Gypsum (GRG) technology produces thin, lightweight, high-strength pieces for architectural applications. There are plaster compounds to meet the demands of a wide range of hand lay-up and spray applications. Georgia-Pacific produces several glass-reinforced gypsum (GRG) plaster products engineered to meet a wide variety of specifications for architectural decoration. While our standard formulations generally meet most needs, we also can customize a special formulation for you based on your specifications for a particular application.

Ultra Densite® HL Plaster is a formulated hemihydrate plaster produced from a high-strength, high-density, alpha-based gypsum. Fast becoming the material of choice for manufacturers of GRG parts. When combined with glass-fiber mats (hand lay-up) or chopped glass-fiber strands (spray application), it creates thin, lightweight, high-strength shapes with ultra-smooth surfaces.

Chemical Name	Calcium Sulfate Hemihydrate
Appearance	Powder
Color	White
Odor	Low odor
Use Consistency	26-32cc Water/ 100gms plaster
Vicat Set Time	45-65 minutes
Set Expansion %	0.078 %
Compressive Strength	7800 psi
Relative Density	2.3 - 2.7

Can be used for ceilings and other places where weight is a factor, and installs with minimal field labor using standard drywall techniques. The superior fire retardant properties of Ultra Densite® HL allow for safe, code-compliant installation in all types of public and private structures.

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Mixing: The Most Important Step

Strength, hardness, absorption and density are finely honed during the mixing process. Throughout the mixing cycle, gypsum particles are dispersed in water and air is removed from the resulting mixture. Two different methods, batch or continuous mixing, can be used to bring water and plaster to a slurry condition that will produce optimum results in the finished product. Batch mixing generally is preferred when specialty plasters will be applied to molds by hand. The process involves manual agitation of slurry produced in small amounts. Plaster is sifted into water and allowed to soak before it is hand mixed to the proper consistency. For big parts, the slurry can be mixed to the proper consistency in a large batch, then transported to the mold in buckets. For smaller parts, the slurry can be mixed in small single-bucket batches as needed.

For best results when batch mixing, follow these rules:

- **Avoid changing the mixing cycle.**
- **Weigh plaster accurately.**
- **Carefully measure water.**
- **Time the soaking period and mixing cycle (sift plaster into water; soak until all particles are wet). If using a mixer, use proper size, container shape and propeller clearances as dictated by the batch size and physical properties of the plaster. Mix the slurry to a creamy state to avoid settling.**
- **Maintain a constant and proper temperature.**
- **Keep all equipment clean.**
- **When pouring, maintain a constant rate, keeping the lip of the bucket as close to the mold as possible.**

For Spray Applications

Continuous mixing, a process by which custom-engineered equipment automatically meters and mixes exact proportions of plaster and water to form a slurry, ensures maximum consistency when using spray equipment. During continuous mixing, the ingredients are blended in a mixer at high velocity, instantly forming a slurry without the need for soaking. The resulting flowable mixture is then pumped through a hose which sprays Densite® HL plaster and fibers into architectural molds.

Fabrication

GRG products are custom made, thin plaster shell shapes and forms manufactured in a plant or on-site by either one or two methods, both of which center around how the glass fiber reinforcement is introduced into the product. The hand lay-up method means that various layers of glass fiber mat and gypsum are manually placed in molds during the lay-up process. Another method, the chopped strand spray method, introduces glass fiber strands into the plaster mix as it is sprayed into the mold. Both methods will produce high quality products. After the gypsum and glass-fiber reinforcement have set, the product should be carefully removed from the mold and stored until adequately dried for shipment.

Drying Decorative Parts

To ensure that the physical properties of the parts can develop to the maximum level, the GRG part should be dried as quickly, thoroughly and safely as possible. Drying is the evaporation of "free" water from the GRG part, which can be a natural or forced air process. When the center of the part reaches the temperature of the air surrounding it, drying is complete. To prevent calcination (soft, powdery surfaces), drying temperatures generally should not exceed 120° F.

Drying times can be reduced by increasing air speed over GRG parts. The best drying conditions consist of a room with:

- **Rapid, consistent air circulation with no "dead spots."**
- **A consistent temperature throughout the area.**
- **An air transfer system that replaces exhausted, moist air with fresh air.**

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Latex or Wooden Molds

For simple architectural parts such as domes or columns, wooden molds generally prove to be the most economical. However, for ornate parts, latex molds provide the best reproduction. Latex molds can be created in a number of ways. In some instances, liquid latex is poured over the original design, that has been surrounded by a shell. In others, thickened liquid latex is brushed onto the original design, then surrounded by a constructed shell. When using Georgia-Pacific specialty plasters to reproduce parts, use a release agent on the surface of the mold to prevent parts from sticking no matter whether the mold is latex or plywood.

Finishing

GRG products generally do not have the surface characteristics required for a high-gloss finish when they arrive on-site from the manufacturer. In most cases, however, the surface can be adequately prepared in the field to receive high-gloss paint through the use of compounds, sealers and/or primers. Consult your parts manufacturer to determine the best process for producing the desired finish.

Installation

Use manufacturers' shop drawings and recommendations. GRG components should be installed plumb and level to required planes as designed and indicated. Use screws, adhesive or hang in accordance with manufacturers' recommendations if GRG must be attached to a framing system. The framing or suspension system itself should be installed in accordance with the manufacturers' recommendations or as recommended by drywall and ceiling standard practices. Openings for plumbing, electrical and mechanical penetrations may be field cut using standard drywall construction methods, tools and procedures. Repair GRG components using standard drywall or plaster materials and techniques.



Georgia-Pacific Gypsum Products, Always Ready to Help

You can depend on Georgia-Pacific Gypsum for the highest quality specialty plasters in the industry — and for all the technical information and hands-on experience you may need. For information on specific product lines please contact your Georgia-Pacific Gypsum representative at 1-800-695-6367.

We welcome the opportunity to serve you.

U.S.A. – Georgia-Pacific Gypsum LLC
 Canada – Georgia-Pacific Canada LP
Sales Information & Order Placement
 U.S.A. and CANADA 1-800-695-6367

Technical Information
 Georgia-Pacific Gypsum Technical Hotline
 U.S.A. and Canada: 1-800-225-6119
 www.gpgypsum.com



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WARRANTIES, REMEDIES AND TERMS OF SALE

For current warranty information, please go to www.gpgypsum.com and select the product for warranty information. All sales of this product by Georgia-Pacific are subject to our Terms of Sale available at www.gpgypsum.com.

CAUTION: For product fire, safety and use information, go to gp.com/safetyinfo.

HANDLING AND USE CAUTION Heat develops as the product hardens (rehydrates) and may cause serious burns resulting in possible permanent injury. After mixing with water, do not allow prolonged contact with skin until the product has completely hardened and cooled.

Mixing or sanding this product after drying may generate dust which can irritate eyes, nose, throat, skin and upper respiratory tract. Use wet sanding to minimize dust generation and always maintain proper ventilation in the work area. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts, long pants and eye protection. Use a dust mask or NIOSH/MSHA approved respiratory protection during mixing dry materials, while sanding and during clean-up as appropriate. For Material Safety Data Sheet or additional information, call 1-800-225-6119 or go to www.gpgypsum.com.

