

GRG Installation Guide – Castle Access Panels & Forms Inc.

Glass Reinforced Gypsum (GRG) is a strong yet lightweight architectural material designed for interior use. At Castle Access Panels, we manufacture GRG using only high-density alpha gypsum plaster and continuous strand fiberglass matting. These are laminated by hand into precision molds to produce clean, structurally reinforced shapes with integrated connection flanges. GRG is an excellent solution for columns, coves, ceilings, and other complex architectural profiles that require durability, aesthetic precision, and ease of installation.

This guide provides practical recommendations for handling, installing, and finishing GRG components to help you achieve a high-quality installation. It is essential to consult project-specific shop drawings, follow applicable codes, and coordinate with manufacturers of paints, sealants, and joint compounds.

1. Understanding GRG Products

Castle's GRG components are pre-formed to match architectural specifications and often include prefabricated features like corners or returns to eliminate field modifications. While GRG can be trimmed onsite, it is preferable to install pieces as supplied. The edges and flanges are designed to handle fasteners and ensure proper alignment and support.

The typical weight of GRG panels ranges from 1.5 to 2.5 lbs per square foot, depending on the shape and profile.

⚠ Note: GRG is designed for interior environments only. Exposure to moisture or direct weather will compromise structural integrity.

2. Site Delivery, Storage & Handling

Although GRG is structurally strong, it is gypsum-based and can be easily damaged if mishandled. Always store GRG components:

- In an upright position
- Indoors or in a dry, climate-controlled area
- On a level and clean surface

Never lay pieces flat, lean at an angle, or stack parts on top of each other. Warping or twisting due to improper storage may require corrective reshaping—usually done by dampening the backside and clamping into position during installation. Contact Castle if you're unsure how to proceed with warped pieces.

3. Cutting and Drilling GRG

GRG can be cut and drilled using tools designed for metal or composite materials. Fine-toothed circular saw blades, jigsaws, and drill bits yield the best results with minimal edge chipping.

- Always pre-drill and countersink fastener holes to avoid surface cracking.
 - Perform all cutting in a well-ventilated area and wear a NIOSH-approved respirator to protect against gypsum dust and fiberglass fibers.
 - Edges can be finished with sandpaper or abrasive pads to restore profile integrity after cutting.
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4. Preparing for Installation

Before installing any component, carefully:

- Review shop drawings
- Check part dimensions and verify field measurements
- Dry fit pieces as needed, especially for larger profiles

GRG parts are often slightly flexible, which can help with alignment but also makes precise measurement more challenging. If a profile needs to be shaped during installation, use clamps, temporary bracing, or supports.

! Important: Report any inconsistencies or damage before installation. Do not attempt to install damaged pieces without manufacturer approval.

5. Framing and Support Requirements

GRG installation relies heavily on proper framing. All attachment flanges must be securely fastened to structural framing:

- Use minimum 20-gauge metal studs or angles for wall/ceiling connections
- Support suspended elements with 12-gauge hanger wire or threaded rod
- All framing must be plumb and aligned with GRG connection points

If framing is not shown in shop drawings or is insufficient, add supplemental framing as needed to support the load and maintain alignment.

6. Fasteners and Adhesives

Fasteners:

- Standard drywall screws are typically suitable (length depends on framing)
- All screws should be pre-drilled and countersunk into flange areas or tape recesses
- Avoid overtightening; shim between GRG and framing as needed

Adhesives:

- Use construction adhesives compatible with plaster/drywall (e.g., PL Premium, Liquid Nails, or equivalent)
 - Do not use flexible panel mastics or low-strength adhesives
 - Apply generously at seams and part-to-part connections
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7. Seam Treatment and Finishing

For a seamless appearance:

1. Clean all joints and surfaces with water, acetone, or isopropyl alcohol to remove dust and oils.
2. Pre-moisten GRG surfaces before applying joint compound to reduce suction.
3. Use 2" fiberglass mesh tape at seams. Do not use paper tape.
4. Apply multiple coats of joint compound (suitable for plaster), feathering beyond the seam to blend into the surface.
5. Sand between coats using 120-grit sandpaper, maintaining the profile curvature.
6. Take care to prevent crowning, which causes visible seam lines after painting.

Priming and Painting:

- GRG and joint compound have different porosities. Use a high-quality primer designed for drywall/plaster to even out the surface.
 - Apply two rolled coats of primer, sanding between coats if needed.
 - Avoid high-gloss finishes, which emphasize surface imperfections and seams. Opt for matte or eggshell finishes where possible.
 - For smooth, monolithic finishes, a full skim coat may be required across the surface.
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8. Finishing Standards and Special Considerations

GRG is not a flawless material out of the mold—field finishing is essential. Follow guidelines from the “Levels of Gypsum Board Finish” publication, especially in areas with critical lighting or smooth, untextured paint.

If your design includes spotlights, up-lighting, or natural light grazing the surface, notify your finisher early. These conditions may require:

- Higher finish levels (Level 5)
- Skim coats
- Extra sanding and touch-ups

Always coordinate with the general contractor and design team regarding finishing expectations.

9. Additional Resources

- “Glass Reinforced Gypsum: A Guide” (CISCA/AWCI)
 - “Levels of Gypsum Board Finish” (AWCI/PDCA/CISCA/Gypsum Association)
 - Manufacturer instructions for:
 - Paints and primers
 - Joint compounds
 - Sealants or coatings
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Questions or Field Support?

Castle Access Panels & Forms Inc. provides technical support and clarification for project-specific challenges. Contact your Castle rep before making modifications or for advice on warped parts, adhesives, or finishing products.