



“GRG” - MULTI-PIECE INTERIOR CEILING DOMES
HANDLING, INSTALLATION AND FINISHING INSTRUCTIONS

RELATED REFERENCE MATERIALS:

- **“Glass Reinforced Gypsum, a Guide”** published by CISCA and endorsed by AWCI for similar information on laminated type products’ tolerance checks, etc..
- **“Levels of Gypsum Board Finish”** cosponsored by AWCI, Painting & Decorating Contractors of America, Gypsum Association and CISCA for generic terms and issues relating to “floated” tape and bed joint qualities.
- Consult the specified Paint, Sealant and Joint Compound Manufacturer’s Specifications and application instructions for proper procedures.

GENERAL - Things to know:

Diameter (circle size in plan at both finish and outer flange points)

Spring line (start of upward curve)

Arc rise (height from spring line to top center dome peak.,

Perimeter Flange condition (can be either horizontal to abut or overlap drywall ceiling, sometimes with a decorative molding ring, or with a vertical drop, possibly behind a light cove or trough)

Framing Point (outside of perimeter flange dimension where dome is attached)

Round “GRG” Domes are usually a series of pie shaped pieces meeting at the top center. Larger diameter and rise domes will be made as a “dome within a dome”, involving a perimeter “cove” shape curving up to the normal pie shaped dome pieces in the center. The number of pieces of any dome is determined by the overall size and height considering mold feasibility and jobsite installation needs.

Elliptical “GRG” Domes are usually (4) quarter pieces with larger sizes split as required.

HANDLING / STORAGE - Although “GRG” is strong, it is a gypsum based product and is subject to damage from improper handling and storage. Store dome pieces on the curved flange side, supported at a wall, upright in a controlled environment, weather protected, and on a level surface similar to conditions as are required for drywall. **DO NOT LEAN AT AN ANGLE, LAY FLAT OR STACK PARTS ON TOP OF EACH OTHER.** Parts that are improperly stored may warp and/or twist. This can usually be corrected by wetting out the back of the pieces and installing before drying. Consult the manufacturer before attempting or if there is any question as to how to store.

CUTTING / DRILLING - Use of blades and drill bits designed for metal produce good results. The number of teeth on the blade determines the finished quality of the cut. Slow but steady progress reduces edge chipping. Predrill and countersink all fastener heads, usually in the tape/bed recess to both sides of seams. Cutting and drilling of “GRG” will produce gypsum dust mixed with glass fibers. Wear correctly fitting, NIOSH approved masks to minimize inhalation.

ASSEMBLY / INSTALLATION - Review of shop drawings and familiarization with all dimensions is a must before starting. Verify the piece dimensions match the approved shop drawings. Large, relatively flat “GRG” pieces like domes will be somewhat flexible allowing for some adjustment and also some difficulty in measuring. Use clamps or other methods to fix to correct shape if necessary.

Continued on Page 2



"GRG" Ceiling Dome Installation continued... (page 2 of 3)

ASSEMBLY / INSTALLATION cont'd.

Depending on the size of the dome, it may be possible to pre-assemble on the floor, raise into place and then secure. Multi-piece sections of larger domes may also allow this method. Dry fitting and pre-drilling hanger holes on the floor for large domes can also be helpful.

The most important installation benchmarks to set are the overall plan diameter (finish or framing point) and the arc rise (overall height from spring line to peak). Too high a rise and the perimeter will "pull in" creating a gap at the side flanges – too low and the outside "spreads" and pieces will only touch in the middle of the sides. It is also helpful to mark progressive piece angles at the perimeter, 45°, 90°, 135°, 180°, etc. for (8) piece domes, to assure alignment as each piece is put in place.

Domes are usually suspended from the side return flanges with positive fastening to the structure at the perimeter flanges for stabilization (vertical drop) or for more rigid attachment where a horizontal flange is taped and floated to an adjacent drywall ceiling. Theoretically a dome will be self supporting once all the pieces are together with the outside edge secured, but perfectly true, circular perimeter framing is not always possible. Normal drywall fastener spacing should be followed depending on the edge condition. As a minimum, locate framing and attachment to both side of seams and as possible along the outer curved edge. However, permanent perimeter attachment should not occur until after all pieces are fit and aligned and adhesive is applied to the seams.

Suspend the dome from the side return flanges, through the embedded wood, by means of hanger wires spaced no more than 4'-0" O.C. along the arc. Locating hangers across from each other will help prevent distortion of the curvature. More hangers are better than less. Size of wire is recommended at #12 minimum. "GRG" weighs 1 1/2 to 2 lbs. per square foot of surface area.

Toe-screw across the seam, in the tape/bed recess to aid temporary alignment if necessary. This may also be the only way to install the "last piece" where access above is not possible. Do not "tie off" the hangers yet.

As pieces are being installed be aware of meeting the correct angles marked at the perimeter. Pieces are usually undersized slightly to allow for both the usual plaster cure expansion and adhesive gaps required onsite. Shim between pieces as you progress in order to stay "on track" with required angles. Visually inspect the dome once all pieces are in place and verify that the pieces are all aligned and the shape "appears" true.

Apply a good quality construction adhesive (Liquid Nails or better – not a "panel" type) to both flange surfaces by lifting every other piece up or to one side by lifting each piece progressively. Tension the hanger wires as needed for fit and tie off. Permanently secure the perimeter as required.

FINISHING / PAINTING - Clean the "GRG" surface to remove any dusts, oils, etc. with a non-oil based solvent such as acetone or isopropyl alcohol and/or plain water (no soap). "GRG" is "hygroscopic" and will tend to "pull" water from the joint compound as it is being spread across the surface. Pre-moisten the "GRG" prior to applying the compound with a damp sponge and allow excess to be absorbed.

Embed standard 2" mesh or

Continued on Page 3



"GRG" Ceiling Dome Installation continued... (page 3 of 3)

paper tape into the seam recess with joint compound. Multiple coats are required as with drywall, "floating" away from the seams to create a monolithic surface.

Proper priming of "GRG" and joint compound surfaces is extremely important to minimize the differences in porosity between the two materials and eliminate chances of seam "read through". Use both a good quality primer and final coating designed specifically for interior drywall and/or plaster. Two primer coats, rolled on, may be needed. Re-sand surfaces between coats as needed.

Finish quality levels and the methods to achieve them are also as required for drywall per the references listed above, especially for critical lighting applications and for coatings with any gloss appearance. High-Gloss paints are specifically not recommended. These will almost surely exhibit seam "read through" even if properly specified and all parties are aware of the extra field measures necessary for their use.

"GRG" is not inherently "perfect". Smooth, non-textured finishes may require additional floating, primer coats and sanding to obtain an acceptable finish. In some cases an applied skim coat may be necessary for the entire surface. Consult the manufacturer for further instructions in these situations.