

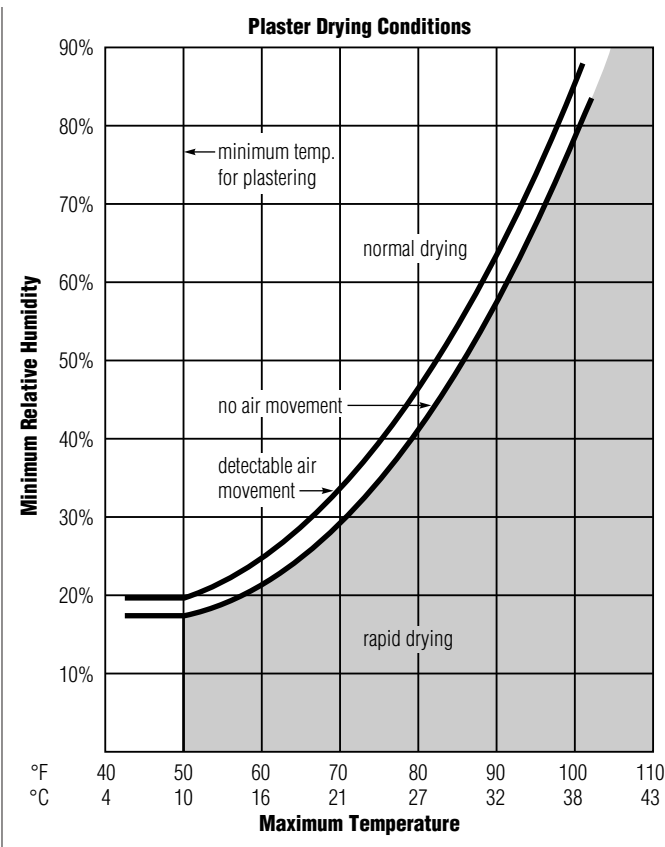
DIAMOND® and IMPERIAL® Brand Finish Plasters

DIAMOND and IMPERIAL Brand Finish Plasters both offer a variety of advantages when used alone or in tandem in various wall systems. DIAMOND Brand Finish Plaster is very workable and easy to apply. IMPERIAL Brand Finish Plaster provides a higher-strength and more impact-resistant finish, which is why it is often recommended as the outer coat on a two-coat system. Whether you use DIAMOND Brand, IMPERIAL Brand, or a two-coat system combining the two, you're sure to be pleased with the variety of textures you can achieve and the refined, finished look of a well-executed plaster interior.

Preparation

Protect the product from moisture during storage and on the job. In cold weather, heat the interior of the building to a minimum of 55 °F (13 °C) for an adequate period before the application of plaster, while basecoat and finish are being applied, and until the finish is dry. Keep air circulation at a minimum level during application and until proper set has been achieved.

If possible, maintain building temperature-humidity combination in the “normal drying” area of the following graph.



When abnormally dry conditions exist, you can increase humidity by wetting down the floor periodically. During these periods, make every effort to reduce air movement by closing windows and deflecting heater blower and duct output away from the surfaces being plastered.

Protect all finish materials and finish surfaces from contact with Finish Plaster. These include glass, ceramic materials, metal and wood. Apply wood, plastic or other exposed trim after finish application.

Tools	Joint Preparation	– Joint Tape – Spring Driven Hand Stapler, 3/8" Staples (if tape is not self-adhesive) – Steel Finishing Knife – Trowel
	Mixing	– Heavy Duty Drill with no-load rating of 900 to 1,000 rpm. Drills with sufficient power include Black & Decker Model #1322; and Milwaukee Models #1250-1, #1630-1, #1670-1 and #1675-1. – Cage-Type Mixing Paddle – Metal Mixing Barrel (16-gal., 1-bag size; 30 gal., 3-bag size; 15-gal. smooth-sided, 1-bag size) – Buckets/Containers for Water
	Plastering	– Trowels, Rods, Darbys – Drop Cloths – Ladders/Scaffolding – Trowels
Joint Treatment		To ensure a smooth, seamless surface, the joints between wall panels must be properly treated to conceal and reinforce them before plaster is applied.
	For Normal Drying Conditions	Align IMPERIAL® Brand Type P (pressure sensitive) Tape over the joint and press it into place over the entire length of the joint. Eliminate wrinkles and assure maximum adhesive bond by pressing the entire length of tape with a steel finishing knife or trowel. Press the tape into corners with a corner tool. Do not overlap. Alternatively, you can attach IMPERIAL® Brand Type S Tape with spring-driven hand stapler using 3/8" staples. Use two staples at each end of the tape; staple the remainder at staggered 24" intervals. At wall-ceiling angles, staple every 18" to 24" along the ceiling edge only. For wall-to-wall interior angles, staple every 18" to 24" on one edge only, working from top to bottom. Position the tape to bridge the joint at all interior corners without overlapping. For fire-rated assemblies, staple either Type P or Type S Tape 8" o.c. Embed the tape and fill beads with a coat of DIAMOND or IMPERIAL Brand Interior Finish Plaster and allow to set—but not dry—prior to finish application. Slightly underfill in the bead by screeding along the bead with edge of trowel after setting the bead. (Best results are obtained by planning the job to permit continuous application of plaster from angle to angle.)
	For Rapid Drying Conditions	When building temperature-humidity conditions fall in the "rapid drying" area of the graph, or IMPERIAL Brand Gypsum Base is being applied over steel studs, or in certain applications to framing spaced 24" o.c., use SHEETROCK® Brand Joint Tape embedded with SHEETROCK® Brand DURABOND™ Setting-Type Joint Compound or SHEETROCK® Brand EASY SAND™ Lightweight Setting-Type Joint Compound. Butter the joints with compound using a trowel or steel finishing knife to force compound into the joints. Center SHEETROCK Brand Joint Tape and press it into the fresh compound with a trowel held at a 45° angle. Draw the trowel along the joint with sufficient pressure to remove excess compound, ensuring the tape is wetted and covered with a thin skim coat of the excess compound to edge wrinkling or curling. Wipe clean. Allow the joint treatment to set; then apply a separate coat of joint compound to completely cover the tape, using a 10" or 12" knife or trowel, feathering it 2" to 3" beyond the edges of the tape. Allow it to set and dry before plastering. Joint areas prepared in this manner should be surface dampened with a light application of water by brush, felt or sprayer just prior to the plaster application to ensure proper absorption. Failure to do this can cause excessive initial absorption, while completely wet joints will not allow required absorption.

Mixing	Mix plaster with a cage-type paddle driven by a heavy-duty drill capable of producing 900-1000 rpm under no load. The correct approximate water-plaster ratio for IMPERIAL Brand Finish (hand application) is 11 to 13 qt./80 lb. bag (10.5-12.0 L/36.3 kg. bag). Water usage for DIAMOND Brand Finish Plaster is approximately 12 to 15 qt. per 50-lb. bag. Place the water in a 12- to 15-gal. smooth-sided container. Start the mixer, slowly add plaster and mix at least 2 minutes to disperse lumps completely. Do not mix more than 5 minutes. Overmixing shortens working time. Do not mix more than can be applied in 30 minutes. Do not retemper. For sand float finish with IMPERIAL Brand Finish Plaster, add up to 20 lb. (9 kg) of clean silica sand per 80-lb. bag to achieve the desired texture. Using more than 20 lb. of sand per bag will diminish the plaster's strength to less than the optimum 3,000 psi. For an eye-catching texture, apply plaster in the normal manner but omit final troweling. After surface has become firm, float to desired texture using a sponge, piece of carpet or other float. Use water sparingly. Note: If you add aggregate to DIAMOND Brand Interior Finish Plaster, you must add a suitable retarder to allow time for proper application before the plaster sets. Add 1/4 to 1/2 teaspoon of USG™ Retarder for Lime Containing Plasters per bag of aggregated DIAMOND Brand Interior Finish Plaster to the mixing water to allow sufficient working time. You can also use Cream of Tartar as an alternative retarder.
Plastering	IMPERIAL and DIAMOND Brand Finish Plasters provide a wide range of finish options with distinct application systems: 1. One Coat, basecoat plaster is not used 2. Two Coat, finish coat over a base coat 3. Two Coat: DIAMOND Brand basecoat and IMPERIAL Brand finish coat over DUROCK Brand Cement Board or FIBEROCK Brand Abuse-Resistant Panels treated with a bonding agent 4. Two Coat: IMPERIAL Brand Finish Plaster—finish coat over sanded STRUCTO-BASE High-Strength Basecoat Plaster One Coat System Scratch-in a tight, thin coat of Finish Plaster over the entire area, immediately doubling back with plaster from same batch to full thickness of 1/16" to 3/32". Fill all voids and imperfections. Final-trowel after surface has become firm, holding the trowel flat and using water sparingly. Do not over-trowel. For texture finished surfaces, with or without the addition of job-added sand, omit final troweling. The surface is textured naturally as the material firms and water is removed into the base. You will obtain the best results by planning plastering to permit continuous application from angle to angle. Where joining is unavoidable, use the trowel to terminate unset plaster in sharp clean edge—do not feather out. Bring adjacent plaster up to terminated edge and leave level. Do not overlap. During finish troweling, use excess material to fill and bridge joining. Two Coat System IMPERIAL Brand Basecoat Plaster or DIAMOND Brand Veneer Basecoat applied to IMPERIAL Brand Gypsum Base, or concrete block or monolithic concrete treated with USG Plaster Bonder. Leave the surface of the base coat rough and open for the proper bond of finish coat. Allow the basecoat to set to provide proper suction for the finish coat. Apply a finish coat of IMPERIAL Brand Finish as indicated above. Veneer Plaster Over FIBEROCK® Brand Abuse-Resistant Panels Veneer Plasters provide increased resistance to abrasion, indentation and penetration when used over FIBEROCK® Brand Abuse-Resistant Panels in commercial and institutional applications such as schools and retail locations. In this two-coat veneer plaster system, DIAMOND Brand Veneer Basecoat Plaster and then IMPERIAL Brand Finish Plaster are applied over FIBEROCK Brand Abuse-Resistant Panels attached to framing.

Treat joints of the fiber board panels using SHEETROCK® Brand Joint Tape and a SHEETROCK® Brand Setting-Type Joint Compound (DURABOND or EASY SAND). Provide an additional coat of setting-type compound to fully conceal the tape. Allow to completely dry. When the joints are completely dry, treat the entire wall surface with USG Plaster Bonder according to the application directions. Then apply DIAMOND Brand Veneer Basecoat Plaster 1/16" to 3/32" thick using scratch and double-back technique. This is accomplished by applying a tight, thin coat over the entire area, and immediately doubling back with plaster from the same batch to achieve full thickness. When basecoat plaster is firm, broom the surface to leave it rough and open for finish. With basecoat set and partially dry, apply IMPERIAL Brand Finish Plaster, using a scratch and double-back technique. Complete finishing when material is firm. Leave finished surface smooth and dense for decorating.

Note that this two-coat technique also works for application over 5/8" FIBEROCK® Brand Abuse Resistant Panels, 5/8" IMPERIAL Brand Gypsum Base, FIRECODE Core, or 1/2" IMPERIAL Brand Gypsum Base, FIRECODE C Core, in any fire-rated design, as long as 20-gauge steel framing is used and the proper joint treatment procedure is followed.

**Veneer Plaster
Over DUROCK® Brand
Cement Board**

Prior to application of Finish Plaster, the DUROCK® Brand Cement Board must be treated with USG Plaster Bonder and the joints treated with SHEETROCK® Brand Joint Tape and SHEETROCK® Brand Setting-Type Joint Compound (DURABOND or EASY SAND). Then apply DIAMOND Brand Veneer Basecoat Plaster as a basecoat. With the basecoat set and partially dry, apply IMPERIAL Brand finish plaster using a scratch and double-back technique. Complete the finishing when the material is firm. Leave the finished surface smooth and dense for decorating. Note that only two-coat veneer plaster system may be used over DUROCK® Brand Cement Board.

Veneer Plaster over sanded STRUCTO-BASE High-Strength Basecoat Plaster—You can achieve extraordinary levels of indentation and impact resistance, as well as superior abrasion resistance with IMPERIAL Brand Finish Plaster used as the finish coat in this system. Apply a base coat of DIAMOND Brand Finish Plaster. Allow the base coat to set and leave it rough to provide proper suction for the finish coat. Apply a finish coat of IMPERIAL Brand Finish Plaster as indicated above.

**Finish Plaster
to Degraded
IMPERIAL Brand
Gypsum Base**

When applying finish plaster to IMPERIAL Brand Gypsum Base, the paper on the gypsum base should be blue. Sometimes plastering on a jobsite can't be done until long after the gypsum base has been installed and there has been lengthy exposure to ultraviolet radiation from sunlight. When gypsum base has become degraded due to exposure to sunlight, the face paper turns from blue or grayish blue to gray or tan. When the face paper color becomes gray to tan, it must be treated with USG™ Accelerator—Alum Catalyst.

For Alum Catalyst treatment, dissolve three lbs. of alum in one gallon of water. Pour the alum slowly into water and mix thoroughly. Allow the solution to stand until any undissolved materials have settled; then strain the solution into a tank-type sprayer (such as a lawn and garden sprayer). One gallon of solution should treat 750 sq. ft. of gypsum base. Begin applying finish plaster before the alum solution is completely dry. **Note:** Alum treatment reduces the setting time of Diamond Brand Interior Finish Plaster. **Note:** If USG Accelerator—Alum Catalyst is not available, an alternative solution is to apply USG™ Plaster Bonder over the faded Imperial Brand Gypsum Base. **Note:** Using USG Plaster Bonder to correct degraded gypsum base will require you to use a two-coat veneer plaster system, since the bonder application will eliminate base suction needed for proper one-coat veneer application.

Finish Plaster as a Base Or Finish Coat Over Monolithic Concrete

Apply DIAMOND or IMPERIAL Brand Interior Finish Plaster only to interior, structurally sound, clean, smooth monolithic surfaces that have been treated with a high-quality bonding agent, such as USG™ Plaster Bonder. Grind ridges and high points flush, and brush the concrete surface clean of loose particles. Slight irregularities (less than 1/8") will not interfere with smooth application. Treat voids and depressions with bonding agent and fill them with IMPERIAL Brand Basecoat Plaster, DIAMOND Brand Veneer Basecoat Plaster, or with DIAMOND Brand Interior Finish Plaster job-aggregated with one-half to one full part sharp, clean, fine silica sand. After application, leave these areas rough and open, and allow them to set. The pre-fill should not be more than 1/4" thick. If pre-filled areas are allowed to dry overnight, recoat these areas with USG Plaster Bonder prior to application of the plaster product. If pre-filled areas are still "green" (set, but not dry), there is no need to recoat the surface with the bonding agent.

Job-aggregate the finish coat of finish plaster with one-half to one full part sharp, clean, fine silica sand. Although this material may be applied unaggregated, the sand promotes good mechanical bond between the finish coat and the bonder/concrete substrate. The sand-aggregated finish also builds up material over slight irregularities, producing an acceptable monolithic finished surface without detracting from smooth finishing. In addition, the aggregated finish provides options for sand float or other sand textured surfaces. Note: Delay smooth troweling or texturing until finish plaster surface has become firm and stiff enough for texturing.

DIAMOND Brand Finish Plaster to Radiant Heat Ceilings, Gypsum Base Radiant Heat Ceiling

When applying finish to IMPERIAL Brand Gypsum Base, first apply a fill coat of job-sanded DIAMOND Brand Interior Finish Plaster (1/2 to 1 parts by weight sand per bag) parallel to the direction of the cable and of sufficient thickness to completely cover the cable. Do not use the cable as a screed. Level the fill coat with a trowel, rod or darby to fill any low spots or to remove any high ridges, etc. "Tooth" fill coat to provide a key for the finish coat by the use of a serrated darby or by lightly brooming prior to set. The average thickness of the fill coat should be 3/16".

Do not apply finish coat until after the fill coat has developed sufficient suction. In good drying weather this takes about two hours after the fill coat has set; in damp and/or cold weather the time interval might extend overnight. Thus proper heat and ventilation should be provided. Apply job-sanded DIAMOND Brand Interior Finish Plaster (1/4 to 1 parts by weight sand) to a finish thickness between 1/16" minimum and 3/32" maximum. Scratch in a tight, thin coat over the entire area, immediately doubling back to the full thickness. Fill all imperfections.

Scratch and double back with the same mix of DIAMOND Brand Interior Finish Plaster. When the surface has become firm, hold the trowel flat and final trowel using water sparingly. Best results are obtained by continuous application of an entire ceiling. The total thickness of fill and finish coats should be 1/4". Always work to a wet edge to avoid dry joinings.

Radiant Heat Ceilings Over Monolithic Concrete

Use USG™ Plaster Bonder on concrete in accordance with the manufacturer's directions, prior to the application of DIAMOND Brand Interior Finish Plaster. The concrete surface must be clean, free of dirt, dust, grease, wax, oil or other unsound conditions and level.

Coat all metal components in the concrete surface to prevent rusting in the plaster. Remove form ridges. Locate uneven ceiling areas that may require filling prior to installation of electric cable and plastering. Treat these areas with USG Plaster Bonder. Then apply DIAMOND Brand Interior Finish Plaster (fill-coat mix) as a leveling coat and allow it to set. **Caution:** Temperature of concrete ceiling with bonding agent and cable must be above 32 °F before plastering is started. Air temperature must be above 55 °F.

Apply job-sanded DIAMOND Brand Interior Finish Plaster to a thickness of 3/8" in two coats to provide a level surface. First apply a fill coat of finish (sanded 1/2 to 1 parts by weight sand per bag of product) parallel to the direction of the cable averaging 5/16" thick and of sufficient thickness to cover the cable and anchor device. Do not use cables as a screed. Level the fill coat with a trowel, rod or darby to fill any low spots or to remove any high ridges, etc. The surface should be made rough to provide mechanical key or "tooth" for the finish coat by the use of serrated darby or by lightly brooming prior to set.

Do not apply the finish coat until after the fill coat has developed sufficient suction. In good drying weather this takes about two hours after the fill coat has set; in damp and/or cold weather the time interval might extend overnight. Thus proper heat and ventilation should be provided. Apply a finish coat of job-sanded DIAMOND Brand Interior Finish Plaster to provide a total thickness of 3/8".

Apply job-sanded DIAMOND Brand Interior Finish Plaster (no less than 1/4 to 1 parts by weight sand per bag of product) to a finish thickness between 1/16" minimum and 3/32" maximum. Scratch in a tight thin coat over the entire area, immediately doubling back to the full thickness. Fill all voids and imperfections. Scratch and double back with the same mix of DIAMOND Brand Interior Finish Plaster. When the surface has become firm, hold the trowel flat and final trowel using water sparingly. Do not over-trowel. Best results are obtained by continuous application over the entire ceiling. Always work to a wet edge to avoid dry joinings.

Cleanup

Clean mixing containers and tools with water immediately after use. Tightly close partially used containers. When machines are shut down, they should be hosed off and thoroughly cleaned—made ready for a fresh start. Remove all scaffolding, empty containers and excess materials from the job site. Sweep the floors and be sure to leave the building and site in good condition for decoration and finishing.

Trademarks

The following trademarks used herein are owned by United States Gypsum or a related company: DIAMOND, DURABOND, EASY SAND, FIBEROCK, IMPERIAL, SHEETROCK and USG.

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