

## *Product and Systems Technology*

### Comparing Regular Plaster, Veneer Plaster, and Drywall Systems



With the variety of plaster and gypsum drywall systems available today, it can be very difficult for United States Gypsum Company to recommend to architects or contractors the system best suited to a job. One approach to this problem is to list the systems and rate their performance using the good, better, best method.

Conventional plaster systems have for many decades provided the ultimate in interior wall and ceiling finishes. Conventional plaster is considered the "Cadillac" in construction, because it provides long-term system performance and a truly monolithic, abuse-resistant surface that can have either a smooth or a textured finish. However, high cost has limited the use of conventional plaster systems to jobs where greater initial costs can be justified, such as high-use public areas in hospitals, schools, and other institutional buildings.

When gypsum drywall partitions and ceiling systems appeared in the early 1940s, cost and speed of erection became the dominant factors. Extreme hardness and monolithic-appearing surfaces were less important in achieving marketability in most construction. Today, drywall systems technology has advanced to the point of providing a relatively smooth, serviceable finish at the lowest possible *initial* installed cost.

Veneer plaster systems were developed during the 1960s and early 1970s. These systems took advantage of large-sized gypsum panels to improve the speed of installation while providing a monolithic-appearing, harder, more abuse-resistant surface. In addition, overall plaster thickness was reduced from the standard  $\frac{1}{2}$ " to  $\frac{3}{8}$ " associated with conventional plaster to a mere  $\frac{1}{8}$ " to  $\frac{3}{16}$ ". This was achieved by using

high-strength plaster in product formulations. The combination of reduced thickness and high-strength material reduced drying time and provided a more serviceable finish.

Even though the initial cost of veneers is usually more than that for regular drywall, overall job cost can favor veneers because of their faster finishing time. Drywall joint treatment, with its multiple drying cycles, takes about five days. Single-coat veneer plaster can be ready for decoration (if completely dry) in as little as 48 hours, because, unlike drywall, it requires only a single drying cycle. This means that a builder can complete a unit three to four days sooner using veneer plaster systems. On a large job, the builder can save substantial interest charges by reducing the time on construction loans.

As acceptance of veneer plaster systems grew, so did the demand for the ultimate in long-term system performance, and a truly monolithic, wear- and abuse-resistant surface. No one veneer system could meet all of these market demands; therefore, a family of veneer systems was developed by U. S. Gypsum. Our approach has been to improve performance by degrees reflecting incremental cost increases. This philosophy has led to the development and introduction of IMPERIAL Plasters and DIAMOND Interior Finishing Systems, and to the corresponding marketing programs for these finishing solutions.

The performance and surface appearance of veneer plaster systems can be rated between those for conventional plaster and gypsum drywall. Based on this fact, we can assign a numerical value to performance expectations, with conventional plaster rated number one as the system which achieves the ultimate

truly monolithic surface while providing good abuse resistance, and gypsum drywall ranked number five as an acceptable system, because it is lowest in cost. Veneer plasters can then be placed in a hierarchy between these two extremes for interior wall and ceiling finishes. The table that follows lists these systems in descending order and describes their characteristics.

Among veneer plaster systems, two-coat systems would rank highest (number two in the one-to-five ranking above). Next (number three) is the one-coat IMPERIAL Veneer Plaster System, followed by one-coat DIAMOND Interior Finish Plaster (number four). One-coat IMPERIAL Plaster is ranked higher because of its high strength. DIAMOND Plaster is a moderate-strength product.

Representing the above ranking as good, better, best, drywall would be considered good, veneer plaster systems as better, and conventional plaster as best. This method permits the architect, client and/or contractor to gain a better perspective on the range of appearance and performance that can be expected from this wide variety of systems.

For instance, if the goal is to upgrade a job from drywall, emphasize DIAMOND Interior Finish. If conventional plaster is desired, but cost is a limitation, emphasize two-coat veneer systems.

One other important consideration affecting the appearance and performance of these systems is workmanship. The installation of framing, gypsum base, joint reinforcement, and perimeter relief must be monitored. Proper technique for installing these elements, as well as their effect on system performance and installed appearance, will be discussed in other bulletins.

## Comparing Regular Plaster, Veneer Plaster, and Drywall Systems

System	Characteristics	Comments				
<b>1. Conventional Plaster</b>	Best system for attaining a uniform, monolithic, blemish-free, smooth surface with excellent wear resistance.					
<b>2. IMPERIAL Basecoat with selected finish (DIAMOND Basecoat with selected finish where high-strength IMPERIAL Basecoat is not required, or over bonding-agent-treated surfaces.)</b>		<b>Finish Plaster Rating</b> (No. 1 = Best; No. 4 = Acceptable)				
		<b>Productivity</b>	<b>Hardness</b>	<b>Workability</b>	<b>Ease to achieve smooth surface</b>	
	<b>A. IMPERIAL Finish</b>	Ultimate in surface hardness and abrasion resistance. Easily textured. Low productivity in achieving a completely smooth finish.	4	1	4	4
	<b>B. DIAMOND Interior Finish</b>	Single bag, ready-to-use finish. Good workability and moderate strength. Extremely adaptable to textured finishes. Satisfactory smooth finish.	2	3	2	3
	<b>C. Regular Gauging Lime Putty</b>	Highest productivity. Excellent workability. Joinable, easiest to achieve a monolithic finish. Surface hardness greater than drywall.	1	4	1	1
	<b>D. STRUCTO-GAUGE Gauging Lime Putty (1:1)</b>	Hard, dense putty finish. Moderate to acceptable strength. Good workability and ease of application. Excellent finish appearance.	2	3-4	2	2
<b>E. RED TOP Keenes Cement Lime Putty and Sand</b>	Unique, only truly retemperable material. Ultimate choice for texturing. Can be floated for extended time period. Acceptable for job addition of color pigments when textured.	Because of its unique nature, Keenes is not rated with the above finishes.				
<b>3. IMPERIAL Finish (one-coat)</b>	Monolithic, smooth or textured appearance. Ultimate in surface hardness (more than 100 times greater than drywall). Primarily intended for direct application to plaster base. With favorable drying conditions, ready for decoration in 48 hours.	Fast completion shortens construction time, brings in paying tenants faster, thus reducing interest paid on project construction loan.				
<b>4. DIAMOND Interior Finish</b>	Monolithic appearing. Moderate wear-resistant surface. Easily textured. Under favorable drying conditions, ready for decoration in as little as 48 hours. Greatest coverage for single-coat application over special absorbent surface of plaster base. Lowest cost veneer system.	See comment on IMPERIAL Finish.				
<b>5. Gypsum Drywall</b>	Relatively smooth surface with acceptable monolithic-appearing finish under most conditions. Lowest cost.					

**Trademarks:** The following trademarks used herein are owned by United States Gypsum Company: DIAMOND, IMPERIAL, RED TOP, STRUCTO-GAUGE.  
**Note:** Products described here may not be available in all geographic markets. Consult your U.S. Gypsum Company sales office or representative for information.  
**Notice:** We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.  
**SAFETY FIRST!** Follow good safety and industrial hygiene practices during handling and installing all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

**United States Gypsum Company**  
125 South Franklin Street  
P.O. Box 806278  
Chicago, IL 60680-4124  
A Subsidiary of USG Corporation