

Product and Systems Technology

Recommended Installation of Bullnose Corners with Veneer Plaster Systems

PM13

The use of bullnose corners in residential construction raises the question of their compatibility with veneer plaster systems. United States Gypsum Company tested three methods of producing bullnose corners in order to evaluate application procedures and impact-resistance. The test results are shown in this sheet.

Tests were conducted at the USG Research Center in Libertyville, Illinois. Three types of bullnose corner construction were tested: metal bullnose corner bead; vinyl bullnose corner bead; and a solid plaster bullnose angle.*

Application Tests

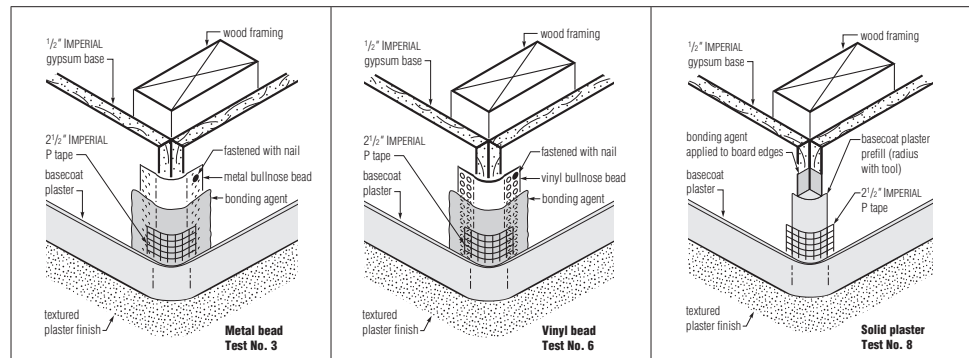
Tests showed that achieving an acceptable smooth finish is easy, achieving an acceptable texture finish is difficult. In all cases special skill and expert workmanship are essential.

For a smooth finish over metal or vinyl beads, plaster is simply brought out to the bead grounds. Over solid plaster bead, a uniform plaster finish is applied all around corners.

One- or two-coat systems are acceptable with all three beads. See Procedures No. 1 and No. 3 below for specific directions.

For a texture finish over metal or vinyl beads, one-coat systems are not acceptable for two reasons. One, the excess thickness of plaster at the grounds makes a uniform finish extremely difficult. And two, the difference in absorption properties between the gypsum base and the metal or vinyl bead affects the applied plaster so that a uniform finish cannot be achieved. As a result, a two-coat system is required. See Procedure No. 2 below for specific directions.

For a texture finish over solid plaster, both one- and two-coat systems are acceptable. See Procedure No. 3 below for specific directions.



Application Procedures

1. Metal or Vinyl Bullnose Bead

For smooth finish; one- or two-coat system: Choose a bead with proper grounds: 1/16" for one-coat system, 3/32" for two-coat system. Apply a quality bonding agent to perforated bead flanges and grounds but not to radius. For one-coat systems, prefill bead flange areas with the same material being used to treat joint areas. For two-coat systems, prefill the bead flange with veneer basecoat plaster. Cut back prefill material slightly to allow for application of finish coat. Finish final coat flush with grounds and clean bead radius. Textured one-coat systems are not recommended.

2. Metal or Vinyl Bullnose Bead

For texture finish; two-coat system: To achieve an aesthetically pleasing texture pattern with bullnose application, it is necessary to apply material continuously over the nose of the bead. In doing so, caution must be taken to adequately adhere the finish over the bead and at the same time maintain the texture pattern and appearance. This is best accomplished with a two-coat system, especially in the area of the bead itself. This procedure provides uniform suction from the plaster base to and over the bead area and back to the adjacent plaster base. Uniform suction is essential to maintain an even texture appearance.

Apply USG™ plaster bonder along the entire bead for adhesion. Apply IMPERIAL® Type P tape to radius for plaster reinforcement.

Cover entire bead with from 1/32" to 1/16" of veneer plaster basecoat. Curvature of bead radius can be formed with an outside bullnose corner tool, wood gauge, pliable forming sheet metal or rubber gasket.

When the basecoat plaster has set and attained some degree of suction, the final texture finish can be applied. The texture pattern obtained on a flat surface can be closely duplicated on, for instance, a 3/4" radius by the skillful use of a small brush.

3. Solid Plaster Bullnose Angle

Smooth or texture finish; one- or two-coat system: Hold IMPERIAL® gypsum base back slightly on exterior angle to allow for curvature of radius. Apply a quality bonding agent to board ends and any exposed wood in resulting cavity.

Prefill corner with veneer basecoat plaster, forming radius with bullnose corner tool. Apply IMPERIAL Type P tape to angle for plaster reinforcement. Prepare angle as for joint treatment, being careful to squeeze material through tape to completely fill bullnose cavity. Excess material on bullnose, at this time, should be formed to approximate bead curvature required using any applicable corner tool. Care must be taken to ensure edges of radius are flush with IMPERIAL base boards.

Apply one- or two-coat veneer plaster finishes to entire wall surface in the normal manner using special care at the bullnose corner to maintain proper radius and finish appearance.

Impact test assemblies

Eight assemblies were tested for impact; the components of each are shown in the table above. All eight assemblies were subjected to impact tests to measure surface impression depth and delamination. The impacts were applied by dropping a 3.5 lb. steel ball through an arc of measured vertical increments. Movement of the ball was horizontal at the point of impact. Blows were applied at vertical height drops of 6" (1.75 ft./lbs. energy), 12" (3.5 ft./lbs. energy) and 24" (7.0 ft./lbs. energy).

Impact test conclusions

The solid plaster assemblies showed the greatest impact resistance with damage confined to three identical size dents. There were no cracks or delamination.

The metal bead assemblies showed cracking, significant damage from denting, and some delamination.

The vinyl beads showed cracking, significant delamination but no damage at all from denting.

For metal and vinyl bead assemblies, the application of both bonding agent and IMPERIAL Type P tape reduced the severity of cracking and spalling.

In general, metal and vinyl bead assemblies are easy to apply but are susceptible to damage from impact.

The solid plaster bead is more difficult to apply but resists damage from impact.

Tested Bullnose Corner Two-Coat Plaster Systems

Type of assembly	Test no.	Bead	Bonding agent	Type P tape	Plaster pre-fill	Plaster basecoat	Plaster finish
Metal bead	1	X				X	X
	2	X	X			X	X
	3	X	X	X		X	X
Vinyl bead	4	X				X	X
	5	X	X			X	X
	6	X	X	X		X	X
Solid plaster	7		X ¹	X		X	X
	8		X ¹	X	X	X	X

(1) bonding agent on board ends

*For testing purposes, the metal bullnose corner bead was from Flannery, Inc. of Pacoima, California. The vinyl bullnose bead (unplasticized polyvinyl chloride) was from Vinyl Corporation of Miami, Florida.

Other manufacturers of metal bullnose bead include: Super Metal Trim, Lynchburg, Virginia, and Belmont, California; Pittcon Industries, New York, Maryland, and Arizona; Milgo/Bufkin, Brookland, New York; and AMPS, Goodyear, Arizona.

Other manufacturers of vinyl bullnose bead include: Bogert Plastics, Inc., Doviestown, Pennsylvania; Trim-Tex, Inc., Lincolnwood, Illinois; Plastic Components, Inc., Miami, Florida; Beadex Manufacturing Co., Inc., Auburn, Washington, and Riverside, California; and Pla-Cor, Inc., Santee, California.

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