

Project Profile



Plaster Systems Make the Grade

Application/Building Type:

Educational Environments

Project Names:

John Pappajohn Business Administration Building
Building

Hillenbrand Residence Hall

Locations:

University of Iowa, Iowa City, Iowa

Purdue University, West Lafayette, Indiana

Subcontractors:

Progress Insulation & Plastering Co., Inc.

Dan Woiwode Lath and Plastering

Featured Products:

IMPERIAL® Brand Veneer Plaster

DIAMOND® Brand Veneer Plaster

IMPERIAL® Brand Veneer Basecoat Plaster

DIAMOND® Brand Veneer Basecoat Plaster

STRUCTO-BASE® Gypsum Plaster

RED TOP® Keenes Cement

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Universities are demanding environments. Stress and pressure take their toll on the buildings as well as the student body, perhaps even more so. With the added abuse of student exuberance, building systems can be put to the test.

To help university buildings like the Hillenbrand Residence Hall at Purdue University, West Lafayette, Ind. (above), stand up to the daily traffic of university life, architects and contractors are incorporating high-strength plaster systems into them. A variety of plaster systems with a wide selection of finish options enables architects to meet a myriad of abuse-resistance requirements with the appropriate combination of surface strength, penetration resistance and cost control.

Veneer plaster systems can provide the surface hardness needed for severe surface-damage resistance. Two-coat veneer systems deliver added strength when a high-compressive strength basecoat material is followed with a finish coat that produces the desired smoothness or texture. [IMPERIAL®](#) or [DIAMOND®](#) veneer plaster systems are applied over base panels to provide a range of performance for residential and commercial needs.

By contrast, conventional plaster systems are thicker and can produce a stronger wall overall. These systems are especially suitable for impact or penetration resistance. Using high-compressive-strength plasters, such as [STRUCTO-BASE®](#) plaster, for scratch and brown coats, coupled with a surface-damage-resistant finish, produces wall systems with superior surface and penetration resistance, but at a higher cost than veneer systems.

Recent developments in building materials have provided several hybrid solutions to the strength vs. efficiency situation. Among them is the combination of a [DUROCK®](#) brand cement board substrate for improved penetration resistance with [IMPERIAL](#) veneer plaster for surface hardness. This system provides mid-range performance and price between veneer and high-density conventional plaster systems.

Whichever system is chosen, university settings offer a strong test for wall system durability. The system that works best in a particular institution will depend on a good evaluation of anticipated abuse levels. Also, the right choice can save significant cost, both initially and from a life-cycle standpoint.

John Pappajohn Business Administration Building, University of Iowa

At the University of Iowa's John Pappajohn Business Administration Building, efficiency and economy objectives were met with a two-coat [IMPERIAL](#) veneer system. Kevin Monson of Neumann Monson P.C., one of the architects for the project, explained, "We needed to have a system that would have a low-maintenance requirement and look good for years. The economy of a veneer system also was important."

To meet maintenance and appearance requirements, the University of Iowa selected an [IMPERIAL](#) veneer plaster system applied over [IMPERIAL](#) basecoat plaster. Imperial basecoat and finish plasters are two-coat, high-strength plasters that offer

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superior surface hardness and compressive strength (3,000 psi). The basecoat is applied 1/16 inch to 3/32 inch thick over the plaster base. IMPERIAL finish plaster completes the system.

IMPERIAL veneer plaster system products also lend themselves well to detail work. The building was constructed with cornices, soffits, projections and various other details to create a sense of visual continuity with other architectural designs on campus. The system boasts the highest resistance to surface abrasion of any finish plaster available. And because the system is applied over 4-foot-by-8-foot or larger panels of IMPERIAL gypsum base, it can be installed quickly and efficiently.

Hillenbrand Residence Hall, Purdue University

Although the [IMPERIAL veneer plaster system](#) is durable, it may not be rugged enough for living accommodations. At Purdue University, thick, high-density conventional plaster is preferred for new residence hall construction because of its penetration resistance.

“We knew that thick, high-strength plasters could give us superior performance,” stated Lanny Wilson, associate director for Purdue residence halls.

The system used in the university's new Hillenbrand Residence Hall incorporates [STRUCTO-BASE gypsum plaster](#) scratch and brown coats over metal lath on steel studs. For the finish coat, RED-TOP® Keenes Cement combined with lime and sand was used, providing optimal hardness and workability. It was applied as a sand float finish texture.