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Ashland Companies and PDG Domus Use High-Tech Plastic Composites in Innovative House Exterior

Dublin, Ohio (USA) – Innovative products and expertise supplied by Ashland Specialty Chemical Company and Ashland Distribution Company helped a modular-housing manufacturer that has an innovative concept develop processes that use high-tech plastic composites in a house exterior.

The manufacturer, PDG Domus based in Columbus, Ohio, completed construction of a prototype house in Columbus in September 1999. The exterior of the two-story, modular house – including the siding, window frames and roof – was made using a variety of products supplied to PDG Domus by the FRP Supply Division of Ashland Distribution Company.

Among those products was MODAR® 814 modified-acrylic, halogen-free thermoset resin, produced by the Composite Polymers Division of Ashland Specialty Chemical Company. Combining ceramic filler with the MODAR resin resulted in the house's attractive, insulating, composite exterior, which is also maintenance free and fire retardant. In addition, use of the ceramic-resin material enables PDG Domus to offer a wide range of exterior treatments that replicate the look of wood, brick or stone and never need painting.

“Ceramic filler allows reproduction of intricate detail in the composite panel,” said Donald R. Belock, source manager for the FRP Supply Division of Ashland Distribution Company. “It also provides a durable, protective, fire-retardant layer that acts as a heat shield, thereby lowering homeowners’ costs for cooling and heating, as well as maintenance.”

PDG Domus’ patented house assembly uses proven technologies. The structural framework or “components” are welded steel, similar to the structure of skyscrapers. The components can be combined in multiple configurations, creating a variety of floor plans for home buyers to select. The exterior walls are made of ceramic-enhanced composite panels that were molded using Ashland MODAR 814 resin, which yields high strength for structural purposes and has low smoke and flame properties – without incorporating halogens.

Domus bonded the composite panels to the modular house’s treated steel structure using structural adhesives supplied by FRP Supply Division. Sandwiched between the exterior composite panel and the interior drywall was a two-part, fire-retardant, UL-approved polyurethane foam, which provided insulation and helped bond the structure together. All exterior panels that made up the house, including the roof and rock foundation skirts, were made using that methodology. FRP Supply also provided gel coat and fiberglass reinforcement to Domus.

“I founded the company,” said Nathan Pingel, chief executive officer and director of PDG Domus, “with the concept that everyone should be able to afford to live in a well-designed, low-maintenance home. People want their homes to have a classic look and feel, yet they require homes with all the modern conveniences. Blending those two ideals has been cost-prohibitive using traditional construction methods – until now. Throughout the prototype development,

which began in spring 1996, Ashland's FRP Supply Division worked to help us at PDG Domus turn this concept into a complete house."

L. Dean Doza, product manager-specialty resins, Composite Polymers Division, said, "The Domus composite house is another example of how Ashland can bring a multitude of resources—products, processes, technical expertise and distribution—to bear on a project to help our customers meet their business goals and challenges."

PDG Domus, a manufacturer of residential homes, integrates modern technology with conventional designs to produce a superior-quality, low-maintenance, affordable-yet-elegant home, equipped with technologically advanced features and conveniences. Its innovative manufacturing system is based on quality and flexibility, featuring structural components that allow customized variations in finishes and floor plans at a moderate price.

Skilled craftspeople manufactured the entire Domus house in an environmentally controlled work space, ensuring a higher level of quality and attention to detail than most traditionally built houses, according to Pingel. The interiors are completely finished in the home buyer's choice of fixtures, cabinets, appliances, countertops, lighting and floor coverings. The completed components are then shipped to the home buyer's site and assembled in two days, ready for occupancy. Visit Domus' Internet website at **www.pdg-domus.com** for more information. Readers may also visit the website to learn about licensing PDG Domus' production technology.

The Composite Polymers Division of Ashland Specialty Chemical Company is a leader in providing products, processes and composite technologies to the global marketplace for reinforced-plastic composites.

The FRP Supply Division of Ashland Distribution Company is the leading distributor of resins, reinforcements and associated materials to the fiberglass-reinforced plastics and cast-polymer industries throughout North America.

Ashland Distribution Company and Ashland Specialty Chemical Company are divisions of Ashland Inc. Ashland Distribution Company is the largest distributor of chemicals, plastics and fiber reinforcements in North America, a leading distributor of fine ingredients in North America, and a leading Pan-European distributor of plastics. Ashland Distribution has 100 distribution centers serving North America and Europe. Visit its Internet website at **www.ashdist.com** for more information. Ashland Specialty Chemical Company is a leading, worldwide supplier of specialty chemicals serving industries including adhesives, automotive, composites, foundry, merchant marine, paint, paper, plastics, and semiconductor. Visit its Internet web site at **www.ashspec.com** for more information.

Ashland Inc. (NYSE:ASH) provides basic industrial materials and services to customer throughout the world, with a primary focus on transportation-and construction-related markets. Consumer brands include Valvoline® motor oils, Eagle One® appearance products, Zerex® antifreeze, Pyroil® Performance Products and Valvoline SynPower® automotive chemicals. In addition, Ashland owns 38 percent of Marathon Ashland Petroleum. Ashland's Internet address is **http://www.ashland.com**.

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Note to editors: Photographs of house available upon request.

Come to the Ashland booth (R18 Hall Curie) at JEC Composites 2000 in Paris Apr. 18-20 to see a composite house part on display.