

CaseHistory

High Strength HVAC Ducting

Market Segment:	-Pipes/Ducts
Composite Application:	HVAC Ducting Collectors Collector Arms
Resin:	Vipel® K026 Bisphenol A Epoxy Vinyl Ester
Manufacturing Process:	Filament Winding
Diameters:	30-, 24- and 14-inch (750-, 600- and 350 millimeter)
Longest Sections:	40 feet (12.2 meters)
Total Length, Primary:	120 lineal feet (37 meters)
Total Collector System:	560 lineal feet (171 meters)
Installed:	2003
Location:	Southern California



Building a dream home on a inspirational point of the Southern California coastline challenged the architect to design ingenious ways to meet basic building needs. For the air return ducting system of the exquisite house, the challenge is met with the help of Vipel K026 high performance vinyl ester resin from AOC.

Ram Fiberglass, Inc. used Vipel K026 resin with continuous glass fibers to filament-wind and factory-fabricate heating/ventilation/air conditioning (HVAC)

ducting that satisfies the unusual specifications for the site.

The home's design requires the main head and collector arms for the residential air return to be buried beneath the structure, a situation that puts the ducting under the site's cyclical water table. Ducting was secured below grade with a Manta Ray® stainless steel sea anchoring system from Foresight Products, Commerce City, CO.

High Strength HVAC Ducting, continued

When the area near the house becomes flooded during storms or high tide, the duct must withstand the hydraulic forces and corrosive environment of seawater. Design parameters extend to the worst-case scenario of the hypothetical “Hundred-Year Storm.” “Because of these stringent standards, the architect wanted something thicker, stronger and more rigid than standard composite ducting,” says Stan Capelli of contractor Environmental Heating and Air Conditioning Inc. “We also had to comply with building codes that call for Class 1 [per ASTM E- 84] flame retardant and low smoke properties.”



“Choosing a resin for the demanding performance requirements of a job like this is critical,” says Patrick Kilcullen, Sales and Marketing for Ram Fiberglass. “Vipel K026 vinyl ester achieves an ASTM E- 84 Class 1 rating with low smoke without the use of a synergist. The inherent flame-retardant chemistry simplifies our inventory and eliminates the need to handle a toxic additive. Combine that with the resin’s outstanding strength and corrosion resistance, and we were able to manufacture and fabricate a system that is designed to resist the forces of nature and time.”

About AOC

AOC is a leading global supplier of resins, gel coats, colorants, additives and synergistic material systems for composites and cast polymers. AOC knows technology, lives quality and delivers service better than any other composites resin supplier. For more information, e-mail corrosionresins@aoc-resins.com, phone (901) 854-2800 or go to www.CorrosionResins.com.


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