

# Better doors, faster

New World Developments of Ballymena, Co Antrim, Northern Ireland, has increased production by up to 20%, and reduced spoilage and scrap rates by 10% for its range of composite moulded door skins. These benefits have been achieved where the company has adopted Scott Bader's Crystic Crestapol® 1210 moulding resin in the manufacture of a number of its household doors, including the fire resistant products in its range. Nigel O'Dea, Marketing Manager, Scott Bader Composites Europe, explains.

Prior to its change in 2007 to Scott Bader's Crestapol 1210 resin for the production of glass reinforced plastic (GRP) door skins, problems with both variable quality of finished doors and shop floor issues with resin handling during the manufacturing process had become increasingly troublesome for New World Developments, resulting in extended lead times and customer issues.

Working together, these production problems have now been successfully resolved for New World Developments following the introduction of Crestapol 1210. Scott Bader has backed-up its product offering with a strong technical service package, while maintaining a rapid and reliable supply chain. Component moulding times have also been improved to the extent that a substantially increased production level has been achieved. The low viscosity Crestapol 1210 gives a very rapid mould fill and cure, resulting in a de-mould time of only 5.5 minutes, with no warping after de-mould (i.e. the product is fully cured).

New World has found that its door skin mouldings now also benefit from better elongation and strength on flexural and tensile testing. Parts cycled from temperatures of 50°C to -18°C for one week and then re-tested also outperformed components produced with previous resins used.

As a result of its chemistry, Crestapol 1210 is tougher and less brittle compared with the other resins used, which has the

added benefit of reducing the potential for finished door skin mouldings being chipped during handling and warehousing. This, together with the better surface finish achieved, has reduced in-house rejection rates, resulting in overall savings of 10% on scrapped materials.

## Door range

New World Developments has a well established reputation for the supply of door sets for the domestic household market. Those incorporating thermoset GRP door

skins with unique integrated mouldings are included in its Apeer, Monno and specialist fire retardant Isolate ranges. With two door skins required per door, a throughput of 70-100 mouldings per day is required across the full range.

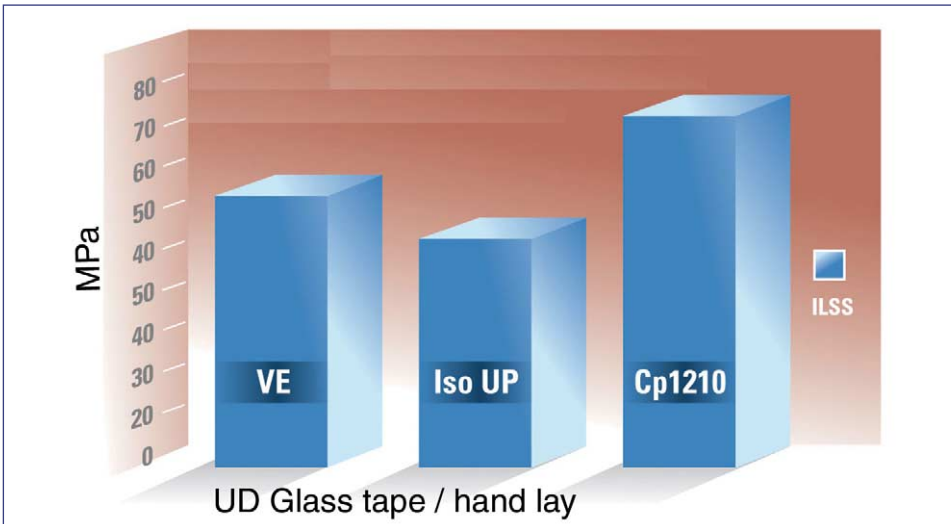
Doors can be supplied in up to eight styles incorporating distinctive integrated mouldings, with an overall wood textured finish. All doors can be supplied as standard in eight colour paint finishes (including white), with special colours also available to order. Doorsets can include sidelights, half panels and overhead fanlights, all complemented by



A GRP door skin under production at New World Developments.



Typical door set manufactured by New World Developments. The adoption of Scott Bader Crystic Crestapol 1210 resin has enabled door skin mouldings to be produced quicker, to higher standards of finish and with lower rejection rates.



Crestomer 1210 interlaminar shear strength compared with vinyl ester (VE) and an isophthalic unsaturated polyester (Iso UP) resin. (Source: Scott Bader.)

stylish door furniture and accessories. With an in-house glass studio, New World is also able to offer original glazing features with decorative, bevelled and leaded glass designs. Rigid polyurethane foam cores ensure that

doors in the Apeer and Monno ranges have good thermal qualities while a double rebate design and double sealed construction is combined with enhanced security features for maximum householder safety.

The Isolate range of fire retardant doors are 30 minute rated and combine solid laminated veneer lumber intumescent cores with 7 mm thick clear Pyroglass glazing and hardwood external frames. Multi-point high security locking mechanisms and overhead automatic doors closers are fitted as standard.

**Cost savings**

“The Scott Bader resin is user friendly and much easier to handle and work with,” says Robert Foster, R&D Manager for New World Developments. "Our changeover to this material has certainly resulted in cost savings with better quality mouldings and lower rejection rates."

The Crystic Crestapol 1210 resin is one of several new high performance products in the composite range manufactured by Scott Bader. This tough, low-viscosity urethane acrylate resin is suitable for the resin transfer moulding (RTM) of components, which can be highly filled with a wide variety of fillers, suitable for the production of quality mouldings combining strength with good durability and excellent surface finishes. Key features of the product are its tough resin matrix, its rapid rate of mould-fill, cure time and de-moulding, leading to very low cycle times of only 6-7 minutes, with no post-cure procedure required. With a gel time range of 2-60 minutes, the product is also versatile, suitable for production of both small and large-area GRP components.

As well as the RTM production process used for this application, Crestapol 1210 is also suited for pultrusion manufacturing using formers and heated dies.

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