



Shell Chemicals

CARILON POLYMERS CASE HISTORY

REFRA Controller®



Superior thermal performance and impact resistance are essential characteristics of Shell's aliphatic polyketone, CARILON™ Polymers, that ensure reliability of this innovative device. Known as the REFRA Controller®, the part is used by emergency workers as an attachment to doors, preventing the doors from closing or locking behind workers. For more information about CARILON Polymers, call 1-888-CARILON (888-227-4566).



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PRESS INFORMATION

CARILON Polymers Help Clear the Way for Emergency Services

REFRA Controller[®] Case History

Area police and fire departments have a little less to worry about in crisis situations due to an innovatively designed device from REFRA Tecnicos BV, of the Netherlands. The REFRA Controller[®], made with Shell Chemicals¹ CARILON² Polymers, is a simple but ingenious door clip that, when applied onto the edge of a door, prevents it from closing.

This clip can be a life-saving tool for fire fighters, as well as an invaluable aid for police, ambulance and hospital services when in household emergency situations or burning buildings. Aside from keeping the doors from closing behind rescuers, with fluorescent strips the clip also can act as a route marker helping to lead people out of dark or smoke filled buildings.

Because the device is used in high heat environments, superior thermal performance and impact resistance are essential characteristics in the material used. REFRA Tecnicos evaluated several materials, before finally selecting CARILON Polymers. Their extensive testing program with CARILON Polymers, an aliphatic polyketone known as PK, demonstrated that clips molded from this material were effective even in high temperatures and did not lose their grip or break when the door was slammed.

With a Deflection Temperature Under Load (DTUL) of 100 °C at 1.8 MPa and a notched Izod impact strength of 20 kJ/m² at 23 °C, CARILON Polymers provide toughness and ductility over a wide temperature range. This unique family of materials, developed by Shell Chemicals, is also characterised by a high elongation at yield of 25 percent, which enables a single clip size to fit a wide variety of door thicknesses. The polymer's good hydrolytic stability and broad chemical resistance mean that the clips can continue to perform in the toughest of environments.

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¹The expression 'Shell Chemicals' refers to the companies of the Royal Dutch/Shell Group which are engaged in the chemicals business. Each of the companies which make up the Royal Dutch/Shell Group of companies is an independent entity and has its own separate identity.

²CARILON is a Shell trademark.

Success of this innovative device has led to wide use by emergency services and hospitals across the Netherlands, and growing popularity in the UK, the United States, Germany and Japan.

CARILON Polymers are engineering thermoplastics with a unique combination of physical properties compared to traditional materials such as polyamides and polyacetals. These properties include strength, stiffness, performance over a broad temperature range, toughness, superior wear and friction characteristics, low hydrocarbon permeability and resistance to a variety of aggressive chemicals.

CARILON Polymers are available in extrusion grades and a variety of injection molding grades, including glass reinforced, flame retardant, mineral filled and lubricated compounds. The polymers can be easily processed on conventional molding and extrusion equipment, and their fast set-up can lead to significantly reduced cycle times in injection molding applications.

For more information on CARILON Polymers, visit the Shell Chemicals Web site at www.shellchemicals.com. In the United States, customers can write to Shell Chemical Company, P.O. Box 2463, Houston, Texas 77252-2463 or call toll free at 1-888-CARILON (1-888-227-4566). In Europe, customers can write to Shell Chemicals Ltd., Shell Centre, SEI 7NA or call +44 171 934 3300.

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