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Borealis promotes infrastructure renewal at Italy's 'H2O 2008' water supply show

Italy's water supply and treatment infrastructure needs a significant upgrade. The country's ageing pipe system is creating annual losses for its operators of at least 3.9 billion euros, and possibly as much as 5.2 billion euros, recent research indicates*. Renewing the system will entail a major investment, but as much as 85 billion euros could be saved in the costs of materials, installation, maintenance and environmental impact, if plastic pipes are used instead of traditional materials to put an end to this wastage.

At Accadueo 2008 (H2O) Borealis, a leading provider of innovative, value creating plastics solutions, is demonstrating how these savings can be made, using innovative polyethylene and polypropylene materials. This international exhibition of technologies for treatment and distribution of drinking water and waste water, is taking place in Ferrara, Italy on May 21-23.

Borealis is highlighting new developments in its BorSafe medium density polyethylene for small diameter pipes, and BorSafe high density polyethylene (PE) for large diameter pressure pipes and fittings. Borealis also shows BorECO polypropylene (PP) grades for non-pressure underground drainage and sewer systems.

These new materials, used in new installation techniques, can deliver sustainable solutions for water supply and sanitation, in high-quality, low-loss, low-maintenance pipe systems that will perform at the highest levels for many decades to come.

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Borealis has long established relationships with the major players in the Italian pipe supply chain, including authorities, pipe and pipe machinery manufacturers, converters, test institutes and infrastructure owners. These have enabled it to identify the critical issues facing water and gas supply and define solutions to guarantee a high-quality, sustainable utilities infrastructure that benefits all members of the value chain.

“Cooperation between all the parties involved in the pipe value chain for gas and water distribution infrastructure remains the most important way to ensure quality and innovation,” says Jane Toogood, Vice President Business Unit Pipe at Borealis. “The need for improvement is clear and we place great emphasis on delivering value to our customers through developing products and technologies that can help progress in infrastructure, economic development and environmental protection.”

BorSafe LS-H polyethylenes withstand tough installation conditions

BorSafe PE pressure grades for water and gas pipes are characterized by durability, sustainability and long life-times. BorSafe is made using Borstar technology, which provides plastics with especially good melt strength and extrudability, enhanced mechanical and heat deformation properties, and environmental stress cracking resistance (ESCR). Innovative new products such as BorSafe HE3490-LS-H and BorSafe HE3494-LS-H are currently being introduced.

With the introduction of the BorSafe-LS-H products, Borealis is responding to the latest developments on the market with regard to the alternative installation methods. Some of the major benefits of using PE pipes for gas and drinking water applications are to be obtained by using alternative installation methods.

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But these techniques are becoming increasingly demanding on the pipe, which requires a polymer that exhibits very high resistance to slow crack growth (SCG) to overcome tough handling conditions.

This resistance is achieved in BorSafe-LS-H grades, Borstar PE100 products based on a new hexene comonomer platform. Pipes made from BorSafe HE3490-LS-H have passed 18,000 hours in the Notch Pipe Test (NPT), more than 100 times the current requirements of the European standards for PE drinking water pipe systems.

BorSafe Medium density PE for more flexible pipes

For smaller sizes, pipes are generally coiled in long lengths. Medium density PE80 materials with superior flexibility are the preferred choice, providing storage and installation benefits. Borealis now brings the benefits of the bimodal process to this family of materials, allowing them to be engineered to meet higher targets.

In producing the medium density BorSafe PE80 material, the viscosity of the material at processing shear rates has been reduced, resulting in increased process efficiency as demonstrated in extensive processing trials.

Currently in its launch phase, BorSafe ME3420 is the most flexible PE80 on the market, providing for easier, safer and faster installation and outstanding mechanical properties.

BorECO Polypropylene copolymers ideal for sewer pipes

BorECO PP materials are new high molecular weight block copolymers based on a high crystallinity homopolymer matrix. They were developed with the specific aim of delivering an optimal balance of stiffness and impact resistance, while retaining excellent long-term performance - expected lifetime is more than 100 years - and favourable processing properties. They also have very high chemical resistance and can utilise all conventional jointing techniques, such as push-fit jointing and fusion.

A typical application for BorECO materials is the 'white water' sewerage pipeline recently installed for a new residential project in Legnano, Italy. ('White water' pipes carry storm drainage water separately from sewage, or 'black water'.) Key to the development was the selection of a pipe solution that was strong enough to be unaffected by ground movement and could be economically produced, easily installed, and deliver a long, low-maintenance and leak-free life. BorECO PP moreover allows for pipe weight reductions while maintaining the same ring stiffness levels.

Borealis has been providing advanced polyolefin solutions for pipe and fittings systems for over 40 years. With its insight into all aspects of production, installation and use, and a strong focus on customer needs, the company continues to take a pro-active approach to meet current and future needs of the industry.

* Study of Benefits of Innovation in Italian water networks by Agici Finanza d'Impresa published May 15, 2008.

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Borealis and **Borouge** are leading providers of innovative, value creating plastics solutions. With more than 40 years of experience in polyolefins and using our unique Borstar® technology, we focus on the infrastructure, automotive and advanced packaging markets. We have production facilities, innovation centres and service centres across Europe, the Middle East and Asia Pacific and work with customers in more than 170 countries around the world to provide plastic materials that make an essential contribution to society and to sustainable development. We are committed to the principles of Responsible Care® and to leading the way in 'Shaping the Future with Plastics.'

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