

Product News

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Battenfeld use BorSafe™ material for commissioning large diameter extrusion line

PE pipes are certainly becoming larger!

To illustrate this point Battenfeld the German extruder manufacturer recently had an open house to demonstrate their new 150 mm extrusion line producing 1,600x61 mm PE pipe using BorSafe HE3490-LS PE100 material from Borealis.

So why did Battenfeld choose BorSafe material?

- Quite simply because it is the best material for the production of large diameter thick walled PE pipes as demonstrated by a growing number of pipe producers. Indeed the material is better by design because in the Borstar process the polymer is 'engineered' to have a higher viscosity at low shear rates. This means that the material is more resistant to 'sag', which is the thickening of the bottom half of the pipe due to the downward flow of the material under gravity as it emerges from the die head.
- Sag is easy to demonstrate in practice by the free flow of material through a fixed orifice under gravitational force. As shown in figure 1 there is much lower sag with BorSafe LS grades which means faster start up and better wall thickness control. By better control of the wall thickness the pipe producer can manufacture at a tighter tolerance thereby saving a significant amount of raw material. In addition, if the wall thickness is even, it is very much quicker to bring the pipe



Picture 2: View showing the extruder barrel, die head and calibration section.



Picture 1: Working on the calibrator

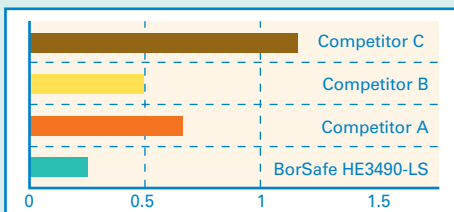


Figure 1: Low sag of BorSafe HE3490-LS



By courtesy of Battenfeld

Picture 3: Details of the die head and calibration section



By courtesy of Battenfeld

Picture 4: Haul off machine in operation

- The Battenfeld machine was based on their 150 mm extruder BEX 1-150-30B and was equipped with the latest design of barrier screw.
- The die head PO1600/1300 Si will cover the diameter range of 710 to 1,600 mm.
- Calibration was achieved using a two chamber vacuum tank. The first section was 1.5 m long and the second section 10.5 m in length.
- Despite significant restrictions in line length and operational handling during the demonstration, 1,600x61 mm pipes were successfully produced. In such confined conditions the output rate was limited to 1,300 kg/hr which is still equivalent to a line speed of 7.2 cm/min.

Large diameter PE pipe has a big future.

- The future is indeed bright for large diameter pressure and non pressure pipelines which can now be efficiently produced in non corrosible PE materials. Additional benefits of PE pipe in installation, particularly the use of leak free fusion jointing will mean that more and more large diameter pipelines are laid in PE rather than iron, steel or glass reinforced materials.
- This will provide a major boost to the PE pipe industry particularly for those pipe producers who have the foresight to invest in large diameter extrusion lines and are prepared to commit resources to convincing engineers to change project specifications to PE.
- Borealis and Borouge will continue to contribute to this growth with the successful Borsafe-LS family of grades.

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