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The Design and Application of PE100 Pipe in Trenchless Technologies for New Installation and Rehabilitation – Aspects of new Materials and Support via Online Guide and Tool

Abstract:

PE100 pipe is the most widely used material for installation, rehabilitation and replacement of pressure pipes for water and gas supply and for pressure sewers. PE100 is used in a broad range of trenchless technologies and this very versatility means that selecting the appropriate method for its use is not always a simple process.

Special grades such as PE100RC have been developed specifically for use in trenchless technology. The lack of recognized international standards have so far limited the use of these highly innovative materials.

PE100+ Association, representing 12 international producers of high-quality PE100 pipe resins, have co-operated with key players in the pipe industry and extensive work has been done on the development and validation of methods for the characterization of the materials, specifically of their extraordinary resistance to slow crack growth, which makes them the material of choice for no-dig applications. Threshold values for the key parameters have been defined and will be used in the upcoming update of the respective standards for gas and water pipes.

The outcome of the project will be discussed together with an online guide and method selection tool to aid designers, utilities and contractors in selecting materials and trenchless methods for PE100 pipe installation for both new installation and rehabilitation works. The Guide is freely available to all and provides descriptions of all the trenchless methods that use PE100 to enable the user to identify practicalities such as surface space and access needs. The Guide includes a decision module in which users can enter project-specific parameters and receive a list of potential methods as well as diameter and SDR details for the PE100 pipe. Examples of the decision process will be included in the paper.