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Water main rehabilitation with inserted hoses – Considerations on design and installation

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ABSTRACT

DIN EN ISO 11295:2016-08 references the classification and information on design and applications of plastic piping systems used for the renovation and replacement. The updated version includes now the rehabilitation with so-called *inserted hoses*. The paper presents the characteristics of this newly included product family and focuses in particular on the flexible Kevlar® reinforced lining solution Primus Line® which falls into this product family. The paper will discuss in particular the no-dig rehabilitation of potable water mains using the Kevlar® reinforced lining system. The paper will show the composition of the lining material and the functionality of the termination fittings. Furthermore, the paper will present the design considerations for a design life of 50 years. The paper will show the feasibility to install through bends and the underlying design and installation considerations. In addition, the installation methodology is shown. The requirements on installation start pits and destination pits are discussed as well as installation through manholes. The CCTV inspection, pipe preparation and cleaning requirements are discussed before the liner installation can commence. The paper will present the areas of application and show case studies on completed projects. The paper concludes with the advantages and limitations of this system.