Large Sewer Rehabilitation with GRP Panels

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Glass Reinforced Plastic (GRP) Panels are fiber reinforced, filled, thermoset resin panels used to renovate medium to large gravity sewers and drains of practically any shape. The product is particularly well suited for large, non-circular sewers. Currently panels are manufactured in a factory setting using the multiple viscosity infusion (MVI) process, transported to the job site, individually set in place in the sewer and attached to adjacent panels with an epoxy adhesive. The annular space between the exterior of the panels and the surface of the host sewer is then filled with a cementitious grout resulting in a fully structural solution. The purpose of this presentation is to provide a description of the GRP Panel product and how and where it can be utilized.

The presentation includes a discussion of the technical envelope including shape, size, alignments and external loadings that are applicable for GRP panels. Current industry specifications are presented along with future standards planned for North America. Product materials and manufacturing techniques are discussed.

A walk-through of the steps required to install the product is presented. These steps include flow bypass and/or diversion, sewer cleaning, required access and panel installation. A discussion of sewer bends, irregular appurtenances such as tapers and junctions and connecting sewers is included.

The presentation continues with a design discussion including the determination of wall thickness, corrosion resistance required and finished product flow capacity. Design options, physical properties and required design parameters are discussed.

The presentation includes a discussion of the types of challenges that may surface during the renovation of large sewers. Typical challenges may include installation in an active sewer, installing panels through a 90-degree bend, large amounts of debris and periods of wet weather.

The presentation concludes with a brief discussion of typical past and ongoing projects and a quick look at what the future may hold for GRP sewer renovation products. The information provided in the presentation will prove useful to planners and designers when faced with the renovation of large sewers, whether irregularly shaped or circular.