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## POLYMER CONCRETE PRODUCTS FOR NEW CONSTRUCTION

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**ABSTRACT:** Polymer concrete is a corrosion resistant, non-porous, high-strength concrete material utilizing polyester or vinyl ester thermosetting resin as a binder and containing no water or Portland cement. The products are designed to meet the severe operating conditions of sanitary sewer systems. When utilizing conventional steel reinforcement, polymer concrete wall thicknesses can be reduced to 50% of standard reinforced concrete products..

The principal advantages of polymer concrete are high compressive strength and a corrosion resistant wall matrix. It is corrosion resistant on the surface and throughout the entire wall. There are no interior linings to connect or coatings to apply during the manufacturing or installation process. And, in cases using conventional steel reinforcement, polymer concrete pipe is designed with well-known and accepted rigid pipe design methods.

With a compressive strength of two to three times of standard reinforced concrete, polymer concrete is ideal for microtunneling or pipe jacking applications. Polymer concrete, however, can be used in multiple sewer infrastructure applications including jacking/microtunneling, direct bury, sliplining, manholes, non-round sewers and tunnel segments.

New construction demands present ideal opportunities for polymer concrete products. This paper discusses both the advances and advantages of polymer concrete in new construction situations. Polymer concrete pipe or structures for sewers can be cost-effective when a corrosion resistant, rigid material is desired, for example. In situations where conventional sewer pipes or structures are lined with plastic materials to prevent corrosion, polymer concrete can be utilized without additional extra corrosion resistant layers- yielding a strong, corrosion-resistant and long-lasting sewer product.