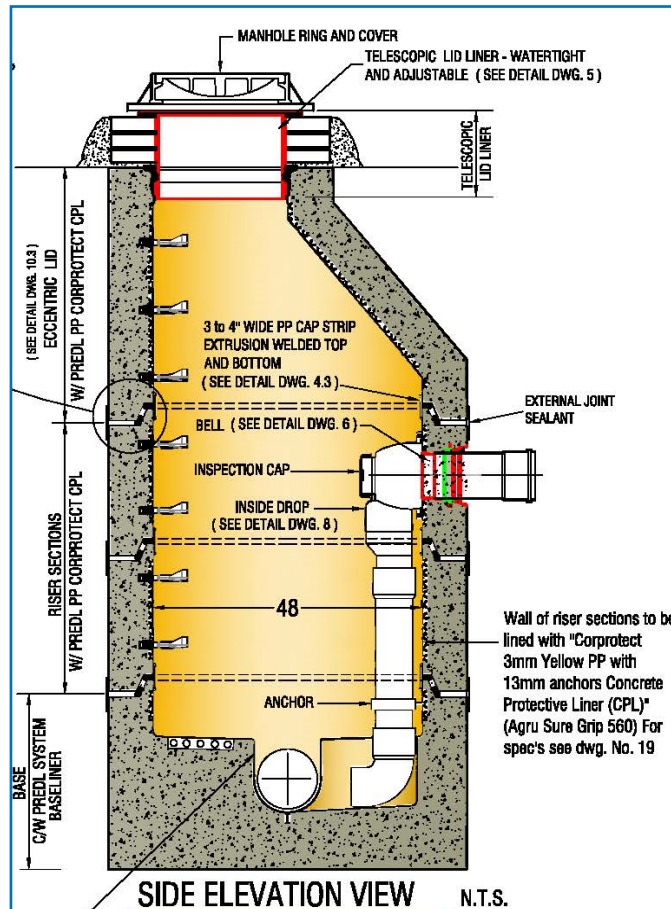
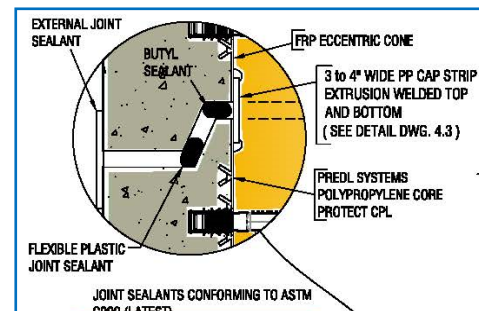


Fully Lined Concrete Manhole Structure by Predl Systems



Fully Lined 48" Manhole with Eccentric Cone Style Lid, No Turnback Joints, Cap Strips, Two Seals, Telescopic Lid Liner, Inside Drop, and Extended Base.



Preventing and Repairing Concrete Manhole Corrosion in Wastewater Collection Systems

Predl Systems North America Inc. provides wastewater resistant thermoplastic liners to protect concrete manhole structures from corrosion due to H_2S gas and abrasion. Predl Systems is a cost-effective full-service solution provider of proven custom and standard products with the added value of local and central support services, professional expertise and years of know-how. We deliver precast manhole liner solutions for municipal wastewater collection systems through local Certified Precaster partners.

Please contact Predl Systems by calling 1-855-773-3562, or email predl.online@predl.com or Contact Us at www.predl.com

Manhole Liner Systems

Predl's Liner Systems are leading edge solutions that prevent and repair concrete corrosion in manholes due to hydrogen sulfide gas (H₂S). The thermoplastic liners install a permanent barrier that isolates the concrete structure from the sanitary sewer effluent. The benefits of Predl Manhole Liners are proven in 1.5 million Base Liner installations worldwide including nearly 50,000 since 1988 in North America. The Liners meet and exceed the specified requirements of most municipal wastewater collection systems. Predl's Liner Systems include pipe specific Bell connections; superior watertight compression gaskets; and effective joint seals to successfully control Inflow & Infiltration. The maintenance-free advantage of Predl Liners makes the total cost of ownership extremely low for the entire design life of the wastewater collection system.



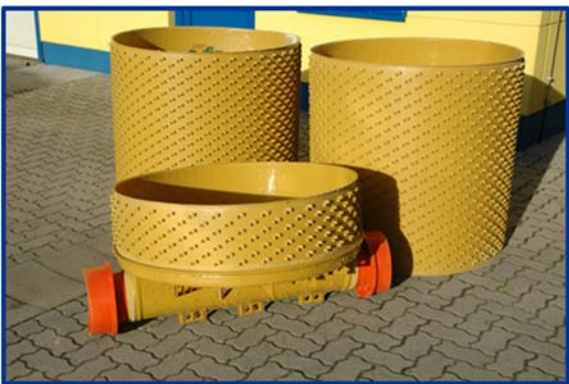
Manhole Base Liners

Predl Manhole Base Liners provide complete protection from corrosion and abrasion. The one-piece molded liners incorporate accurate invert elevations and smooth flow surfaces to eliminate turbulence. Integrated watertight pipe connecting bells are flexibly aligned to correct slope and angle with funnels trimmed flush to outside diameter of concrete form. The textured non-skid surface improves worker safety. Precasters can manufacture a lined concrete manhole efficiently and easily with only minor process adjustments. The result is a much better product with a lower cost of operation and significant I&I savings.



Pipe Connections

Predl's pipe-specific Bells and compression seal gaskets provide a secure, flexible and watertight connection between the manhole base and pipe system. To facilitate pre-cast concrete production, the Bell funnel extends to the outside profile of the manhole structure. All Predl Connecting Bells are designed to tolerate varying incoming pipe angles and elevations. This flexibility assures proper fit when connecting the concrete structure to the pipe system in the field during installation and after the structure has settled in the soil.



Wall Liners

Predl's tough wastewater resistant polypropylene Wall Liners protect the inner surface of the manhole riser from corrosion and water infiltration. Riser joints are capped with a PP strip and extrusion welded for a watertight seal. The low thermal shrinkage of polypropylene and 13mm anchors ensures a permanent and durable mechanical bond with the concrete. Wall Liners are produced for standard manhole riser sections in 1' (305mm), 2' (610mm), 3' (915mm) and 4' (1.22M) heights for 42" (1.07M), 48" (1.22M), 54" (1.37M), 60" (1.52M) and 72" (1.83M) diameters. Predl Systems can manufacture custom sizes to any dimension upon request.



Telescopic Access Collar

A Telescopic Access Collar is an adjustable polyethylene (PE) liner for manhole-grade adjustment rings. The collar provides protection for grade rings from corrosion and water infiltration for a fully-lined concrete structure; it allows both vertical and horizontal adjustments to suit the grade and chamber. The Telescopic Access Collar is a one-piece, rotationally molded polyethylene sleeve with a 2" (50mm) sealing flange around the top edge. The inside diameter of the access opening is 24" (610mm). It is installed with a lip seal gasket allowing for an effective adjustable height of 8" (203mm).



Ladder Rungs

Predl's polypropylene steps are designed and manufactured to provide safe and secure vertical mobility inside a lined manhole structure. Staggered barbed ends create a secure connection with the inserts that are firmly embedded in the concrete riser through the wall liner. Bright red reflectors for greater visibility, molded finger grips for a firmer hold and a sure-footed tread design all contribute to achieving high safety standards in a confined, difficult working environment.



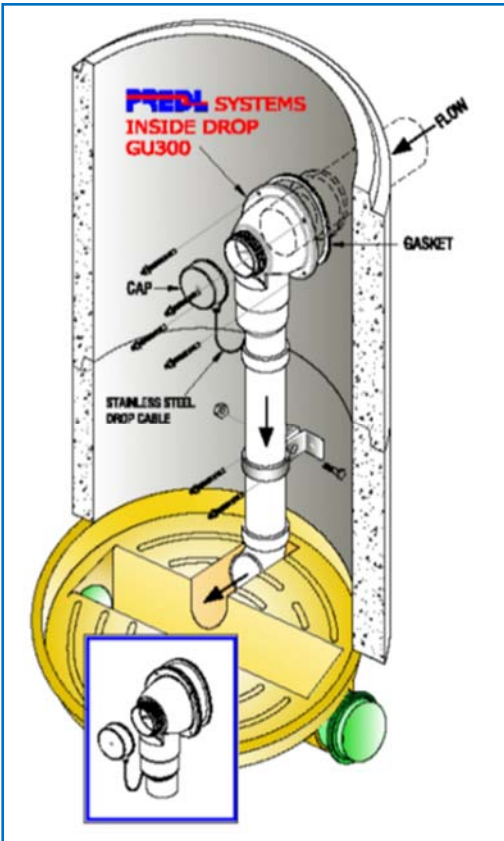
Slide Gate and Flap Gate Valves

The Slide Gate is equipped with a stainless steel manually controlled handle and knife for corrosion protection. Available in a range of sizes including 3" (76mm), 4" (102mm), 6" (152mm) and 8" (203mm). The Flap Gate has high mechanical strength due to durable GRP construction for a long low maintenance service life. Effective watertight solution up to 1 bar (10m head), back pressure (0.8 to 1.0 bar by model) and flexible couplings enable watertight connection to any circular pipe. Both gate valves are factory-installed with the base liner as a fully integrated component.



Case Study - Pierce County, WA State

Since 1989, Pierce County has installed Predl's Manhole Base Liner in over 10,000 manholes structures in their wastewater collection system. Robin Ordonez, P.E. retired in 2010 as Pierce County's Assistant Wastewater Utilities Manager. Please visit www.predl.com/case-study/ to hear in Robin Ordonez's own words why Pierce County specified and sole sourced Predl's Manhole Base Liner and Inside Drop and how the use of these products for the past 25 years has contributed to reduced I&I, lower maintenance costs and improved worker safety.



Predl Systems' Inside Drop

- Wastewater resistant durable polyethylene plastic construction
- Helps to reduce hydrogen sulfide gas emissions, odor and turbulence
- Accepts horizontal pipe connections up to 12" (300mm) in diameter
- Provides downward facing spigot of 6" (150mm) and 8" (200mm) in diameter
- Removable screw cap allows for easy inspection and cleaning
- Compact profile does not obstruct worker movement inside manhole
- Low weight and small size makes it simple and easy to install
- Gaskets for watertight fit, stainless steel tether line and installation guide included

REDUCE I&I BY 100 GALLONS/MIN & SERVE 655 MORE HOMES

100 GALLONS /MINUTE = 6,000 GALLONS /HOUR OR 144,000 GALLONS /DAY

If a municipal sewer utility allows for 220 Gallons per day of wastewater for each single detached home, 655 homes will produce 144,000 gallons of wastewater each day.

1 MGD (million gallons per day) in collection system and wastewater treatment plant capacity can cost between \$10 – \$20 million to construct.

Visit or call Predl Systems to learn how concrete manhole structures using Predl Liner System products can help control I&I, reduce maintenance costs and enhance worker safety in the manhole environment.