

Northwest Trunk Sewer-VIC

Steel for Wastewater Applications



Objectives:

Because some projects need both the structural strength of a steel pipeline and the inert properties of polyethylene, Steel Mains developed a new product for the water and waste-water industry. SINTAPIPE® is a mild steel shell, fully coated inside and out with fusion bonded, low - density polyethylene (later improved as medium – density polyethylene).

SINTAKOTE is recognised already as the best product to protect steel below ground against the environment. SINTALINE® is an extension of that protection, the application of fusion bonded polyethylene to the internal surface of the steel shell. Coastal criteria challenge gravity sewer project.

Coastal Criteria Challenge Gravity Sewer Project

The Northwest Trunk sewer project was required to satisfy three main criteria:

- Replacement of a thirty (30) year old cement jointed concrete main which is subject to a large amount of infiltration due to the type of construction and its location below the water table adjacent to Fawthrop Lagoon.
- The elimination of the need for the existing small pump station located on the western side of Henty Highway just south of the Bridgewater Road overpass.
- The elimination of the need for a large sewer pump station to be constructed in this location in the future (estimated cost \$1.0 million) when the City is further developed to the west and sewer reticulation is required in this area.

Challenge

The Northwest Trunk Sewer presented a number of engineering challenges:

- The bulk of the pipeline traversed a swamp with poor ground conditions providing minimal support to the pipeline.
- Soil loadings up to four metres with water table levels up to 1 metre above ground level.
- Groundwater infiltration to be minimised.

Solution

Portland Water Board chose Steel Mains's SINTAPIPE as the most cost-effective means of satisfying the demanding design criteria. As SINTAPIPE is a pressure pipe, the working pressure of the joint is well in excess of 300m head, more than adequate to ensure security against infiltration. The strength of steel and its proven history as a pipeline material meant confidence in its structural strength, the internal fusion bonded polyethylene lining provided corrosion protection while maximising abrasion resistance.

Northwest Trunk Sewer

Client	Portland Water Board (Wannon Water), VIC
Pipeline	504m of 660 OD × 6mm WT SINTAPIPE MS RRJ 1,828m of 559 OD × 6mm WT SINTAPIPE MS RRJ
Construction	Gambier Earthmovers & Portland Water Board Direct Labour

Construction Period: April - June 1993

Period: