

Corrosion protection linings

Issue 1





Introduction

While Humes' sewerage pipes and products are designed to serve over 100 years in accordance with AS/NZS 4058, we offer corrosion protection linings to increase durability and reduce the risk of corrosion.

Above:
HDPE lining sheets
with the anchor
side visible

Lining systems are able to bridge any discontinuities in the pipe/structure wall, which is a distinct advantage over coating systems that depend on the integrity of the surface for functionality.

Humes supplies two thermoplastic linings to reduce the risk of sulphide attack/corrosion in sewage applications:

- **HDPE lining**

High density polyethylene (HDPE) lining suits both precast and in-situ applications. Firmly anchored to the pipe, the lining forms a superior protective layer able substantially withstand both abrasion and harsh chemical environments. This material is available in a variety of colours, including pale colours which allow easy visual inspection. HDPE lining is available in 2 mm to 5 mm thicknesses in sheets up to 3 m wide.

- **Plastiline® lining**

This chemically inert plasticised PVC material is mechanically fixed to the pipe's internal surface during the manufacturing process and gives superior protection against chemical attack inside the pipe. Plastiline® lining has been in use across Australia for over 45 years, is easy to weld and is suitable for both precast and in-situ applications.

HDPE lining

Applications

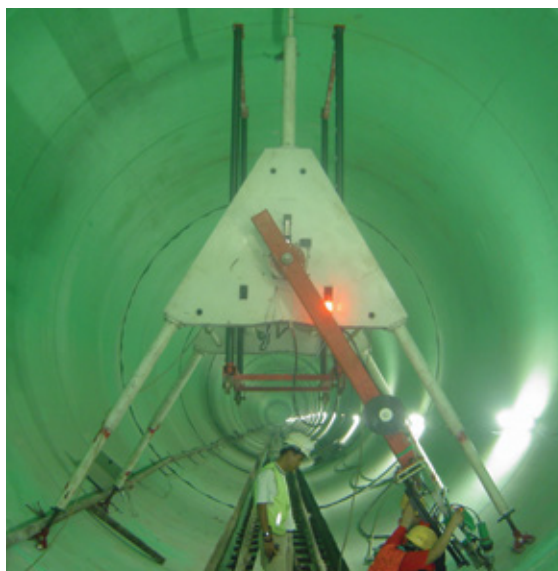
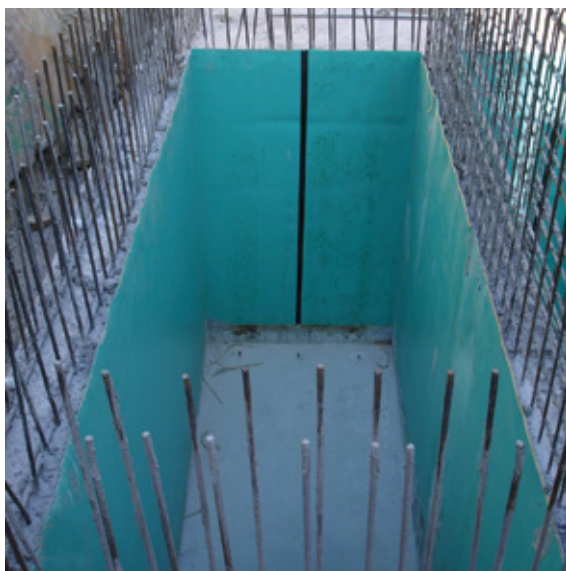
Humes' advanced manufacturing capability enables HDPE lining to be incorporated into our full range of precast products.

HDPE lining is equally suitable for in-situ installations. Sheets can be glued or mechanically fixed to formwork, and the anchors themselves can provide excellent fixing points. Lining the surface area of slabs, and retrofitting of walls and complex shapes can be achieved with the use of high-strength grout bedding or injection. HDPE lining has been used in a broad range of applications including segmental sewer tunnels, detention basins, piers, pile caps and bridge abutments.



Features

- available in white and other light colours
- suitable for potable water systems
- suitable for both precast and in-situ applications
- quality assured installation by trained industry professionals
- anchors are integrally formed with the sheet
- sheets are up to 3 m wide
- sheets are 2 mm to 5 mm thick
- anchors are 12 mm long
- 1230 knobs per square metre
- manufactured from HDPE (PP or LLDPE also available)



Left:
In-situ application
for a sewer pump
station

Right:
In-situ application
in a sewer tunnel

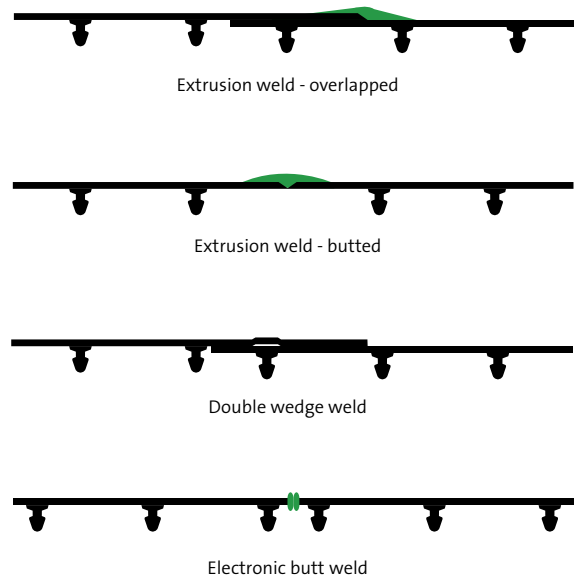
Jointing

Right:
Thermal welding of
HDPE lining

A continuous lining system is created through the use of various methods of thermal welding, performed by trained and certified industry professionals. Overlapped extrusion welds are recommended for site work. As a minimum all site welds must be spark or vacuum box tested. Extrusion butted, double wedge and electronic butt welds are used predominately in factory assembly conditions.



Figure 1 — HDPE weld types





Plastiline® lining

Applications

The prime function of Plastiline® lining is the protection of concrete against hydrogen sulfide (H₂S) attack. It is also effective against a wide range of acids, alkalis and aggressive salt solutions.

Plastiline® lining offers superior protection and is suitable for applications which include sewers, treatment works, industrial waste lines, storage tanks - in fact, any concrete structure where aggressive agents are encountered.

Jointing

Jointing and sealing together sections of Plastiline® lining is readily achieved by a trained operator using a heat fusing process. The resultant weld is equivalent in protection to that of the parent sheet.

Welding strips and other accessories are readily available.

Features

- suitable for both precast and in-situ applications
- quality assured installation by trained industry professionals
- keys are integrally formed with the sheet
- sheets are 1240 mm wide
- sheets are 1.5 mm thick
- keys are 10 mm long
- used in Australia for over 45 years

Above:
Concrete pipes with
Plastiline® lining



National sales 1300 361 601

humes.com.au

info@humes.com.au

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