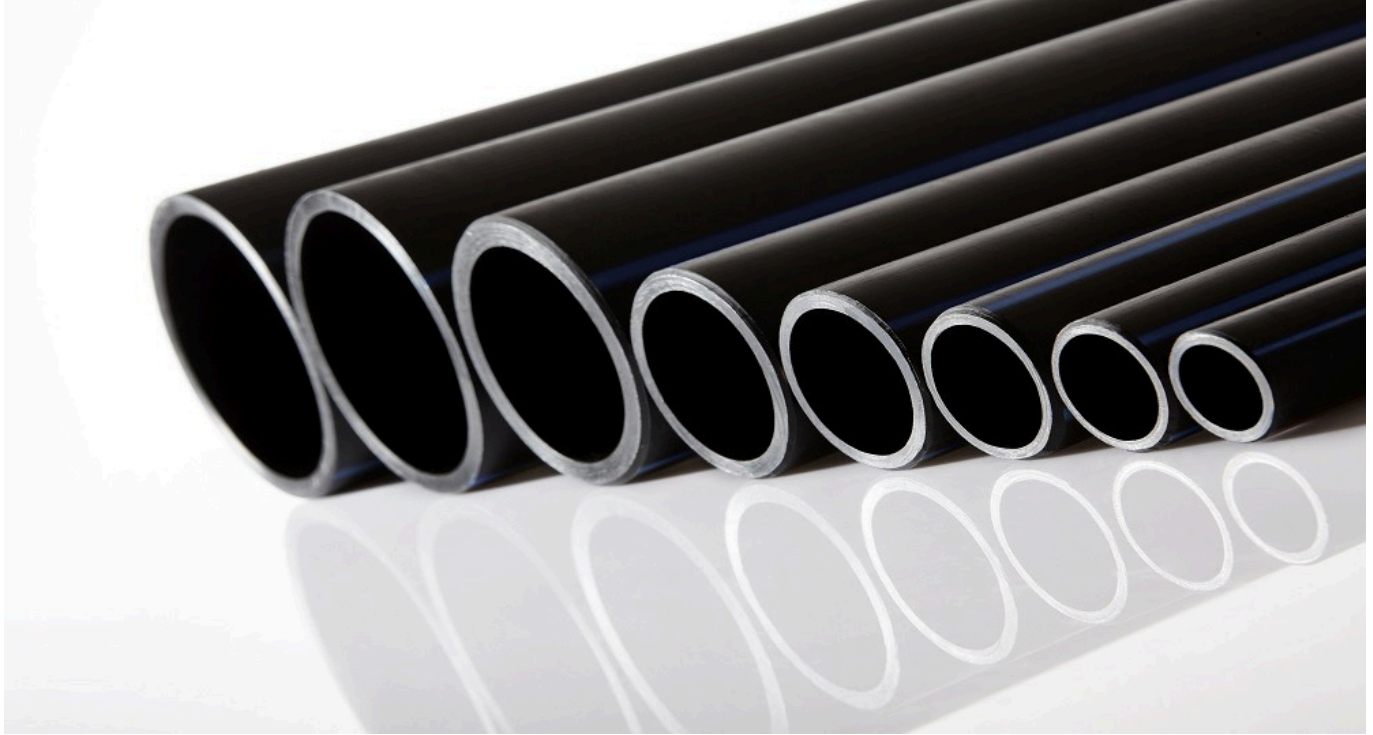


TECH OFFER

Anti-Corrosion Thermoplastic Piping Systems



KEY INFORMATION

TECHNOLOGY CATEGORY:

Materials - Plastics & Elastomers

Environment, Clean Air & Water - Mechanical Systems

Chemicals - Polymers

Sustainability - Circular Economy

TECHNOLOGY READINESS LEVEL (TRL): **TRL9**

COUNTRY: **SINGAPORE**

ID NUMBER: **TO175021**

OVERVIEW

Anti-corrosion is important for piping systems because corrosion can lead to several problems including reduced flow capacity, leaks and ruptures, contamination, increased maintenance costs and reduced lifespan. While there are several approaches to mitigate these problems, a possible approach is to utilise thermoplastic materials which are lightweight, durable, and resistant to corrosion.

This technology is a thermoplastic piping system lined with HDPE/LDPE linings that is corrosion-resistant, do not generate any waste (waste material can be recycled) and has a reduced carbon footprint. The piping system is easy to assemble and install, providing long service lives due to the high-quality thermoplastic materials being deployed in the system. By laying these thermoplastic pipes underground using native soil without sand-bedding, a reduction in CO₂ is achieved and offers users a sustainable piping solution against conventional piping materials. In combination with proprietary welding technologies, the

technology has the lowest rate of leakages with high guarantee of preservation of drinking water quality when used in water piping systems.

The technology owner is seeking for co-development and test-bedding opportunities with asset owners to integrate the technology into their infrastructure, particularly with hydrogen producing and transporting companies.

TECHNOLOGY FEATURES & SPECIFICATIONS

The technology is a thermoplastic piping system that exhibits the following features:

- Efficient corrosion protection against aggressive media
- Excellent product properties (static puncture resistance)
- Long service life (minimum service life is 50 years, up to 100 years)
- Maintenance free – pipework is homogenous, longitudinally force-locked and leak-tight
- Reduced carbon footprint compared to conventional piping materials
- Easy to install using permanently leak-tight welding technologies
- Suitable for clean and efficient trenchless installation
- Black piping and fitting are resistant to UV and corrosion free against chemicals

POTENTIAL APPLICATIONS

The technology is a thermoplastic piping system that has been successfully deployed in several industries. Possible applications include (but are not limited to):

- Hydrogen Plant
- Hydrogen transport (or transportation of natural gas)
- Semiconductor
- Photovoltaic
- Life Science
- Water and Wastewater
- Chemical Processing
- Oil & Gas
- Mining
- Power Plant
- Municipal
- Shipbuilding
- Environmental Engineering
- Irrigation

UNIQUE VALUE PROPOSITION

- Long life expectancy (up to 100 years)
- Maintenance free
- Simple and economical installation
- Toxic free and recyclable