UNWRAPPED

ZINALIUM®
ACTIVE CORROSION PROTECTION
ELIMINATING THE NEED FOR POLYETHYLENE SLEEVING

TYTON® DUCTILE IRON PIPE

VIADUX VERSION 1.0
ELIMINATING THE NEED FOR SLEEVING
ZINALIUM ACTIVE CORROSION PROTECTION
FACTORY APPLIED ZINC ALUMINIUM ALLOY COATING SYSTEM

Developed by PAM, the world’s leading manufacturer of DI Pipe, Zinalium® is a highly effective, patented alloy comprising of 85% zinc and 15% aluminium. This factory applied, ACTIVE corrosion protection system, will extend the service life of your pipeline and reduce on-site handling by eliminating the requirement for polyethylene sleeving.

**METALLIC ZINC/ALUMINIUM ALLOY**

The entire outer surface of the ductile iron pipe is coated in an 85% zinc and 15% aluminium alloy at a density of 400g per m². This hot metal spray is applied directly onto the ductile iron providing active galvanic protection.

**SYNTHETIC RESIN PORE SEALER**

The outer blue coating is a synthetic resin pore sealer applied at an average thickness of 100μm, the particles 'agglomerated' in a way to form a uniform, stable and adhesive protective film, resistant to atmospheric conditions (stockyards) and to the soil. Its mechanical and chemical properties are compatible with the increased resistance of the ZnAl alloy.

**DUCTILE IRON**

The Ductile Iron shell is manufactured to AS 2280 giving complete compatibility with current water industry standards and requirements.

A PAM patented ZnAl alloy applied at twice the density of standard zinc coatings.
The factory applied, ACTIVE corrosion protection system removes the risks associated with installation of sleeving, as it is no longer required. In addition, Zinalium will ACTIVELY protect the underlying iron against scratches and scrapes which can commonly occur during transport and installation.

**FASTER, EASIER INSTALLATION**

Extensive research in the installation of loose polyethylene sleeving reveals that it takes up to 15 minutes per length of pipe to install. This accumulated time can account for up to 5% of the cost of a pipeline, tying up personnel and machinery.

By eliminating the need for sleeving, the installation of Ductile Iron Pipe becomes a simple one step push fit operation.

**REDUCED COST**

Not only will contractors find a typical ~5% cost saving in time, but also further saving in the cost of the sleeving itself which makes up to 2% of the cost of Ductile Iron Pipe as a complete system.

The end result is a cost effective solution which will increase installation efficiency and asset life.

**ALUMINIUM, WORKING WITH ZINC**

The perfect combination of aluminium and zinc in the ZnAl alloy considerably increases the strength of the protective properties of the outer layer.

The high quality zinc hydroxide layer can only form when the zinc transforms at an appropriate rate. In Zinalium®, this change is optimised by two factors:

- the porous paint layer is applied at an optimum thickness to allow both the formation of zinc hydroxides and the ongoing galvanic effect;
- the presence of aluminium slows the transformation effect to allow the creation of a more stable protective layer compared to zinc alone, whilst allowing the sacrificial galvanic healing process to take place.

**THE ACTIVE PROPERTIES OF ZINC**

The Zinalium coating system benefits from the 'active' properties of the Zinc-Aluminium alloy when in contact with the soil in that it:

- provides a long term barrier by forming a stable all-round protective layer [zinc hydroxides] covering the entire surface of the buried pipe;
- restores the protective layer at points where it has been slightly damaged (impacts during transportation, scrapes when backfilling) through the galvanic effect between the exposed iron and the zinc around the damage.

Pipes coated in PAM’s patented Zinalium alloy may be buried in contact with the majority of soils, except:

- Acidic peaty soils;
- Soils below the marine water table with a resistivity lower than 5000-Ω·cm.
TYTON HYDROCLASS Ductile Iron Pipe, with Zinalium® external protection, reflects state-of-the-art manufacture in evolving water industry demands.

Available in pressure classes, PN 20 and PN 35, TYTON HYDROCLASS becomes the first class choice for efficiency gains and cost savings without sacrificing the time proven superior performance capabilities associated with Ductile Iron pipeline systems. Complete with the time proven, robust TYTON JOINT® which provides flexibility, ease of installation and is your guarantee of quality.

TYTON HYDROCLASS delivers with:

- Increased bores giving increased flows and reduced head losses result in lower pumping costs
- Faster laying – with no sleeving required, increased efficiency, and reduced cost means more savings
- Active corrosion protection with 400g per m² ZnAl Alloy Zinalium gives a longer lasting solution.

**LINING OPTIONS**

HYDROLINE-C is a centrifugally spun cement mortar lining made up of Type SR (Sulphate Resisting) Blast Furnace Slag cement standard internal lining.

HYDROLINE-CSC is HYDROLINE-C with an added Seal Coat to inhibit the leaching of lime where very aggressive, soft waters of low hardness (Total alkalinity <30mg/L) or high dissolved CO₂ are being conveyed.

**TECHNICAL DATA**

**Sizes**
DN 100 - DN 750

**Certification**
TYTON HYDROCLASS pipes are certified to:
- AS/NZS 2280 Ductile iron pipes and fittings
- AS 4020 Testing of products for use in contact with drinking water

**End Connections**
TYTON® push-on rubber ring joint.
TYTON-LOK® gaskets are also available for restrained joints up to DN 375 rated to PN 16

**External Coating**
Zinalium ZnAl alloy – 400g per m²
Blue synthetic resin – 100μm
TYTON INTEGRAL combines the best features of TYTON® proven Ductile Iron Pipeline Systems with materials that provide high resistance to chemical attack and abrasion. This is achieved by using calcium aluminate cement (CAC) in lieu of sulphate resisting (SR) cement in the barrel lining. CAC is an effective lining for aggressive fluids with extreme pH values and/or abrasive solids. Combined with Zinalium external protection, TYTON INTEGRAL Ductile Iron Pipes are a comprehensive and cost effective solution for wastewater transportation.

TYTON INTEGRAL delivers with:
- A lining suitable for the transport of sewage or aggressive waters with pH values of 4 to 12
- Faster laying – no sleeving required, increased efficiency, and reduced cost means more savings
- Active corrosion protection with 400g per m² ZnAl Alloy Zinalium gives a longer lasting solution.

THE TYTON INTEGRAL ZINALIUM SYSTEM

No sleeving required. Sewage or aggressive waters with pH values of 4 to 12.

LINING OPTIONS
HYDROLINE-CA calcium aluminate cement mortar lining. This lining protects the internal surface from corrosion, tuberculation and bacteriogenic acid attack when conveying aggressive fluids common in sewage and wastewater pipelines.

TECHNICAL DATA
Sizes
DN 100 - DN 750
Certification
TYTON INTEGRAL pipes are certified to:
- AS/NZS 2280 Ductile iron pipes and fittings
End Connections
TYTON® push-on rubber ring joint TYTON-LOK® gaskets are also available for restrained joints up to DN 375 rated to PN 16
External Coating
Zinalium ZnAl alloy – 400g per m²
Red synthetic resin – 100μm
Sydney Water commissioned the renewal of 242 metres of a two kilometre, DN 100 cast iron pipeline due to main breaks. It was also a prudent time to take advantage of the opportunity to up-size the main to facilitate for further urban growth in the area.

TYTON HYDROCLASS was selected due to a perceived risk of presence of hydrocarbons in the soil as there was previously a petrol station along the pipe alignment.

A special order was placed with Saint Gobain PAM, the worlds leading manufacturer of DI Pipe, for the first shipment of Zinalium coated pipe to Australia specifically for this project in the required time frame.

**INSTALLATION CONTRACTOR**
Comdain Infrastructure, Bray Civil

**INTERVIEW**
Paul McCloskey—Installation Supervisor

**SAVINGS—COST OF SLEEVING**
- Installation time 10-15 minutes per pipe
- 2 people to install sleeving
- 1 person to drive load shift equipment
- 1 x load shift equipment
- Plus actual cost of sleeving
- Approximately 7% cost saving overall

**COMMENTS**
Brilliant Product, makes DI Pipe installation much quicker and simpler.
Takes away the reliance on good sleeving installation for protection.
ACTIVE CORROSION PROTECTION
TYTON® DUCTILE IRON PIPE

CUSTOMER CENTRES

TOWNSVILLE
P: 07 4725 5940
F: 07 4725 4995
E: cct.sales@viadux.com.au

MELBOURNE
P: 03 9309 9133
F: 03 9309 6237
E: ccm.sales@viadux.com.au

GOLD COAST
P: 07 5587 4400
F: 07 5534 7079
E: ccg.sales@viadux.com.au

ADELAIDE
P: 08 8440 3980
F: 08 8340 3422
E: cca.sales@viadux.com.au

NEWCASTLE
P: 02 4914 0700
F: 02 4914 8776
E: ccn.sales@viadux.com.au

PERTH
P: 08 9344 8100
F: 08 6102 3886
E: ccp.sales@viadux.com.au

SYDNEY
P: 02 9794 3440
F: 02 9794 3499
E: ccs.sales@viadux.com.au

ADELAIDE
P: 08 8440 5980
F: 08 8340 3422
E: cca.sales@viadux.com.au

PERTH
P: 08 9344 8100
F: 08 6102 3886
E: ccp.sales@viadux.com.au

VIADX PTY LTD P0 BOX 1025, PARRAMATTA, NEW SOUTH WALES 2124 AUSTRALIA / VIADUX.COM.AU / PHONE 1300VIADUX

All Viadux trademarks and logos are owned by Viadux Pty Ltd. The words TYTON®, TYTON-LDK® and TYTON JOINT® are United States Pipe and Foundry Co. Inc. trademarks and are registered as such in the United States Patent Office and some 45 other countries. Viadux is an exclusively authorised and licensed user of these trademarks within Australia and New Zealand. All other brand or product names are trademarks or registered marks of their respective owners. Because we are continuously improving our products and services, Viadux reserves the right to change specifications without prior notice. VIAZIN1610.2