

DIMAX TYTON® Z+ COATING SYSTEM

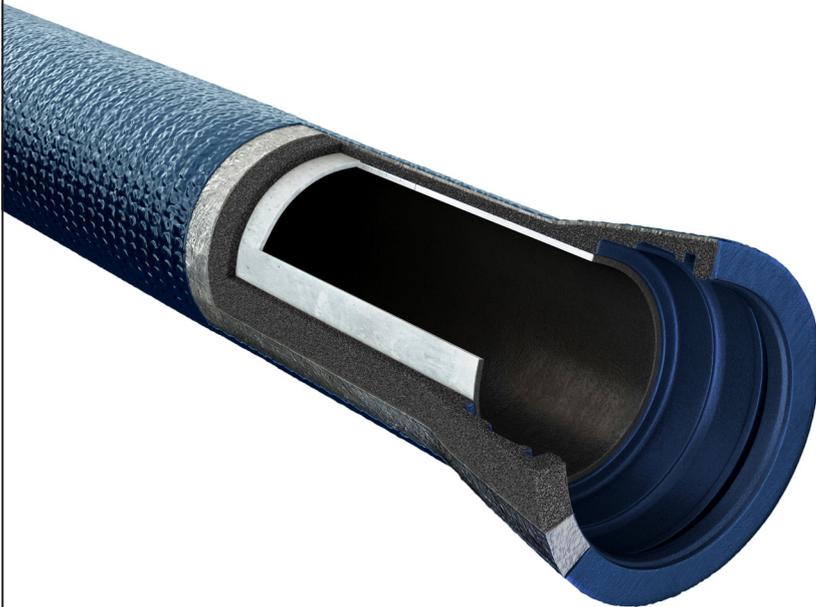
ZnAIRE400 EXTERNAL PROTECTION

Eliminates The Need For
Loose Polyethylene Sleevings



EXTERNAL CORROSION PROTECTION

Zinc Aluminum has long been used in the civil industry as an effective corrosion protection system. Dimax Z+ further improves on this traditional formula to bring you the most advanced corrosion protection system available. Dimax Z+ has been engineered with a small percentage of rare earth metals to withstand Australia's aggressive soil conditions. This unique Zinc-Aluminum-Rare Earth Alloy enhances the galvanic effect that standard Zinc Aluminum creates to actively protect the pipe.



GOODBYE SLEEVING, HELLO PROFITS

The Dimax Z+ coating will extend the service life of your pipeline by providing an active self-healing layer that prevents corrosion forming. Pipes coated in a Z+ alloy may be buried in contact with the majority of soils, without the need for polyethylene sleeving. Dimax offers a complimentary site soil test can also be carried out to ensure soil suitability for the piping system.

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.

Not only will contractors find a typical 5% cost saving in time, they'll enjoy a further 2% saving on 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.

APPLICATION

The Z+ layer is hot sprayed directly onto the ductile iron at a density of 400g per m², then finished with a thin layer of synthetic resin to a thickness of 100µm. Z+ maximises the life of your pipeline while eliminating the need for the manual application of plastic sleeving that can add significant time and labour costs at the point of installation.

ALL-ROUND PROTECTION

The Z+ coating system has active properties that enable it to create a stable all-round protective layer when in contact with soil. The zinc hydroxides that form over the entire surface of the buried pipe, restore the protective layer at points where it has been slightly damaged (impacts during transportation, scrapes when backfilling) This is achieved through the galvanic effect between the exposed iron and the zinc around the damage.

The perfect combination of aluminum and zinc 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.

To achieve this, the outer 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 aluminum slows the transformation effect to allow the creation of a more stable protective layer compared to zinc alone, while allowing the sacrificial galvanic healing process to take place.

TECHNICAL DATA

Composition

Zinc (Zn) 85%
Aluminium (Al) 15%

Coating Density

400g per square metre

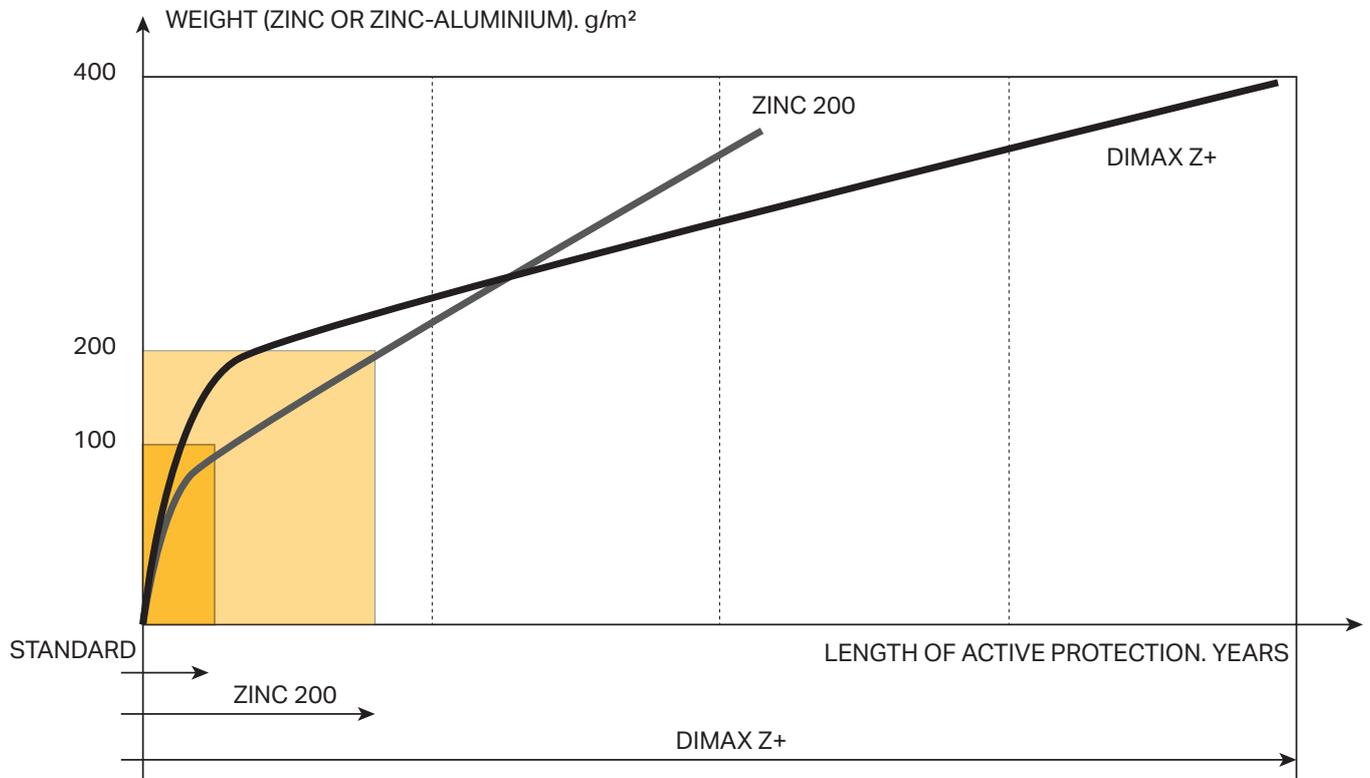
Finishing Layer

Synthetic resin 100µm thickness

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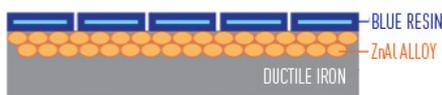


PROTECTIVE MECHANISMS

The metallic DIMAX Z+ coating offers active protection due to the galvanic action of the alloy. The mechanism has two effects

Formation of a Stable Protective Layer

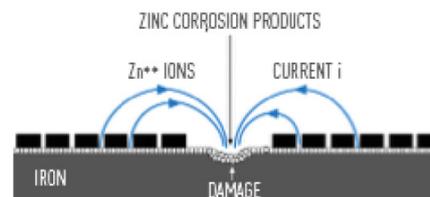
In contact with the surrounding soil, the DIMAX Z+ coating slowly changes into a dense, adherent, impermeable and continuous layer of insoluble zinc salts. This forms a protective screen as seen below.



The presence of aluminium increases the passivation effect even in highly corrosive soils, reducing the zinc consumption rate. Whilst allowing galvanic protection and self-healing, the synthetic resin outer coating promotes the formation of a stable, insoluble layer of ZINALIUM conversion products.

Self-Healing of Damage

One of the outstanding features of the ZINALIUM external coating is its ability to restore the continuity of the protective layer at small areas which have suffered local damage, the below diagram shows this self-healing process.



The Zn++ ions migrate through the pore sealer to plug the damage and then convert into stable, insoluble corrosion products.

COATING COMPOSITION

The DIMAX Z+ coating consists of a layer of Zinc-Aluminium-Rare Earth alloy at a minimum density of 400 g/m².

A two part epoxy coating (pore sealer) of 100 microns in thickness is applied to the outer surface of the ductile iron pipe during two successive manufacturing operations.

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Because we are continuously improving our products and services, The Reece Group reserves the right to change specifications without prior notice.

CERTIFICATIONS

AS/NZS2280 – Ductile Iron Pipes & Fittings
AS4020 – Testing for use in contact with drinking water
EN15655.1 - Polyurethane lining of pipes and fittings

