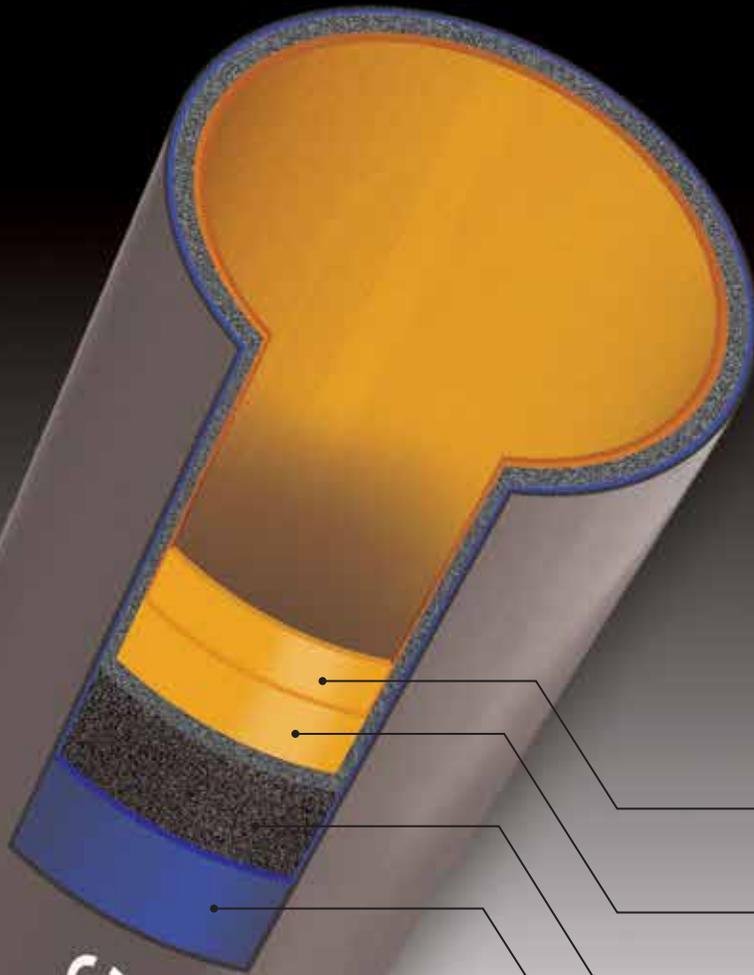


# PRO-TEC

## CAST IRON SOIL PIPE

By NewAge Casting

Your Solution for Harsh Environments  
Above and Below Ground Sanitary and  
Storm DWV Systems



NewAge Casting **PRO-TEC** Cast Iron Soil Pipe and Fittings are guaranteed to deliver years of superior performance and protection for the harshest waste water exposures including chemical waste, hot soils, alkali, grease and others.

**PRO-TEC** Interior Pipe Lining is applied in 2 layers fully cross linked epoxy with a minimum of 5 mil thickness. 1st layer known as the base coat is directly applied to the gray cast iron cured then thermally bonded. The 2nd layer known as the cover coat is applied directly to the base coat cured then thermally bonded again, resulting in a 10 mil optimal and permanent adhesion between both layers and the cast iron.

**PRO-TEC** Exterior Pipe Lining is 1st lined with a thermal spray of metallic zinc coating in accordance to section 4.8.3.2 of the EN 877 standard. Then finally sealed with a Gray color fully cross linked epoxy with a minimum of 2.5 mill thickness. The exterior coating provides excellent protection against severe environmental elements and is recommended for above and below ground installations.

**PRO-TEC** Fittings Coating is applied inside and outside with a high quality matching Gray epoxy powder. After the fittings have completed shot blasting then they are heated to approximately 400° F. and then dipped into an fluidized bed of whirling epoxy powder. Resulting into a fully cross linked epoxy providing excellent chemical and corrosion resistant.

### Suitable Applications

- Harsh Waste Water
- Chemical Waste
- Hot Soils
- Alkali
- Direct Ground Burial
- Soil Class II
- Excessive Corrosive Environments
- Grease Interceptors
- Dialysis

### Coatings Overview

#### INNER LINER

Material: Cross Linked Yellow Epoxy  
Thickness: 5 Mil. (minimum)

#### INTERIOR PIPE COATING

Material: Cross Linked Yellow Epoxy  
Thickness: 5 Mil. (minimum)

#### CAST IRON PIPE

Material: Gray Iron  
Standards: NH, SV & XH

#### EXTERIOR PIPE COATING

Material: Thermal Zinc  
Thickness: 2.5 Mil. (minimum)

#### OUTER COATING

Material: Gray Epoxy  
Thickness: 2.5 Mil. (minimum)

Note: Available in NH, SV and XH

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**NewAge Casting**

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### Corrosion Resistance

When left unprotected, Cast Iron will corrode in almost any environment. Zinc coatings protect Cast Iron by providing a physical barrier as well as cathodic protection for the underlying Cast Iron. It is important that zinc coated products are specified to provide optimal performance under the exposure conditions to which the coating will be subjected.

### Barrier Protection

Zinc coatings provide a continuous, impervious metallic barrier that does not allow moisture to contact the cast iron. Without moisture, there is no corrosion, except in certain chemical atmospheres. Coating life is determined by the coating corrosion rate, itself a function of many factors such as time, composition of the atmosphere and the type of coating. Corrosion resistance of coatings is improved by applying a fully cross linked epoxy top coat. This method is recommended for exposed applications where enhanced corrosion protection is required.

### Cathodic Protection

Another outstanding protection mechanism is zinc's remarkable ability to galvanically protect cast iron. When base cast iron is exposed, such as at a cut edge or scratch, the cast iron is cathodically protected by the sacrificial corrosion of the zinc coating adjacent to the cast iron. In practice, this means that a zinc coating is not undercut because the cast iron cannot corrode adjacent to a zinc coating.

### Zinc Coatings

Epoxy Coating acts as a barrier protecting the underlying zinc coating. Zinc is an excellent substrate for Epoxy coatings because if damaged, zinc's high corrosion resistance prevents undercutting of the Epoxy coating. Even if the coating damage reaches the cast iron base, zinc's cathodic action will prevent the cast iron from corroding. Zinc's ability to extend the life of the Cast Iron System coupled with the fully cross linked Epoxy outer coating is what makes Pro-Tec Cast Iron Soil Pipe the system of choice for Hot Soils, corrosive environments and direct ground burial for Storm, Drain, Waste and Vent.

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## Factors Affecting the Corrosion Process



1. Aeration
  - a. More Air = Less Corrosion
    - i. Drier Environment Reduces Galvanic Action
2. Water Retention
  - a. More Water = More Electrolyte = More Corrosion
3. Dissolved Salt Content
  - a. More Dissolved Salt = Higher Conductivity
    - i. Higher Conductivity = Greater Corrosion
4. Soil Resistivity
  - a. Greater Resistivity = Less Current Flow
    - i. Less Current Flow = Lower Corrosion Rate

### Soil Resistivity, (ohm-cm) vs Corrosivity

0 - 500	Very Corrosive
500 – 1000	Corrosive
1000 – 2000	Moderately Corrosive
2000 – 10,000	Mildly Corrosive
> 10,000	Negligible Corrosivity

5. Soil Acidity
  - a. Steels
    - i. Greater corrosion in acid soils
    - ii. Passive in neutral/alkaline soils
6. Presence of Ionic Species
  - a. Active Bacteria are fed by Sulfate Ions (SO<sub>4</sub>-)

### Sulfate Concentration, ppm      Corrosivity

>10,000	Severe
>1500 – 10,000	Corrosive
>150 – 1500	Moderate
<150	Negligible

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For over a century, zinc has enhanced the longevity and performance of all forms of steel. Zinc coatings provide the most effective and economical way of protecting steel against corrosion which, left unchecked, is estimated to cost between 10 and 15 billion dollars annually. Worldwide the figure balloons to over 45 billion dollars.

Zinc-coating offers a unique combination of properties unmatched by any other material. These include:

- high strength
- formability
- light weight
- corrosion resistance
- aesthetics
- recyclability
- low cost

For this reason, zinc coated metal is an ideal material for a multitude of building and manufacturing applications - from automobiles to household appliances to residential, commercial and industrial construction.

See our process



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