



**ZALCOTE®**

**SUPERIOR CORROSION PERFORMANCE**

**Up to 4 times  
the life of Zinc  
Galvanised Coating\***



\* As stated in AS 2423



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## ZALCOTE®

### SUPERIOR CORROSION PERFORMANCE

Introducing **ZALCOTE®** from OneSteel - a zinc and aluminium alloy coating that provides superior corrosion performance for wire products.

#### ADVANTAGES OF ZALCOTE®

##### Longer Life

- Greater Corrosion Resistance

##### Ductile Coating

- Ideal for woven wires

##### Good Welding Performance

- Ideal for welded meshes

##### Wide Range of Sizes

- To suit most applications

##### Manufactured by OneSteel

- High quality Australian made.

#### WHAT IS ZALCOTE®?

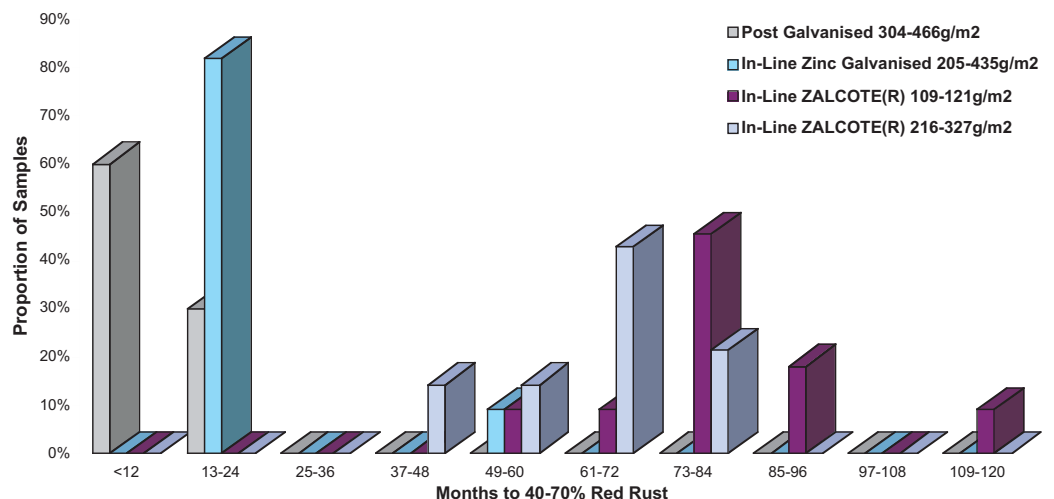
**ZALCOTE®** is a new protective coating specifically designed to enhance the working life of steel wire products. The coating comprises a 5% Aluminium and 95% zinc alloy.

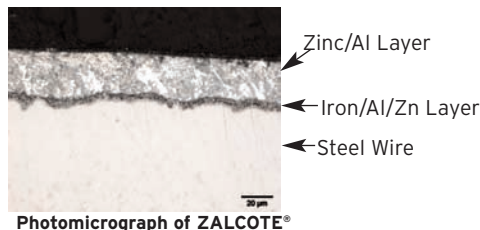
The **ZALCOTE®** process forms two different alloy layers that provide both passive and galvanic protection to the steel wire in the one coating.

The **ZALCOTE®** inner layer forms an aluminium rich iron-aluminium zinc alloy that acts as a passive barrier.

The **ZALCOTE®** outer layer of zinc and aluminium is finer and more homogeneous than plain zinc. This outer layer provides galvanic protection offering sacrificial protection to the steel wire.

### 1.25MM WELDED MESH SEVERE ATMOSPHERIC CORROSION SITE BELMONT BEACH NSW COMPARISON OF TIME TO 40-70% RED RUST





Photomicrograph of ZALCOTE®

For plain galvanised products the zinc coating layer only protects the steel with galvanic protection.

## ZALCOTE® - SUPERIOR CORROSION PERFORMANCE

Independent international research and studies undertaken at OneSteel corrosion sites around Australia, demonstrate the superior corrosion performance of zinc/5% Al- alloys such as **ZALCOTE®** in atmospheric conditions.

This is supported in Australian Standard AS 2423 - Coated Steel Wire Fencing Products for Terrestrial, Aquatic and General Use, which states "Studies under Australian external atmospheric field conditions have shown that the zinc/5% aluminium-alloy coatings on wire offer from about two up to four times greater protection per unit coating mass, than do zinc coatings".

### HOW IT WORKS?

A coating on wire can provide corrosion protection in two ways:

1. Barrier Protection (eg: paint).
2. Galvanic Protection (eg: zinc)

#### 1. Barrier Protection

The coating forms a protective layer that separates the steel wire from the corrosive environment, however;

Barrier coatings can get damaged or breakdown and then the steel is unprotected.

#### 2. Galvanic Protection

The zinc coating sets up an electrolytic cell with the steel in the wire that protects the steel from corroding, however;

Eventually the electrolytic cell between the galvanic coating and steel leads to the depletion of the zinc coating.

#### ZALCOTE®

The best coating provides BOTH Barrier and Galvanic protection from a single coating.

- The outer layer Zn/5%Al provides the Galvanic Protection
- The inner Iron/Al/Zn alloy layer provides Barrier Protection

#### Galvanised Zinc

The layer of the galvanised coating provides Galvanic Protection only.

## GOOD WELDING PERFORMANCE

The superior corrosion performance of **ZALCOTE®** applies to welded meshes as well as other wire products. At OneSteel's severe marine corrosion site at Belmont Beach, samples of hot dip galvanised and **ZALCOTE®** welded meshes were monitored over a period of time. The relative time taken for the samples to reach 40-70% red rust is displayed in the graph on previous page.

The adjacent pictures show the relative performance between hot dip galvanised welded mesh versus **ZALCOTE®** welded mesh panels after just 12 months at Belmont Beach.

Hot Dipped Welded Mesh - Belmont Beach, NSW  
after 12 months



Welded ZALCOTE® - Belmont Beach, NSW  
after 12 months



### MORE DUCTILE COATING

In addition to its superior corrosive properties the thin **ZALCOTE®** alloy is more ductile and adherent than the hard brittle alloy of zinc galvanised coating.

This means that it is less likely to crack under deformation and allow corrosive elements to attack the steel wire.

**ZALCOTE®** wires are therefore better suited for wires that are woven, deformed or twisted into shape.

### APPLICATIONS

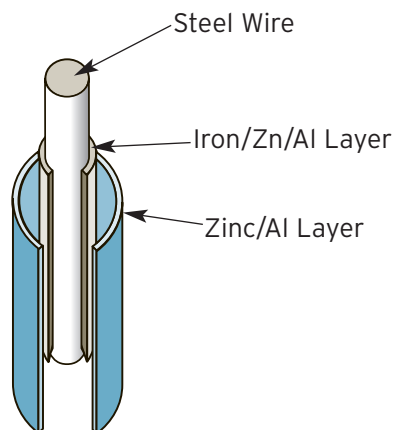
**ZALCOTE®** wires are ideally suited for a wide range of applications, including security meshes, chain link, wire nettings, fabricated fencing, nails and staples.

### RANGE OF SIZES

Diameter (mm)	Minimum Coating Weight (g/m <sup>2</sup> )
2.00	120
2.50	125
3.15	130
4.00	140

### WIRE QUALITY

High quality coatings such as **ZALCOTE®** are important, but as a wire user, you need to be confident in the underlying quality of the wire that the coating is being applied as well. Other critical factors to a wire's performance are its tensile strength, diameter, cast and helix. When using any wire from OneSteel, you can be sure it is of the highest quality you benefit from over 100 years of wiremaking experience and all of OneSteel's wire mills are accredited to ISO 9001.





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## WHY ONESTEEL?

	Delivered by		Via	
Galvanic protection (via Zn/Al outer layer)		Coating mass control		OneSteel patented advanced galvanising process
Barrier protection (via FeAlZn internal layer)		<ul style="list-style-type: none"><li>• Better alloy integrity (encases the wire fully)</li><li>• Significantly thicker barrier layer</li><li>• Enriched in corrosion resistant aluminium</li></ul>		<ul style="list-style-type: none"><li>• Unique processing which minimises scraping of the barrier layer in production</li><li>• Double-dip coating process</li></ul>
Better corrosion performance		Coating mass control, alloy integrity and thickness		OneSteel advanced galvanising process.



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