MARGEL™ VPI901

Introduction

Developed and manufactured by QED Chemicals since 1985 in the UK, Margel™ is a Vapour Phase Inhibitor made up of a blend of three advanced corrosion inhibitors with proven results across multiple industries.

Margel works as a migrating corrosion inhibitor by building a vapour density within an enclosed space. It vaporises and is adsorbed to the steel surfaces within close proximity, blocking the path of Chlorides, Water and Oxygen - the fuels of steel corrosion. The components in Margel provide sufficient vapour, where 60grams will provide effective protection to 1 metre^3 of air space.

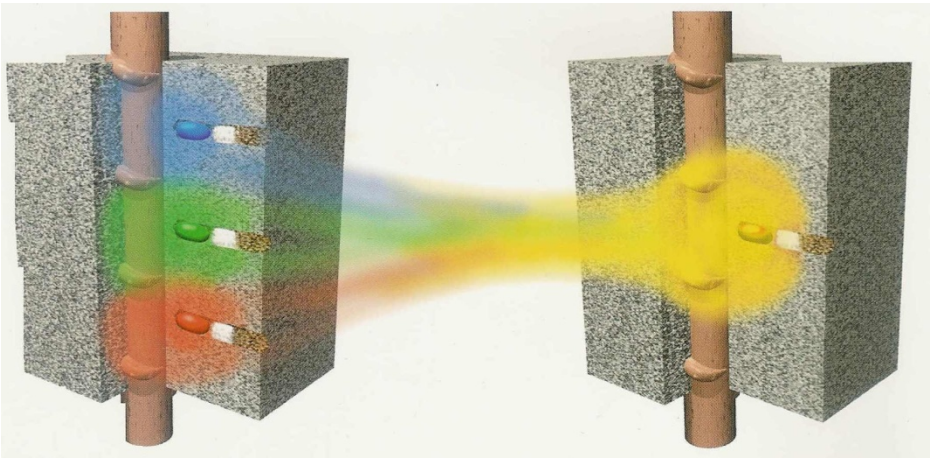

Figure 1

Figure 1 above illustrates the three chemical elements that provide a unique three-pronged approach to tackle the problem of corrosion. The Margel releases a vapour that saturates a given airspace. This vapour forms a mono-molecular coating on exposed and embedded steel. The product travels easily through even dense materials such as concrete, to coat steel with an anti-corrosive coating.

- **Margel Fast Action Component**
  Margel's fast action quickly vaporises and permeates the concrete substrate. Its alkalinity ensures early passivation of corrosion as it is adsorbed to the reinforcing steel surface, blocking the path of Chlorides, Water and Oxygen, the fuel of reinforcement corrosion.

- **Margel Medium term Component**
  Slower to vaporise Margel medium term supplements and replenishes the protection afforded from the initial fast action component. This forms a greater bond strength barrier to extend the period of protection.

- **Margel Long term Component**
  A complex ethanolamine derivative that provides long term protection. The very slow release of this component (over a period in excess of twelve months) gives the extended adsorbed protective care to steel reinforced concrete structures.

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MARGEL VPI901 – WATER-BASED ANTI-CORROSION PAINT FOR STEEL

QED' anti-corrosion paint is a highly effective paint for coating metal surfaces, providing long-term protection. It can be applied to rust covered surfaces with little to no surface preparation. The product is proven in use and has certified test data to ISO standards from the Paint Research Association, UK.

Product Features

- Quick drying, overcoat in 30-60 minutes;
- Excellent abrasion resistant, scrubable and impact resistant;
- Salt spray resistant- suitable for coastal properties and boats;
- Stain, mould resistant, condensation and water proof;
- Semi-permeable membrane - honeycomb structure allows Margel™ VPI product to transmit to protect metal surface;
- Temperature resistance: -50^{o}c to $+210^{o}$c;
- Extremely Rust Preventative; can be applied to both new and corroded metal;
- UV and Weather resistant; Tested for 8 years with no cracking or blistering;
- Flexibility - will not harden to a brittle state;
- Exceptional wet weather performance;
- Flame retardant - tested to have zero flame spread;
- Resistant to Acids, Alkalis, Solvents, Water and Salt solutions;
- Extremely Low VOC's, no solvents, petrochemicals or biocides;
- No unpleasant odour;
- Life expectancy: >20 years.

For exterior use and maximum lifespan it is recommended to use 2 x base coats applications and a top coat application. Margel™ is added to the 1st base coat at the time of application; this is then locked in by subsequent coats to provide maximum surface protection.

Product Configurations

Available in 3 paint colours Red, Green & Grey;
Ships in 20l, 200l and 1000l containers.
Coverage is from 12 – 20 m^2/litre, with 13.6 sq meters being used in estimates.

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DCI580T (VPI580) TEST
BY BIERRUM STRUCTURAL SERVICES LTD

In 1990, Bierrum Structural Services Ltd & QED jointly commissioned a test to show the effect of Margel DCI 580T on suppressing steel corrosion within concrete. Testing was carried out by Bierrum at their Peterborough site.

Ten concrete cubes were prepared in a mould measuring 400mm x 400mm x 400mm, single steel reinforcing bar measuring 500mm in length was set in the centre of each cube. Chloride levels were calculated at 2% by volume of concrete. 5 of the cubes were drilled with a hole to a depth of 100mm in the middle of one side. A Margel cartridge 25mm long by 25mm diameter was sealed in the cavity drilled within the concrete. The cubes were left stored outside for a period of approximately 3 years.

In September 1993, the concrete cubes were broken to assess the effects of the Margel DCI 580T. In the cubes with the Margel cartridge installed, there were no signs of corrosion to the rebar. In the cubes without the protection of Margel, the corrosion of the steel rebar was significant as shown in the photographs below.

Microscopic (x50) Photographs of Steel Reinforcement in Concrete

Figure 8

Figure 8 is a cross section showing the expansion of corrosion on a steel reinforcement bar in concrete with 2% chloride

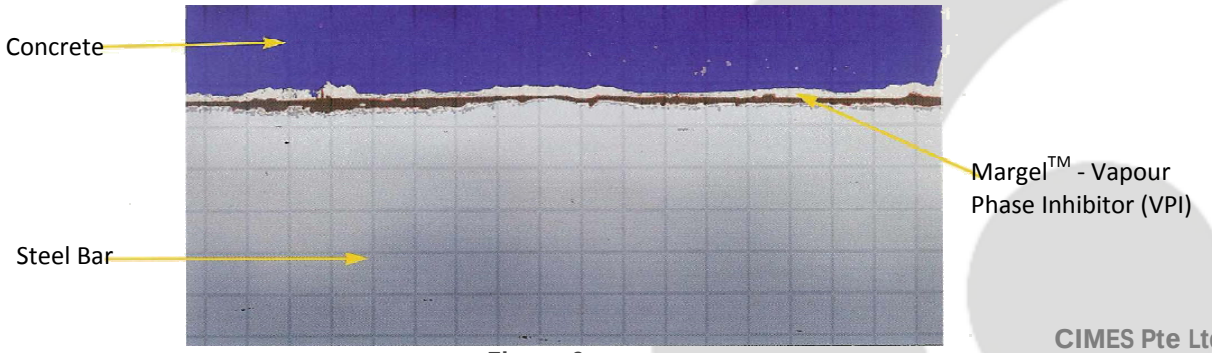

Figure 9

Figure 9 is a cross section showing the effect of Margel VPI580 on suppressing steel corrosion by adsorption to the surface.

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