

## Surface Liquid Applied Migrating Corrosion Inhibitor

**Guardian LMCI** is a surface applied migratory corrosion inhibitor, designed to migrate even through dense concrete structures forming a protective layer on the surface of the reinforcement. **Guardian LMCI** can be used in reinforced concrete structures that show signs of reinforcement corrosion or need additional protection to inhibit future corrosion. It protects the steel by forming a protective layer and reduces the corrosion rate.

**Guardian LMCI** is applied to the surface and drawn into the concrete via capillary action. Additionally **Guardian LMCI** moves throughout the concrete pore structure following Fick's law, molecules move randomly in vapour phase through the cement matrix from areas of high concentration to areas of low concentration.

Independent tests have shown that **Guardian LMCI** is adsorbed on to reinforcement at a depth of 7-8.5 cm forming a layer up to 100 $\mu$ m thick. Chlorides are shown to penetrate 60 mm. deep confirming the ability of **Guardian LMCI** to displace chlorides providing protection at the reinforcements surface despite the presence of chlorides.

The rate of migration is dependent on the density & permeability of the concrete and other factors, however, it is between 7-8 cm at 7 days.

## USES & ADVANTAGES

Migratory corrosion inhibitor's are useful for repair and maintenance purposes and the treatment of undamaged concrete where corrosion induced damage is anticipated due to chloride or carbonation attack. **Guardian LMCI** extends the service life of the structure for below and above ground structures. It can be used for all type of buildings, marine structures, car parks, bridges, dams, water tanks, cooling towers, etc.

### Advantages include:-

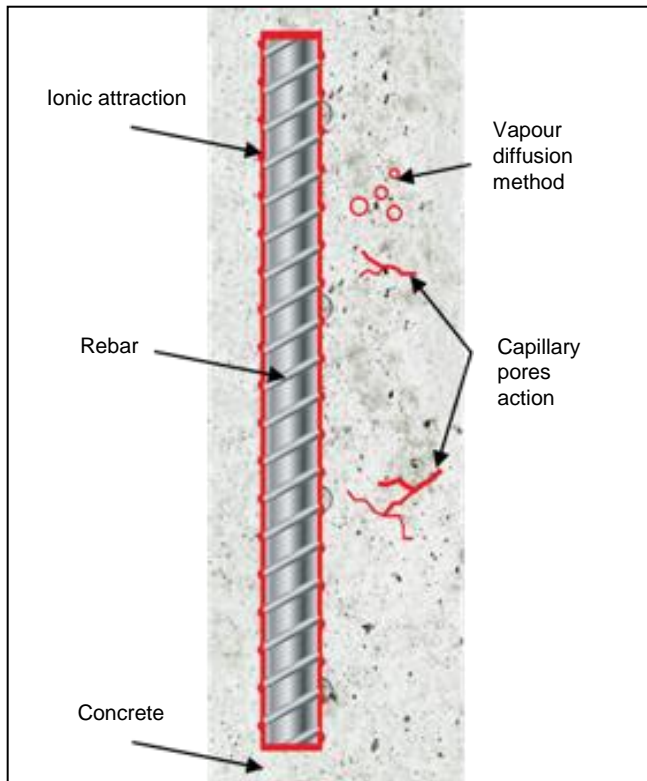
- Protection of concrete steel reinforced structures.
- Non staining.
- Low viscosity ensures good in depth penetration through capillary pores.
- Both delays, the start of corrosion and reduces the corrosion rate.
- Easy to apply and economical.
- Extension of service life and long term protection.
- Safe and environment friendly.
- Protects both cathodic and anodic areas.
- No special curing time required traffic can resume immediately after application.
- Water based and non flammable.
- Can perform on other metals such as galvanized steel, aluminum, coated steel.
- Use in combination with Guardian waterproofing by crystallization for total concrete protection (rebar & cement paste).

## Surface Liquid Applied Migrating Corrosion Inhibitor

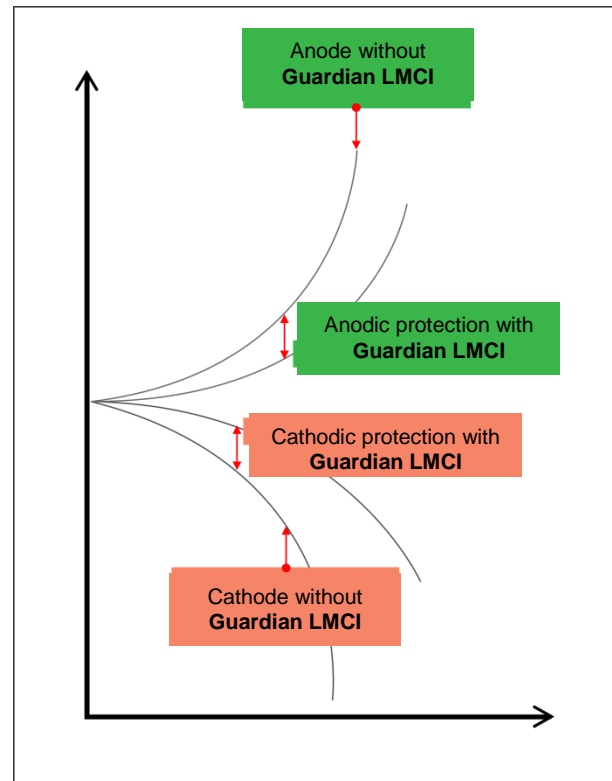
### PROPERTIES

Form:	Liquid
Appearance:	Yellow to Amber colour
Density:	1.10 ± 0.02 Kg/Ltr
pH:	9 to 11
Flash Point:	Not applicable (water based)
Drying time:	30 - 40 mins
Re coat time:	40 - 60 mins

### Schematic Representation of Guardian LMCI by Vapour diffusion system and penetration through capillary pores.



CORROSION RATE



POTENTIAL

### SURFACE PREPARATION

Substrate should be dry, sound, clean and free of all dirt, grease, oil, laitance, sealers, coatings, curing compounds, membranes, etc. Cleaning can be done by use of mechanical equipment or by using jet water blast.

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### APPLICATION

**Guardian LMCI** can be applied either by using a brush, roller or low pressure spray equipment. For better performance at least 2 coats are required. The recoat time between coats is around 40-60 minutes. Application should be done +5 to +30° C.

**Guardian LMCI** can also be applied by using an injection method to ensure fast and deep penetration into thick structures and speeding up work.

### COVERAGE RATE

Approximately 3.5 to 4 m<sup>2</sup> /ltr/coat, depending upon surface texture, porosity and absorption of concrete. Generally 2-4 coats are required.

### CURING

**Guardian LMCI** does not require any special curing and if required can be opened for traffic after a few minutes of application.

### LIMITATION

Before and after application the surface should be protected from rain, frost and direct sunlight. Application should be done above freezing point.

*NOTE : For complete and entire concrete corrosion protection system please contact Guardian Services Department.*

### STORAGE & SHELF LIFE

Store in the shade do not allow to freeze. Shelf life is 12 months in original sealed containers. Stir before application.

### PACKAGING

25 Ltr pails and 200 Ltr drums.

### HEALTH & SAFETY

**Eye contact:** Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Eyelids should be held away from the eyeball to ensure thorough rinsing. Obtain medical attention urgently.

**Skin contact:** Wash skin thoroughly with soap and water. Obtain medical attention if blistering occurs or redness persists. Contaminated clothing should be washed or dry-cleaned before re-use.

**Ingestion:** Do not induce vomiting. Wash out mouth with water. If vomiting occurs naturally, lean victim forward to reduce risk of aspiration. Obtain medical attention urgently.

**Inhalation:** Remove from exposure. In cases of possible respiratory irritation or if feeling unwell due to prolonged exposure, obtain medical attention.

### TECHNICAL SERVICE

The Guardian Coating Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

### QUALITY ASSURANCE

ISO 9001: 2015 verified by TUV Nord.

All statements and data presented herein are given in good faith and believed to be appropriate and reliable. It is given without express or implied warrant or guarantee. Potential users of Guardian's materials are urged to conduct confirmatory trials to satisfy themselves as to the suitability of the selected product for their particular end use prior to purchase.