



## **TECMADRY<sup>®</sup> MILENIUM**

**Cementitious capillary crystalline waterproofing mortar for blocking the capillary net of concrete**

### **DESCRIPTION:**

**TECMADRY<sup>®</sup> MILENIUM** is a hydraulic cement based waterproofing mortar, single component, specifically designed to **penetrate into the capillary network of the concrete and through a series of chemical reactions leading to the formation of insoluble crystals, sealing the capillary network blocking the passage of water therethrough and acting with positive or negative water pressures.** **TECMADRY<sup>®</sup> MILENIUM** does not alter the conditions of exchange of water vapor of the substrate, thus allowing its natural transpiration.

### **SCOPE:**

**TECMADRY<sup>®</sup> MILENIUM** is recommended to provide a total and durable waterproofing to concrete and cement mortars on which it is applied. Thus, it achieves an excellent waterproofing on numerous substrates: concrete, rendering, cement mortar, concrete block, brick, masonry, etc. **TECMADRY<sup>®</sup> MILENIUM** due to its high weather resistance and its great finish can be let uncovered, with no need to paint it, getting the decorative and aesthetic properties of other types of finishes.

Among the applications it's interesting to notice its use for waterproofing:

- Concrete structures submitted to positive or negative water pressure: basements, foundations, elevator caves, indoor or outdoor walls, etc.
- Swimming-pools, pools, fountains and water tanks.
- Several works in civil engineering: channels, dams, bridges, tunnels and galleries, water treatment plants, etc.
- Waterproofing on walls or floors with ascending dampness due to capillarity.

### **SURFACE CONDITIONING:**

The support should be solid and free from any pollutant, such as grease, oil, formwork release agents remains, grout, dust, sand, loose materials, etc. Paint and other waterproofing materials remains should be removed. Efflorescence and salts should also be removed before applying **TECMADRY<sup>®</sup> MILENIUM**. Damaged areas should be previously repaired with **PREMHOR** or **PREMHOR-R**. Should there be water ways, they have to be closed with **PROQUICK** applying afterwards a grout of **PREMHOR** before applying **TECMADRY<sup>®</sup> MILENIUM**. Before applying **TECMADRY<sup>®</sup> MILENIUM** on any surface, this should be saturated with water.

### **APPLICATION AS GROUT:**

Prepare the necessary amount of water, adding **TECMADRY<sup>®</sup> MILENIUM**, stirring the mixture at the same time, until it's completely added. As a simple indication, use between 6 and 7 litres of water per each 25 kg sack of **TECMADRY<sup>®</sup> MILENIUM**. It's recommended to use a mechanical mixer.

The mixing will start with little water, stirring slowly but constantly. Add water to the homogeneous paste until getting the proper consistency, trying to avoid lump formation. It's not recommended to stir quickly since that would lead to the introduction of a great amount of air, thus causing the appearing of pores and holes while applying. Let the mixture rest afterwards for about 5-10 minutes in order to get an enhancement of the setting. Mixture life lasts about 30 minutes.



The steps to follow for applying are:

- 1.- Damp the surface by spraying clean water.
- 2.- Apply the mixture of **TECMADRY<sup>®</sup> MILENIUM** and water with a special short haired brush, covering the whole surface as a first coat.
- 3.- Let the coat dry for 6 or 12 hours, depending on the weather conditions.
- 4.- Damp the coat in order to enhance its setting before applying a second coat.
- 5.- Apply a second coat, in a crossways, covering the whole surface.
- 6.- Damp the coat from time to time, in order to get a homogeneous setting.

#### **APPLICATION BY DUSTING AND FLOATING:**

**TECMADRY<sup>®</sup> MILENIUM** can be used by dry dusting (sandwich system) on horizontal surfaces. In this case, on the concrete, which should have been perfectly saturated with water, a first coat of dusty product is homogeneously dusted in a proportion of 0,75-1,0 kg/m<sup>2</sup> approx. After 1-3 hours, pour the fresh concrete trying not to damage the previous application. After the pouring of the concrete, when the alter has reach its initial setting (it can be stepped on and the grout can be removed by floating), dust a second coat of dusty product in a proportion of about 1,0-1,5 kg/m<sup>2</sup>, and float finish in order to create a monolithic surface coat. It can be slightly watered while floating in order to get better penetration or to prevent the drying of the coat. If only the final coat on the fresh concrete is applied, the yield should be 1,5-2,5 kg/m<sup>2</sup>. It's very important to dust in a continuous and homogeneous way, leaving enough amount of product on the whole surface.

#### **SPECIAL RECOMMENDATIONS:**

- Do not apply with temperatures below 5 °C or when frost is expected in 24 hours after applying.
- Do not apply on frozen or frosted supports.
- Do not excessively damp the wall when the temperature is low, not reaching 5 °C.
- Do not apply on gypsum, paint or lime.
- Let cure at least for 7-14 days (depending on the temperature and relative humidity) before filling with water or painting.
- For deposits which are going to be in contact with drinking water, rinse several times with water before the final filling of the deposit.

#### **YIELD:**

For a correct waterproofing and applied as grout on a normal cured concrete surface, the recommended yield is 0,75-1,0 kg/m<sup>2</sup> per coat. We recommend to apply two coats if there is not high water pressure. With water pressure, such as in swimming-pools, tanks, etc., apply a minimum of 3 coats.

#### **COLOURS:**

**TECMADRY<sup>®</sup> MILENIUM** is supplied in white and grey.

#### **ACCREDITATIONS:**

Product with the European conformity mark **CE**: product compiles with the European Standard **EN 1504-2** and **Directive 89/106/EEC on construction products**.

**TECMADRY<sup>®</sup> MILENIUM** is indicated for use in contact with potable water as **Migration Report No. 0670612200** Joaquin Riera Tuebols

Product approved by Beijing Chinese Official Laboratory (**Report No. 20035-0118** and **No. 2004-B-C-1252**).

Product approved by the Shanghai Chinese Official Laboratory (**Report No. WH04-0111**).

**SPECIFICATIONS:**

Apparent density of the powder component	1,14 g/cm <sup>3</sup>
Particle size distribution (EN 12192-1)	0 – 0,6 mm
Pot life	30 minutes approx.
Application temperature	+5 °C to +30 °C
Apparent density of the fresh mortar (EN 1015-6)	1910 kg/m <sup>3</sup>
Setting time (EN 13294)	Initial: 3 hours Final: 4-5 hours
Water vapor permeability (EN ISO 7783-1/-2) (Equivalent air barrier)	S <sub>D</sub> < 5 meters Class I (EN 1504-2) Permeable to water vapor
Liquid water permeability (EN 1062-3)	< 0,1 kg/ m <sup>2</sup> .h <sup>0,5</sup> Waterproof (EN 1504-2)
Bond strength on concrete support (EN 1542) (28 days)	1,06 MPa (Product cohesive breakage)
Bond strength on ceramics support (EN 1542) (28 days)	0,74 MPa (Product cohesive breakage)
Bond strength on concrete support (EN 1542) (6 months)	4,21 MPa (Support cohesive breakage)
Bond strength on ceramics support (EN 1542) (6 months)	1,19 MPa (Support cohesive breakage)
Compression resistance (EN 12190)	> 40,0 MPa
Flexural resistance (EN 196-1)	> 10,0 MPa
Hazardous substances (EN 1504-2)	According to EN 1504-2 Standard – Section 5.3
Ability to be used in contact with drinking water (Test report nº 067061220 – O.T.E.C. Joaquin Riera Tuebols, S.A.)	SUITABLE

**PACKAGING AND STORAGE:**

**TECMADRY<sup>®</sup> MILENIUM** is supplied in 25 kg multi-coat sacks. **TECMADRY<sup>®</sup> MILENIUM** should be stored in the original closed sacks. The store life in the original sacks won't be longer than 12 months.

TECMADRY<sup>®</sup> is a trade mark owned by Industrias Químicas Satecma<sup>®</sup>S.A.

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