

**Siloxane Impregnation for Chloride Resistance & Water Repellents**

**Type: Solvent Free, Powder Form Siloxane/Silane  
100% Environment System  
Admixture Powder for Concrete or Plaster**

**Characteristics** **Top Gard WR Powder A**, is a silicone concentrate that is on silane /siloxane and is cement base, serve as high-quality general purposes water repellents for impregnating & mineral and highly alkaline substrates.

- Features**
- \* Excellent Depth of Penetration & Stop Diffusion of Vapor
  - \* Permeable to Water Vapor so **does not affect the Breathing Behavior of Mineral Substrate**
  - \* Improvement in Adhesion of the Coating
  - \* Marine Environment
  - \* Excellent Protect of Chloride Attack
  - \* Excellent Protect of Freeze Thaw Cycles
  - \* Excellent Protect of High Alkaline Resistance
  - \* Water Repellency Develops Fast

After application **Top Gard WR Powder A** reacts with the atmosphere moisture or pore water in the substrate, thereby generating the active ingredient while liberating alcohol. The active ingredient greatly lowers the water absorbency of the substrate. Since neither pores nor capillaries are clogged, the substrate retains a very high degree of water vapor permeability.

**Uses** **Top Gard WR Powder A** is suitable for imparting water repellency to absorbent, porous, mineral construction materials,

- \* All kinds of concrete for Buildings, Reservoirs, Jetties & Bridges
- \* Brickwork Surfaces
- \* Cement sand or mineral plasters

**Existing Surface  
To New Surfaces  
Preparation**

The surface to be applied with **Top Gard WR Powder A** shall be free of dust and dirt. Lime efflorescence, salt and paint remnants, etc must be removed, preferably by high pressure water-jet, hot water or pressurized steam. Detergent cleaning is not recommended as if detergents are not removed completely, they can adversely affect the water repellency effect. Acid or alkali cleaning is also not recommended because of the risk of damaging the mortar joint or formation of salts which would lead to efflorescence.

**Consumption of Material / Coverage**

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Jetty Element      100mm thick/per 10 m2      ~ 2.025 kg/m3 **Top Gard WR Powder A**

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Cement Plaster      20mm thick/per 50 m2      ~ 3.300 kg/m3 **Top Gard WR Powder A**

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Bridge Element      100mm thick/per 10 m2      ~ 2.025 kg/m3 **Top Gard WR Powder A**

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*These figures are intended as a guide and should not be used in preparing specifications.*

<i>Property of Concrete</i>	25 °C Temp	<b>System 1 Concrete</b>	<b>System 2 Plaster Cement</b>
Compressive Strength	N/mm2	61.00	26.00
Flexural Strength	N/mm2	6.30	5.05
Workability	mm	60-75	25-30
Bleeding	%	0.96	
Modulus of Elasticity	X10 <sup>3</sup> N/mm2	36.00	
Shrinkages	%	0.040 (±0.010)	0.050 (±0.010)
Sulfate Expansion	%	0.361 (±0.050)	0.105 (±0.020)

**Technical Specification (see below format mixing ratio)**

<b>Materials Mixing Ratio</b>	<b>System 1 Concrete</b>	<b>System 2 Plaster Cement</b>
Top Gard WR Power A	0002.025 kg	0003.300 kg
Portland Cement	0405.000 kg	0550.000 kg
Fine Sand (River)	0695.000 kg	1675.000 kg
Course Aggregate 20mm Ø	1120.000 kg	Nil
Water	0175.000 kg	0162.000 kg
Plasticizer	0001.200 kg	Nil
Polypropylene Fiber	Nil	0001.000 kg
Steel Fiber	Nil	Nil
Note: Water/Binder	(0.430)	(0.295)
	<b>2398.225 kg/m3</b>	<b>2391.300 kg/m3</b>

<i>Product Data</i>		<b>System 1 Concrete</b>	<b>System 2 Plaster Cement</b>
Appearance		Grey	Grey
Silane / siloxane content ,approx	(%)	0.50	0.30
Density base on Powder	kg/m <sup>3</sup>	2223 (±10)	2228 (±10)
Reduction of water absorption	(%)	68.00	60.00
Water absorption	(%)	<0.32	<0.55
Reduction of chloride ion content	(%)	68 (no corrosion)	56 (no corrosion)
Water vapor transmission	(%)	>73	>69
Salt Scaling (Concrete G 30)	(g/m <sup>2</sup> )	12.2 (±0.3)	12.2 (±0.1)

<b>Packaging</b>	<b>Top Grad WR Powder A</b> 20 kg bag, 10 kg bag, 5 kg bag & 1 kg bag
<b>Safety Information</b>	Detailed safety information is contained in each material safety data safety sheet, which can be obtained from our sales offices
<b>Storage</b>	<b>Top Gard WR Powder A</b> has a shelf life of at least 12 months when stored between 0 °C and 30 °C in the lightly closed original container. The containers must be protected against direct sunlight. The “Best use before end” date of each batch appears on the product label.  Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

**Handling Precautions**

Wash off any silicone concentrate on the skin with plenty of water before it dries. During mixing and application ensure adequate ventilation since the silicone component contains active ingredient which is volatile and may cause eye watering in confined spaces. Avoid generation of airborne dust during mixing. Top Gard WR Powder silicone contains more than 100% Silane/siloxane and, therefore, in line with current legislation, is classified as irritating to eyes and skin. For this reason the following precautions should be observed: -  
Avoid contact with the skin and eyes; in case of contact with the eyes, rinse immediately with plenty of water and seek medical advice; wear suitable gloves and keep the product out of the reach of children.

**The General Term & Conditions**

All recommendations for use of our product, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for this intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

The above mentioned details Specified key data are individually checked throughout, guarantee, and included in the certificates of Analysis (CoAs). & Typical key data are spot checked, the value are typical for the product and are indicated for information only. The values are not guaranteed or included in the CoAs.

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