



SILOEN[®] Silicones for Construction, Coatings & Inks

Paint & Coatings

Silicones for Building Protection

Why building materials are in need for a protective agent

Typical damages carried in by the water and affecting the life of a building material and its aesthetic

- *Chemical corrosion (acid rain attacking the material)*
- *Frost damage and freeze/thaw damage by road salts (cracks)*
- *Efflorescence and salt stains*
- *Fungal and lichens growth*
- *Dirty pick up*
- *Rust stain (in reinforced concrete)*

Repairing is typically more expensive than preventing

Why building materials are in need for a protective agent



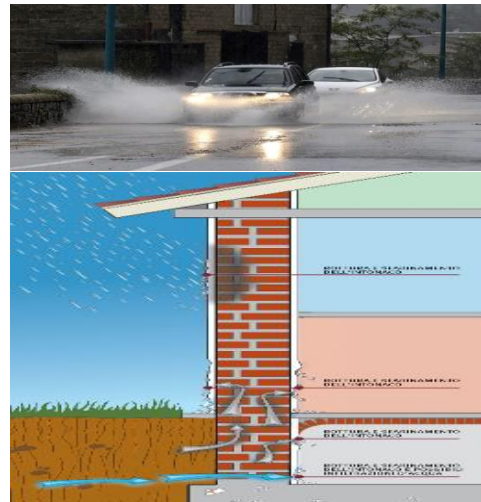
New



Life cycle



Aged Unprotected



Rain & Rising damp



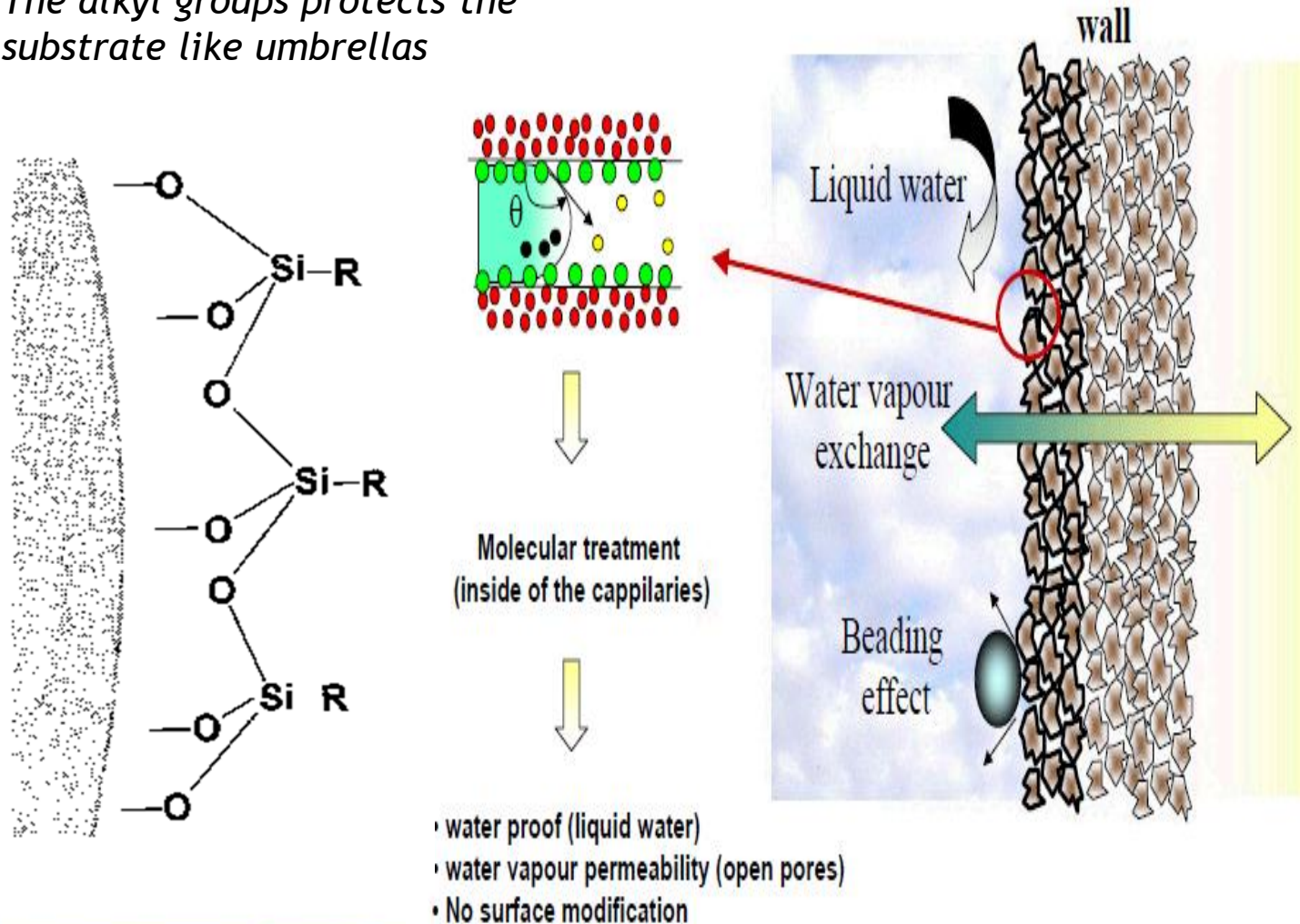
Why choose Silicone impregnating agents

- **Silicone based water-repellents are the most effective protective agents for building materials:**
- **Strong chemical links with the mineral surfaces**
- **Long lasting resin network repellent to the liquid water but permeable to the water vapor.**
- **Not film forming thus pores are not closed and material can “breathe”**
- **UV resistant hence assuring a long life of the protective treatment**

Why choose Silicone impregnating agents

Principle of water repellency

The alkyl groups protects the substrate like umbrellas



Why choose Silicone impregnating agents

Properties:

- *Good water repellence*
- *Excellent water vapour permeability*
- *Good resistance to alkalis*
- *Good penetration depth and durability*
- *Unchanged appearance of the substrate*
- *Stop growth microroganism (left) and efflorescences (right)*

Lime sand stone

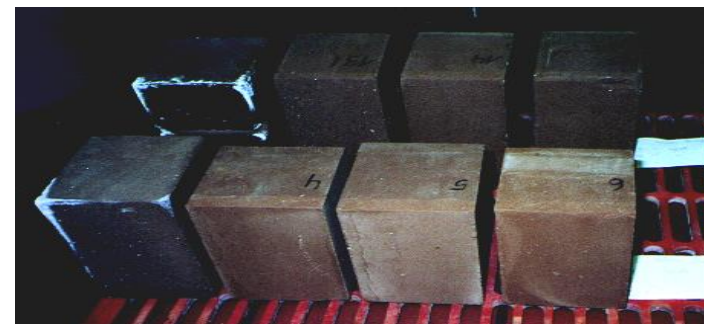


untreated

treated

Exposure: 3 months under tree

Clay bricks



untreated

treated

Exposure: 9 months in dry condition

BRB Siloen® Water Repellents Product Range

Product	Type	Application
Siloen® SR 608	Silane/Siloxane concentrate	HQ general purpose water-repellent
Siloen® 694	Silane based impregnating agent	For concrete and reinforced concrete
Siloen® WRE	Silane/Siloxane emulsion	Good penetration, good beading effect alkalis resistant
Siloen® WRC4	Silane based tixotropic cream	Improved penetration on porous material. Suitable for damp proof barriers
Siloen® WRC8	Silane based tixotropic cream	For concrete and reinforced concrete Suitable for overhead application
Siloen® WRP	Silane based powder	Cementitious dry mix water repellent additive

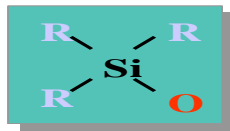
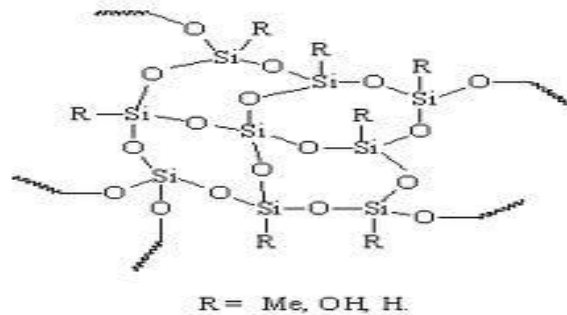
BRB Siloen® Water Repellents Product range (cont.)

Product	Type	Application
Siloen® SR 349	Potassium Methyl Siliconate	In-plant WR impregnation of terracotta tiles, bricks, perlite vermiculite. Damp proof chemical barriers
Siloen® SR 403 <small>(formerly Sempure SR 403)</small>	Reactive silicone fluid emulsion	Admixture for cement based mortars WR additive for paints, plasters, renders
Siloen® HPA 406	Modified Siloxane Resin emulsion	High performance WR/beading additive with minimal dirty pick up for Silicones, Silicate and WB dispersion masonry paints
HY 43	Polymethylhydrogen siloxane	Water repellent additive for gypsum
Sempure 379	Polymethylhydrogen siloxane emulsion	Water repellent additive for gypsum

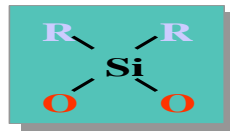
Silicone Resins for High Temperature Application

Silicone Resins Chemistry

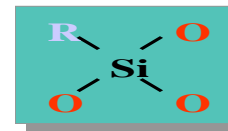
Branched linked caged structures made of D, T-functional or Q functional units



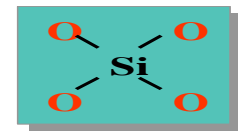
M



D



T



Q

For the most common silicone resins R might be Methyl or Phenyl group.

- Methyl Groups (Me) bring water repellency, release, incompatibility with organic products, hardness but also fragility
- Phenyl Groups (ϕ) bring thermal resistance, Thermoplasticity, flexibility, compatibility with organic products, chemical resistance

A resin contains reactive functions (silanol or alkoxy groups) that react to build up the network and increase the molecular weight.

Silicone Resins Product Range in Aromatic Solvent

Product	Type	% solid	Max. Temp (°C)	Application	Resin hardness
Siloen® SR 379	Me	50	600	Anti corrosion Heat resistance	Hard
Siloen® SR 379 N	Me	50	600	Heat resistant Anti corrosion Low viscosity	Hard
Siloen® SR 383	Me, Phe.	50	650	Heat resistant, Anti corrosion	Medium
Siloen® SR 313	Me, Phe.	80	650	High temperature Anti corrosion High solids Low VOC	Medium

Silicone Alkoxy Oligomer

Product	Type	% solid	Application
Siloen® SR 833 (ind scale up)	Methyl Alkoxy	100%	<p>Alone as a resin: Room temperature moisture curing (need catalyst/curing agent) coatings (short tack dry time, high hardness and excellent water-repellency, high temperature paints up to 600-650°C, auto body coating, floor coatings etc)</p> <p>As Organic Resin Modifier (especially water based) Add typical silicones features (weatherability, water-repellency, heat resistance) to those belonging to organic polymer. Major application:</p> <ul style="list-style-type: none">- Acrylic (<i>construction material coatings</i>)- Polyester (<i>industrial, high temp operating appliances</i>)- Epoxy (<i>anti stain, anti corrosive paints</i>)- Alkyd (<i>storage tankers, external structures</i>)

Food Release Application

Silicone Resins Range in Aromatic Solvent Food Release Application

Product	Type	% solid	Max. Temp(°C)	Application	Resin hardness
Siloen® SR 385 FD	Me, Ph	50%	300	Non stick coatings (Bakery Pans , Toaster, BBQs)	Medium

- Silicone resins are easier to coat (one step cycle) than silicone elastomers as well as PTFE (multi step process).
- Number of baking can be extended provided an accurate pre-treatment
- Re-coating is also less expensive than for the other technologies



Paint Additives

BRB Paint Additive Range

Function	BRB Offer
Substrate Wetting	BRB Siloen® WA 260
Substrate Wetting	BRB Siloen® WA 261
Substrate Wetting	BRB Siloen® WA 262
Substrate Wetting	BRB Siloen® WA 263
Substrate Wetting	BRB Siloen® WA 264
Levelling Flow	BRB Siloen® LA 271

BRB Paint Additive Range

Function	BRB Offer
Slip, Mar Resistance	BRB Siloen® SMA 280
Slip, Mar Resistance	BRB Siloen® SMA 282
Slip, Mar Resistance	BRB Siloen® SMA 283
Slip, Mar Resistance	BRB Siloen® SMA 284
Slip, Mar Resistance	BRB Siloen® SMA 285
Slip, Mar Resistance	BRB Siloen® SMA 286
Defoamer	BRB Siloen® DA 290
Texturing Additive	BRB Siloen® TA 394
Pigment Dispersant	BRB Siloen® PDA 222

BRB Paint Additive Range

Function	BRB Offer
Adhesion Promoter	Silanil 250
Adhesion Promoter	Silanil 919
Adhesion Promoter	Silanil 176
Adhesion Promoter	Silanil 258
Adhesion Promoter	Silanil 581

BRB Silicones for Insulation

BRB Sempure Emulsions are VOC free

Product	Type	% solid	Binder Type	Application
BRB Sempure SW4	OH	40%	PF	Hydrophobe for fibre rolls & batts
BRB Sempure HJS	NH ₂	60%	Dextrose	

Silicone emulsions confer a powerful hydrophobising effect to oven-cured binder chemistries utilized in glasswool and stonewool insulation

The emulsions benefit from optimised dispersion characteristic offering enhanced binder compatibility



BRB Silanil for powerful coupling

Product	Type	% solid	Nature	Application
BRB Silanil 919 BRB Silanil 581	Amino	100% 50%	Non Aqueous Prehydrolysed	Coupling agent for organic binder and mineral fibres

BRB Silanil coupling agents are cost effective agents assuring the strongest chemical bond between formulated binders and insulation fibres

BRB offers a broad range of silanes meeting your cost vs performance demands



BRB Snapsil eliminates foam issues

Product	Type	% solid	Binder Type	Application
BRB Snapsil TG10	Me	10%	PF Dextrose	Eliminates unwanted foam in wash-water loops and binder make-up

BRB Snapsil TG10 is a versatile, water based defoamer, easily dosed at lowest application rates into all susceptible water-loops to keep you plant and equipment in top working order





The powerful shield

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BRB has more than 10 locations worldwide from which we supply our markets and meet our customer's needs. Get in contact with us by scanning this code.