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SILOEN® Silicones for Construction, Coatings & Inks

Silicones for Building Protection

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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 attaching 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

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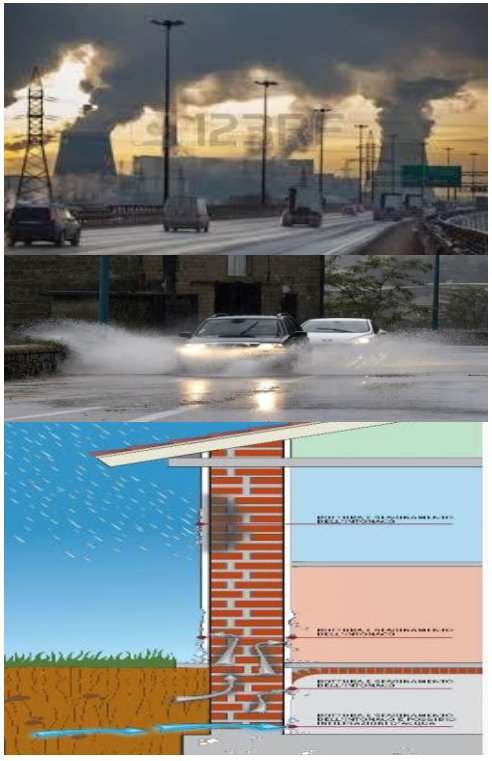
Why building materials are in need for a protective agent

New

Life cicle

Aged Unprotected



Rain & Raising 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

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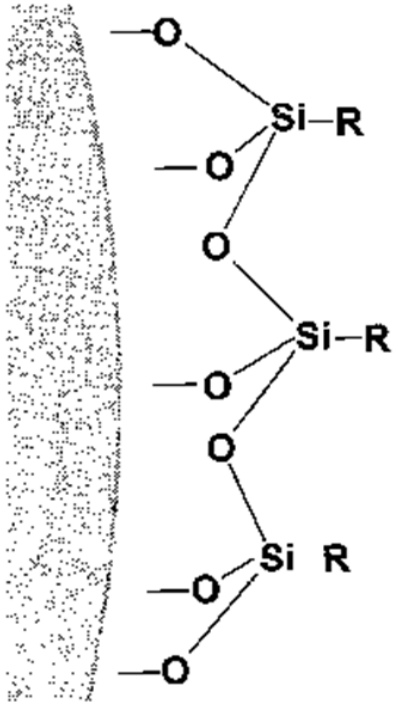
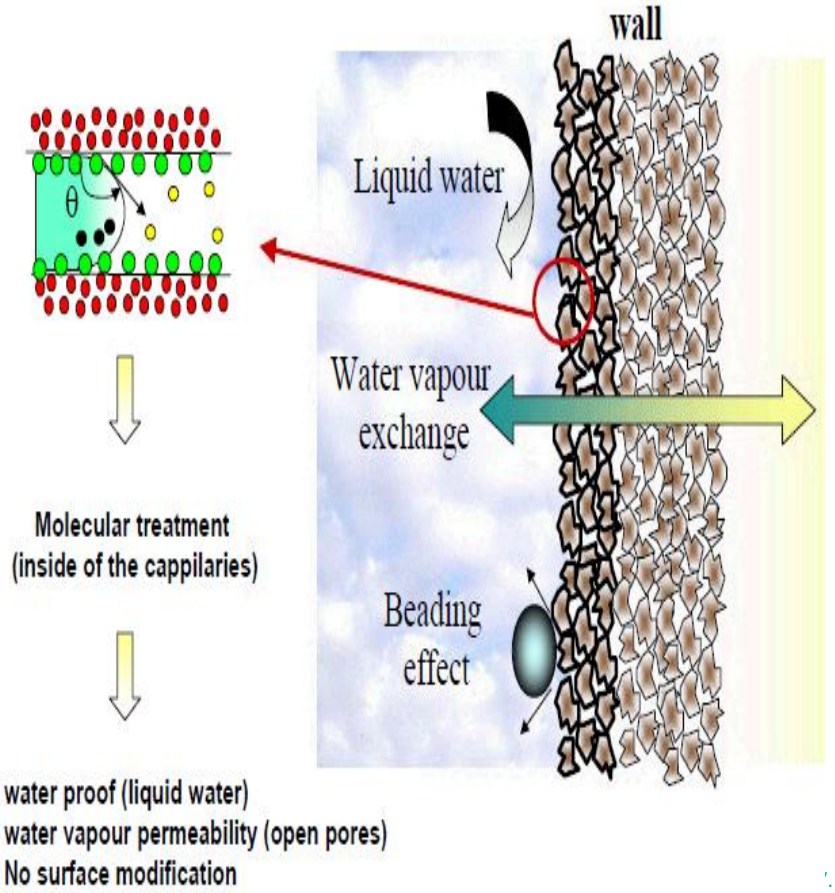
Why choose Silicone impregnating agents

Principle of water repellency
The alkyl groups protects the substrate like umbrellas





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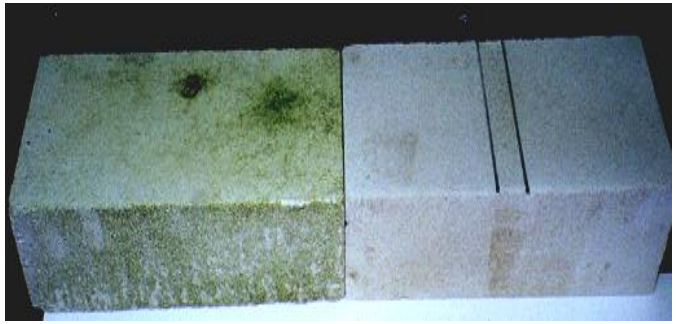
Why choose Silicone impregnating agents

Properties:

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



untreated treated

Exposure: 3 months under tree

untreated treated

Exposure: 9 months in dry condition

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BRB Siloen® Water Repellents Product Range

Product	Type	Application
Siloen® SR 619	Silane Siloxane concentrate	HQ general purpose solvent dilutable water repellent. Highly suitable for concrete. Tin catalyst free
Siloen® SR 608	Silane/Siloxane Concentrate	HQ general purpose solvent dilutable water repellent. Suitable for porous materials
Siloen® 694	Silane based impregnating agent	For concrete and reinforced concrete
Siloen® 5022 WR	Silane/Siloxane emulsion	Good penetration, strong 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® MXP 5	Silane bases powder	High efficiency dry mix water repellent additive
Siloen® WRP	Silane based powder	Cementitious dry mix water repellent additive.

BRB Siloen® Water Repellents Product Range

Product	Type	Application
Siloen® 696	Alkyl Silane Emulsion	Use undiluted: impregnating agent for concrete Diluted: WR admixture for non load bearing concrete, cementitious based mortar and plaster
Siloen 882	Alkyl Silane Oligomer	Integral Water Repellent for Cementitious based construction material. Admixture improving water resistance of fibre reinforced cement blocks and or prefabricated autoclaved lightweight cement (ALC)
Siloen® SR 349	Potassium Methyl Siliconate	In-plant WR impregnation of terracotta tiles, bricks, perlite vermiculite. Damp proof chemical barriers
Siloen® SR 403	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
Siloen® HPA 415	Methyl Siliconate	VOC free pH adjuster. Long lasting pH stability. Improve water and abrasion resistance. Odor free; alternative to organic amines type pH adjuster
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

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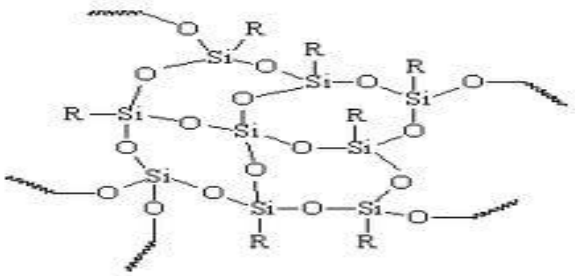
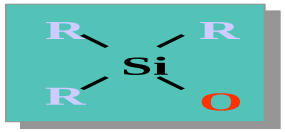
Silicone Resins Chemistry

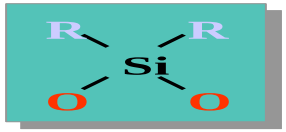
Branched linked caged structures made of D, T-functional or Q functional units





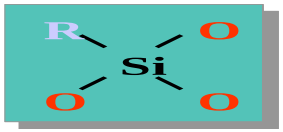
$R_3SiO_{1/2}$

M



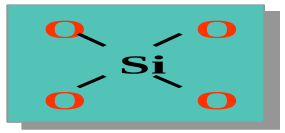
$R_2SiO_{2/2}$

D



$RSiO_{3/2}$

T



$SiO_{4/2}$

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.

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Siloen® Resins 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

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Silicone Methyl Alkoxy Oligomer

Product	Type	% solid	Application
Siloen® SR 833	Methyl Alkoxy	100%	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)

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Food Release Application

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Siloen Resin 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

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Paint Additives

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BRB Paint Additive Range

Main Function: Substrate Wetting	Type	Benefits
BRB Siloen® WA 261	Trisiloxane Polyether	• Lowest surface tension in the range. • Substrate wetting, Air-release, Levelling Flow • For waterborne, Solventborne, UV/EB
BRB Siloen® WA 263	Silicone Polyether	• Substrate wetting, levelling, flow • Hydrolytically stable in a pH range 4 to 10 • Low foam stabilisation, do not increase slip • Waterborne, solventborne, UV/EB
BRB Siloen® WA 264	Silicone Polyether	• Substrate wetting, levelling, flow • Hydrolytically stable in a pH range 4 to 10 • Low foam stabilisation, do not increase slip • Waterborne, solventborne, UV/EB • Best suited for system not containing co-solvent
BRB Siloen® WA 265	Trisiloxane Polyether	• Low surface tension • Suitable for difficult substrates (Plastic, Wood) • Substrate wetting, Air-release, Levelling Flow • For waterborne, UV/EB
BRB Siloen® WA 266	Silicone Polyether	• Low surface tension • Improve levelling and wetting • Low foam stabilisation do not increase slip • Suitable for system free or low co-solvent • Suitable for WB Acrylic, Styrene-Acr, WB PU

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BRB Paint Additive Range

Main Function: Levelling Flow	Type	Benefits
BRB Siloen® LA 270 (former BRB MRA)	Silicone Polyether in solvent solution	• Promote flow levelling and anti cratere, • Moderate slip • Universal for solvent-borne coatings.
BRB Siloen® LA 271	Silicone Polyether	• Highly efficient levelling, flow • Provides slip, gloss, anti-blocking, mar resistance • Recoatable • UV/EB, Solvent and waterborne • Printing inks, leather top coat

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BRB Paint Additive Range

Main Function: Slip & Mar	Type	Benefits
BRB Siloen® SMA 280	Silicone Polyether	• The highest slip in the range • Promote flow levelling anti-blocking
BRB Siloen® SMA 281	Ultra High MW Sil Emulsion	• Low visco Ultra High MW Silicone Emulsion (65% solid) • Slip, Anti-blocking, CoF reduction, Mar resistance • Good compatibility with WB Acrylic, PU, Alkiyd… • Wood coating, Leather top coat. (abrasion resistance)
BRB Siloen® SMA 283	Silicone Polyether	• Excellent slip and fast levelling, good tape release, gloss, anti-cratere • Help substrate wetting; Recoatable • Waterborne, Solventborne, UV
BRB Siloen® SMA 284	Ultra High MW Sil Emulsion	• Ultra high MW silicone Emulsion (tin free) 80% solid • Mar & scratch resistance, Cof reduction, anti-blocking • PU and Acrylic leather top coats
BRB Siloen® SMA 285	Urethane Modified Silicone Res Emulsion	• 30% solid emulsion • Slip, mar, smoothness • Improve water repellence and soiling resistance • Waterborne Paint and Inks formulation
BRB Siloen® SMA 286	Silicone Acrylate	• UV crosslinkable (**NON Migrating**) slip and mar additive • Cof Reduction (0.2 to 1,5%) Release (2 to 3%) • UV overprinting varnishes, Inks, Wood coatings

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BRB Paint Additive Range

Main Function: Diver	Type	Benefits
BRB Siloen® DA 290	Fluorosilicone solvent dilution	• High efficiency defoamer, especially in high solid paints • Air release (PU & epoxy based ambient curing plastics) • For solvent and solvent free systems
BRB Siloen® DA 291	Polyether Modified siloxane compound	• Highly efficient de-aerator concentrate for WB paints and printing inks • 100% active content solvent free performing against micro foams thus reducing risk of pinholes • Recommended for high solid system
BRB Siloen® DA 293	PDMS Emulsion	• Suitable for high PVC (60 to 85) WB dispersion paints • Suitable for any type of WB adhesives • Cost effective alternative to min oil based defoamers
BRB Siloen® TA 394	High MW Silicone Solvent solution	• Hammertone effect additive • Solvent based metallic pigment coatings • Possible application in some waterborne
BRB Siloen® PDA 222	Alkyl Modified Silicone	• Surface treatment of Mineral filler (ex TiO_2), Organic & Inorganic pigments. Flame retardant (ex ATH) • Improves compatibility into polymer matrix • Allows higher pigment load • Mostly suitable for plastic application

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BRB Silanes for Paint & Coatings

Main Function: Adhesion Promoter	Type
BRB Silanil® 919	3- amino propyl triethoxy silane
BRB Silanil® 581	3-amino propyl triethoxy silane aqueous solution
BRB Silanil® 176	Amino Ethyl Amino Propyl Trimethoxy silane
BRB Silanil® 276	Vinyl Trimethoxy silane
BRB Silanil® 258	3 Glycidoxypropyl trimethoxy silane
BRB Silanil® 533 ESO	3 Glycidoxypropyl Oligomer

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BRB Silicones for Insulation

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BRB Siloen® Emulsions

Products	Type	% solid	Binder Type	Application
BRB Siloen® SW4 BRB Siloen® HJS	OH NH_2	40% 60%	PF Dextrose	Hydrophobe for fibre rolls & batts
BRB Siloen® BW5	Reactive	50%		Hydrophobic treatment of Blowing wool

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 fibre

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 silane meeting your cost vs performance demands

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BRB Akasil® eliminates foam issues

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

BRB Akasil® 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

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Passionate about Progress