Dow Construction Chemicals
Overview silicon based products

Dow Corning® becomes DOWSIL™.
New name. Same trusted material.

Jointly advancing better building ...
Where quality building starts

The highly reliable quality of additives and binders from Dow Construction Chemicals form the heart of many innovative products and systems that have since become industry essentials.

With a broad portfolio of chemistries and brands such as DOWSIL™ Silicones, WALOCER™ Cellulose Ethers, DOW™ Latex Powders, PRIMAL™ and UCAR™ Acrylic Emulsion Polymers and AQUASET™ Acrylic Thermosetting Resins Dow is a leading supplier to customers manufacturing building and construction products around the world.

Regardless of whether your customers are looking for improved building material performance, superior durability, high-quality end-product, improved workability or demand a specific performance feature we help you meet their expectations. Our experts support you in optimising formulations in order to design and keep key properties of your end products stable and as required – this is where quality building starts.

The suggestions in this brochure are made in good faith and are intended as a starting point. For additional information or clarification, contact Dow Construction Chemicals.
Enhancing durability and aesthetics

Nature can be a tough adversary. From the moment we start building a structure, the forces of nature are at work: water intrusion, sunlight, wind and abrasion, attack by organisms, and even spills and stains affect appearance and functionality.

Dow silicone based solutions can help you invent the future of building materials protection through:
• Hydrophobic treatments
• Silicone resin and binding products
• Process aids
• Innovative collaboration to meet your specific needs
  – Solvent-dilutable or water-based
  – Integral protection or surface treatments
  – Low VOCs
  – Ease of use
Choose from a wide range of silanes, siloxanes, resins, additives, blends and emulsions to maximize substrate life, reduce maintenance, improve aesthetics and – most importantly – meet customer demands for enhanced performance.

Materials with increased longevity
↓
Buildings with increased sustainability …
↓
… and durable performance
↓
Lower maintenance and less impact on the environment
Discover our solutions

Concrete
Alkoxy Silanes
XIAMETER™ OFS-6341 Silane
XIAMETER™ OFS-2306 Silane
XIAMETER™ OFS-6403 Silane
XIAMETER™ OFS-6665 Silane
Formulated water repellents
DOWSIL™ IE-6683 Water Repellent Emulsion
DOWSIL™ IE-6694 Water Repellent Emulsion
DOWSIL™ Z-65889 Water Repellent Emulsion
DOWSIL™ IE-6682 Emulsion

Wood
Additives for wood impregnation sealer
Formulated impregnants
DOWSIL™ Z-6690 Water Repellent
DOWSIL™ 6691 Fluid
DOWSIL™ 1-6184 Water Repellent
DOWSIL™ IE-6683 Water Repellent Emulsion
DOWSIL™ 6696 Emulsion
DOWSIL™ 2-9034 Emulsion
Siliconate
XIAMETER™ OFS-0777 Silicone

Natural stone, sandstone, granite
Siloxane
DOWSIL™ MH-1109 Fluid
Formulated water repellents
DOWSIL™ 520 Dilutable Water Repellent Emulsion
DOWSIL™ IE-6683 Water Repellent Emulsion
DOWSIL™ IE-6694 Water Repellent Emulsion
DOWSIL™ Z-65889 Water Repellent Emulsion
DOWSIL™ MR-2404 Resin

Decorative and precast concrete
Surface treatment
DOWSIL™ IE-6683 Water Repellent Emulsion
DOWSIL™ IE-6682 Water Repellent Emulsion
DOWSIL™ 520 Dilutable Water Repellent Emulsion
DOWSIL™ IE-6694 Water Repellent
DOWSIL™ Z-65889 Water Repellent
DOWSIL™ MR-2404 Resin Integral protection
DOWSIL™ Z-6289 Resin
DOWSIL™ IE-6692 Emulsion
DOWSIL™ IE-6686 Water Repellent Emulsion
DOWSIL™ BY 16-846 Fluid
DOWSIL™ BY 16-606

EIFS/ETICS, renders, stucco, mortar, tile grouts
Dry powder
DOWSIL™ GP SHP 50 Silicone Hydrophobic Powder
DOWSIL™ GP SHP 60+ Silicone Hydrophobic Powder
DOWSIL™ GP 7070 Silicone Granulated Antifoam Emulsion
DOWSIL™ IE-2404 Emulsion
DOWSIL™ Z-70 Emulsion
DOWSIL™ IE-6683 Water Repellent Emulsion
DOWSIL™ IE-2610 Emulsion

Gypsum
Siloxane
XIAMETER™ MHX-1107 Fluid, 30CS
Siliconate
XIAMETER™ OFS-0777 Silicone
XIAMETER™ OFS-0772 Silicone
Resin
DOWSIL™ IE-2404 Emulsion

Color enhancer for natural stone substrates
Our impregnation chemistry is invisibly protecting building materials whilst enabling to keep the original appearance. In specific cases a color enhancement can be achieved if desired.
Product selector for protection of building materials

**Integral water repellent**
- **Drymix**
  - Hydrophober
    - DOWSIL™ GP SHP 50 Silicone Hydrophobic Powder
  - DOWSIL™ GP SHP 60+ Silicone Hydrophobic Powder

**Antifoam**
- DOWSIL™ GP 7070 Silicone Granulated Antifoam

**Surface treatment water repellent**
- **Solvent-dilutable**
  - DOWSIL™ Z-6289 Resin
  - DOWSIL™ IE-6692 Emulsion
  - DOWSIL™ IE-6686 Water Repellent Emulsion
  - DOWSIL™ BY 16-846 Fluid
  - DOWSIL™ BY 16-606

**Antifoam**
- XIAMETER™ AFE-0400 Antifoam Emulsion
- XIAMETER™ Antifoam 2210
- XIAMETER™ AFE-0310 Antifoam Emulsion

**Water-based**
- DOWSIL™ Z-6689 Water Repellent
- DOWSIL™ MR-2404 Resin
- XIAMETER™ OFS-6341 Silane
- XIAMETER™ OFS-2306 Silane
- XIAMETER™ OFS-6403 Silane
- XIAMETER™ OFS-6665 Silane
- XIAMETER™ OFS-6595 Silane

**External wall**
- DOWSIL™ IE-6683 Water Repellent Emulsion
- DOWSIL™ IE-6694 Water Repellent
- DOWSIL™ IE-6682 Emulsion
- DOWSIL™ 520 Dilutable Water Repellent Emulsion
- XIAMETER™ OFS-0777 Silicone
- XIAMETER™ OFS-0772 Silicone
- DOWSIL™ 2-9034 Emulsion
- DOWSIL™ IE-2610 Emulsion

**For damp proofing application**
- DOWSIL™ 1-6184 Water Repellent

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1) Pre-selection. Wider range of foams control materials available for specific needs and requirements.
Physical and chemical properties of silicones

Silicones are available in various forms and functionalities and can be used in combination to achieve specific properties.

Silicone chemistry: the unique properties of silicones

<table>
<thead>
<tr>
<th>Molecular characteristics</th>
<th>Physicochemical properties</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Highly open, flexible and mobile siloxane backbone: -Si - O - Si - O - Si - O -</td>
<td>• Low surface tension and energy</td>
<td>• Lubricant</td>
</tr>
<tr>
<td>• High bond strength as compared to organics: 435 kJ mol⁻¹ Si-O vs. 350 kJ mol⁻¹ C-C</td>
<td>• High spreading and wetting capabilities</td>
<td>• Anti-fouling</td>
</tr>
<tr>
<td></td>
<td>• Permeable to gas and water vapor</td>
<td>• Release agent</td>
</tr>
<tr>
<td></td>
<td>• Heat and UV stability</td>
<td>• Aesthetic feel (softness)</td>
</tr>
<tr>
<td></td>
<td>• Compatibility with organics</td>
<td>• High-temperature processing</td>
</tr>
<tr>
<td></td>
<td>• Weather resistance</td>
<td>• Can be sterilized</td>
</tr>
</tbody>
</table>

The following table with relevant glossary shows how various forms of silicon can be developed into formulations that help to protect or enhance your construction products.

Silicon chemistry glossary

<table>
<thead>
<tr>
<th>Silicon → Silica → Silane → Siloxane</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon = Si. Second most abundant element on Earth. Atomic number 14. Able to form four stable bonds like carbon</td>
<td>Unique reactivity allows chemistry similar to carbon, but – especially when bonded to oxygen – forms a longer, stronger, more flexible chemical bond.</td>
</tr>
<tr>
<td>Silica = SiO₂. The simplest compound of silicon. Very common as sand or quartz (crystalline) or refined forms such as silica fume, precipitated or fumed silica (amorphous)</td>
<td>Silica is used as a mineral reinforcement for many filled polymer systems and exists in many useful forms. Silica fume (microsilica) is an extremely effective pozzolanic material used in concrete to increase strength and chemical resistance and decrease porosity.</td>
</tr>
<tr>
<td>Silane. A molecule comprised of one central silicon atom with four attachments. The attachments can be any combination of organic or inorganic groups.</td>
<td>Alkoxy silanes with attached alkyl groups are efficient and effective water repellent treatments for concrete and masonry. Silanes with both organic and inorganic attachments are used as coupling agents with many useful variations.</td>
</tr>
<tr>
<td>Silicone or Siloxane. An oligomeric or polymeric compound with repeating Si-O (siloxane) “units”</td>
<td>Inherently resistant to UV, heat and oxidative degradation, silicones can be made as linear fluids, functional polymers and resins. By varying structure, attachments and molecular weight, they can be made into thousands of useful products.</td>
</tr>
<tr>
<td>Silicone Emulsion. In silicone technology, typically a silicone polymer suspended in water by means of stabilizing surfactants. More than one ingredient can be suspended within an emulsion.</td>
<td>Emulsion technology allows waterborne formulations to be used to deliver many types of ingredients that would otherwise require solvents or would be too viscous to use effectively.</td>
</tr>
<tr>
<td>Silicon resin are crosslinked, three-dimensional networks of highly branched siloxane polymers.</td>
<td>Silicone resins can be tailored to suit many applications by varying the ratio of branched and linear siloxanes and by attaching different functional groups. In high-performance water repellent formulations and coatings, silicone resins enhance water repellency and weatherability. Some silicone resins can form films and be used to enhance coating formulation based on organic resins.</td>
</tr>
<tr>
<td>Formulations and Blends. Multi-ingredient compositions intended for specific uses</td>
<td>Formulated products can take advantage of more than one type of material in a common package. For example, silane reactivity and penetration can be combined with siloxane mobility and water beading. Blends and formulations can be made with basic fluids, diluted with solvent, made into emulsions or even transformed into powders.</td>
</tr>
</tbody>
</table>

Saving resources and energy through building protection

Prolonging the lifespan of building materials

Most siloxanes and silanes are very small molecules and, when applied to the surface of a suitable substrate, penetrate deeply. They react with the substrate and among themselves. When cured, they allow water vapor transmission while preventing liquid water – which could contain dissolved chloride ions or acids – from passing into the substrate. This way Dow silicones contribute to the durability of building materials and help save resources and maintenance.
SiOH groups formed when the silane reacts with water (hydrolysis) can further react with SiOH groups (via condensation) in the substrate and form chemical attachments. Condensation also occurs between silanes, forming an Si-O-Si polymer. The alkyl groups (R groups) orient away from the surface to very effectively repel water.

Protecting buildings saves energy

Beyond the cost and resource savings of longer-lasting buildings, Dow silicone products can be key components for saving energy costs, too. With Dow hydrophobic materials you can help to make your customers’ buildings more energy-efficient.

Dow silicones reduce two main causes of structure heat loss:

- **Heat loss from evaporation of absorbed water in untreated materials**
  As water evaporates, changing from liquid to vapor, it draws heat energy, cooling the substrate and structure and increasing energy consumption.

- **Thermal conductivity**
  Testing shows that thermal conductivity of wet material is higher than that of dry material.

Dow hydrophobing technologies help reduce thermal conductivity and increase energy efficiency.
## Product properties

<table>
<thead>
<tr>
<th>Product type</th>
<th>Product name</th>
<th>Dilution system (if needed)</th>
<th>General description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silane/siloxane emulsions (water-based)</td>
<td>DOWSIL™ 520</td>
<td>Water</td>
<td>Silane/SiH siloxane emulsion blend</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ IE-6682 Emulsion</td>
<td>Water</td>
<td>Silane/alkoxy resin emulsion blend, contains no free siloxane</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ IE-6683 Water Repellent Emulsion</td>
<td>Water</td>
<td>Silane/siloxane resin blend</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ IE-6687 Emulsion</td>
<td>Water</td>
<td>Silane/functional resin emulsion blend</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ IE-6692 Emulsion</td>
<td>Water</td>
<td>Silane/alkoxy resin emulsion blend</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ IE-6694 Water Repellent</td>
<td>Water</td>
<td>Low-VOC (&lt;100 g/L) silane/siloxane emulsion blend</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ 6696 Emulsion</td>
<td>Water</td>
<td>Organosiloxane emulsion</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ Z-70 Emulsion</td>
<td>Water</td>
<td>Silanol-functional siloxane emulsion</td>
</tr>
<tr>
<td>Water-based siloxane</td>
<td>DOWSIL™ 1-6184 Water Repellent</td>
<td>Water</td>
<td>Water-soluble siloxane</td>
</tr>
<tr>
<td>Silane/siloxane blends (solvent-dilutable)</td>
<td>DOWSIL™ Z-6689 Water Repellent</td>
<td>Solvent</td>
<td>Silane/siloxane blend, no added solvent</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ Z-6690 Water Repellent</td>
<td>Solvent</td>
<td>Silane/silicon resin blend</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ 6691 Fluid</td>
<td>Solvent</td>
<td>Silane/silicon resin blend</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ Z-6695</td>
<td>Solvent</td>
<td>Siloxane/silicon resin blend</td>
</tr>
<tr>
<td>Silicone resin emulsion</td>
<td>DOWSIL™ IE-2404 Emulsion</td>
<td>Water</td>
<td>Silicone resin emulsion</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ IE-6686 Water Repellent Emulsion</td>
<td>Water</td>
<td>Emulsion of silicone resin</td>
</tr>
<tr>
<td>Hydrophobic powders</td>
<td>DOWSIL™ GP SHP 60 Silicone Hydrophobic Powder</td>
<td>Dry ingredient</td>
<td>Silane/siloxane-based powder</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ GP SHP 60+ Silicone Hydrophobic Powder</td>
<td>Dry ingredient</td>
<td>Resin/siloxane-based powder</td>
</tr>
<tr>
<td>Specialty fluids</td>
<td>DOWSIL™ BY 16-846 Fluid</td>
<td>Solvent¹</td>
<td>Functional siloxane</td>
</tr>
<tr>
<td></td>
<td>XIAMETER™ MHX-1107 Fluid, 30CS</td>
<td>Solvent</td>
<td>Linear SiH-functional siloxane</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ Mh+1-1109 Fluid</td>
<td>Solvent</td>
<td>SIH-functional siloxane</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ Z-6289 Resin</td>
<td>Solvent¹</td>
<td>Alkoxyl-functional silicone resin</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ MR-2404 Resin</td>
<td>Solvent</td>
<td>Alkyl-functionalized low-viscosity silicone resin</td>
</tr>
<tr>
<td></td>
<td>DOWSIL™ BY 16-606</td>
<td>Solvent¹</td>
<td>Functional siloxane</td>
</tr>
<tr>
<td></td>
<td>XIAMETER™ PMX-0930 Silanol Fluid</td>
<td>Solvent</td>
<td>Silanol-functional siloxane</td>
</tr>
<tr>
<td>Siloxane/organic emulsion</td>
<td>DOWSIL™ 2-9034 Emulsion</td>
<td>Water</td>
<td>Silane/organic polymer emulsion</td>
</tr>
<tr>
<td>Siliconates</td>
<td>XIAMETER™ OFS-0772 Siliconate</td>
<td>Water</td>
<td>Sodium methyl silicate</td>
</tr>
<tr>
<td></td>
<td>XIAMETER™ OFS-0777 Siliconate</td>
<td>Water</td>
<td>Potassium methyl silicate</td>
</tr>
<tr>
<td>Alkyl alkoxy silanes</td>
<td>XIAMETER™ OFS-6341 Silane</td>
<td>Solvent</td>
<td>Alkyl ethoxy silane</td>
</tr>
<tr>
<td></td>
<td>XIAMETER™ OFS-6403 Silane</td>
<td>Solvent</td>
<td>Alkyl ethoxy silane</td>
</tr>
<tr>
<td></td>
<td>XIAMETER™ OFS-6697 Silane</td>
<td>Solvent</td>
<td>Tetraethoxysilane</td>
</tr>
<tr>
<td></td>
<td>XIAMETER™ OFS-2306 Silane</td>
<td>Solvent</td>
<td>Alkyl methoxy silane</td>
</tr>
<tr>
<td></td>
<td>XIAMETER™ OFS-6665 Silane</td>
<td>Solvent</td>
<td>Alkyl methoxy silane</td>
</tr>
</tbody>
</table>

¹ Products can be used under certain conditions in water-containing mixtures. Please consult Dow R&D or refer to the specific product data sheet for additional details.
<table>
<thead>
<tr>
<th>Application/substrate/pH type</th>
<th>Active ingredient %</th>
<th>Typical actives usage level</th>
<th>Specific gravity</th>
<th>Flash point, °C (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>40</td>
<td>5 to 20</td>
<td>0.99</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Surface treatment (&quot;primer&quot;) for concrete or cementitious materials</td>
<td>52.5</td>
<td>5 to 20</td>
<td>0.95</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>40</td>
<td>5 to 20</td>
<td>1</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>52.5</td>
<td>5 to 20</td>
<td>0.98</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Integral water repellent</td>
<td>52.5</td>
<td>0.2 to 0.8 vs. cement content</td>
<td>0.95</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>60</td>
<td>5 to 20</td>
<td>1.02</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Wood</td>
<td>40</td>
<td>5 to 10</td>
<td>0.99</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Hydrophobic additive for paint and render; used on cement-based materials; additive for post-treatment for substrates with pH 7-10</td>
<td>60</td>
<td>0.15 to 0.5</td>
<td>0.99</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>pH neutral to 10</td>
<td>&gt;90</td>
<td>3.5 to 7.5</td>
<td>1.05</td>
<td>27 (81)</td>
</tr>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>&gt;95</td>
<td>5 to 15</td>
<td>0.96</td>
<td>10 (50)</td>
</tr>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>&gt;95</td>
<td>5 to 15</td>
<td>1.02</td>
<td>44 (111)</td>
</tr>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>&gt;95</td>
<td>5 to 15</td>
<td>1.025</td>
<td>100 (212)</td>
</tr>
<tr>
<td>Multisurface water repellent; neutral and moderately alkaline substrates; pH 7-10</td>
<td>&gt;95</td>
<td>5 to 15</td>
<td>1.02</td>
<td>100 (212)</td>
</tr>
<tr>
<td>Rendes/paints/stucco on cementitious material</td>
<td>50</td>
<td>3 to 10</td>
<td>1.02</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Integral water repellent</td>
<td>30</td>
<td>0.2 to 0.8 vs. cement content</td>
<td>0.99</td>
<td>50 (122)</td>
</tr>
<tr>
<td>Hydrophobic powder additive in cementitious-based materials</td>
<td>20</td>
<td>0.2 to 1</td>
<td>0.61</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Hydrophobic powder additive in cementitious-based materials</td>
<td>20</td>
<td>0.1 to 1</td>
<td>0.7</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Additive for integral protection of factory-manufactured autoclave light concrete</td>
<td>&gt;95</td>
<td>0.1 to 0.5</td>
<td>0.92</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Gypsum</td>
<td>&gt;95</td>
<td>0.1 to 0.5</td>
<td>1</td>
<td>93 (200)</td>
</tr>
<tr>
<td>Natural stone: limestone, sandstone, marble, granite; pH neutral to 12</td>
<td>&gt;95</td>
<td>5 to 30</td>
<td>0.98</td>
<td>30 (86)</td>
</tr>
<tr>
<td>Integral protection of fiber cement boards</td>
<td>&gt;95</td>
<td>0.1 to 0.5 vs. dry composition</td>
<td>0.98</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Neutral and alkaline mineral substrates such as brick, sandstone or cement-based materials</td>
<td>&gt;95</td>
<td>2 to 10</td>
<td>1.1</td>
<td>95 (203)</td>
</tr>
<tr>
<td>Additive for integral protection for neutral and alkaline factory-manufactured ALC boards; for air cure</td>
<td>&gt;95</td>
<td>0.1 to 0.5</td>
<td>0.94</td>
<td>&gt;80 (176)</td>
</tr>
<tr>
<td>Siloxane polymer to formulate water repellent material</td>
<td>&gt;95</td>
<td>0.5 to 5</td>
<td>0.98</td>
<td>100 (212)</td>
</tr>
<tr>
<td>Hydrophobic additive for wood sealer formulations</td>
<td>50</td>
<td>2 to 8</td>
<td>0.94</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Bricks, wood; pH neutral to 10</td>
<td>32</td>
<td>0.5 to 3</td>
<td>1.25</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Bricks, wood; pH neutral to 10</td>
<td>40</td>
<td>0.5 to 3</td>
<td>1.29</td>
<td>&gt;100 (212)</td>
</tr>
<tr>
<td>Alkaline or neutral substrates such as concrete, mortar and brick, stone; pH slightly alkaline to 12</td>
<td>&gt;95</td>
<td>5 to 100</td>
<td>0.88</td>
<td>65 (149)</td>
</tr>
<tr>
<td>Alkaline or neutral substrates such as concrete, mortar and brick, stone; pH slightly alkaline to 12</td>
<td>&gt;95</td>
<td>5 to 100</td>
<td>0.88</td>
<td>62 (144)</td>
</tr>
<tr>
<td>Alkaline or neutral substrates such as concrete, mortar and brick, stone; pH slightly alkaline to 12; may be used as densifier for concrete</td>
<td>&gt;95</td>
<td>5 to 100</td>
<td>0.93</td>
<td>54 (113)</td>
</tr>
<tr>
<td>Alkaline or neutral substrates such as concrete, mortar and brick, stone; pH slightly alkaline to 12</td>
<td>&gt;95</td>
<td>5 to 100</td>
<td>0.92</td>
<td>32 (90)</td>
</tr>
<tr>
<td>Alkaline or neutral substrates such as concrete, mortar and brick, stone; pH slightly alkaline to 12</td>
<td>&gt;95</td>
<td>5 to 100</td>
<td>0.91</td>
<td>66.5 (152)</td>
</tr>
</tbody>
</table>
Product selector for surface treatment of building materials

Surface treatment water repellent

Structural concrete
- Solvent-dilutable
  - XIAMETER™ OFS-6341 Silane
  - XIAMETER™ OFS-6403 Silane
  - XIAMETER™ OFS-2306 Silane
- Water-based
  - DOWSIL™ IE-6682 Emulsion

Wood
- Water-based
  - DOWSIL™ 2-9034 Emulsion
  - DOWSIL™ E-6683 Water Repellent Emulsion
  - DOWSIL™ 1-6184 Water Repellent
- Neat or solvent-dilutable
  - DOWSIL™ 2-9030 Water Repellent
  - DOWSIL™ 6691 Fluid

Anti-stain/stay clean
- Solvent-dilutable
  - XIAMETER™ OFS-6341 Silane
  - XIAMETER™ OFS-6403 Silane
  - + fluorocarbon polymer
- Water-based
  - DOWSIL™ IE-6682 Emulsion
  - + fluorocarbon dispersion
  - (bricks and terracotta pavers)

General-purpose surface treatment water repellent
- Water-based
  - DOWSIL™ IE-6683 Water Repellent Emulsion
  - + fluorocarbon dispersion
- Solvent-dilutable
  - XIAMETER™ OFS-6341 Silane
  - XIAMETER™ OFS-6403 Silane
  - + fluorocarbon polymer

Damp proofing
- Solvent-dilutable
  - XIAMETER™ OFS-6697 Silane (stone strengthening)
- Water-based
  - DOWSIL™ Z-6689 Water Repellent
  - DOWSIL™ IE-6687 Emulsion

- Neat or solvent-dilutable
  - DOWSIL™ Z-70 Emulsion (clay)
  - DOWSIL™ IE-6683 Water Repellent Emulsion
  - DOWSIL™ IE-6684 Water Repellent Emulsion
  - DOWSIL™ IE-6682 Emulsion

Is the substrate treated at high T°?
- Yes
  - DOWSIL™ Z-6690 Fluid
- No
  - XIAMETER™ OFS-6697 Silane (stone strengthening)

Is the substrate very-low-porosity stone (e.g. granite)?
- Yes
  - DOWSIL™ Z-6690 Water Repellent
- No
  - DOWSIL™ Z-6690 Water Repellent for wood

Inorganic substrates
- Low-VOC general-purpose
  - DOWSIL™ IE-6691 Emulsion
- Low impact on adhesion
  - DOWSIL™ IE-6694 Water repellent emulsion
- General-purpose
  - DOWSIL™ IE-6689 Water Repellent Emulsion

Wood
- DOWSIL™ Z-6689 Water Repellent
- DOWSIL™ IE-6689 Water Repellent

Silane/siloxane emulsions (water-based)
- Water-based siloxane
- Silane/siloxane blends (solvent-dilutable)
- Silicone resin emulsion
- Hydrophobic powders
- Specialty fluids
- Siloxane/organic emulsion
- Siliconates
- Alkyl alkoxy silanes
Product selector for integral protection of building materials

What kind of material needs to be treated?

Gypsum-based
- Integral protection for board production?
  - Gypsum board
    - Surface treatment: XIAMETER™ OFS-0777 Siliconate
  - Gypsum plaster
    - Integral protection: DOWSIL™ I-2404 Emulsion

Cement-based
- Is the cementitious material formulated as a dry mix?
  - Yes
    - Do you need extra beading and hydrophobic performance?
      - Yes
        - DOWSIL™ GP SHP-50 Silicone Hydrophobic Powder
      - No
    - Do you need hydrophobic integral protection?
      - Yes
        - Antifoam: XIAMETER™ AFE-0400 Antifoam Emulsion
      - No
    - Do you require a water-based formulation?
      - Yes
        - DOWSIL™ I-6692 Emulsion
      - No
    - Does your process involve an autoclave?
      - Yes
        - DOWSIL™ BY 16-846 Fluid
      - No
    - Is the substrate a fiber-reinforced cement board?
      - Yes
        - DOWSIL™ Z-6289 Resin
      - No

1 For formulating safe and effective gypsum integral protection, contact your Dow Corning Technical Service associate.
2 Additional antifoam emulsions are available. Please contact your Dow Corning Technical Service associate for assistance.

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