Product Overview Europe

Cellulose Ethers, Redispersible Latex Powders, Acrylic Emulsion Polymers, Silicones, Synthetic Thickeners, Dispersants and Opaque Polymers

Jointly advancing better building

New products for gypsum based plaster, ETICS, cement based tile adhesives, cementitious waterproofing, fiber cement products and metal roof tile coating
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Welcome to Dow Construction Chemicals

High performance products and solutions for the construction industry

The construction industry in Europe, Middle East and Africa is changing. Demand for high-performance, cost effective and environmentally advanced building products continues to increase as the sector adapts to meet the challenges of energy efficiency, economic constraints and demand for structures equipped for 21st century living.

Dow Construction Chemicals has evolved to address those needs with a broad product portfolio based on acrylic emulsion polymers, redispersible latex powder, cellulosic and silicone based technology.

Dow Construction Chemicals brings together the combined expertise and high research and development competence based on 40-years of industry experience. We offer in-depth application knowhow as well as effective formulation support to manufacturers of building and construction products around the world – a strong construction-focused business unit supported by global research, technical service and manufacturing facilities.
Where quality building starts

The highly reliable quality of binders and products 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 WALOCEL Cellulose Ethers, DOW Latex Powders, DOWSIL Silicones, PRIMAL and UCAR Acrylic Dispersion 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 workability features or demand an especially durable, high-quality end-product – we help you meet their expectations. Our experts support you in optimising formulations in order to keep key properties of your end products stable and as specified – this is where quality building starts.

The technological building blocks

The Dow Construction Chemicals portfolio is built around four core technological pillars that are essential for the development of building product formulations to meet a wide variety of needs.

Acrylic polymer dispersions and acrylic solution polymers

Customers of Dow Construction Chemicals have access to a heritage of technically advanced, high-quality binders and additives.

The business offers a wide range of dispersion for the manufacture of building and construction products including pure acrylic, styrene acrylic and vinyl acetate polymers for improving the properties of cementitious as well as non-cementitious applications. In addition, dispersants and synthetic thickeners are available for a variety of applications.

Features and benefits offered by our portfolio include strong adhesion, improved water resistance, ease of use, increased durability and more.

Applications range from dispersion based renders through to coatings for cool reflective roofs and roof tiles, and from sealants and adhesives to cementitious waterproofing membranes. High-performance acrylic thermoset binders have also been developed for use in high-performance nonwovens and in glass fiber insulation.

Cellulosic technology

Decades of experience enable Dow Construction Chemicals to offer a portfolio of cellulose-based products for construction materials with distinctive benefits across a wide range of applications.

The range includes well known brands such as WALOCEL cellulose ethers which incorporate features such as:
- rapid development of temperature-stable, high-water retention capabilities
- selective consistency adjustment for easy workability
- precise control of rheology for good workability and sag resistance
- stabilisation of air voids
- improved substrate adhesion.

Potential applications range from tile adhesives and grouts, to fillers, levellers and joint compounds, and from reinforcing and bonding mortars for ETICS to gypsum plasters and cement-based renders.

Redispersible latex powder

DOW Latex Powders are redispersible polymer powders that combine the performance benefits of liquid latex modifiers with the convenience, reliability and handling/storage advantages of one-component dry systems.

They offer a variety of features and benefits for mineral-bound products, including:
- improved workability
- excellent adhesive strength on different and demanding surfaces
- improved open time
- hydrophobicity (water repellent properties)
- abrasion resistance.

The powders are used primarily as additives for products such as cement-based tile adhesives, thermal insulation systems and self-leveling flooring compounds.
Silicones
When used as admixtures, surface treatments and in-situ treatments, silanes, siloxanes and resins from Dow have a history of providing water repellency and enhanced protection for a variety of key construction materials. The range of proven and highly effective silicon-based products include hydrophobic powders, resin emulsions, hydrophobic booster, powdered antifoams. Let our experts support you in choosing the right products for the development of long-lasting building materials.

What you need, where you need it

Tailored support
The range of options offered by Dow Construction Chemicals means products can be tailored to suit a variety of applications and end-use needs. That might mean designing more cost-effective options into an existing range; creating new, environmentally advanced products to help address environmental challenges or creating formulations for a premium performance product for a high-end application.

Thanks to the wide range of expertise and broad portfolio of products based on a proven range of technologies, customers working with Dow Construction Chemicals have access to highly-competent, experienced professionals who will provide support in identifying the appropriate formulation based on the right technology and the right products.

The benefit of global resources
Combining our expertise and know-how has resulted in a worldwide network of research and manufacturing capabilities well equipped to meet the demands of today’s businesses. Customers benefit from global innovations and development across all regions, and can at the same time rely on local presence that understands the specific demands of the regional marketplace.

In Europe, Middle East and Africa, Dow Construction Chemicals serves the market with regional laboratories, 13 strategically placed production plants and around 100 dedicated professionals in sales, marketing and R&D.

The team provides access to global knowledge along with on-the-ground support and in-depth market understanding, meaning it is well-equipped to respond to local needs.

In the following you will find an overview on our product range. Please consult your local sales representative to identify the specific product portfolio available in your region.
### Gypsum based plaster, machine applied  | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]$^1$</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ Xtra 30-60</td>
<td></td>
<td>30.000</td>
<td>high</td>
</tr>
<tr>
<td>WALOCEL Xtra 40-01</td>
<td></td>
<td>40.000</td>
<td>no</td>
</tr>
<tr>
<td>WALOCEL Xtra 40-10</td>
<td></td>
<td>40.000</td>
<td>low</td>
</tr>
<tr>
<td>WALOCEL Xtra 40-30</td>
<td>Functional (rheological), non-ionic cellulose ether, improving water retention</td>
<td>40.000</td>
<td>medium</td>
</tr>
<tr>
<td></td>
<td>– even at high temperature of the wet mortar – and workability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WALOCEL Xtra 40-40</td>
<td></td>
<td>40.000</td>
<td>medium</td>
</tr>
<tr>
<td>WALOCEL Xtra 60-01</td>
<td></td>
<td>60.000</td>
<td>no</td>
</tr>
<tr>
<td>WALOCEL Xtra 60-30</td>
<td></td>
<td>60.000</td>
<td>medium</td>
</tr>
<tr>
<td>WALOCEL Xtra 60-50</td>
<td></td>
<td>60.000</td>
<td>high</td>
</tr>
</tbody>
</table>

$^1$ 2 % solution in water, Haake Rotovisko RV 100, shear rate 2.55 s$^{-1}$, 20°C

### Gypsum based plaster, hand applied  | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]$^1$</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ Xtra 40-10</td>
<td></td>
<td>40.000</td>
<td>low</td>
</tr>
<tr>
<td>WALOCEL Xtra S 50-95</td>
<td>Functional (rheological), non-ionic cellulose ether, improving water retention</td>
<td>55.000</td>
<td>very high</td>
</tr>
<tr>
<td></td>
<td>– even at high temperature of the wet mortar – and workability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WALOCEL Xtra S 50-96</td>
<td></td>
<td>55.000</td>
<td>very high</td>
</tr>
</tbody>
</table>

$^1$ 2 % solution in water, Haake Rotovisko RV 100, shear rate 2.55 s$^{-1}$, 20°C
### Product Characteristics

<table>
<thead>
<tr>
<th>Particle size</th>
<th>Controlled particle morphology</th>
<th>Features of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Water retention</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>★★★★</td>
</tr>
</tbody>
</table>

- **no** ★☆☆☆☆  fair ★☆☆☆☆  good ★☆☆☆☆  excellent ★☆☆☆☆  outstanding

### Particle size

<table>
<thead>
<tr>
<th>Particle size</th>
<th>Controlled particle morphology</th>
<th>Features of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Consistency build-up</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>fast</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>fast</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
<td>slow</td>
</tr>
</tbody>
</table>

- **no** ★☆☆☆☆  fair ★☆☆☆☆  good ★☆☆☆☆  excellent ★☆☆☆☆  outstanding
Gypsum based smoothing mortar, skim coat and gypsum based joint filler | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ Xtra 40-50</td>
<td>Functional (rheological), non-ionic cellulose ether, improving water retention – even at high temperature of the wet mortar – and workability</td>
<td>40.000</td>
<td>high</td>
</tr>
<tr>
<td>WALOCEL Xtra 20-40</td>
<td>20.000</td>
<td>medium</td>
<td></td>
</tr>
<tr>
<td>WALOCEL Xtra 20-70</td>
<td>20.000</td>
<td>very high</td>
<td></td>
</tr>
<tr>
<td>WALOCEL Xtra 20-01</td>
<td>20.000</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

1) 2 % solution in water, Haake Rotovisko RV 100, shear rate 2.55 s⁻¹, 20°C

Gypsum based smoothing mortar, skim coat and gypsum based joint filler | Redispersible latex powders

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
<th>MFFT [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLP 211 (DOW™ Latex Powder)</td>
<td>Polymer binder, rapidly dispersible in water</td>
<td>VAE-VeoVa</td>
<td>3</td>
</tr>
<tr>
<td>DLP 212 (DOW Latex Powder)</td>
<td>VAE-VeoVa</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Tape joint compound and dispersion based joint filler, smoothing mortar | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ MK 25000 PFV</td>
<td>Functional, non-ionic cellulose ether with balanced set of application characteristics – improving body and texture</td>
<td>25.000¹</td>
<td>retarded dissolution</td>
</tr>
<tr>
<td>WALOCEL MW 40000 PFV</td>
<td>40.000</td>
<td>retarded dissolution</td>
<td></td>
</tr>
</tbody>
</table>

¹) 2 % solution in water, Haake Rotovisko RV 100, shear rate 2.55 s⁻¹, 20°C

Tape joint compound and dispersion based joint filler, smoothing mortar | Vinyl acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>MFFT [°C]</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAPE-X™</td>
<td>High efficiency latex, rheology modifier, compatible with WALOCEL™ Cellulose Ether</td>
<td>10</td>
<td>47</td>
</tr>
</tbody>
</table>
### Particle size

<table>
<thead>
<tr>
<th>Controlled particle morphology</th>
<th>Features of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water retention</td>
<td>Lump reduction</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
</tr>
<tr>
<td>powder, fine</td>
<td>yes</td>
</tr>
</tbody>
</table>

- **No** ★☆☆☆☆: fair ★★★☆☆: good ★★★★☆: excellent ★★★★★: outstanding

### Particle size

<table>
<thead>
<tr>
<th>Rheology</th>
<th>Flexibility</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>medium hard</td>
</tr>
</tbody>
</table>

| powder, free-flowing | neutral     | medium                            | good surface appearance, no impact on setting |

### Particle size

<table>
<thead>
<tr>
<th>Features of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistency</td>
</tr>
<tr>
<td>powder, fine</td>
</tr>
<tr>
<td>powder, fine</td>
</tr>
</tbody>
</table>

- **No** ★☆☆☆☆: fair ★★★☆☆: good ★★★★☆: excellent ★★★★★: outstanding

### Properties/behavior of end-product

Designed to improve tape bond adhesion and impart the good balance of overall application properties for smoothing mortars.
# Cement based render | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WACOLEC™ MKX 6000 PF 01</td>
<td>Functional, non-ionic cellulose ether, improving water retention, not modified</td>
<td>6.000</td>
<td>no</td>
</tr>
<tr>
<td>WACOLEC MKX 6000 PP 20</td>
<td>Functional, non-ionic cellulose ether, improving water retention, modified for easy workability</td>
<td>6.000</td>
<td>low</td>
</tr>
<tr>
<td>WACOLEC MKX 15000 PF 01</td>
<td>Functional, non-ionic cellulose ether, improving water retention, not modified</td>
<td>15.000</td>
<td>no</td>
</tr>
<tr>
<td>WACOLEC MKX 15000 PP 25</td>
<td>Functional, non-ionic cellulose ether, improving water retention, modified for easy workability and standing strength</td>
<td>15.000</td>
<td>medium</td>
</tr>
<tr>
<td>WACOLEC MKX 35000 PP 10</td>
<td>Functional, non-ionic cellulose ether, improving significantly the water retention, modified for easy workability</td>
<td>35.000</td>
<td>low</td>
</tr>
<tr>
<td>WACOLEC MKW 10000 PP 01</td>
<td>Functional, non-ionic cellulose ether, improving water retention, not modified</td>
<td>10.000</td>
<td>no</td>
</tr>
<tr>
<td>WACOLEC MKW 15000 PP 30</td>
<td>Functional, non-ionic cellulose ether, improving water retention with modification for very high sag resistance</td>
<td>15.000</td>
<td>medium</td>
</tr>
<tr>
<td>WACOLEC MKW 20000 PP 01</td>
<td>Functional, non-ionic cellulose ether, improving water retention, not modified</td>
<td>20.000</td>
<td>no</td>
</tr>
<tr>
<td>WACOLEC MKW 20000 PP 20</td>
<td>Functional, non-ionic cellulose ether, improving water retention, modified for easy workability</td>
<td>20.000</td>
<td>low</td>
</tr>
<tr>
<td>WACOLEC MKW 20000 PP 30</td>
<td>Functional, non-ionic cellulose ether, improving water retention, modified for easy workability and high standing strength</td>
<td>20.000</td>
<td>medium</td>
</tr>
<tr>
<td>WACOLEC MKW 20000 PP 40</td>
<td>Functional, non-ionic cellulose ether, improving water retention, modified for high standing strength</td>
<td>20.000</td>
<td>high</td>
</tr>
<tr>
<td>WACOLEC MKW 30000 PP 10</td>
<td>Functional, non-ionic cellulose ether, improving water retention, modified for easy workability</td>
<td>30.000</td>
<td>low</td>
</tr>
<tr>
<td>WACOLEC MKW 30000 PP 30</td>
<td>Functional, non-ionic cellulose ether, improving water retention, modified for high sag resistance</td>
<td>30.000</td>
<td>medium</td>
</tr>
<tr>
<td>WACOLEC MKW 40000 PP 10</td>
<td>Functional, non-ionic cellulose ether, imparting very high water retention, modified for easy workability</td>
<td>40.000</td>
<td>low</td>
</tr>
<tr>
<td>WACOLEC MKW 40000 PP 20</td>
<td>Functional, non-ionic cellulose ether imparting very high water retention, modified for easy workability</td>
<td>40.000</td>
<td>low</td>
</tr>
</tbody>
</table>

WACOLEC MKW: all Base Coat products: excellent water retention at high wet mortar temperatures and outstanding air void stabilisation.

For Decorative and Silicate Render (RTU) please see ETICS page 12.

1 | WACOLEC™ products: 2% solution in water, Haake Rotovisko RV 100, shear rate 2.55 s⁻¹, 20°C
<table>
<thead>
<tr>
<th>Particle size</th>
<th>Water retention</th>
<th>Workability – ease of leveling</th>
<th>Reduced influence on cement setting</th>
<th>Shear stability</th>
<th>Standing strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
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<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
</tbody>
</table>

- no | fair | good | excellent | outstanding
## Cement based render | Redispersible latex powders

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
<th>Sub-application</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLP 211 (DOW™ Latex Powder)</td>
<td>Polymer binder, rapidly dispersible in water with good saponification resistance</td>
<td>VAE-VeoVa</td>
<td>Decorative render</td>
</tr>
<tr>
<td>DLP 212 (DOW Latex Powder)</td>
<td></td>
<td>VAE-VeoVa</td>
<td>Decorative render</td>
</tr>
<tr>
<td>DLP 2141 (DOW Latex Powder)</td>
<td></td>
<td>VAE-VeoVa</td>
<td>Decorative render</td>
</tr>
</tbody>
</table>

## Cement based render | Silicone hydrophobic powders

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
<th>Sub-application</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ GP SHP 50</td>
<td>Silicone hydrophobic powder, rapidly dispersible in water, providing long lasting protection against water ingress.</td>
<td>Silane/siloxane</td>
<td>Decorative render/ skim coat</td>
</tr>
<tr>
<td>DOWSIL GP SHP 60+</td>
<td>Silicone resin/siloxane</td>
<td>Decorative render/ skim coat</td>
<td></td>
</tr>
</tbody>
</table>

## ETICS¹ and dispersion based render | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]²</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ MKW 10000 PP 01</td>
<td>Functional, non-ionic cellulose ether, improving water retention, not modified</td>
<td>10.000</td>
</tr>
<tr>
<td>WALOCEL MKS 10000 PP 25</td>
<td>Functional rheological, non-ionic, multipurpose additive cellulose ethers with modification to improve sag resistance and workability</td>
<td>13.000</td>
</tr>
<tr>
<td>WALOCEL MKX 25000 PF 25 L</td>
<td>Functional rheological, non-ionic, multipurpose additive cellulose ethers to improve water retention and the workability of the mortar</td>
<td>25.000</td>
</tr>
<tr>
<td>WALOCEL MKX 45000 PF 20 L</td>
<td></td>
<td>45.000</td>
</tr>
<tr>
<td>WALOCEL MKX 45000 PF 40 L</td>
<td></td>
<td>45.000</td>
</tr>
<tr>
<td>WALOCEL 327</td>
<td>Functional rheological, non-ionic, multipurpose additive cellulose ethers to improve water retention and the workability of the mortar</td>
<td>15.000</td>
</tr>
<tr>
<td>WALOCEL MKW 20000 PP 20</td>
<td>Functional rheological, non-ionic, multipurpose additive cellulose ethers to improve water retention &amp; air void stability, less impact on cement hydration</td>
<td>20.000</td>
</tr>
<tr>
<td>WALOCEL MW 6000 PFV</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability and to avoid segregation</td>
<td>6.000</td>
</tr>
<tr>
<td>WALOCEL MW 15000 PFV</td>
<td>Decorative Render (RTU)</td>
<td>15.000</td>
</tr>
<tr>
<td>WALOCEL MW 40000 PFV</td>
<td>Decorative Render (RTU)</td>
<td>40.000</td>
</tr>
</tbody>
</table>

¹ External Thermal Insulation Composite System

² WALOCEL products: 2% solution in water, Haake Rotovisko RV 100, shear rate 2.55 s⁻¹, 20°C; WALOCEL 327: 2% solution in water, Brookfield RV, 20 rpm, 20°C
## Product Characteristics

### Composition

<table>
<thead>
<tr>
<th>Sub-application</th>
<th>Particle size</th>
<th>Rheology</th>
<th>Hydrophobicity</th>
<th>Protection against efflorescence</th>
<th>Water contact angle (beading)</th>
<th>Weather resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decorative render/skim coat</td>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Decorative render/skim coat</td>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>yes</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

### Sub-application

<table>
<thead>
<tr>
<th>Sub-application</th>
<th>Particle size</th>
<th>Rheology</th>
<th>Hydrophobicity</th>
<th>Protection against efflorescence</th>
<th>Water contact angle (beading)</th>
<th>Weather resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decorative render</td>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Decorative render</td>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>yes</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

### Features of end-product

<table>
<thead>
<tr>
<th>Modification</th>
<th>Particle size</th>
<th>Water retention</th>
<th>Workability</th>
<th>Adhesion to substrate</th>
<th>Adhesion to insulation board</th>
<th>Wetting capability/open time</th>
<th>Efficient thickening</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>powder, very fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>medium</td>
<td>powder, very fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>high</td>
<td>powder, very fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>medium</td>
<td>powder, very fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>high</td>
<td>powder, very fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>medium</td>
<td>powder, very fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>retarded dissolution</td>
<td>powder, fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>retarded dissolution</td>
<td>powder, fine</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

### Weather resistance

- no fair good excellent outstanding
**ETICS\(^1\) | Redispersible latex powders**

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Sub-application</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLP 212 (DOW™ Latex Powder)</td>
<td>Polymer binder, rapidly dispersible in water with good saponification resistance</td>
<td>Adhesive &amp; Base Coat Mortar</td>
<td>VAE-VeoVa</td>
</tr>
<tr>
<td>DLP 2141 (DOW Latex Powder)</td>
<td></td>
<td>Adhesive &amp; Base Coat Mortar</td>
<td>VAE-VeoVa</td>
</tr>
</tbody>
</table>

\(^1\) External Thermal Insulation Composite System

**ETICS\(^1\) and dispersion based render | Acrylic dispersions**

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>MFFT[^]°C</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ 3317 EF</td>
<td>Quick-Set Technology for enhanced productivity in dispersion and silicone render application</td>
<td>5</td>
<td>57 – 59</td>
</tr>
<tr>
<td>PRIMAL UC-550 EF</td>
<td>Versatile binder</td>
<td>18</td>
<td>50</td>
</tr>
<tr>
<td>FINNDISP™ A-10</td>
<td>Universal binder</td>
<td>18</td>
<td>49</td>
</tr>
<tr>
<td>UCAR™ Latex DL 420 G</td>
<td>Universal binder</td>
<td>20</td>
<td>49</td>
</tr>
<tr>
<td>UCAR Latex DL 432 S</td>
<td>Low odor binder for coalescent free systems</td>
<td>&lt; 5</td>
<td>50</td>
</tr>
<tr>
<td>UCAR Latex DL 424</td>
<td>High water resistant binder for renders</td>
<td>14</td>
<td>50</td>
</tr>
<tr>
<td>PRIMAL AC-339</td>
<td>Marble stone binder</td>
<td>28</td>
<td>48</td>
</tr>
<tr>
<td>PRIMAL TX-100</td>
<td>Marble stone binder</td>
<td>28</td>
<td>46,5</td>
</tr>
<tr>
<td>PRIMAL WDV-2001 ER</td>
<td>High UV stability for renders</td>
<td>7</td>
<td>46,5</td>
</tr>
</tbody>
</table>

\(^1\) External Thermal Insulation Composite System

\(^2\) This product is manufactured without added APED (no APED surfactants intentionally added).
<table>
<thead>
<tr>
<th>MFFT [°C]</th>
<th>Particle size</th>
<th>Rheology</th>
<th>Hydrophobicity</th>
<th>Flexibility</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>yes</td>
<td>medium</td>
<td>good dry and wet adhesion</td>
</tr>
<tr>
<td>0</td>
<td>powder, free-flowing</td>
<td>neutral</td>
<td></td>
<td>medium hard</td>
<td>lower water absorption</td>
</tr>
</tbody>
</table>

**Properties/behavior of end-product**

- Pure acrylic designed for increasing the application window for ETICS, covering a temperature range from 1°C to 15°C and humidity up to 95%, with high early wash-out resistance and colour stability, manufactured without added APEO.

- Versatile styrene acrylic polymer with good performance in silicate paints and dispersion based renders, manufactured without added APEO. Cement stable.

- Universal styrene acrylic. Can be used for primers.

- Universal styrene acrylic. Can be used for primers.

- Styrene acrylic, silicate stable, coalescent free polyvalent emulsion with excellent dirt pick up resistance.

- Styrene acrylic recommended for applications requiring especially high water resistance due to very low water absorption. Stable with silicates.

- Highly hydrophobic pure acrylic polymer for good water resistance. Ideal for marble stone finishes (no water whitening).

- Highly hydrophobic pure acrylic polymer designed for especially high water resistance. Ideal for marble stone finishes (no water whitening).

- Silicate and cement stable pure acrylic polymer. Low coalescent emulsions with excellent dirt pick up resistance and UV stability.
### ETICS\(^1\) and dispersion based render | Silicone resin emulsions and hydrophobic booster

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Function</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ IE 2404</td>
<td>Silicone resin based co-binder</td>
<td>Film forming silicone resin</td>
<td>50</td>
</tr>
<tr>
<td>DOWSIL IE 6683</td>
<td>Non ionic emulsion of silane/siloxane/silicone resin</td>
<td>Hydrophober for external wall top coat</td>
<td>40</td>
</tr>
<tr>
<td>DOWSIL Z-70</td>
<td>Non ionic emulsion of organosiloxane</td>
<td>Hydrophober for external wall top coat</td>
<td>60</td>
</tr>
</tbody>
</table>

\(^1\) External Thermal Insulation Composite System

### Cement modifier | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>MFFT [°C]</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ CM-160</td>
<td>Low temperature cement modifier</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>PRIMAL CM-330</td>
<td>General purpose cement modifier</td>
<td>12</td>
<td>47</td>
</tr>
</tbody>
</table>

### Cement based tile adhesive – basic quality | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas](^1)</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ MKX 40000 PF 01</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention</td>
<td>40.000</td>
<td>no</td>
</tr>
<tr>
<td>WALOCEL MKX 60000 PF 01</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention</td>
<td>60.000</td>
<td>no</td>
</tr>
<tr>
<td>WALOCEL MKX 60000 PF 15</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance</td>
<td>60.000</td>
<td>medium</td>
</tr>
<tr>
<td>WALOCEL MW 40000 PFV</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability, water retention</td>
<td>40.000</td>
<td>retarded dissolution</td>
</tr>
<tr>
<td>WALOCEL MW 60000 PFV</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability, water retention</td>
<td>60.000</td>
<td>retarded dissolution</td>
</tr>
</tbody>
</table>

\(^1\) 2% solution in water, Haake Rotovisko RV 100, shear rate 2.55 s\(^{-1}\), 20°C

\(^2\) Temperature stability of wet mortar
Product Characteristics

<table>
<thead>
<tr>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating with enhanced water vapor permeability and reduced liquid water penetration.</td>
</tr>
<tr>
<td>Coating with increased resistance to water penetration with expected long lasting aesthetics.</td>
</tr>
<tr>
<td>Coating with increased resistance to water penetration with expected long lasting aesthetics.</td>
</tr>
</tbody>
</table>

### Properties/behavior of end-product

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viscosity</strong></td>
<td>mPas</td>
</tr>
<tr>
<td><strong>Particle size</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Features of End-Product</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Water retention</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Long adjustability time</strong></td>
<td></td>
</tr>
<tr>
<td><strong>High slip resistance</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Long open time</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature stability</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Less retarded setting</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Particle size

<table>
<thead>
<tr>
<th>Particle size</th>
<th>Water retention</th>
<th>Long adjustability time</th>
<th>High slip resistance</th>
<th>Long open time</th>
<th>Temperature stability</th>
<th>Less retarded setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>powder, fine</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>–</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>–</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>–</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>–</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>–</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
</tr>
</tbody>
</table>

**-** no

**★** poor

**★★** fair

**★★★** good

**★★★★** excellent

**★★★★★** outstanding

Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.
### Cement based tile adhesive – standard quality (C1) | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]$^1$</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCHEL™ MKX 15000 PF 01</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention</td>
<td>15.000</td>
<td>no</td>
</tr>
<tr>
<td>WALOCHEL MKX 20000 PP 10</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance</td>
<td>20.000</td>
<td>low</td>
</tr>
<tr>
<td>WALOCHEL MKX 25000 PF 25 L</td>
<td>Functional non-ionic cellulose ether to improve workability, slip resistance</td>
<td>25.000</td>
<td>medium</td>
</tr>
<tr>
<td>WALOCHEL MKX 40000 PF 01</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention</td>
<td>40.000</td>
<td>no</td>
</tr>
<tr>
<td>WALOCHEL MW 40000 PFV 50</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability, water retention, slip resistance</td>
<td>40.000</td>
<td>high, retarded dissolution</td>
</tr>
<tr>
<td>WALOCHEL MKX 45000 PP 10</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance</td>
<td>45.000</td>
<td>low</td>
</tr>
<tr>
<td>WALOCHEL MKX 45000 PF 20 L</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance</td>
<td>45.000</td>
<td>medium</td>
</tr>
<tr>
<td>WALOCHEL MKX 45000 PF 40 L</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance</td>
<td>45.000</td>
<td>high</td>
</tr>
<tr>
<td>WALOCHEL™ 327</td>
<td>Functional non-ionic cellulose ether improving adhesion strength, slip resistance</td>
<td>15.000</td>
<td>high</td>
</tr>
<tr>
<td><strong>NEW</strong> WALOCHEL™ M 20-20</td>
<td>Functional non-ionic cellulose ether improving adhesion strength, slip resistance</td>
<td>20.000</td>
<td>medium</td>
</tr>
<tr>
<td><strong>NEW</strong> WALOCHEL M 35-10</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance</td>
<td>35.000</td>
<td>low</td>
</tr>
</tbody>
</table>

$^1$ WALOCHEL™ products: 2% solution in water, Haake Rotovisko RV 100, shear rate 2.55 s⁻¹, 20°C. WALOCHEL 327: 2% solution in water, Brookfield RV, 20 rpm, 20°C

$^2$ Temperature stability of wet mortar
<table>
<thead>
<tr>
<th>Particle size</th>
<th>Water retention</th>
<th>Long adjustability time</th>
<th>High slip resistance</th>
<th>Long open time</th>
<th>Temperature stability</th>
<th>Less retarded setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>-</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
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<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>-</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
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<tr>
<td>powder, fine</td>
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<td>★★★★☆</td>
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</tr>
<tr>
<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, very fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
</tr>
</tbody>
</table>

- no ★☆☆☆☆   fair ★☆☆☆☆   good ★☆☆☆☆☆   excellent ★☆☆☆☆☆☆   outstanding

Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.
## Cement based tile adhesive – high quality (C2) | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCÉL™ 327</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance, setting, open time</td>
<td>15,000</td>
<td>high</td>
</tr>
<tr>
<td>WALOCÉL™ M 10-40</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance, esp. at high water loads</td>
<td>10,000</td>
<td>medium</td>
</tr>
<tr>
<td>WALOCÉL™ M 20-20</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance, setting, open time</td>
<td>20,000</td>
<td>medium</td>
</tr>
<tr>
<td>WALOCÉL™ M 20-30</td>
<td>Functional non-ionic cellulose ether to improve workability, water retention, slip resistance, setting, open time</td>
<td>20,000</td>
<td>medium</td>
</tr>
</tbody>
</table>

<sup>1</sup> WALOCÉL™ products: 2% solution in water, Haake Rotovisko RV 100, shear rate 2.55 s<sup>-1</sup>, 20°C; WALOCÉL 327: 2% solution in water, Brookfield RV, 20 rpm, 20°C
<sup>2</sup> Temperature stability of wet mortar
<sup>3</sup> Adjusted rheology enabling higher bonding at higher water loads

## Cement based tile adhesive | Redispersible latex powders

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
<th>MFFT [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLP 211 (DOW™ Latex Powder)</td>
<td>Polymer binder, rapid dispersible in water with good saponification resistance</td>
<td>VAE-VeoVa</td>
<td>3</td>
</tr>
<tr>
<td>DLP 212 (DOW Latex Powder)</td>
<td>Polymer binder, rapid dispersible in water with good saponification resistance</td>
<td>VAE-VeoVa</td>
<td>0</td>
</tr>
<tr>
<td>DLP 2001 (DOW Latex Powder)</td>
<td>Polymer binder, rapid dispersible in water with good saponification resistance</td>
<td>VAE-VeoVa</td>
<td>2</td>
</tr>
<tr>
<td>DLP 2000 (DOW Latex Powder)</td>
<td>Polymer binder, rapid dispersible in water with good saponification resistance</td>
<td>VAE</td>
<td>3</td>
</tr>
<tr>
<td>Particle size</td>
<td>Water retention</td>
<td>Long adjustability time</td>
<td>High slip resistance</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>-------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★★☆☆☆</td>
<td>★☆☆☆☆</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★☆☆☆☆</td>
<td>★☆☆☆☆</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★☆☆☆☆</td>
<td>★☆☆☆☆</td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td>★☆☆☆☆</td>
<td>★☆☆☆☆</td>
<td>★★★★★</td>
</tr>
</tbody>
</table>

- no ★☆☆☆☆ fair ★☆☆☆☆ good ★★★☆☆ excellent ★★★★★ outstanding

<table>
<thead>
<tr>
<th>Particle size</th>
<th>Rheology</th>
<th>Flexibility</th>
<th>Properties/ behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>medium hard</td>
<td>versatile</td>
</tr>
<tr>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>medium</td>
<td>multipurpose</td>
</tr>
<tr>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>medium hard</td>
<td>improved adhesion after water immersion</td>
</tr>
<tr>
<td>powder, free-flowing</td>
<td>neutral</td>
<td>medium hard</td>
<td>especially suitable for high quality CGTA</td>
</tr>
</tbody>
</table>
Tile grouts | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ MT 400 PFV</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to avoid segregation and to improve rheology and water retention</td>
<td>400</td>
<td>retarded dissolution</td>
</tr>
<tr>
<td>WALOCEL MKW 4000 PF 01</td>
<td>Functional non-ionic cellulose ether to avoid segregation and to improve rheology and water retention</td>
<td>4.000</td>
<td>no</td>
</tr>
</tbody>
</table>

1) 2 % solution in water, Haake Rotovisko RV 100, shear rate 2.55 s⁻¹, 20°C

Tile grouts | Redispersible latex powders

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
<th>MFFT [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLP 2141 (DOW™ Latex Powder)</td>
<td>Polymer binder, rapid dispersible in water with good saponification resistance</td>
<td>VAE-VeoVa</td>
<td>0</td>
</tr>
</tbody>
</table>

Tile grouts | Silicone hydrophobic powders

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
<th>Sub-application</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ GP SHP 50</td>
<td>Silicone hydrophobic powder, rapidly dispersible in water, providing long lasting protection against water ingress.</td>
<td>Silane/siloxane</td>
<td>Tile grouts</td>
</tr>
<tr>
<td>DOWSIL GP SHP 60+</td>
<td>Silicone hydrophobic powder, rapidly dispersible in water, providing long lasting protection against water ingress.</td>
<td>Silicone resin/siloxane</td>
<td>Tile grouts</td>
</tr>
</tbody>
</table>
### Product Characteristics

**WALOCEL ™ MT 400 PFV**
- Functional non-ionic cellulose ether with retarded dissolution to avoid segregation and to improve rheology and water retention.
- Powder, fine

**WALOCEL MKW 4000 PF 01**
- Functional non-ionic cellulose ether to avoid segregation and to improve rheology and water retention.
- Powder, fine

### Features of end-product

<table>
<thead>
<tr>
<th>Particle size</th>
<th>Rheology</th>
<th>Hydrophobicity</th>
<th>Flexibility</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powder, fine</td>
<td>Neutral</td>
<td>Yes</td>
<td>Medium hard</td>
<td>Low water absorption</td>
</tr>
</tbody>
</table>

### Product Characteristics

**DOWSIL ™ GP SHP 50**
- Silicone hydrophobic powder, rapidly dispersible in water, providing long lasting protection against water ingress.
- Silane/siloxane
- Tile grouts
- Powder, free-flowing neutral

**DOWSIL GP SHP 60+**
- Silicone hydrophobic powder, rapidly dispersible in water, providing long lasting protection against water ingress.
- Silicone resin/siloxane
- Tile grouts
- Powder, free-flowing neutral

### Features of end-product

<table>
<thead>
<tr>
<th>Particle size</th>
<th>Rheology</th>
<th>Hydrophobicity</th>
<th>Flexibility</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powder, free-flowing</td>
<td>Neutral</td>
<td>Yes</td>
<td>Medium hard</td>
<td>Low water absorption</td>
</tr>
</tbody>
</table>

### Product Characteristics

**DLP 2141 (DOW™ Latex Powder)**
- Polymer binder, rapid dispersible in water with good saponification resistance
- VAE-VeoVa 0
- Powder, free-flowing neutral
- No fair good excellent outstanding

<table>
<thead>
<tr>
<th>Particle size</th>
<th>Rheology</th>
<th>Features of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powder, free-flowing</td>
<td>Neutral</td>
<td>Hydrophobicity Protection against efflorescence Water contact angle (beading) Weather resistance</td>
</tr>
</tbody>
</table>

| Powder, free-flowing | Neutral | ★★★☆☆ | ★★★☆☆ | ★★★☆☆ | ★★★☆☆ |
| Powder, free-flowing | Neutral | ★★★☆☆ | ★★★☆☆ | ★★★☆☆ | ★★★☆☆ |

- no | fair | good | excellent | outstanding

Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.
## Dispersion based tile adhesive  |  Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]$^1$</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ MW 15000 PFV</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability and to avoid segregation</td>
<td>15.000</td>
<td>retarded dissolution</td>
</tr>
<tr>
<td>WALOCEL MW 40000 PFV</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability and to avoid segregation</td>
<td>40.000</td>
<td>retarded dissolution</td>
</tr>
<tr>
<td>WALOCEL MW 40000 PFV 50</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability and to avoid segregation – excellent slip resistance</td>
<td>40.000</td>
<td>highly modified, retarded dissolution</td>
</tr>
<tr>
<td>WALOCEL MW 60000 PFV</td>
<td>Functional non-ionic cellulose ether with retarded dissolution to improve workability and to avoid segregation</td>
<td>60.000</td>
<td>retarded dissolution</td>
</tr>
</tbody>
</table>

$^1$ 2% solution in water, Haake Rotovisko RV 100, shear rate 2.55 s$^{-1}$, 20°C

## Dispersion based tile adhesive  |  Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>MFFT [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRiMAL™ CM-230 ER</td>
<td>General purpose dispersion based tile adhesive</td>
<td>18</td>
</tr>
<tr>
<td>Particle Size</td>
<td>Features of end-product</td>
<td>Water retention</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>powder, fine</td>
<td></td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td></td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td></td>
<td>★★★★★</td>
</tr>
<tr>
<td>powder, fine</td>
<td></td>
<td>★★★★★</td>
</tr>
</tbody>
</table>

- no ★★★★★ fair ★★★★★ good ★★★★★ excellent ★★★★★ outstanding

<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>Styrene acrylic polymer with high binding power capability helping achieve very high water resistance, and excellent dry and wet adhesion on various substrates.</td>
</tr>
</tbody>
</table>
### Self leveling underlayment (SLU) | Cellulose ethers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Viscosity [mPas]$^1$</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALOCEL™ MT 400 PFV</td>
<td>Functional non-ionic, retarded cellulose ether with retarded dissolution to avoid segregation and to improve rheology and water retention</td>
<td>400</td>
<td>retarded dissolution</td>
</tr>
<tr>
<td>WALOCEL MKW 4000 PF 01</td>
<td>Functional non-ionic cellulose ether to avoid segregation and to improve rheology</td>
<td>4,000</td>
<td>no</td>
</tr>
</tbody>
</table>

$^1$ 2% solution in water, Haake Rotovisko RV 100, shear rate 2.55 s$^{-1}$, 20°C

### Self leveling underlayment (SLU) | Redispersible latex powders

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
<th>MFFT [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLP 2050 (DOW™ Latex Powder)</td>
<td>Polymer binder, rapid dispersible in water with good saponification resistance</td>
<td>VAE</td>
<td>3</td>
</tr>
</tbody>
</table>

### Self leveling underlayment (SLU) | Silicone powdered antifoam

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ GP 7070</td>
<td>Powdered silicone antifoam</td>
<td>Polydimethylsiloxane/silica</td>
</tr>
</tbody>
</table>
### Product Characteristics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>particle size</td>
<td>powder, fine</td>
</tr>
<tr>
<td>Flow</td>
<td>★★★★★</td>
</tr>
<tr>
<td>No segregation</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Workability</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Water retention</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Less air voids</td>
<td>★★★★★</td>
</tr>
</tbody>
</table>

### Features of end-product

- **Flow**: ★★★★★
- **No segregation**: ★★★★★
- **Workability**: ★★★★★
- **Water retention**: ★★★★★
- **Less air voids**: ★★★★★

### Particle Size

- **Particle Size**: powder, free-flowing
- **Rheology**: flow modifier
- **Flexibility**: medium hard
- **Properties/Behavior of End-Product**: generates very low VOC emissions (suitable for systems that must comply with EMICODE EC 1 Plus).

### Particle Size

- **Particle size**: Free flowing powder
- **Rheology**: neutral
- **Other**: No impact on early mechanical properties
- **Properties/behavior of end-product**: Reduce air incorporation during mixing of mortar containing superplasticizers.

---

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### Cementitious waterproofing membrane | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Tg [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ AS-8012 R</td>
<td>2K waterproofing flexible membrane</td>
<td>-8</td>
</tr>
<tr>
<td>PRIMAL™ CM-500</td>
<td>Waterproofing flexible membrane for very low temperatures (-20°C)</td>
<td>-35</td>
</tr>
<tr>
<td>PRIMAL AS-48 ER</td>
<td>Waterproofing flexible membrane for high adhesion and pressure resistance</td>
<td>-1</td>
</tr>
</tbody>
</table>

1. Manufactured without added APEO (no APEO surfactants intentionally added)
2. Complies with German regulations on materials to come in contact with drinking water

### Primer | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>MFFT [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ UC-550 EF</td>
<td>Versatile primer</td>
<td>18</td>
</tr>
<tr>
<td>UCAR™ Latex DL 420 G</td>
<td>Universal primer</td>
<td>20</td>
</tr>
<tr>
<td>FINNDISP™ A-10</td>
<td>Universal binder</td>
<td>18</td>
</tr>
<tr>
<td>FINNDISP AGP 04</td>
<td>Penetrating primer</td>
<td>1</td>
</tr>
<tr>
<td>UCAR Latex XZ 91930.00</td>
<td>Stabilizing primer</td>
<td>&lt; 5</td>
</tr>
<tr>
<td>PRIMAL AC-339</td>
<td>Water resistant sealer</td>
<td>28</td>
</tr>
</tbody>
</table>

### Fiber glass – high-performance nonwoven | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Tg [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ ECO-16</td>
<td>Battery separators</td>
<td>33</td>
</tr>
<tr>
<td>PRIMAL ECO-46</td>
<td>Wall covering</td>
<td>-12</td>
</tr>
<tr>
<td>PRIMAL ECO-88</td>
<td>Flooring and roofing reinforcement</td>
<td>11</td>
</tr>
<tr>
<td>PRIMAL GL-618L</td>
<td>Flooring and roofing reinforcement</td>
<td>27</td>
</tr>
</tbody>
</table>

1. UF: Urea Formaldelhyde; MF: Melamine Formaldelhyde
<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>Styrene acrylic polymer\textsuperscript{10} demonstrating reliable performance in cementitious waterproofing membranes, especially for elongation and crack bridging.</td>
</tr>
<tr>
<td>52,5</td>
<td>Pure acrylic polymer\textsuperscript{10} for 2K-waterproofing membranes supporting high flexibility at low temperatures, excellent water resistance and adhesion on various substrates.</td>
</tr>
<tr>
<td>56</td>
<td>Styrene acrylic polymer\textsuperscript{10} for 2K-waterproofing membranes with excellent water and alkaline resistance and outstanding adhesion and crack bridging properties at room temperature.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>Versatile styrene acrylic polymer for ETICS clear or pigmented primer application.</td>
</tr>
<tr>
<td>49</td>
<td>Styrene acrylic binder for basic primer application. Very good adhesion on various substrates.</td>
</tr>
<tr>
<td>33</td>
<td>Universal styrene acrylic. Can be used for primers.</td>
</tr>
<tr>
<td>49</td>
<td>Styrene acrylic polymer with very fine particle size and excellent penetration into porous substrates.</td>
</tr>
<tr>
<td>48</td>
<td>Very hydrophobic and alkali resistant pure acrylic polymer as primer or sealer for cementitious substrates with excellent resistance to efflorescence and excellent chalk adhesion.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>45,5</td>
<td>Superior acid resistance good tensile strength, UF/MF\textsuperscript{11} resins compatible.</td>
</tr>
<tr>
<td>47</td>
<td>Excellent dry and wet tensile strength, low water penetration, hydrophobic, durable to washing.</td>
</tr>
<tr>
<td>50</td>
<td>Good adhesion especially on polyester fibers. Excellent strength and solvent resistance, high dimensional stability at elevated temperatures, excellent durability to washing and dry-cleaning and excellent wet and dry tensile strength. Compatible with UF/MF\textsuperscript{11} resins.</td>
</tr>
<tr>
<td>47</td>
<td>Superior dry wet and hot tensile strength; outstanding shear and chemical stability, low yellowing and foaming, UF/MF\textsuperscript{11} resins compatible.</td>
</tr>
</tbody>
</table>
**Fiber cement coating** | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>MFFT [°C]</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL SS-640</td>
<td>Primer, pigmented top coat and clear varnishes</td>
<td>28</td>
<td>50</td>
</tr>
<tr>
<td>PRIMAL E-357 EF</td>
<td>Primer and pigmented top coat</td>
<td>55</td>
<td>47,5</td>
</tr>
</tbody>
</table>

**Fiber cement solutions** | Silicone hydrophober – integral protection

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Rheology</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL Z 6289</td>
<td>Neat silicone resin, low viscosity liquid</td>
<td>Slight plasticizing effect</td>
<td>&gt; 98</td>
</tr>
<tr>
<td>DOWSIL IE 6686</td>
<td>Microencapsulation of a silicone resin, easily water dispersible</td>
<td>Neutral</td>
<td>30</td>
</tr>
</tbody>
</table>

**Fiber cement impregnation** | Silicone hydrophober – surface treatment

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Dilutable in</th>
<th>Solids [%]</th>
<th>Si-H based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicone impregnation</td>
<td>Non film forming hydrophobic treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOWSIL™ 520</td>
<td>Non ionic emulsion of a mix of silane and organofunctional siloxane</td>
<td>Water</td>
<td>40</td>
<td>Yes</td>
</tr>
<tr>
<td>DOWSIL IE 6682</td>
<td>Non ionic emulsion of a mix of silane and silicone resin designed as impregnation primer. Can be top coated.</td>
<td>Water</td>
<td>52,5</td>
<td>No</td>
</tr>
</tbody>
</table>
### Properties/behavior of end-product

**PRIMAL ™ SS-640 Primer, pigmented top coat and clear varnishes**

- **28 °C**
- **50% solids**

Pure acrylic polymer for use on fiber cement substrate in formulations that result in high flexibility, exterior durability, low VOC and excellent early blocking resistance. Could be used as primer as well as top coat, pigmented and clear for roof and façade tiles.

**PRIMAL E-357 EF Primer and pigmented top coat**

- **55 °C**
- **47.5% solids**

Pure acrylic polymer developed for use on fiber cement substrates with outstanding exterior durability, excellent efflorescence resistance and fast hardness development.

### Properties/behavior of end-product

**DOWSIL ™ Z 6289 Neat silicone resin, low viscosity liquid**

- **Slight plasticizing effect**
- **> 98% solids**

Integral water repellent for fiber cement products providing long lasting protection against water ingress, which can enable improved durability, improved dimensional stability, reduced efflorescence and longer lasting aesthetics.

**DOWSIL IE 6686 Microencapsulation of a silicone resin, easily water dispersible**

- **Neutral**
- **30% solids**

Integral water repellent for fiber cement products providing long lasting protection against water ingress, which can enable improved durability, improved dimensional stability, reduced efflorescence and longer lasting aesthetics.

### Properties/behavior of end-product

**Hydrophobicity**

- Treatment of fiber cement surfaces leading to impregnation and providing durable protection against water ingress which can enable improved durability and dimensional stability, reduced efflorescence and longer lasting aesthetics.

- Quick absorption during application (no blocking issue).

**Can be post coated.**

**DOWSIL™ 520 Non ionic emulsion of a mix of silane and organofunctional siloxane**

- **Water 40% solids**

Can be post coated.

**DOWSIL IE 6682 Non ionic emulsion of a mix of silane and silicone resin designed as impregnation primer. Can be top coated.**

- **Water 52.5% solids**

Can be post coated. Can be mixed with DOWSIL™ 520 to increase depth of penetration.

---

Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.
Elastomeric roof coating and liquid applied waterproofing membranes

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Tg [°C]</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ EC-5210 PU</td>
<td>High performance binder for liquid applied roofing membranes with waterproofing performance</td>
<td>-36</td>
<td>52.5</td>
</tr>
<tr>
<td>PRIMAL EC-1791E</td>
<td>Versatile binder for multiple substrates</td>
<td>-40</td>
<td>55</td>
</tr>
</tbody>
</table>

Sealant

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Tg [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ E-3362</td>
<td>High quality pigmented sealant</td>
<td>-35</td>
</tr>
<tr>
<td>PRIMAL 2620</td>
<td>High quality translucent sealant</td>
<td>-34</td>
</tr>
<tr>
<td>PRIMAL 928 ER</td>
<td>High quality clear sealant</td>
<td>-3</td>
</tr>
<tr>
<td>PRIMAL P-308M</td>
<td>General pigmented sealant</td>
<td>8</td>
</tr>
<tr>
<td>PRIMAL UC-550 EF</td>
<td>General pigmented sealant</td>
<td>18</td>
</tr>
</tbody>
</table>
Elastomeric roof coating and liquid applied waterproofing membranes

<table>
<thead>
<tr>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylic polyurethane polymer helping achieve excellent tensile strength and flexibility in cold and hot temperatures. Outstanding exterior durability and UV resistance, very good adhesion to various roofing substrates. Superior dirt pick up resistance.</td>
</tr>
<tr>
<td>Pure acrylic polymer contributing to good adhesion to spray polyurethane foams, weathered modified bitumen and metal. Excellent low temperature flexibility (high crack resistance at low temperature). Excellent dirt pick-up resistance.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>High solid pure acrylic polymer for water-based pigmented sealants. PRIMAL™ E-3362 helps achieve excellent adhesion and flexibility and low modulus elasticity. Formulations pass requirements of ISO 11600 (type F, class 12.5P) or French SNJF standard.</td>
</tr>
<tr>
<td>62</td>
<td>High solid pure acrylic polymer for water-based translucent and pigmented sealants. PRIMAL™ 2620 contributes to outstanding adhesion and elasticity and meets the Aymar Cyclic Movement Test requirements (Class A, U.S. Federal Specification TT-S-00230C).</td>
</tr>
<tr>
<td>62.5</td>
<td>High solid styrene acrylic polymer for water-based clear and pigmented sealants. Sealants based on PRIMAL™ 928 ER can dry faster and demonstrate excellent clarity, excellent resistance to dirt-pick-up and blushing.</td>
</tr>
<tr>
<td>50</td>
<td>Styrene acrylic polymer for low VOC sealants with excellent wet strength, outstanding compatibility to silicate and excellent binding power.</td>
</tr>
<tr>
<td>50</td>
<td>Styrene acrylic polymer with good filler acceptance for pigmented sealants.</td>
</tr>
</tbody>
</table>
### Flooring & assembly adhesives | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Tg [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ E-3362</td>
<td>General purpose flooring adhesives</td>
<td>-35</td>
</tr>
<tr>
<td>PRIMAL CA-187</td>
<td>Tackifier free flooring adhesive</td>
<td>-27</td>
</tr>
<tr>
<td>PRIMAL CA-172</td>
<td>High performance flooring adhesive</td>
<td>-21</td>
</tr>
<tr>
<td>UCAR™ Latex DL 435</td>
<td>General purpose flooring adhesives</td>
<td>0</td>
</tr>
<tr>
<td>UCAR Latex DL 345</td>
<td>Universal assembly adhesive</td>
<td>10</td>
</tr>
</tbody>
</table>

### Metal roof tile coating | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Tg [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINCOTE™ PR-225 EF</td>
<td>Very good dry and wet adhesion to multiple metal surfaces</td>
<td>11</td>
</tr>
<tr>
<td>PRIMAL™ GC-5 ER</td>
<td>Formulated binder for transparent glaze coat</td>
<td>&lt; 5</td>
</tr>
</tbody>
</table>

### Concrete roof tile coating | Acrylic dispersions

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Tg [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMAL™ E-2001 LF</td>
<td>Low odor universal binder</td>
<td>16</td>
</tr>
<tr>
<td>PRIMAL E-822K</td>
<td>Universal binder for CRT coating</td>
<td>18</td>
</tr>
<tr>
<td>PRIMAL RS-110</td>
<td>Formulated binder for clear coats</td>
<td>&lt; 5</td>
</tr>
</tbody>
</table>

### Concrete solutions | Silicone hydrophober – integral protection

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Rheology</th>
<th>Water contact angle (beading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ IE 6692</td>
<td>Silane/silicone resin emulsion</td>
<td>Slight plasticizing effect</td>
<td>★★★★</td>
</tr>
<tr>
<td>DOWSIL IE 6686</td>
<td>Microencapsulation of a silicone resin</td>
<td>Neutral</td>
<td>★★★★</td>
</tr>
<tr>
<td>Solids [%]</td>
<td>Properties/behavior of end-product</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>High solid pure acrylic polymer for solvent-free floor adhesives that comply with EMICODE EC 1. PRIMAL™ E-3362 helps achieve excellent adhesion to linoleum and carpet floorings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60,5</td>
<td>High solid pure acrylic polymer for solvent-free and tackifier-free floor adhesives that complies with EMICODE EC 1. For formulations that require an early strength development, an excellent peel adhesion, superior water and alkali resistance and outstanding tackiness.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>High solid pure acrylic polymer for solvent-free floor adhesives that comply with EMICODE EC 1. PRIMAL CA-172 contributes to a long open time together with early strength development, an excellent shear stability, superior water and alkali resistance and superior adhesion on hydrophobic substrates.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Styrene acrylate dispersion recommended for very low emission flooring adhesives for pvc, carpet, linoleum and rubber floors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Versatile styrene acrylic polymer especially recommended for nail free construction adhesives for interior and exterior use.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>Acrylic co-polymer, designed for pigmented basecoats over factory applied metal roof tiles requirering flexibility to select a wider variety of steel sources without sacrificing performance. The emulsion gives excellent dry and wet adhesion to multiple metal surfaces, good exterior durability, high toughness and great binding capacity.</td>
</tr>
<tr>
<td>34</td>
<td>Pure acrylic polymer specifically designed for metal roof tile glaze coat. Ready formulated for industrial spray applications. Seal mineral granulates and provide good weathering properties.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>Ammonia and formaldehyde free binder, with excellent resistance to efflorescence and excellent water whitening resistance.</td>
</tr>
<tr>
<td>50</td>
<td>General purpose polymer for coatings on mineral substrates with excellent efflorescence resistance and excellent water whitening resistance.</td>
</tr>
<tr>
<td>45,5</td>
<td>Ammonia and formaldehyde free formulated binder, with excellent resistance to efflorescence and excellent water whitening resistance that can be applied within a broad application window.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solids [%]</th>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>52,5</td>
<td>Integral water repellent for cementitious materials providing long lasting protection against water ingress, which can enable improved durability, reduced efflorescence and longer lasting aesthetics High contact angle of water (beading) on surface of modified materials.</td>
</tr>
<tr>
<td>30</td>
<td>Integral water repellent for cementitious materials. providing long lasting protection against water ingress, which can enable improved durability, reduced efflorescence and longer lasting aesthetics Can be used for foamed concrete production.</td>
</tr>
</tbody>
</table>
Concrete solutions | Silicone impregnation and hydrophobers – surface protection

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Dilutable in</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>XIAMETER™ OFS 6341</td>
<td>Octyltriethoxysilane</td>
<td>Solvent</td>
<td>98</td>
</tr>
<tr>
<td>DOWSIL™ Z 6689</td>
<td>Solvent dilutable mix of silane and organofunctional siloxane</td>
<td>Solvent</td>
<td>98</td>
</tr>
<tr>
<td>DOWSIL IE 6683</td>
<td>Non ionic emulsion of a mix of silane, siloxane and silicone resin</td>
<td>Water</td>
<td>40</td>
</tr>
<tr>
<td>DOWSIL IE 6682</td>
<td>Non ionic emulsion of a mix of silane and silicone resin. Designed as impregnation primer. Can be top coated</td>
<td>Water</td>
<td>52.5</td>
</tr>
<tr>
<td>DOWSIL IE 6694</td>
<td>Non emulsion of a mix of silane, siloxane and silicone resin. Low VOC according to CA regulations</td>
<td>Water</td>
<td>60</td>
</tr>
<tr>
<td>DOWSIL 1-6184</td>
<td>Neat/pure water soluble silane</td>
<td>Water</td>
<td>&gt; 90</td>
</tr>
<tr>
<td>DOWSIL IE 2610</td>
<td>Anionic emulsion of cross linked organosiloxane designed as impregnation film former</td>
<td>Water</td>
<td>45</td>
</tr>
</tbody>
</table>

Additives | Synthetic thickeners

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACRYSOL™ ASE 60 ER</td>
<td>ASE&lt;sup&gt;1&lt;/sup&gt; thickener, anionic</td>
<td>28</td>
</tr>
<tr>
<td>ACRYSOL DR-72</td>
<td>Associative thickener</td>
<td>30</td>
</tr>
<tr>
<td>ACRYSOL TT-615</td>
<td>Associative HASE&lt;sup&gt;2&lt;/sup&gt; thickener</td>
<td>30</td>
</tr>
<tr>
<td>ACRYSOL RM-998</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>ACRYSOL SCT-275</td>
<td></td>
<td>17,5</td>
</tr>
<tr>
<td>ACRYSOL RM-8W</td>
<td>Associative HEUR&lt;sup&gt;3&lt;/sup&gt; thickener, non-ionic</td>
<td>21,5</td>
</tr>
<tr>
<td>ACRYSOL RM-5000</td>
<td></td>
<td>18,5</td>
</tr>
<tr>
<td>ACRYSOL RM-2020-E</td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

<sup>1</sup> ASE: alkali swellable emulsion
<sup>2</sup> HASE: hydrophobically modified alkali swellable emulsion
<sup>3</sup> HEUR: hydrophobically modified ethoxylated urethane
<sup>4</sup> ETICS: External Thermal Insulation Composite System
Product Characteristics

Dow Construction Chemicals ™

**Solids [%]**

- ACRYSOL ™ ASE 60 ER ASE 1) thickener, anionic 28
  - Excellent low shear efficiency, great resistance to sedimentation and sagging.
  - Particularly suitable for dispersion based renders (ETICS 4)), sealants, flooring adhesives.

- ACRYSOL DR-72 Associative thickener 30
  - Shear thinning rheology modifiers, particularly suitable for sealants, flooring adhesives.

- ACRYSOL TT-615 Associative HASE 2) thickener 30
  - Very efficient low and mid shear builder. Suggested for high sag resistance.
  - Particularly suitable for dispersion based renders (ETICS 4)), sealants, flooring adhesives.

- ACRYSOL RM-998
  - Associative HEUR 3) thickener, non-ionic 20
  - Efficient low and mid shear builder. Enhanced sag resistance.

- ACRYSOL SCT-275 17,5
  - Good mid versus high shear efficiency, also generates low shear viscosity, can be used as sole thickener.
  - Contains solvent. Particularly suitable for fiber cement coating.

- ACRYSOL RM-8W 21,5
  - Broad utility mid shear builder, excellent leveling properties, particularly suitable for fiber cement coating.

- ACRYSOL RM-5000 18,5
  - Efficient high shear builder showing balanced mid shear efficiency, good leveling properties. Particularly suitable for fiber cement coating.

- ACRYSOL RM-2020-E 20
  - High shear builder, good leveling properties. Particularly suitable for fiber cement coating.

**Dilutable in Solids [%]**

- XIAMETER™ OFS 6341 Octyltriethoxysilane Solvent 98
- DOWSIL ™ Z 6689 Solvent dilutable mix of silane and organofunctional siloxane Solvent 98
- DOWSIL IE 6683 Non ionic emulsion of a mix of silane, siloxane and silicone resin Water 40
  - Designed as impregnation primer. Can be top coated Water 52,5
- DOWSIL IE 6694 Non emulsion of a mix of silane, siloxane and silicone resin. Low VOC according to CA regulations Water 60
- DOWSIL 1-6184 Neat/pure water soluble silane Water > 90
- DOWSIL IE 2610 Anionic emulsion of cross linked organosiloxane designed as impregnation film former Water 45

<table>
<thead>
<tr>
<th>Features of end-product</th>
<th>Hydrophobicity</th>
<th>Depth of penetration</th>
<th>Water contact angle (beading)</th>
<th>Weather resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>XIAMETER™ OFS 6341 Octyltriethoxysilane Solvent 98</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★★</td>
</tr>
<tr>
<td>DOWSIL ™ Z 6689 Solvent dilutable mix of silane and organofunctional siloxane Solvent 98</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★</td>
</tr>
<tr>
<td>DOWSIL IE 6683 Non ionic emulsion of a mix of silane, siloxane and silicone resin Water 40</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★</td>
</tr>
<tr>
<td>DOWSIL IE 6682 Non ionic emulsion of a mix of silane and silicone resin.</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★</td>
</tr>
<tr>
<td>DOWSIL IE 6694 Non emulsion of a mix of silane, siloxane and silicone resin. Low VOC according to CA regulations Water 60</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★</td>
</tr>
<tr>
<td>DOWSIL 1-6184 Neat/pure water soluble silane Water &gt; 90</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★</td>
</tr>
<tr>
<td>DOWSIL IE 2610 Anionic emulsion of cross linked organosiloxane designed as impregnation film former Water 45</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★</td>
</tr>
</tbody>
</table>

**Features of end-product**

- Hydrophobicity: ★★★★★
- Depth of penetration: ★★★★★
- Water contact angle (beading): ★★★★★
- Weather resistance: ★★★★★

**Properties/behavior of end-product**

- Excellent low shear efficiency, great resistance to sedimentation and sagging. Particularly suitable for dispersion based renders (ETICS®), sealants, flooring adhesives.
- Shear thinning rheology modifiers, particularly suitable for sealants, flooring adhesives.
- Very efficient low and mid shear builder. Suggested for high sag resistance. Particularly suitable for dispersion based renders (ETICS®), sealants, flooring adhesives.
- Efficient low and mid shear builder. Enhanced sag resistance.

- Good mid versus high shear efficiency, also generates low shear viscosity, can be used as sole thickener. Contains solvent. Particularly suitable for fiber cement coating.
- Broad utility mid shear builder, excellent leveling properties, particularly suitable for fiber cement coating.

- Efficient high shear builder showing balanced mid shear efficiency, good leveling properties. Particularly suitable for fiber cement coating.
- High shear builder, good leveling properties. Particularly suitable for fiber cement coating.
Additives | Dispersants

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>OROTAN™ N-4045</td>
<td>Polyacid, sodium salt</td>
<td>45</td>
</tr>
<tr>
<td>OROTAN 731 A ER</td>
<td>Hydrophobic copolymer, sodium salt</td>
<td>25</td>
</tr>
<tr>
<td>OROTAN 165</td>
<td>Hydrophobic copolymer, ammonium salt</td>
<td>21.5</td>
</tr>
<tr>
<td>OROTAN 681</td>
<td>Hydrophobic copolymer, ammonium salt</td>
<td>35</td>
</tr>
<tr>
<td>OROTAN 850 ER LO</td>
<td>Polyacid, sodium salt</td>
<td>30</td>
</tr>
</tbody>
</table>

1) ETICS: External Thermal Insulation Composite System

Additives | Opaque polymers

<table>
<thead>
<tr>
<th>Product</th>
<th>Characteristics</th>
<th>Solids [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROPAQUE™ Ultra E</td>
<td>Hollow sphere opaque polymer</td>
<td>30</td>
</tr>
</tbody>
</table>

More applications we serve

Mineral wool thermal insulation
AQUASET – the environmentally advanced alternative binder for mineral wool insulation

Dow Construction Chemicals offers thermosetting resins that can be used as an alternative to traditional formaldehyde based resins for binding mineral fibers in the production of insulation blanket products that go into building insulation systems and specialty insulation.

1) Orotans are made without formaldehyde or formaldehyde generating materials and do not release formaldehyde under normal operating conditions.
## Product Characteristics

<table>
<thead>
<tr>
<th>Properties/behavior of end-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly efficient dispersant with good pigment wetting. Particularly suitable for dispersion based renders (ETICS(^1)), fiber cement coating.</td>
</tr>
<tr>
<td>Enhanced wet adhesion, good color acceptance, particularly suitable for fiber cement coating.</td>
</tr>
</tbody>
</table>

## Concrete admixtures

We also make precursors allowing for efficient production of PCE superplasticizers water reducers for concrete admixtures.

For more detailed information on the products available for these applications, please contact us.
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