Description
Sigma 412 is a high active admixture formulated to reduce the permeability of concrete mixes. It is used to significantly reduce water absorbency.

Applications
Sigma 412 is based upon a stabilised dispersion of a blend of insoluble long chain fatty acid salts which form a permanent hydrophobic layer within the cast stone pore matrix.

Benefits in Concrete
- Open texture blocks
- Lightweight blocks
- Masonry blocks
- Aerated blocks
- Block paving
- Ready mixed concrete

Properties
<table>
<thead>
<tr>
<th>Nature</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Milky White</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.02 g/cm³</td>
</tr>
<tr>
<td>pH</td>
<td>11.0</td>
</tr>
<tr>
<td>Chloride Content</td>
<td>&lt;0.10%</td>
</tr>
<tr>
<td>Na₂O equivalent</td>
<td>&lt;1.00%</td>
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Addition Rates
Dosage rates vary dependant on mix design, process, aggregate type and the desired effect but typically:

500mls - 3000mls per 100 kg cement
(0.50% - 3.00% by weight of cement)

Standards
Sigma 412 complies with the requirements of BS EN 934-2 and is produced in accordance with the ISO 9001 Quality Management Standard and the ISO 14001 Environmental Management Standard.
Compatibility
SiMa 412 is compatible with all Portland cement systems, including GGBS, Pfa and limestone blends.
SiMa 412 is compatible with all Oscrete admixtures, but should be added to the mix separately.

Storage
SiMa 412 should be protected from extreme temperatures and if stored unopened within the range 10°C - 30°C will have a minimum shelf life of 12 months.

Handling
SiMa 412 is a non hazardous product but in line with normal handling procedures, personal protective equipment should be worn.

Refer to the Material Safety Data Sheet for full details.

Packaging
200 litre drums, 1000 litre IBCs and bulk deliveries.

Notes
SiMa 412 should be added neat, immediately after the water or at the end of the mixing process and not directly onto the cement. A mixing time of at least 30 seconds is recommended after the addition of the admixture.

If frozen SiMa 412 will not recover, avoid freezing at all cost, store above 10°C.

Please consult the OSCRETE Technical Department for advice on admixture selection.

Disclaimer
The physical properties quoted are typical, and should not be taken as a specification. The information supplied in our literature is based on data and experience and is given in good faith. Our policy is one of continuous research and development and we reserve the right to update this information at any time; customers should therefore ensure they have the latest issue. Whilst we guarantee the consistent high quality of our products, we have no control over the circumstances in which our materials are used, site conditions or the execution of the work and are therefore unable to accept any liability for any loss or damage which may arise as a result thereof. Materials are supplied in accordance with our standard conditions of sale.