High-Efficiency in Cementitious Waterproofing
MasterSeal 6100 FX
MasterSeal 560
Master Builders Solutions

The Master Builders Solutions brand brings all of our expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry. The know-how and experience of a global community of construction experts form the core of Master Builders Solutions.

We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

A Major Challenge: Waterproofing along the Water Cycle

Concrete structures along the water cycle are in permanent contact with water and need to remain operational without interruptions.

**Waterproofing is a major challenge**

Water can penetrate building materials by various means, such as capillary absorption, ponding, hygroscopic uptake or condensation. The effective waterproofing of dams, channels, aqueducts, water tanks, water towers, waste water plants or other building structures, to prevent water ingress or loss, is a major challenge requiring easy application, a quick return to service and long-term durability.

**Concrete structures are not static**

Changes in load conditions, temperature, humidity and other internal factors make concrete structures move and crack. Preventing water losses caused by these unavoidable movements is an additional challenge.
The evolution
Cement-based waterproofing membranes have been successfully used throughout the last century to prevent the negative influences of water on concrete and other building materials. Master Builders Solutions has been providing cementitious waterproofing solutions for more than 100 years and has used expertise and know-how to set various milestones in the evolution and performance of this technology.

Cementitious membranes
Cementitious membranes are naturally compatible with concrete and mortars and use moisture from the substrate as an adhesion promoter. The latest advances provide durable and sustainable high-performance solutions even when sprayed or manually applied to a thickness of only 2 mm, with improved workability for an aesthetic finish.

The ongoing development of our waterproofing products based on long term experience, is giving rise to a new generation of cementitious membranes, which combines the advantages of this technology with a unique set of features: lightweight, elastic, fast and sustainable.

1912
MasterSeal rigid
- One component
- Cement matrix
- Admixtures to improve waterproofing properties

1980
MasterSeal flexible
- Two components: addition of liquid polymer to a rigid system
- Flexibility and elasticity depending on the polymer/cement ratio and type of polymer
- Polymer dosage strongly influences formulation cost

2012
MasterSeal 6100 FX
- One component, elastic, fast and lightweight
- High dosage of exclusive polymers and new complex binder system
- Cost control by consumption reduction through the use of lightweight formulation

2015
MasterSeal 560
- Two components, high performance and lightweight
- New complex binder system and selected polymer dispersions
- Faster, higher elasticity down to -20 °C
The unique combination of properties which prolongs the service life of cementitious waterproofing membranes brings the existing technology into a new era.

Keeping the benefits, exceeding the limits
The new generation of cementitious waterproofing solutions by Master Builders Solutions combines the benefits of the cement-based products with the latest advances in polymer technology. The results: stability, rapid hardening, fast internal drying, low shrinkage, flexibility, elasticity and UV-stability – all rolled into ONE component.

New complex binder system
The new binder system is responsible for stability, rapid hardening and fast internal drying. Reaction times have been significantly reduced with binder hydration completed within 24 – 72 h, and no late hydration embrittlement. This new binder system supports high layer thickness without cracking and shows excellent sulphate resistance throughout its service life.

High dosage of exclusive polymers
The exclusive polymers are responsible for flexibility, elasticity and UV stability. Polymer particles coat cement grains and aggregates, forming a continuous matrix throughout the structure. This enhances adhesion and cohesion, restrains microcrack propagation and improves the watertightness of the membrane.
The New Generation of Cementitious Waterproofing

Benefits translated into savings: MasterSeal 6100 FX and MasterSeal 560 are highly flexible and elastic cementitious membranes, with low consumption and rapid curing.

<table>
<thead>
<tr>
<th>Features</th>
<th>MasterSeal 6100 FX</th>
<th>MasterSeal 560</th>
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<tbody>
<tr>
<td>LIGHTWEIGHT</td>
<td>85% Increased yield*</td>
<td>40% Increased yield*</td>
</tr>
<tr>
<td>ELASTIC</td>
<td>-10 °C Elasticity kept even at low temperatures</td>
<td>-20 °C Elasticity kept even at low temperatures</td>
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<tr>
<td>FAST</td>
<td>3 Days Return to service of the structure**</td>
<td>1 Day Return to service of the structure**</td>
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* Compared to average performance of traditional cementitious membranes
** Times measured at 23 °C and 65% relative humidity
MasterSeal 6100 FX

The innovation for multi-purpose waterproofing and concrete protection.

<table>
<thead>
<tr>
<th>Examples of application</th>
<th>The challenge</th>
<th>Special features</th>
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<tbody>
<tr>
<td>Process water reservoir.</td>
<td>Strong reduction in material and in packaging waste</td>
<td>One component product</td>
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<tr>
<td>Montjo (Salamanca - Spain)</td>
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<tr>
<td>Cordee Montblanc tunnel</td>
<td>Easy application, reduced consumption and elasticity</td>
<td>Reduced consumption and increased yield up to +85%</td>
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<tr>
<td>(Italy)</td>
<td></td>
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<tr>
<td>Presa Albagés</td>
<td>High watertightness under pressure</td>
<td>Resistance to 5 bar pressure with only 2 mm thickness</td>
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<tr>
<td>(Lleida - Spain)</td>
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MasterSeal 560

The innovation for highly challenging applications in waterproofing and concrete protection.

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<tr>
<td>Tank for potable water</td>
<td>Application in drinking water tanks</td>
<td>Meets potable water guidelines*</td>
</tr>
<tr>
<td>Tank for industrial process water</td>
<td>Quick return to service</td>
<td>Back in service after only 1 day</td>
</tr>
</tbody>
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Low temperature elasticity and UV stability finish to support dynamic in exterior applications in cold climates

Maintained aspect, watertightness and protection down to -20 °C

* Please check local regulations
Sustainable Waterproofing Solutions

The Eco-Efficiency Analysis is a quantitative tool to measure sustainability. Based on a holistic method, used by many companies, it helps you to decide which products are ecologically and economically the best choices for your needs.

Waterproofing with MasterSeal 6100 FX brings significant cost savings and a high degree of eco-efficiency as it:
- Reduces greenhouse gas emissions by up to 70%
- Reduces acid rain emissions by up to 80%
- Reduces summer smog (NMVOC) by up to 90%
- Reduces ozone hole depletion by a minimum of 70%

The Eco-Efficiency Analysis examined a range of waterproofing membrane technologies for a typical reservoir in Europe. The comparison included the application of the membranes and the maintenance thereof over a period of 25 years.
Certified Performance

Complementary tests prove the performance of the new generation of cementitious waterproofing, MasterSeal 6100 FX and MasterSeal 560, applied at only 2 mm thickness.

**Performance:**抵抗水压至5巴（5 atm）和2巴负压以上

**Performance:**耐盐和防粉化

**Performance:**饮用水认证**

**Performance:**UV稳定白色和浅灰色：在干湿循环下进行外部测试，暴露于2000小时的紫外线辐射

* Value registered for MasterSeal 6100 FX
** Please check local regulations
Master Builders Solutions for the Construction Industry

MasterAir
Complete solutions for air entrained concrete

MasterBrace
Solutions for concrete strengthening

MasterCast
Solutions for the manufactured concrete product industry

MasterCem
Solutions for cement manufacture

MasterEase
Low viscosity for high performance concrete

MasterEmaco
Solutions for concrete repair

MasterFinish
Solutions for formwork treatment and surface improvement

MasterFlow
Solutions for precision grouting

MasterFiber
Comprehensive solutions for fiber reinforced concrete

MasterGlenium
Solutions for high performance concrete

MasterInject
Solutions for concrete injection

MasterKure
Solutions for concrete curing

MasterLife
Solutions for enhanced durability

MasterMatrix
Advanced rheology control for concrete

MasterPel
Solutions for hydrophobization, anti-efflorescence and surface protection

MasterPolyheed
Solutions for mid-range concrete

MasterPozzolith
Solutions for water-reduced concrete

MasterProtect
Solutions for concrete protection

MasterRheobuild
Solutions for high strength concrete

MasterRoc
Solutions for underground construction

MasterSeal
Solutions for waterproofing and sealing

MasterSet
Solutions for set control

MasterSphere
Solutions for guaranteed freeze-thaw resistance

MasterSuna
Solutions for sand and gravel in concrete

MasterSure
Solutions for extraordinary workability retention

MasterTop
Solutions for industrial and commercial floors

Master X-Seed
Advanced accelerator solutions for concrete

Ucrete
Flooring solutions for harsh environments

QUANTIFIED SUSTAINABLE BENEFITS
ADVANCED CHEMISTRY BY MASTER BUILDERS SOLUTIONS

Let the numbers do the talking: We have portrayed some of our most eco-efficient product solutions for concrete and precast production, construction, civil engineering, and flooring.

sustainability.master-builders-solutions.com