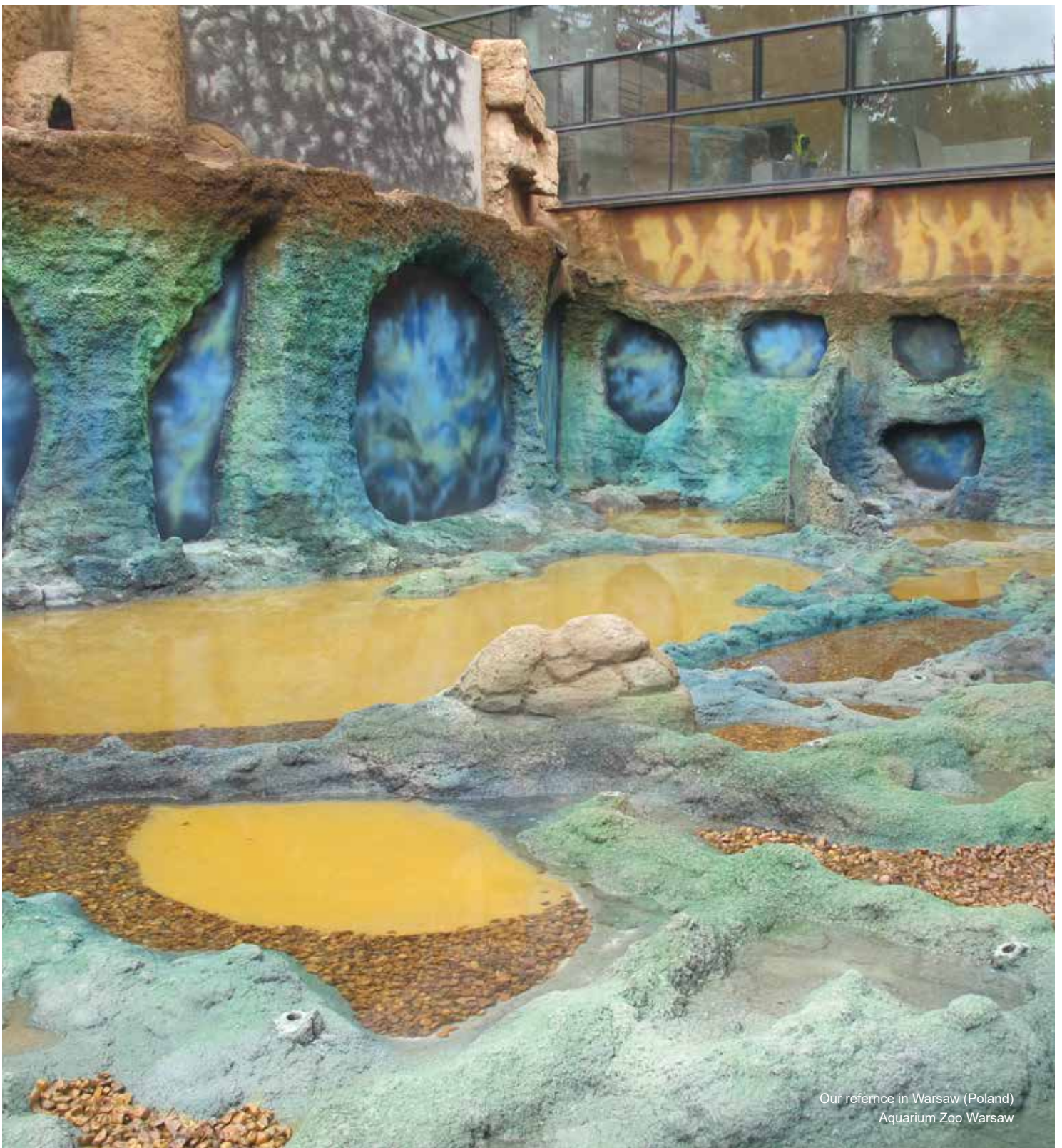




## MasterSeal M 689

A 100 % Pure Polyurea  
Membrane for Waterproofing  
in Industry and Infrastructure





Our reference in Warsaw (Poland)  
Aquarium Zoo Warsaw

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# 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.

The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, solutions for underground construction, waterproofing solutions, sealants, concrete repair & protection solutions, performance grouts, performance flooring solutions and solutions for on- and offshore wind energy.

## Our comprehensive portfolio

- Concrete admixtures
- Cement additives
- Chemical solutions for underground construction
- Waterproofing solutions
- Sealants
- Concrete repair and protection solutions
- Performance grouts
- Wind turbine grouts
- Performance flooring solutions





## What is MasterSeal M 689 and what makes it so Special?

MasterSeal M 689 is a low density and low viscosity 100% polyurea membrane. Its exclusive properties, make MasterSeal M 689 a highly versatile product that can be used in several applications, and especially the most demanding ones, where waterproofing capacities have to be combined with resistance to chemicals dissolved in water.

### Main benefits:

- High elasticity, crack-bridging and high mechanical resistance.
- Improved durability and long term performance.
- Application to horizontal surfaces and detailing in only one step. Faster completion.
- High resistance to wearing and erosion. Surface can be directly exposed to mechanical loads.
- Fully bonded and monolithic – no laps, welds or seams – no risk of infiltration by water.
- Spray application 1:1 – suitable for most internationally available, two component spray equipment.
- Very fast curing. Immediate serviceability.
- According to European regulations
- UV-stability allows faster finishing
- Wide application window for outdoor

### Main advantages:

- high mechanical resistance
- high chemical resistance
- high thermal resistance
- high impact resistance
- high elasticity/crack-bridging properties
- watertight – but open for vapour diffusion

... and all this in one combination!



Application on complex substrates



Application in harsh environments



## Where to use MasterSeal M 689?



### Secondary Containment

Where MasterSeal M 689 offers a highly durable membrane that can be applied both indoors and outdoors, with long term chemical resistance and maintained elasticity.



### Industrial Waterproofing

Where high chemical resistance of MasterSeal M 689 offers an effective protection against corrosive vapors and chemicals that could damage concrete and steel structures.



### Waste Water Treatment Plants

High mechanical resistance against impact and abrasion as well as chemical resistance against acids, makes MasterSeal M 689 an excellent waterproofing option for areas exposed to incoming wastewater.



### Roofs

MasterSeal M 689 can be applied on roofs with complicated shapes. Its high resistance to UV and weathering allows the use of the membrane without topcoat where aesthetics is not a requirement.



### Parking Decks

MasterSeal M 689 applied in parking decks shows quick hardening and early serviceability, together with high mechanical resistance and skid resistance is achieved by controlled applied overspray.



### Other

MasterSeal M 689 can be applied in aquariums, architectural buildings, biogas plants, etc. where its waterproofing, elastic and crack-bridging properties ensure high durability and performance.



## What are the Main Properties of MasterSeal M 689?



### Fire resistance classification

According EN 13501-1 (for floors): C<sub>fl</sub> – s1

According EN 13501-5 (for roofs): B<sub>Roof</sub> – T4



### Static and dynamic crack-bridging

Static crack-bridging: EN 1062-7 (A)/Class A5 (+23°C)

Dynamic crack-bridging: EN 1062-7 (B)/Class B4.2 (–20°C)



### UV stable – does not need any additional topcoat

Even for exposed outdoor areas with chemical, mechanical stress.



### Easy application – even with difficult geometric areas

Industrial surfaces often mean complex shapes and areas with lots of penetrations and other details; too complex for hand applied waterproofing. MasterSeal M 689 spray application without the need for a topcoat, accelerates the completion of these projects.

### Chemical resistance (according EN 13529)

Group	Description	Result
DF 1	Gasoline	Class II
DF 2	Aviation fuels	Class I
DF 3	Fuel oil, Diesel fuel and other unused combustion motor oils	Class III
DF 4	All hydrocarbons as well as mixtures containing benzol with max. 5 Vol. %	Class I
DF 4b	Crude oils	Class III
DF 4c	Used combustion motor oil and used automotive transmission oil with a flash point >55 °C	Class III
DF 5	Mono- and polyvalent alcohols (up to a max. 48 vol.-% methanol), glycol ethers	Class I (7d)
DF 5a	All alcohols and glycol ethers (incl. 5 and 5b)	Class I
DF 5b	Single and multi-valent alcohols $\geq C_2$	Class I (7d)
DF 7b	Biodiesel fuel	Class III
DF 8	Aqueous solutions of aliphatic aldehyde up to 40 %	Class I (7d)
DF 9	Aqueous solutions of organic acids (carboxylic) up to 10 % as well their salts	Class III
DF 10	Mineral acids (non oxidizing) up to 20% and inorganic salts in aqueous solution (pH < 6) except HF	Class III
DF 11	Inorganic lye (except oxidizing) and inorganic salts in aqueous solution (pH > 8)	Class III
DF 12	Aqueous solutions of inorganic non-oxidizing salts with a pH value between 6 and 8	Class III
DF 13	Amines as well as their salts (in aqueous solution)	Class I
DF 14	Aqueous solutions of organic surfactants	Class III



**Class I: 3d**  
**Class II: 28d without pressure**  
**Class III: 28d with pressure**

Reduction in hardness of less than 50 % when measured according to Buchholz method, EN ISO 2815, or Shore method EN ISO 868 24 h after the coating is removed from immersion in the test liquid.



# Approvals and Certificates

**SGS**

**INITIAL TYPE TEST ACCORDING TO EN 1504-2**

**Masterseal 689**

Final Report

Ordering party / Client: BASF Polyurethanes Benelux B.V.  
de heer A. van Oorsouw  
Postbus 207  
5280 AG BOXTEL

Order number / Our reference: A846660R20090228b/IR/SSI

Authorized / Authorisation: ir. R. Leppers

Date: April 24, 2012

Author / Author: ing. J.F.F. Richartz

CE marked according EN 1504 part 2

**Test report**

Order no.: 2198021-01-eng  
Employee in charge: Lechner

Client: BASF Construction Chemicals Europe AG  
Industriest. 28  
8207 Schaffhausen, Schweiz

Date of order: 1 April 2014

Order reference: Mr Schapka

Purpose of order: Testing of the resistance of the concrete coating system "MasterSeal M 689" according to EN 13529 (December 2003) to different testing liquids in accordance with Annex A:

Call: 31 86 884  
Certificate: 01/10/14/01/01  
Customer: VAF, 218274  
R.J. de Vriesweg  
Industriewijk 19  
7521 HX  
Soort No: 218201  
This document contains pages  
Page No: 3

Export of the document is not permitted without the express written consent of SGS Benelux.

The test results are only valid in the context of this test.

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TUV

Nir 2001 sok. sht. Service Center  
Geotechnical Engineering  
18880 Hershovitz  
Beit Shean  
Israel

Chemical resistance according EN 13529

**EXOVO**  
Innovative  
Building Systems

**Teknis Advizins Assuris**

**TITLE:**  
CLASSIFICATION REPORT  
FOR ROOF/ROOF  
COVERINGS EXPOSED TO  
EXTERNAL FIRE  
EN 13501-0: 2005 +A1:  
2009

Notified Body No:  
0833

**Product Name(s):**  
"MasterSeal M 689"

**Report No.:**  
WF 247501

**Date:**  
1

**Prepared for:**  
BASF Construction  
Chemicals Europe AG  
Industriestrasse 28, 8207  
Schaffhausen  
Switzerland

**Date:**  
5<sup>th</sup> January 2015

**SGS**

Fire resistance according EN 13501 part 1  
Fire resistance according EN 13501 part 2

**LGA**  
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Campus LGAL s/n  
Avenida de Cornisa 20  
E-08035 Sabadell (Barcelona)  
T +34 93 581 20 00  
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www.applus.com

**Applus**  
LGA

**Belleferra** : 26th October 2012

**Dossier number** : **12/001-1618**

**Petitioner Reference** : **BASF CONSTRUCTION CHEMICALS ESPAÑA, B.L.**  
N.I.F.: B-31721541  
Carretera del Mig, 219  
08907 L'Hospitalet de Llobregat (Barcelona)

**TEST REPORT**

**RECEIVED MATERIAL:**  
On 03rd September 2012, a sample of polyurea membrane, was received at Applus-LGAL, with the following references, according to the Petitioner:

**MASTERSEAL 689**

**DETERMINED TESTS:**  
1- Influence of combustion products on water intended for human consumption: Migration of substances, UNE-EN 12873

**TEST DATE:** From 03/09/2012 to 24/10/2012.

**RESULTS:** See attached pages.

Firmado digitalmente por Juan Martínez Egua  
Responsible For Construction Materials  
LGA Technological Center S.A.

Firmado digitalmente por Raúl Martín García  
Technician Responsible  
LGA Technological Center S.A.

The results included in this document refer exclusively to the indicated materials and has been tested according to the specifications given.

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Page 1 - The present document consists of **3** pages long, whereof **0** are appendices

LGA Technological Center S.A. inscrita en el Registro Mercantil de Barcelona, Tomo 60.635, Folio 197, Nº 1 de Inscripción de 17/11/2005

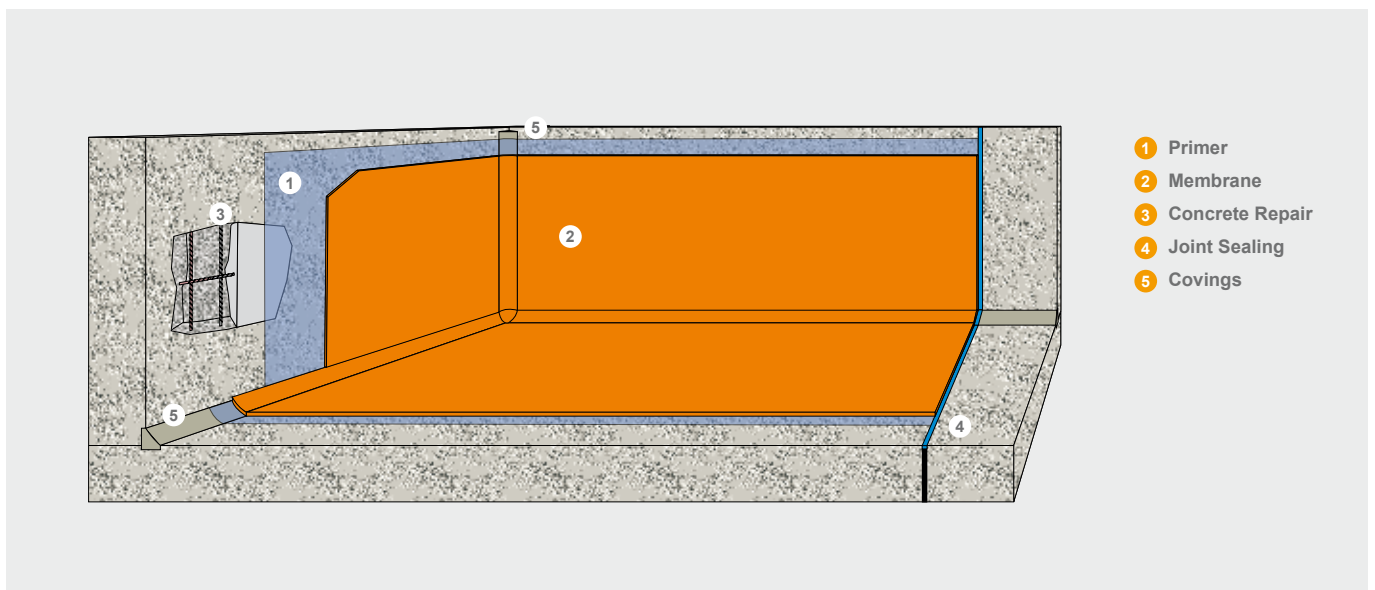
Contact with potable water according Drinking  
Water Directive





# System Layout

The MasterSeal M 689 waterproofing system is comprised of a layer of membrane that is applied fully bonded onto the primed substrate.



	Product	Thickness approx.	Consumption approx.
<b>1. Primer</b>			
Primer	<b>MasterTop P 617</b> Special primer for MasterSeal M membranes applied on mineral substrates	0.25 mm	0.35 kg/m <sup>2</sup>
Alternative primer for humid substrates	<b>MasterSeal P 385</b> Epoxy-cement based primer and levelling coat for MasterSeal M membranes applied on damp surfaces	1 mm	1.5 kg/m <sup>2</sup>
<b>2. Membrane</b>			
Membrane	<b>MasterSeal M 689</b> Elastomeric, 100% polyurea membrane for waterproofing concrete surfaces exposed to chemical or mechanical loads	2 mm (1 coat)	2.1 kg/m <sup>2</sup>

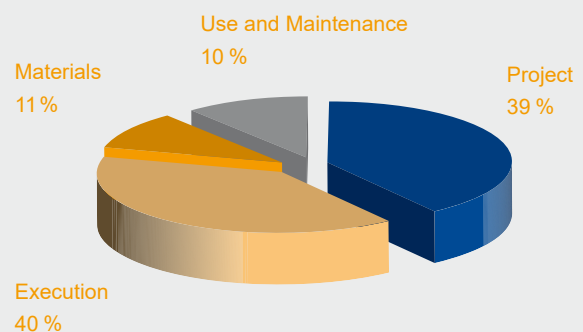


# Risk Management: Master Builders Solutions System Products for Successful Projects

This guide illustrates the waterproofing of different types of elements using MasterSeal M 689. Whatever the area to be treated, several components are required. The right combination and compatibility are essential to ensure successful performance.

Based on our global knowledge of construction physics and our experience and track record in the repair and waterproofing of water structures, we know that Risk Management is a unique and relevant topic in the construction industry and requires reliability in all respects, including products, full system solutions (from membranes to detailing products), professional consultancy, approved and warranted application, etc.

Causes of construction failures and the probability of their occurrence have been identified following several surveys in Europe, resulting in four basic categories of deficiency: Design, Construction, Materials, Use and Maintenance.



To control these risks and secure their investment, owners, investors, general contractors and engineers first and foremost need complete waterproofing solutions supplied by a reliable manufacturer with proven experience in Risk Management.

Risk Management provided by Master Builders Solutions focuses on reducing the probability of the occurrence of the causes that have been identified as damage generators:

- Detailed analysis of needs and review of specifications and drawings to ensure perfect waterproofing.
- Improving planning reliability of waterproofing installation objectives with defined product systems that include not only waterproofing membranes but also detailing such as joint treatment, crack injection, substrate repair, etc.
- Ensuring greater certainty about technical application and projected durability based on expert workmanship.
- Managing installation via Master Builders Solutions Licensed Contractors and/or Master Builders Solutions Approved Applicators.



**1 Experience:**

Our Master Builders Solutions experts solve challenges on jobsites worldwide. This is proven by our extensive list of job references.



**2 Expertise in application:**

Master Builders Solutions System Partners, following an intensive and continued training programme, offer the reliable and professional application of systems. This ensures the successful completion of jobs and, thus, long term serviceable structures. Our exclusive Master Builders Solutions System Warranty includes a documented application carried out by a Master Builders Solutions System Partner.



**3 Design and specification:**

Our Master Builders Solutions experts contribute to the analysis and design process, combining single products into complete system solutions.



**5 Detailing:**

We understand the necessary products and solution approach, including details (joints, transition points, penetrations, etc.) that are often neglected, although they represent the most vulnerable points.



**4 Product systems:**

Products with high performance characteristics are required in this and all other applications, but it is always essential that these products are designed and thus certified for the specific intended use. Our comprehensive range of waterproofing systems under Master Builders Solutions is documented and certified in different European countries for use in the waterproofing of different building areas.



# 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](https://sustainability.master-builders-solutions.com)



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