



# Protecting Concrete

Solutions to Extend the  
Life of Your Structure



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## Master Builders Solutions from BASF

**Building on partnership.** Our Master Builders Solutions experts find innovative and sustainable solutions to meet your specific construction needs. Our global experience and network help you to be successful – today and tomorrow.



### Master Builders Solutions

The Master Builders Solutions brand brings all of BASF's 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 BASF 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 BASF 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, chemical solutions for underground construction, waterproofing solutions, sealants, concrete repair and protection solutions, performance grouts, performance flooring solutions.



# Repair and Protection Systems from Master Builders Solutions

## Competence profile of repair and protection systems

As a full-range supplier of repair and protection products, we offer customized solutions for your structure. We do not, however, only look at the visible damage, but also provide support for the evaluation of the causes of your structural damage. As a result, we are able to offer you an integrated solution, providing a specifically designed product combination based on the needs of your individual structure. The comprehensive technical construction knowledge of our salesrepresentatives will ensure that you receive the best solutions for your construction requirements.

For owners, planners and architects we provide information and guidance on the advantages and benefits of the system solutions worked out by our experts.

Specialist applicators and contractors receive guidance and support concerning the application of the chosen system solution. Our development experts have placed special emphasis on making all products user friendly and easy to work with. With in-house training and support on construction sites we can achieve the ambitious target of the safe and high quality application of our products.

We offer you a range of products for the repair and protection of concrete structures, including crack injection, chemical anchoring, reinforcement corrosion protection, structural repair mortars, trafficable repair mortars and repair mortars for cosmetic repair and reprofiling, as well as concrete protection to accomplish the refurbishment.

All products are certified by independent testing institutes in compliance with national and/or international standard requirements. Our production sites are externally controlled in compliance with DIN ISO 9001 to guarantee high and consistent product quality.

As an applicator or owner, you will benefit from our safe and durable solutions, especially designed for your construction needs. With our system solutions, we help you to extend the service life of your construction and, lastly, make a significant contribution to sustainability.





# Extending the Life Cycle of Concrete Structures

## Life cycle extension:

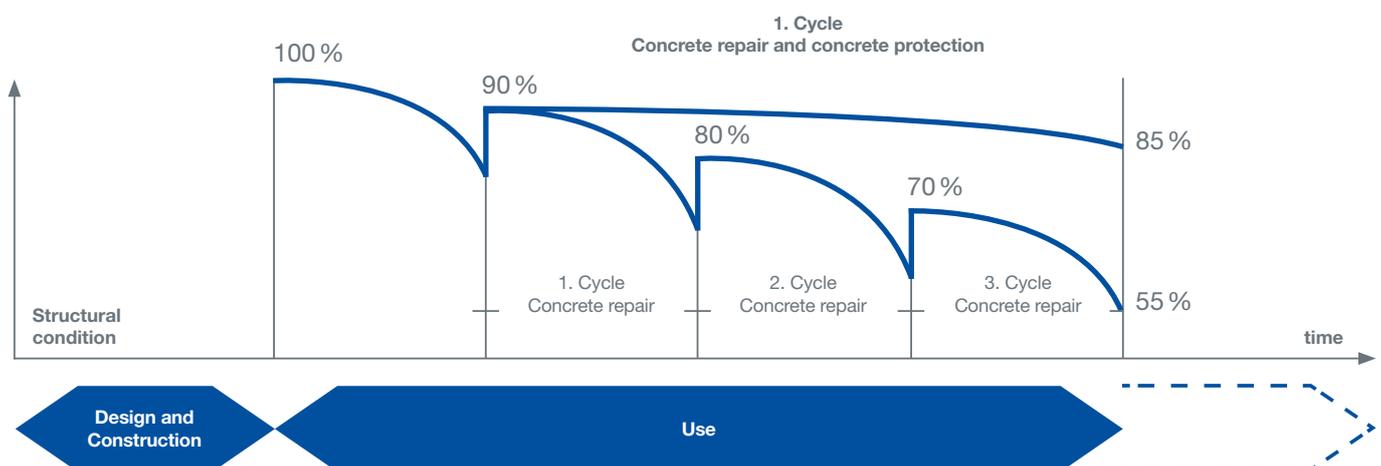
Today, if you are the owner or architect, the wide range of products available to specify for your construction presents a great challenge:

## Construction products:

Many construction material suppliers offer similar products. But are these products really comparable? Many of our products for protection and concrete repair are certified in compliance with EN 1504, and many decision makers choose their construction materials based on this standard. Therefore, it is well worth taking a closer look at this standard: mandatory and voluntary test methods do exist for testing products. Our MasterProtect products for protecting concrete, in particular, are tested over and above the mandatory testing methods, providing significantly better and more durable protection for concrete structures based on superior product properties. The properties of most of our repair mortars are far in excess of EN 1504's requirements – very high compressive strengths, weather and freeze-thaw resistance allow continuous use of those mortars even in highly frequented traffic areas.

## System solutions:

Choosing the most suitable solution for refurbishment can have a big impact on the life cycle of a concrete structure. While many owners decide to use high quality concrete repair materials, they do not consider that there is more to do after the concrete repair is finished. Despite repairing a concrete structure with concrete repair mortars, further damages may occur some years later, because only the damaged concrete has been replaced – but insufficient concrete cover still remains. Is that really efficient? By using concrete protection after the concrete repair has been completed, the entire structure can be protected for longer and repair cycles can be prolonged significantly. Although the total cost of the first refurbishment is higher when compared to solutions without protection, it is less expensive when a period of 10 to 15 years from the first refurbishment is taken into account.



Example of interaction of protection materials and repair mortar (depends on project condition and is therefore different for each project).



# EN 1504

## Certified solutions

Coatings play a vital role in the overall strategy of returning structures to their original appearance and design function. Because concrete structures are often exposed to aggressive environments, it is necessary to protect new and refurbished structures from degradation and deterioration. BASF offers a comprehensive range of coatings which are certified according to EN 1504 part 2.

EN 1504 provides the construction sector with complete and detailed guidelines for concrete repair and protection. Part 9 of EN 1504 describes principles and repair strategies based on surface-applied coatings.

## EN 1504 – Products and Systems for the Protection and Repair of Concrete Structure, Definitions, Requirements, Quality Control and Evaluation of Conformity.

Since December 31st 2008, EN 1504 has been fully adopted as a harmonized norm within the EU.

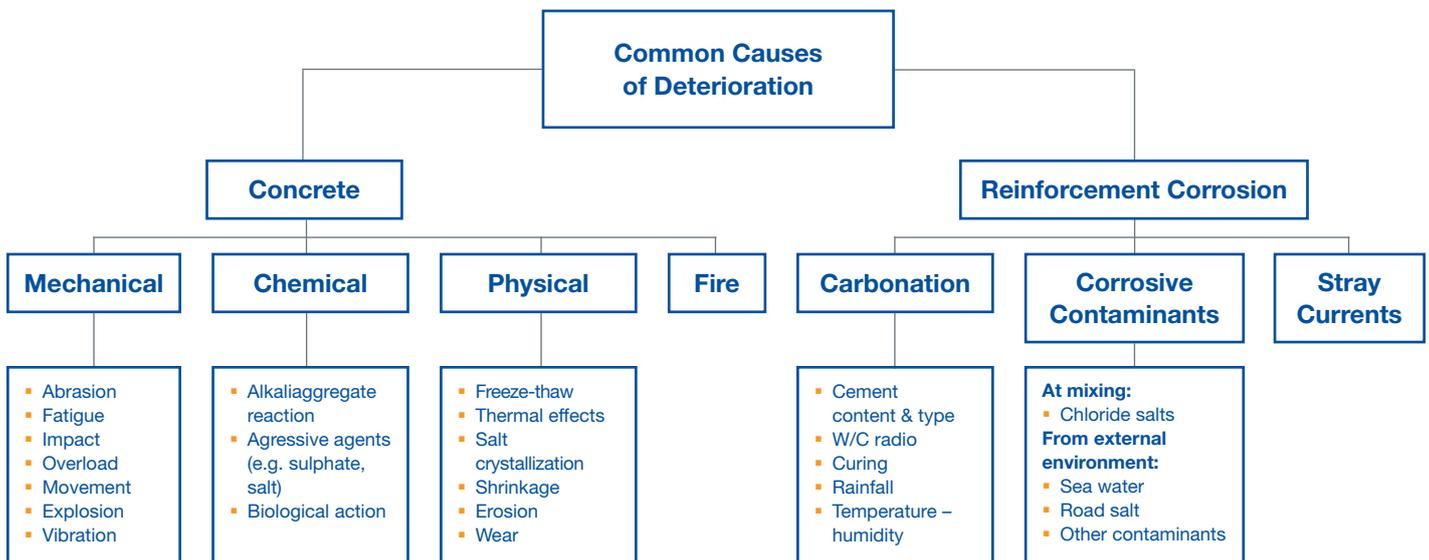
## Classification of damage

### Assessment of defects and their causes in accordance with EN 1504-9

An assessment shall be made of the defects in the concrete structure, their causes, and of the ability of the concrete structure to perform its function.

The process of assessment of the structure shall include but not be limited to the following:

- the visible condition of the existing concrete structure
- testing to determine the condition of the concrete and reinforcing steel
- the original design approach
- the environment, including exposure to contamination
- the history of the concrete structure including environmental exposure
- the conditions of use, (e.g. loading or other actions)
- requirements for future use



## Principles and methods of protection and repair

### Principles and methods of protection and repair according to EN 1504-9

The principles of protection and repair are based on chemical, electrochemical or physical principles that can be used to prevent or stabilize the deterioration of concrete or electrochemical corrosion on the steel surface, or to strengthen the concrete structure.

Only methods which comply with the principles shall be selected, taking into account any possible undesirable consequences of applying a particular method or combination of methods under the specific conditions of the individual repair.

Other methods not described in EN 1504 may be used if there is documented evidence that they comply with one or more principles.

## EN 1504, Part 9: Principles and methods

<b>Principle 1:</b>	<b>Protection against ingress</b>
Reducing or preventing the ingress of adverse agents, e.g. water, other liquids, vapour, gas, chemicals and biological agents.	
Method 1.1: Method 1.3:	Hydrophobic impregnation Surface coating with and without crack bridging ability
<b>Principle 2:</b>	<b>Moisture control</b>
Controlling adverse reactions by allowing concrete to dry, as well as preventing moisture build-up. Adverse reactions may include alkali-silica reaction and sulfate attack. Saturated concrete may also be susceptible to freeze-thaw damage	
Method 2.1: Method 2.3:	Hydrophobic impregnation Surface coating
<b>Principle 5:</b>	<b>Increasing physical resistance</b>
Increasing resistance to physical or mechanical attack.	
Method 5.1:	Surface coating
<b>Principle 6:</b>	<b>Resistance to chemicals</b>
Increasing resistance of the concrete surface to deterioration by chemical attack.	
Method 6.1:	Surface coating
<b>Principle 7:</b>	<b>Preserving or restoring passivity</b>
Creating chemical conditions in which the surface of the reinforcement is maintained in or is returned to a passive condition.	
Method 7.4:	Realkalisation of carbonated concrete by diffusion
<b>Principle 8:</b>	<b>Increasing resistivity</b>
Increasing the electrical resistivity of the concrete.	
Method 8.1: Method 8.3:	Hydrophobic impregnation Surface coating
<b>Principle 9:</b>	<b>Cathodic control</b>
Creating conditions in which potentially cathodic areas of reinforcement are unable to drive an anodic reaction.	
Method 9.1:	Limiting oxygen content (at the cathode) by saturation or surface coating.



Principle 1: Protection against ingress of chlorides  
Torres Blancas, Alicante, Spain;  
Protection with Corrosion Inhibitor MasterProtect 8000 CI



# Exposure Classes According to EN 206-1

## Environmental exposure classes

### Durability of concrete

The durability of concrete can be simply defined as the ability to resist the following effects:

- Weathering action
- Chemical attack
- Abrasion
- Any process of deterioration

In order to achieve a durable concrete, engineers devise different designs depending on the environmental and service conditions of the structure. Environmental conditions are the most important factor to affect the service life of a designated concrete.

The environments to which the concrete is to be exposed are identified in EN 206-1's Exposure Classes table. Using the planned service working life and the minimum concrete cover to reinforcement, the limiting values of composition are determined for each of the identified exposure classes.



## EN 206-1 Environment exposure classes

	No risk of corrosion or attack	Carbonation-induced corrosion				Chloride-induced corrosion						Freeze-thaw attack				Aggressive chemical environments		
						Sea water			Chloride other than from sea water									
		X0	XC 1	XC 2	XC 3	XC 4	XS 1	XS 2	XS 3	XD 1	XD 2	XD 3	XF 1	XF 2	XF 3	XF 4	XA 1	XA 2
Maximum w/c	–	0.65	0.60	0.55	0.50	0.50	0.45	0.45	0.55	0.55	0.45	0.55	0.55	0.50	0.45	0.55	0.50	0.45
Minimum strength class	C12/15	C20/25	C25/30	C30/37	C30/37	C30/37	C35/45	C35/45	C30/37	C30/37	C35/45	C30/37	C25/30	C30/37	C30/37	C30/37	C30/37	C35/45
Minimum cement content (kg/m <sup>3</sup> )	–	260	280	280	300	300	320	340	300	300	320	300	300	320	340	300	320	360
Minimum air content (%)	–	–	–	–	–	–	–	–	–	–	–	–	4.0a	4.0a	4.0a	–	–	–
Other requirements												Aggregate in accordance with EN 126200 with sufficient freeze-thaw resistance				Sulphate-resistant cement <sup>9</sup>		

## Exposure classes and protection technologies

### Need for concrete protection

Designing the concrete according to the minimum requirements of the exposure classes identified in EN 206-1 is not enough to achieve a durable concrete in the field. Properly manufacturing, compacting and curing the concrete are key parameters to achieve a durable structure. Due to the human factor involved in the workmanship of the concrete in manufacturing and placing it on site, it is also always a challenge to achieve the designed properties in respect of durability in new structures.

Considering the lack of concrete technology available before the 1980s, structures that are 30 years old or more and which represent the greater part of the infrastructure and industrial buildings in Europe, are susceptible in terms of durability. There is a high probability of poorer resistance against carbonation, corrosion, freeze-thaw, salt attacks etc.

For more extreme environments, particularly where very long service life is required or where chemical attack is an issue, consideration should be given to additional methods of protection such as corrosion inhibition, surface protection and special admixtures.

## Exposure classes and protection technologies

Class	Description of the environment	Protection Technology
No risk of corrosion or attack		
X 0	For concrete without reinforcement or embedded metal: all exposures, except where there is freeze-thaw, abrasion or chemical attack. For concrete with reinforcement or embedded metal: very dry	Decorative Paints
Corrosion induced by carbonation		
X C 1	Dry	Acrylic Coatings
X C 1	Permanently wet	N/A
X C 2	Wet, rarely dry	Acrylic Coatings
X C 3	Moderate humidity	Acrylic Coatings
X C 4	Cyclic wet and dry	Acrylic Coatings
Corrosion induced by chlorides other than from sea water		
X D 1	Moderate humidity	Corrosion Inhibition
X D 2	Wet, rarely dry	Corrosion Inhibition
X D 3	Cyclic wet and dry	Corrosion Inhibition
Corrosion induced by chlorides from sea water		
X D 1	Exposed to airborne salt but not in direct contact with sea water	Corrosion Inhibition
X D 2	Permanently submerged	N/A
X D 3	Tidal, splash and spray zones	Corrosion Inhibition
Freeze-thaw attack with or without de-icing agents		
X F 1	Moderate water saturation, without de-icing agent	Hydrophobic Impregnation
X F 2	Moderate water saturation, with de-icing agent	Hydrophobic Impregnation
X F 3	High water saturation without de-icing agent	Hydrophobic Impregnation
X F 4	High water saturation, with de-icing agent	Hydrophobic Impregnation
Chemical Attack		
X A 1	Slightly aggressive chemical environment according to Table 2.2.2. in EN 206-1	Resin-based coatings
X A 2	Moderately aggressive chemical environment according to Table 2.2.2. in EN 206-1	Resin-based coatings
X A 3	Highly aggressive chemical environment according to Table 2.2.2. in EN 206-1	Resin-based coatings



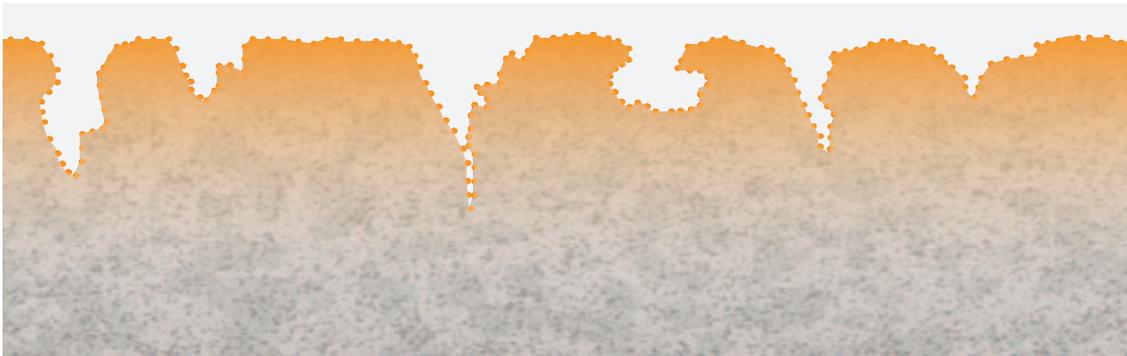


## Terms and Definitions

### Hydrophobic impregnation

Treatment of concrete to produce a water repellent surface. The pores and capillaries are internally coated, but they are not filled.

There is no film on the surface of the concrete and there is little to no change in its appearance:

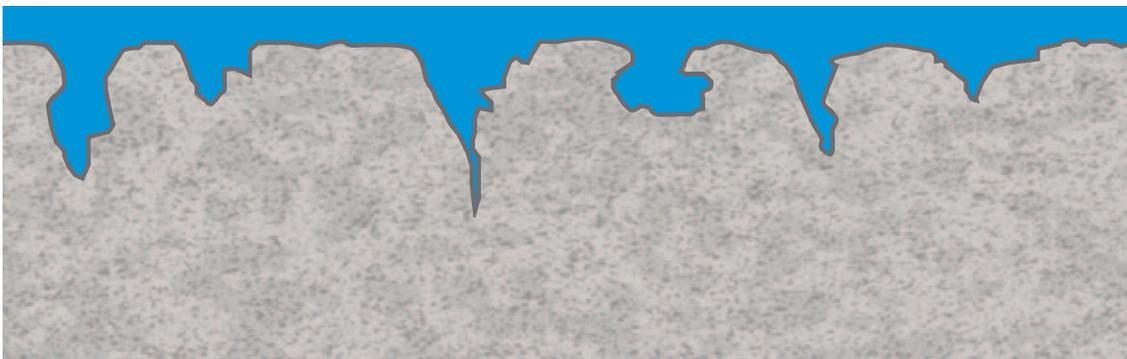


Hydrophobic impregnations are ideal if a structure needs to be protected from the ingress of water through capillary absorption. It is also possible to reduce the ingress of chlorides and other harmful water-borne chemicals. The water vapour permeability of the substrate remains, the concrete is allowed to breathe and the water content can be reduced. Hydrophobic impregnations are neutral in colour and can limit the growth of algae and moss, preserving the original appearance of concrete structures.



## Coating

Treatment to produce a continuous protective layer on the surface of concrete:



In terms of protection from water and CO<sub>2</sub> ingress, acrylic coatings are the optimal choice for concrete structures. Their non-yellowing chemical base combined with excellent resistance to weathering and UV light, make them the ideal solution for concrete protection. For concrete structures permanently immersed in water, where the substrate will rarely be dry, cementitious coatings can be the optimal protection solution for long-term durability for indoor and outdoor areas. In chemically aggressive environments, the effective protection of concrete can be achieved through resin-based coatings. Additionally, resin-based coatings can enhance the mechanical properties of exposed surfaces and also provide an aesthetic finish.





# Hydrophobic Impregnation

## MasterProtect H 303 (formerly Masterseal 303)

Single-component hydrophobic impregnation based on alkyl alkoxysilane emulsion for long-lasting, invisible protection of concrete surfaces.

### Features

- Significantly reduces water ingress and chloride ion penetration into the concrete
- Non flammable
- Does not form a layer on the surface and penetrates deep into the concrete
- Keeps concrete water vapour permeable

### Advantages

- Fast and easy spray application with simple equipment
- Surface appearance remains unchanged
- No delamination or abrasion risk due to surface wear
- Protects concrete against freeze-thaw actions and de-icing or airborne salt attacks
- Reduces efflorescence, algae growth and dirt build-up
- Can be used for concrete protection even on traffic areas

### Benefits

- Delays concrete deterioration
- Short downtime due to fast application
- Improves the aesthetics, keeps the surface cleaner
- Cost-efficient due to maximized coverage. More active ingredient penetration into concrete when compared to 100 % silanes





# Corrosion Inhibition

## MasterProtect 8000 CI (formerly Protectosil CIT)

Single-component, organo-functional silane-based corrosion inhibitor. It penetrates into concrete and inhibits the electro-chemical corrosion process between the rebar and the chloride ions, oxygen and moisture present in the concrete.

### Features

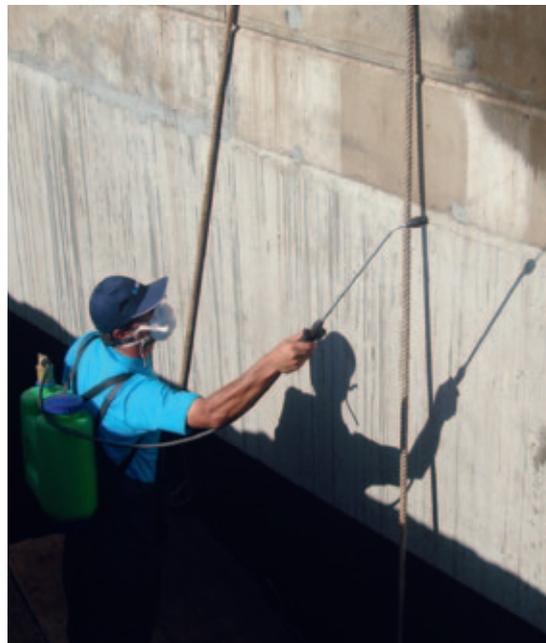
- Does not form a layer on the surface and penetrates deep into the concrete
- Prevents anodic and cathodic corrosion reactions
- Increases the electrical resistivity of concrete
- Strengthens the passive layer on the steel reinforcement
- Significantly reduces water ingress

### Advantages

- Fast and easy spray application with simple equipment
- Surface appearance remains unchanged
- No delamination or abrasion risk due to surface wear
- Delays the initiation of corrosion and reduces active corrosion significantly
- Protects concrete against freeze-thaw actions and de-icing or airborne salt attacks
- Can be used for concrete protection even on traffic areas

### Benefits

- Significantly delays concrete deterioration and stops concrete deterioration if already taking place prior MasterProtect 8000 CI application
- Extends the service life of the structure, reduces maintenance costs and cost of operational downtime
- One-time installation cost only (no running cost as with cathodic protection systems, for example)
- Improves the aesthetics, keeps the surface cleaner
- Freedom to apply additional coats for decorative or other reasons





# Anti-Carbonation Coating



Acrylic polymer-based coatings

MasterProtect 330 EL and 320  
(formerly Masterseal F1131/367 Elastic and F1120/326/368)

MasterProtect 330 EL provides excellent protection of concrete surfaces, with crack-bridging ability.

## Features

- Water-based dispersion on acrylic polymers
- Non flammable
- Full CE certification including additional, non-mandatory tests according to EN 1504-2
- Excellent resistance against CO<sub>2</sub> diffusion
- Significantly reduces chloride ion penetration into the concrete
- High resistance against saponification
- Good adhesion onto concrete substrates
- Water vapour permeable





### Advantages

- Excellent concrete protection against carbonation
- Crack-bridging ability – MasterProtect 330 EL
- Can be cleaned by steam or even high pressure water – MasterProtect 320
- Protects concrete against freeze-thaw actions, de-icing or airborne salt attacks
- Long-term stability on concrete surfaces
- Low delamination risk
- Environmentally friendly, non-solvent systems coating
- Easy application and fast installation

### Benefits

- Long-term protection (aesthetic and structural), even on cracked substrates or structures subject to higher movements (physical and thermal) – MasterProtect 330 EL
- Improves aesthetics, keeps the surface cleaner, keeps the structure in good condition long terms
- Reduces maintenance cost and the cost of operational downtime
- Significantly delays concrete deterioration caused by freeze-thaw and de-icing salt attacks
- Incorporates decorative design of the protective coating





# Waterproofing Coating

## 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 solutions with high performance, even with only 2 mm thickness sprayed or hand applied, with improved workability for an aesthetic finish.

## MasterSeal 6100 FX

One-component elastic, lightweight and fast curing cementitious membrane for waterproofing and concrete protection.

### Features

- Single-component formulation, simply to be mixed with water
- Lightweight: up to 50 % less consumption compared to traditional waterproofing slurries
- Resists up to 5 bar positive and 2 bar negative water pressure
- Only 2 mm application thickness needed
- Fast curing
- High elasticity: static and dynamic crack-bridging ability, suitable for use even at low temperatures

- UV-stable, high anti-carbonation barrier
- Good weather resistance
- CE certified according EN 1504-2

### Advantages

- Less material to be transported and handled
- Requires only the addition of water
- Suitable for water management structures with large dimensions
- Covers cracks effectively, even down to  $-10^{\circ}\text{C}$  or under permanent immersion
- White and light grey colour available, no need for additional paint

### Benefits

- Reduced application time
- Reduced downtime: structures receive water 3 days after application
- Reduced maintenance cost
- Saves waste and storage space
- Contributes to LEED credits



### MasterSeal 588

Chemical-resistant, two-component elastic cementitious membrane for waterproofing and protection of concrete in harsh environments. DWI approved for contact with potable water.

#### Features

- Good adhesion, also on damp substrates
- Crack bridging capability, even down to  $-30^{\circ}\text{C}$
- Good chemical resistance
- Good abrasion resistance
- Freeze-thaw resistant
- Water vapour permeable
- $\text{CO}_2$  barrier
- CE-certified according to EN 1504-2
- DWI approved for contact with potable water

#### Advantages

- Easy application, also on damp substrates
- Reduced risk of crack appearance
- Resistant to occasional foot traffic
- Aesthetic-finish, no need for additional paints

#### Benefits

- Longterm effective protected structures, even when exposed to weathering and repeated movement, even in chemically aggressive environments (e.g. waste water treatment plants)
- Suitable for waterproofing drinking water containment or conducting concrete structures





# Waterproofing Coating

## Chemical Resistant

### Resin-based coatings

In addition to CO<sub>2</sub> and water, a high number of substances found in nature and industrial processes represent a risk to the integrity of the concrete structures exposed to them. With less than 1 mm thickness, hand or spray applied, MasterSeal resin coatings build an effective barrier against the undesired penetration of hazardous substances on concrete in harsh environments.

The use of a suitable primer for the given substrate conditions will ensure the required adhesion of the membrane for its long-term functionality. MasterSeal P 305 (formerly Masterseal 105) promotes adhesion on dry substrates. If substrates are subject to negative pressure or high moisture presence, or are in need of surface levelling, MasterSeal P 385 (formerly Masterseal 185) will perfectly prepare the substrate to be coated properly.

With ancillaries such as sealants, joint tapes and hydroswellable gaskets and pastes for treating joints, pipe penetrations and other individual parts, the Master Builders Solutions experts offer complete solutions for waterproofing concrete protection.

### MasterSeal M 338 (formerly Masterseal 138)

Water-based epoxy which tolerates humidity on the substrate and protects concrete structures subject to moderate chemical attack, eventual abrasion or permanent immersion.

#### Features

- Tolerates up to 8 % moisture on the substrate
- No need for primer
- Low VOC content
- High abrasion resistance
- CE certified according to EN 1504-2

#### Advantages

- Can be applied in humid areas without the need to wait for drying
- Easy and faster application
- Can be applied in closed environments or in sensitive areas
- No risk of blistering of the coating

#### Benefits

Easy and fast solution providing a waterproofed surface, resistant to moderately chemically aggressive environments.

### MasterSeal M 391 (formerly Masterseal 191)

Epoxy coating specifically designed and certified for foodstuff and drinking water contact. Wine, oil, cereals and drinking water are optimally preserved at the same time as the concrete structure containing it.

#### Features

- Chemical resistance
- Specifically tested for the containment of wine, oil and grains – no migration of substances
- Certified according to EU 10/2011 and EN 1504-2
- Smooth, glossy surface finish
- Abrasion and impact resistant
- Available in different colours: red, ivory, yellow and light blue
- CE certified according to EN 1504-2

#### Advantages

- Effective protection for storage and process areas
- Foodstuffs and drinking water conserve their properties with no organoleptic alteration
- Ensures health and safety in storage
- Easily cleaned
- Contributes to aesthetics in installations

#### Benefits

Added value for storage and process areas in industrial food and beverage installations through improved safety and aesthetics. Optimal conservation of foodstuffs and the structure, meaning a minimal requirement for maintenance interventions.





# Waterproofing Coating

## Chemical Resistant

### Resin-based coatings

#### MasterSeal M 336 (formerly Masterseal 136)

Our highly elastic and chemically resistant epoxy-polyurethane coating MasterSeal M 336 provides longer durability for structures subject to a chemically aggressive environment combined with possible movement of the structure, such as vibration, dilatation, etc.

#### Features

- Impermeable to water and CO<sub>2</sub>
- High elasticity: static and dynamic crack-bridging ability, even at low temperatures
- Resistant to severe chemical attack
- Good weather resistance
- CE certified according to EN 1504-2

#### Advantages

- The structure will be waterproofed and protected against carbonation and the penetration of hazardous substances
- In the event of crack formation, the coating will remain unbroken and preserve its protection property
- In outdoor applications, the mechanical performance of the product will be maintained

#### Benefits

MasterSeal M 336 is the appropriate coating choice to ensure the durability of concrete structures which have a high risk of being exposed to movement, and which are also exposed to intermittent or permanent immersion in moderately aggressive chemicals.



### MasterSeal M 808 (formerly Masterseal 608 A)

Two-component, flexible and elastic polyurethane membrane with high chemical resistance. Provides protection under the most demanding conditions.

#### Features

- Impermeable to water and CO<sub>2</sub>
- High chemical resistance
- High elasticity and crack-bridging capabilities
- High mechanical resistance (impact and abrasion)
- CE certified according to EN 1504-2
- Potable water certified
- UV stable
- Fully bonded and monolithic: no laps, welds or seams
- DWI approved for contact with potable water

#### Advantages

- Withstands harsh conditions. Stable membrane even in contact with aggressive chemicals
- Product can be directly exposed to mechanical loads
- Can be used in tanks with potable water
- Suitable for outdoor applications
- Application can be both sprayed and manual and on complex substrates
- No risk of infiltration by liquids

#### Benefits

MasterSeal M 808 provides a waterproofing and protection solution with long-term durability, even for substrates with moving cracks and in very harsh conditions (e.g. wastewater). Suitable for outdoor applications without the need to apply additional topcoat.



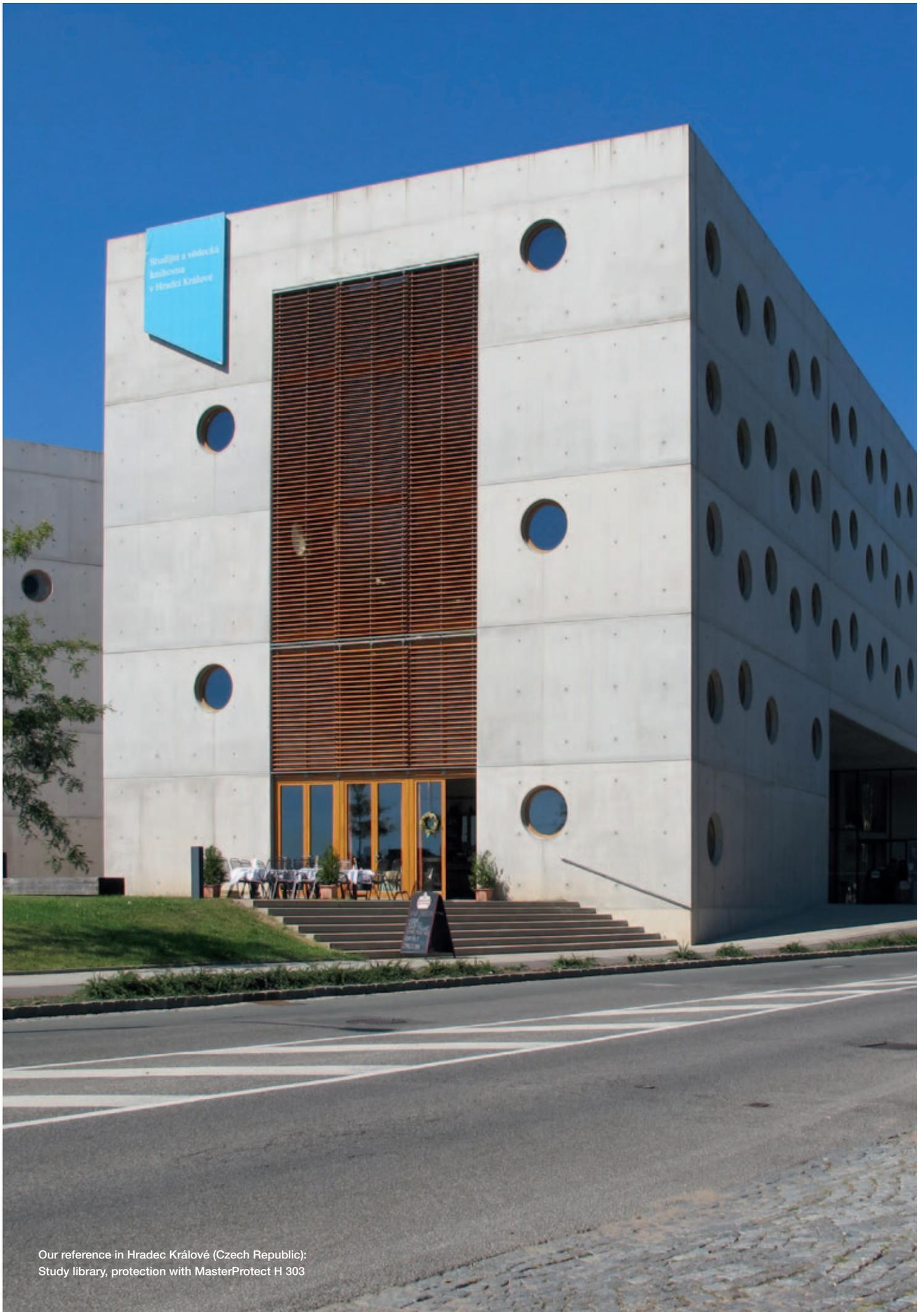


# Product Guide

		MasterProtect H 303	MasterProtect 8000 CI	MasterProtect 320	MasterProtect 330 EL	MasterSeal M 338	MasterSeal M 391	MasterSeal M 336	MasterSeal M 808	MasterSeal 6100 FX	MasterSeal 588
Main Application	Hydrophobic Impregnation	●	●								
	Corrosion Inhibitor		●								
	Anti-carbonation Weatherproofing			●	●						
	Waterproofing and Anti-carbonation Coating									●	●
	Chemical Resistant Waterproofing					●	●	●	●		●
Properties	Resistance Against Carbonation			***	***	***	***	***	***	***	*
	Water Vapour Permeable	***	***	***	***	*	*	*	*	***	***
	Permanent immersion possible	no	no	no	no	yes	yes	yes	yes	yes	yes
	Chemical Resistance					*	**	***	***	*	**
	Elastic / Crack-Bridging	n/a	n/a	*	***		*	***	***	***	**
	Decorative (colour choice)	n/a	n/a	***	***	**	**			*	*
	Applicable to damp surface (> 4 CM %)	*	*			**	*	*	*	***	***

- Applicable
- n/a Not applicable
- \* suitable
- \*\* recommended
- \*\*\* highly recommended

For detailed product application and product combinations, please look at our Product Data Sheet.



Our reference in Hradec Králové (Czech Republic):  
Study library, protection with MasterProtect H 303



# Master Builders Solutions from BASF 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

## **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 water tight concrete

## **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

## **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

## **BASF plc**

### **Construction Chemicals**

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[www.master-builders-solutions.basf.co.uk](http://www.master-builders-solutions.basf.co.uk)

## **BASF plc**

### **Construction Chemicals**

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