

MAKING GOOD CONCRETE BETTER.
Concrete Admixtures for the Concrete Industry





Ha-Be is an internationally operating manufacturer of concrete admixtures, concrete colours and surface protection systems. In more than 40 years, the family-owned company has delivered products to numerous ready-mix, precast and manufactured concrete goods productions. Having high-quality products, possessing many years of experience in concrete technology and supporting customers with a competent application engineering service, Ha-Be has become a reliable and capable partner in the concrete industry.

Ha-Be is headquartered in Hameln, Germany. In many European countries, in the Middle and Near East region the medium-sized company is represented with subsidiaries and representatives. For individual projects, Ha-Be exports its projects to many other countries and supports the projects locally by its international application engineering service.

Product Portfolio

CONCRETE ADMIXTURES

Concrete admixtures are Ha-Be's core competence. The company has developed special product ranges for the ready-mix concrete, precast and manufactured concrete goods industry. These are purposefully built for the different needs within these diverse fields of application.

Concrete Admixtures

Ha-Be's assortments include plasticizers and superplasticizers branded PANTARHIT® and ANTIPOR®, retarders, air entraining agents, accelerators, stabilizers, form release agents and curing compounds. In conjunction with hydrophobic agents, film-formulating and transparent impregnations, Ha-Be is able to offer a broad product portfolio. Having an own production plant the admixture producer is capable of responding to customers requirements in the short term and ensuring an on-schedule accomplishment. Experienced concrete technologists and engineers are always ready to give product advices and implement the purposeful application on site or within the plant to adjust the optimal result. Mobile laboratory equipment allows concrete supervision on site and ensures the realisation of the defined requirements.

Concrete Colours

Ha-Be's product range comprises high-quality pigments and slurries on the basis of iron oxide and chrome oxide, cobalt, carbon and titanium dioxide. The colours labelled YIPIN ensure a homogeneous and reproducible colouring and provide concrete with an intense colour vibrancy.

Research and Development

From concrete goods over precast to ready-mix concrete to apply in engineering, transport infrastructure or tunnel construction – Ha-Be develops innovative products, object-related solutions and gives answers to customer's challenges.

Dosing Plants and Spraying Technologies

Customers can obtain high quality products and precise application technologies from one hand. Ha-Be's subsidiary BM-Anlagenbau und Dosiertechnik GmbH produces innovative dosing plants for concrete admixtures and colours as well as efficient spraying technologies to apply surface protection- and separation agents.



Concrete Admixtures

READY-MIX AND PRECAST

Regardless of what specific concrete properties are required - with the special built admixture system for ready-mix concrete and Ha-Be's application service customers are able to realize the defined technical requirements efficiently. Admixtures for the precast industry have to match the efficient production process on one hand and need to satisfy the improved surface requirements on the other one.

Admixtures for Ready-Mix Concrete

Our system includes traditional PANTARHIT® plasticizers and superplasticizers as well as high performance superplasticizers on the newest PCE-technology. They ensure long slump retention, improve the workability and increase compactability in concrete with low water/cement ratios. Manufacturers, contractors and applicators may therefore achieve an economical and technical benefit.

Admixtures for Precast Concrete

Our special formulated high performance superplasticizers named PANTARHIT® PC suits both challenges. They ensure a high strength development particularly at early ages. Even at low temperatures and without external heat the high performance superplasticizers attain high early strengths. Therefore the PANTARHIT®-products may reduce stripping times. In conjunction with an optimised compactability production expenditure can be reduced and productivity enhanced. The VARIOL line includes separating and cleaning agents that ensure an easy and clean release of precast elements and enables productions to manufacture high-quality surfaces with minimised blow holes.

Concrete Admixtures

SOLUTIONS FOR PROJECTS

Each project has its own challenges. Therefore finding individual solutions in the short-term is essential. Having own laboratories and an experienced application engineering service, Ha-Be is able to fulfil these requirements. Weather building and transport engineering or tunnel and underground constructions Ha-Be supplies the right admixture system and technology to their customers.

BUILDING AND CIVIL ENGINEERING CONSTRUCTION

Bridge constructions, high rise buildings and industrial structures – Ha-Be's customers profit from the company's high quality products and its experienced application engineering service. The concrete

technologists and certified engineers give support in adjustments and purposeful application on site or within the plant to attain the optimal concrete results.

TRANSPORT ENGINEERING CONSTRUCTION

Modern transport routes have a key role in connecting people and transporting products and transferring goods. To allow them a safe arrival, concrete applied in road, motorway and air traffic construc-

tions has to meet high specific requirements. To fulfil them, Ha-Be developed a special assortment that includes PANTARHIT® branded plasticizers, air entraining admixtures and curing compounds.





Concrete Admixtures

UNDERGROUND PROJECTS

Sprayed concrete, concrete for casting the tunnel inner shell or tubbing segments – each underground construction project has its own technical challenges. That is why Ha-Be developed not only a special designed product system but also provides competent support by the exclusively specialised Ha-Be Tunnel Team.

Beside the superplasticizers PANTARHIT® the product system includes retarding and air entraining agents, curing compounds, separating agents and fibers. The assortment is completed by the Tunnel Team's application engineering service. The competent team is acquainted with both the special requirements of the bored tunnel construction method

and the cut-and-cover technique. Besides adjusting the company's products the Ha-Be Tunnel Team supports the entire construction process on site. Equipped with mobile laboratories, the certified engineers and technologists supervise concrete and submit independently application, processing and technique proposals.



Concrete Admixtures

CONCRETE PRODUCTS & WETCAST

Pavers, slabs and masonry blocks – most of manufactured concrete products are being pressed and compacted. These products are manufactured within a highly efficient production process by having short cycle times and a good quality consistency. WetCast elements are being casted instead. To ensure a smooth process concrete needs to have an excellent workability.

Admixtures for Concrete Products

Ha-Be's special built ANTIPOR® plasticizers meet these requirements. They ensure an improved workability, enhance the early strength development, minimise sticking to the ram and attain an abbreviate curing time. Additionally, they achieve a homogeneous, dense and closed vertical structure that advances concrete's visually attraction. In short: ANTIPOR® supports the proficient production of high-quality and durable concrete products.

Admixture for WetCast

The innovative high performance superplasticizers PANTARHIT® PC have been developed to fulfill these purpose. They show a strong plasticizing effect, minimize the compaction energy applied to concrete and ensure high early strength. The good strength development may allow reduced curing times and improves productivity.

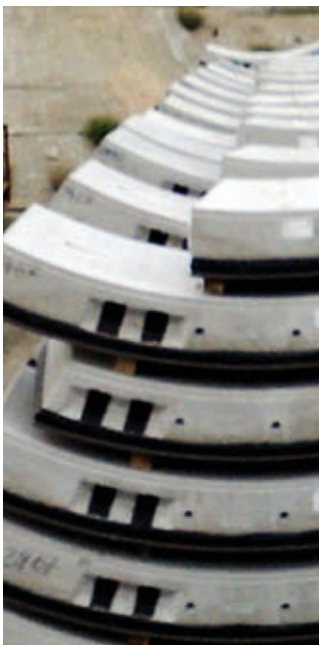


Photo: Baresel GmbH

Concrete Admixtures

SURFACE PROTECTION SYSTEMS

To protect and upgrade pavers, slabs and wetcast elements, Ha-Be developed diverse surface protection systems. The Ha-Be PROTECT-systems include hydrophobic agents, film-formulating and transparent impregnations for both - the wet and dry side of production.

The PROTECT-systems protect concrete and its surfaces from staining, water penetration and environmental influences. Liquids like oil, wine and fat are mostly prevented from penetrating into the concrete. Therefore the occurrence of unappealing spots and signs of usage are significantly reduced. Having water-repellent properties in hydrophobised concrete the incidence of

efflorescence is minimised and its frost and thawing salt resistance is enhanced. The surface protection program is perfectly completed by the innovative spraying systems of Ha-Be's subsidiary BM-Anlagenbau und Dosiertechnik GmbH. On request Ha-Be provides innovative application- and dosing technologies that are adapted to suit customer's specific production line.



YIPIN  Pigments

Concrete Colours

INTENSE COLOUR VIBRANCY

Ha-Be produces ready-to-use liquid colours and distributes high-quality pigments for the concrete industry under the name of YIPIN Pigments GmbH. Being founded more than 75 years ago in Shanghai YIPIN has developed to one of the leading pigment manufacturers worldwide. The European assortment includes inorganic, synthetic pigments based on iron oxides, chromium oxides, cobalt, titanium and carbon.

The liquid colours are produced at the company's headquarter in Hameln, Germany. An intense colour vibrancy and a constantly high product quality which ensures having a reproducibility are secured by using state-of-the-art mixing equipments with precise measuring and weighing technologies. Besides the general repertoire YIPIN develops customised liquid colours based on customer's mix-design and their specific raw materials. For attaining the defined concrete colouring the natural colour of the cementitious material and aggregates are therefore taken into account.

In the plants, the company's engineers and technologists support their customer's by supporting the calibration process of the necessary measuring- and weighing technologies. Therefore the employees ensure concrete is assuming the preliminary specified colour. By request Ha-Be provides and installs mobile dosing systems for liquid colours into the existing production line.

All YIPIN pigments and slurries conform to EN 12878 – "pigments for the colouring of building materials based on cement and/or lime" and are certified accordingly.



Research and Development

ESSENTIAL – THE CONCRETE LAB

A consequent product development success is enabled through the close cooperation between the chemical and building material laboratory at Ha-Be. The application engineers, chemists and concrete engineers develop innovative and economical admixtures.

Workability, air void content or consistency – Ha-Be analyses all concrete technological parameters in its concrete laboratories. After successful examinations the application engineering service tests the product under onsite conditions.

The experienced technologists and engineers pass on their knowledge to mixing plant supervisors, drivers, logistics managers, architects and administration

agencies in regularly organised instruction courses. General standards, classification in various exposure classes and their practical consequences are some of the fields responded to in these lectures. The accreditation as assessors on German courts approves the fundamental practical experience and underlines the credibility of Ha-Be's engineers and technologists.



Dosage and Spraying Technologies

EVERYTHING FROM ONE HAND

Ha-Be's product range is completed by the application technologies of its subsidiary BM-Anlagenbau und Dosiertechnik GmbH. BM produces dosing systems for concrete admixtures and concrete colours, spraying technologies for surface protection and release agents as well as control programs for these equipments. On request BM and Ha-Be assemble the adequate equipment and integrate it into customer's existing production line.

Dosing systems

BM's gravimetric and volumetric dosing systems ensure an exact and efficient dosing of admixtures and colours. The subsidiary supplies mobile solutions for construction sites as well as stationary systems for plants with many mixers and production lines. BM is able to integrate their products in a short-term, cost-efficient and easy into new facilities as well as into existing systems due to the modular product components.

Spraying technology

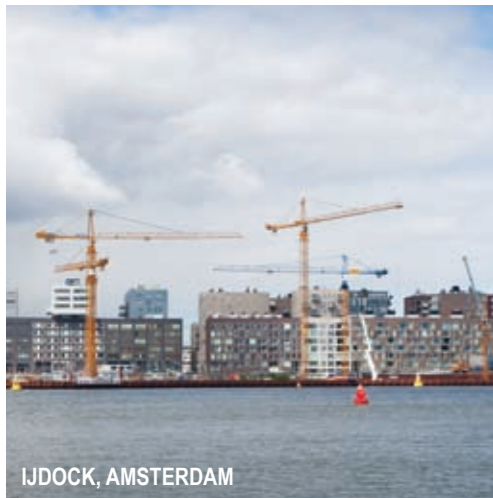
The BM spraying systems are planned and constructed to the latest edge of technology. This includes the innovative

pulse-spray blast pipe system which is equipped with an integrated volumetric measuring technology. The system allows to adjust variable application quantities without changing the blast pipes. The requested quantity is entered into the control system which regulates the pulse frequency of the spraying pipes. This enables large pipes to spray small amounts. Being controlled by the volumetric measuring system, occurring variations due to e.g. clogged pipes are recognised immediately. By sending error messages the responsible employee is enabled to react instantly and can therefore reduce the incidence of unrectifiable rejects significantly.



References

ADMIXTURES FOR YOUR SUCCESS

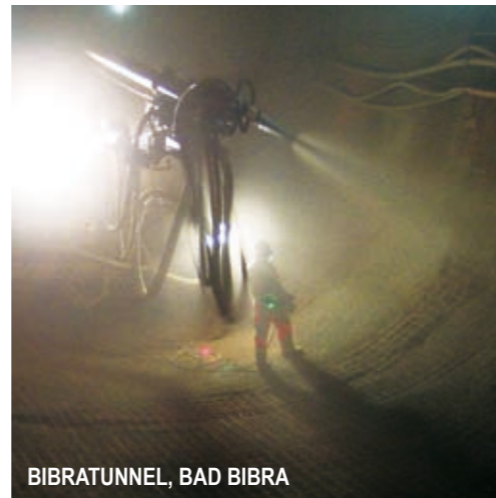


IJDOCK, AMSTERDAM



Photo: Daimler Chrysler

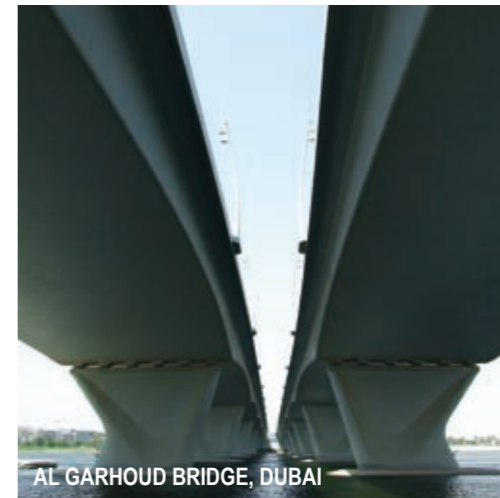
MERCEDES BENZ MUSEUM, STUTTGART



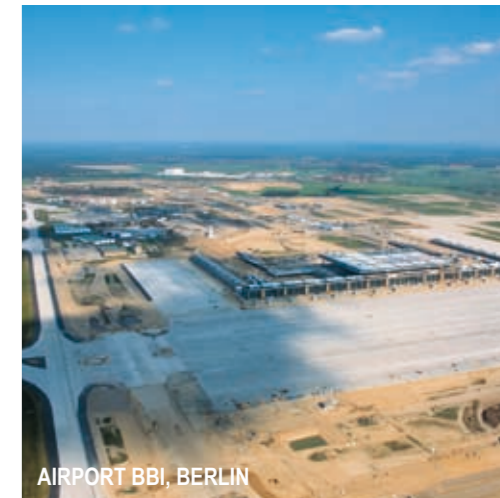
BIBRATUNNEL, BAD BIBRA



SEWEGE TREATMENT PLANT, JEBEL ALI, DUBAI



AL GARHOUD BRIDGE, DUBAI



AIRPORT BBI, BERLIN



HEIDKOPFTUNNEL, EICHSFELD



BUSINESS BAY CROSSING, DUBAI



AIRPORT LEIPZIG, LEIPZIG



FAIRGROUND "NEUE MESSE", STUTTGART

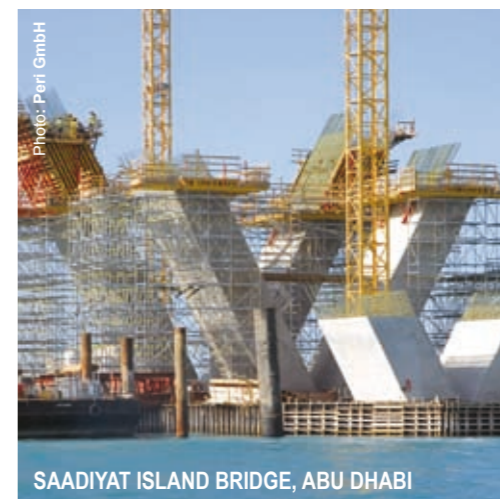
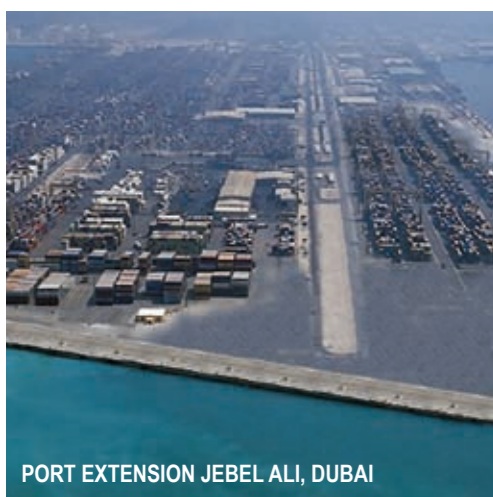


Photo: Perit GmbH

SAADIYAT ISLAND BRIDGE, ABU DHABI



DUBAI PEARL, DUBAI



PORT EXTENSION JEBEL ALI, DUBAI

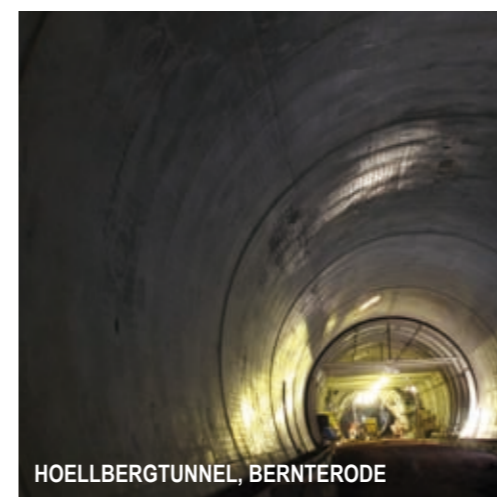


Photo: Perit GmbH

ADAC HEADQUARTER, MUNICH



PORSCHE MUSEUM, STUTTGART



HOELLBERGTUNNEL, BERNTERODE



WAIDATALBRIDGE, ESPERSTEDT



MOTORWAY A23, HEIDE TO HAMBURG

Product Assortment

ADMIXTURE SOLUTIONS FOR EUROPE

This is an extraction of Ha-Be's complete product range. To find the latest product information, technical and material safety data sheets please visit the company's website or contact Ha-Be by phone or email: Phone: +49 5151 587-0 | info@ha-be.com | www.ha-be.com

We are looking forward to getting in touch with you.

Plasticizer for Ready-Mix Concrete

PANTARHIT® 25 (BV) Item No. 0105	Recommended dosage: 0.2–1.0 mass-% Density: approx. 1.18 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - plasticizer suitable for producing F2 consistency concrete and soft concrete (F3) - improves concrete's pumpability, placeability, levelability and compactability
PANTARHIT® 35 (BV) Item No. 0101	Recommended dosage: 0.2–0.9 mass-% Density: approx. 1.21 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - plasticizer suitable for producing F2 consistency concrete and soft concrete (F3) - improves concrete's pumpability, placeability, levelability and compactability
PANTARHIT® 45 (BV) Item No. 0100	Recommended dosage: 0.2–1.2 mass-% Density: approx. 1.15 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - plasticizer with slight retarding effects - suitable for producing F2 consistency concrete and soft concrete (F3) - improves concrete's pumpability, placeability, levelability and compactability
PANTARHIT® 550 (BV) Item No. 0180	Recommended dosage: 0.2–1.6 mass-% Density: approx. 1.13 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - plasticizer for producing concrete in the consistency range F3 - improves concrete's pumpability, placeability, levelability and compactability

Superplasticizer for Ready-Mix Concrete

PANTARHIT® RC140 (FM) Item No. 0841	Recommended dosage: 0.2–2.0 mass-% Density: approx. 1.02 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer for producing C1, C2 and C3 concrete - suitable for road constructions - ensures an extended workability time
PANTARHIT® RC170 (FM) Item No. 0830	Recommended dosage: 0.2–2.1 mass-% Density: approx. 1.05 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an extended workability time
PANTARHIT® RC173 (FM) Item No. 0827	Recommended dosage: 0.2–2.1 mass-% Density: approx. 1.05 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an extended workability time - attains high early strength
PANTARHIT® RC180 (FM) Item No. 0832	Recommended dosage: 0.2–2.2 mass-% Density: approx. 1.06 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an extended workability time in any consistency class
PANTARHIT® RC310 (FM) Item No. 0867	Recommended dosage: 0.2–2.1 mass-% Density: approx. 1.04 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an exceptional long workability time in the consistency classes F3 - F6 - attains high early strength - minimises compaction energy applied to concrete
PANTARHIT® RC330 (FM) Item No. 0872	Recommended dosage: 0.2–2.2 mass-% Density: approx. 1.07 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - minimises compaction energy applied to concrete
PANTARHIT® RC550 (FM) Item No. 0825	Recommended dosage: 0.2–2.15 mass-% Density: approx. 1.08 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing concrete in the consistency class F2 up to F6 - ensures an extended workability time
PANTARHIT® S (FM) Item No. 0820	Recommended dosage: 0.2–2.0 mass-% Density: approx. 1.13 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - superplasticizer suitable for producing concrete in the consistency classes F2 up to F5 - optimises concrete's workability time, its processing and compactability
PANTARHIT® TB100 (FM) Item No. 0868	Recommended dosage: 0.2–2.2 mass-% Density: approx. 1.07 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for high consistency mixed batches with low water cement ratios and little consistency losses - stabilises the mixed batch and reduces its bleeding and segregation tendencies - minimises compaction energy applied to concrete

Superplasticizer for both Ready-Mix and Precast Concrete

PANTARHIT® (FM) Item No. 0800	Recommended dosage: 0.2–2.5 mass-% Density: approx. 1.15 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - superplasticizer suitable to transform stiff concrete (F1) into flow concrete (F5) - optimises concrete's workability time, its processing and compactability
PANTARHIT® C120 (FM) Item No. 0826	Recommended dosage: 0.2–2.1 mass-% Density: approx. 1.05 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency concretes, easily and self compacting concrete having a low water cement ratio - attains an high early strength even at low ambient temperatures
PANTARHIT® C140 (FM) Item No. 0823	Recommended dosage: 0.2–2.15 mass-% Density: approx. 1.06 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - high performance superplasticizer suitable for durable concrete with high mechanical strength from F3 up to F6 consistency concrete - ensures an extended workability time - stabilises the mixed-batch and reduces segregation and bleeding tendencies
PANTARHIT® C150 (FM) Item No. 0821	Recommended dosage: 0.2–2.15 mass-% Density: approx. 1.07 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an enhanced strength development even at low ambient temperatures
PANTARHIT® L (FM) Item No. 0802	Recommended dosage: 0.2–2.4 mass-% Density: approx. 1.19 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - superplasticizer suitable for producing stiff concrete (F1) up to flow concrete (F5) - optimises concrete's workability time, its processing and compactability
PANTARHIT® LK (FM) Item No. 0812	Recommended dosage: 0.2–2.4 mass-% Density: approx. 1.20 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - superplasticizer suitable for producing stiff concrete (F1) up to flow concrete (F5) - optimises concrete's workability time, its processing and compactability
PANTARHIT® M (FM) Item No. 0810	Recommended dosage: 0.2–3.3 mass-% Density: approx. 1.12 g/cm ³ Colour: light brown	<ul style="list-style-type: none"> - superplasticizer suitable for producing stiff concrete (F1) up to flow concrete (F5) - attains high early strength and stabilises the mixed-batch - optimises concrete's workability time, its processing and compactability
PANTARHIT® MN (FM) Item No. 0840	Recommended dosage: 0.2–3.0 mass-% Density: approx. 1.15 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - superplasticizer suitable for producing stiff concrete (F1) up to flow concrete (F5) - attains high early strength and stabilises the mixed-batch - optimises concrete's workability time, its processing and compactability
PANTARHIT® MN40 (FM) Item No. 0844	Recommended dosage: 0.2–3.0 mass-% Density: approx. 1.23 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - high concentrated superplasticizer suitable for producing stiff concrete (F1) up to self compacting concrete (SCC) - attains high early strength and stabilises the mixed-batch - optimises concrete's workability time, its processing and compactability

High Performance Superplasticizer for Precast Concrete

PANTARHIT® FT500 (FM) Item No. 0878	Recommended dosage: 0.2–2.65 mass-% Density: approx. 1.05 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - high performance superplasticizer that ensures high early strength development particularly at early ages even at low temperatures - may allows the elimination of heat treatment - minimises compaction energy applied to concrete
PANTARHIT® FT750 (FM) Item No. 0858	Recommended dosage: 0.2–2.65 mass-% Density: approx. 1.07 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency concretes, easily and self compacting concrete having a low water cement ratio - ensures high early strength development particularly at early ages even at low temperatures without the need of external heat - may reduce stripping times and enhance productivity - minimises compaction energy applied to concrete

PANTARHIT® PC110 (FM) Item No. 0854	Recommended dosage: 0.2–2.10 mass-% Density: approx. 1.06 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency concretes, easily and self compacting concrete having a low water cement ratio - ensures exceptional high early strength particularly at early ages even at low temperatures without the need of external heat - stabilises the mixed batch, prevents it from segregation and bleeding tendencies - may reduce stripping times and enhance productivity
PANTARHIT® PC140 (FM) Item No. 0890	Recommended dosage: 0.2–2.65 mass-% Density: approx. 1.07 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency concretes, easily and self compacting concrete - ensures high early strength even at low temperatures without the need of external heat - minimises compaction energy applied to concrete
PANTARHIT® PC150 (FM) Item No. 0894	Recommended dosage: 0.2–2.65 mass-% Density: approx. 1.07 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency concretes, easily and self compacting concrete having a low water cement ratio - attains an high early strength development even at low temperatures without the need of external heat - may reduce stripping times and enhance productivity
PANTARHIT® PC160 (FM) Item No. 0895	Recommended dosage: 0.2–2.20 mass-% Density: approx. 1.07 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency concretes, easily and self compacting concrete having a low water cement ratio - ensures extended workability times in precast productions - stabilises the mixed batch, prevents it from segregation and bleeding tendencies - attains high early strength particularly at early ages even at low temperatures without the need of external heat - may reduce stripping times and enhance productivity - minimises compaction energy applied to concrete
PANTARHIT® PC180 (FM) Item No. 0892	Recommended dosage: 0.2–2.65 mass-% Density: approx. 1.05 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - high performance superplasticizer suitable for producing high consistency concretes, easily and self compacting concrete having a low water cement ratio - attains high early strength particularly at early ages even at low temperatures without the need of external heat - minimises compaction energy applied to concrete

Plasticizer for Manufactured Concrete Products

ANTIPOR® 52 (ST) Item No. 0110	Recommended dosage: 0.2–0.4 mass-% Density: approx. 1.0 g/cm ³ Colour: light yellow	<ul style="list-style-type: none"> - plasticizer for producing semi-dry concrete - suitable for manufactured concrete goods like paving stones, slabs, tubes - attains an homogenous and dense concrete structure - improves concrete's early and final strength
ANTIPOR® 54 (ST) Item No. 2030	Recommended dosage: 0.2–0.6 mass-% Density: approx. 1.16 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - plasticizer for producing semi-dry concrete - suitable for manufactured concrete goods like paving stones, slabs, tubes - ensures an improved compactability - attains an homogenous and dense concrete structure - improves concrete's early and final strength
ANTIPOR® 57 (BV) Item No. 2060	Recommended dosage: 0.2–0.9 mass-% Density: approx. 1.12 g/cm ³ Colour: dark brown	<ul style="list-style-type: none"> - plasticizer for producing semi-dry concrete - suitable for manufactured concrete goods like paving stones, slabs, tubes - attains an homogenous and dense concrete structure - improves concrete's early and final strength
ANTIPOR® 59 (ST) Item No. 2240	Recommended dosage: 0.2–0.4 mass-% Density: approx. 1.01 g/cm ³ Colour: red	<ul style="list-style-type: none"> - plasticizer for manufactured concrete goods like paving stones, slabs, tubes - ensures good water/cement ratios - improves concrete's early and final strength

ANTIPOR® 65 (ST) Item No. 2120	Recommended dosage: 0.2–0.4 mass-% Density: approx. 1.04 g/cm ³ Colour: yellowish	<ul style="list-style-type: none"> - plasticizer for manufactured concrete goods like paving stones, slabs, tubes - hydrophobises concrete's structure - optimises concrete's compactability - minimises sticking to the ram - reduces the incidence of efflorescence in hardened concrete
ANTIPOR® 70 Item No. 2270	Recommended dosage: 0.6–1.0 mass-% Density: approx. 1.04 g/cm ³ Colour: white	<ul style="list-style-type: none"> - multi purpose plasticizer for manufactured concrete goods within consistencies from F1 up to F3 - hydrophobises concrete's structure - improves concrete's compactability - attains an homogeneous and closed vertical structure - minimises sticking to the ram - minimises water penetration and the incidence of efflorescence in hardened concrete
ANTIPOR® 100KK (ST) Item No. 2210	Recommended dosage: Diluted 0.1–0.15 mass-% Density: approx. 1.02 g/cm ³ Colour: colourless	<ul style="list-style-type: none"> - plasticizer for manufactured concrete goods like paving stones, slabs, tubes - ensures an improved compactability - attains an homogenous and dense concrete structure - improves concrete's early and final strength
ANTIPOR® aqua plus Item No. 2330	Recommended dosage: 0.5–1.0 mass-% Density: approx. 1.03 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - additive that allows productions with higher water contents an increased strength development due to its cement wetting properties - increases cement's capacity to absorb water and raise the w/c ratio - optimises concrete's compactability - attains an homogenous and closed vertical structure - minimises sticking to the ram - reduces deformation - adverts process caused water variations
ELEMENTAN classic (ST) Item No. 2025	Recommended dosage: 0.2–0.4 mass-% Density: approx. 1.01 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - plasticizer for producing semi-dry concrete with optimised frost and freeze-thawing salt resistance - improves concrete's protection against chemical attacks - optimises concrete's compactability - ensures an homogeneous and dense structure with closed surfaces - enhances concrete's colour vibrancy
PAVEMENT classic (ST) Item No. 2130	Recommended dosage: 0.4–1.5 mass-% Density: approx. 1.00 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - plasticizer for producing semi-dry concrete - hydrophobises concrete's structure - achieves an even and intense colour vibrancy - inhibits incidence of efflorescence - attains an homogeneous structure with closed surfaces

Retarder

PANTARHOL 85 (VZ) Item No. 0410	Recommended dosage: 0.2–1.4 mass-% Density: approx. 1.15 g/cm ³ Colour: colourless	<ul style="list-style-type: none"> - retarding agent that extends the workability time purposefully - can avoid construction joints and longer breaks during construction can be bridged
PANTARHOL 90 (VZ) Item No. 0400	Recommended dosage: 0.2–1.0 mass-% Density: approx. 1.04 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - retarding agent that extends the workability time purposefully - can avoid construction joints and longer breaks during construction can be bridged

Air Entraining Admixtures

PANTAPOR 66 (LP) Item No. 0206	Recommended dosage: 0.1–0.8 mass-% Density: approx. 1.00 g/cm ³ Colour: light blue	<ul style="list-style-type: none"> - air entraining agent that improves concrete's durability by optimising its frost and freeze-thawing salt resistance - especially suited for highway and road constructions
PANTAPOR 66K (LP) Item No. 0209	Recommended dosage: 0.02–0.8 mass-% Density: approx. 1.02 g/cm ³ Colour: blue	<ul style="list-style-type: none"> - high concentrated air entraining agent that improves concrete's durability by optimising its frost and freeze-thawing salt resistance - especially suited for highway and road constructions

PANTAPOR 88 (LP) Item No. 0200	Recommended dosage: 0.2–0.8 mass-% Density: approx. 1.0 g/cm ³ Colour: light blue	<ul style="list-style-type: none"> - air entraining agent that improves concrete's durability by optimising its frost and freeze-thawing salt resistance - especially suited for highway and road constructions
PANTAPOR 1200 (LP) Item No. 0212	Recommended dosage: 0.2–1.6 mass-% Density: approx. 1.0 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - air entraining agent that optimises concrete's frost and freeze-thawing resistance - suited for highway and road constructions - improves concrete's workability - minimizes its bleeding and segregation tendencies
PANTAPOR 2000 (LP) Item No. 0220	Recommended dosage: 0.2–0.8 mass-% Density: approx. 1.0 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - air entraining agent that improves concrete's durability - optimises its frost and freeze-thawing salt resistance - especially suited for highway and road constructions
PANTAPOR 2005 (LP) Item No. 0221	Recommended dosage: 0.01–0.8 mass-% Density: approx. 1.02 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - air entraining agent suitable for concretes with low powdery particle content - optimises concrete's frost and freeze-thawing salt resistance - suited for highway and road constructions
PANTAPOR 2010 (LP) Item No. 0223	Recommended dosage: 0.01–0.8 mass-% Density: approx. 1.03 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - air entraining agent that optimises concrete's frost and freeze-thawing salt resistance - especially suited for highway and road constructions
PANTAPOR 2020 (LP) Item No. 0224	Recommended dosage: 0.01–0.4 mass-% Density: approx. 1.07 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - air entraining agent suitable for concretes with low powdery particle content - optimises concrete's frost and freeze-thawing salt resistance - suited for highway and road constructions

Stabiliser

STABILISIERER (ST) Item No. 0710	Recommended dosage: 0.2–2.0 mass-% Density: approx. 1.0 g/cm ³ Colour: colourless	<ul style="list-style-type: none"> - stabiliser suitable to produce lightweight concrete, mortar and concrete with a tight internal structure - ensures stabilisation
STABILISIERER 72 (ST) Item No. 0720	Recommended dosage: 0.2–4.0 mass-% Density: approx. 1.0 g/cm ³ Colour: colourless to yellowish	<ul style="list-style-type: none"> - stabiliser for manufacturing easily compactable concrete and self-compacting concrete (ECC and SCC) - suitable to produce lightweight concrete, mortar and concrete with tight internal structure - ensure a stabilisation and reduces the segregation tendency in soft concrete
STABILISIERER D (ST) Item No. 0738	Recommended dosage: 0.2–4.0 mass-% Density: approx. 1.02 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - stabiliser especially suitable for producing self and easily compacting concrete (SCC and ECC) - stabilises concrete's structure - segregation and bleeding tendencies are significantly reduced

Admixtures for Mortar

PANTAROL 100 Item No. 0900	Recommended dosage: 0.2–2.3 mass-% Density: approx. 1.12 g/cm ³ Colour: yellowish	<ul style="list-style-type: none"> - admixture for mortar that combines an air entraining agent with a stabiliser and a retarder to one product - retards the hydration process - reduces bleeding and segregation tendencies - improves processing characteristics
PANTAROL 100 LM Item No. 0904	Recommended dosage: 0.2–2.4 mass-% Density: approx. 1.2 g/cm ³ Colour: colourless to yellowish	<ul style="list-style-type: none"> - admixture for lightweight mortar that combines an air entraining agent with a stabiliser and a retarder to one product - retards the hydration process - reduces bleeding and segregation tendencies - improves processing characteristics
PANTAROL 500 LP Item No. 0210	Recommended dosage: 0.2–1.0 mass-% Density: approx. 1.02 g/cm ³ Colour: light blue	<ul style="list-style-type: none"> - air entraining for producing mortar - improves workability by generating air void in the mixed-batch - minimises bleeding and segregation tendencies - extends workability time

PANTAROL 500 S Item No. 0240	Recommended dosage: For 100 l foam approx. 450 ml are required Density: approx. 1.01 g/cm ³ Colour: blue	<ul style="list-style-type: none"> - foam formulating admixture for producing mortar - extends its workability time - minimises its bleeding and segregation tendencies
PANTAROL 500 VZ Item No. 0420	Recommended dosage: 0.2–1.7 mass-% Density: approx. 1.16 g/cm ³ Colour: yellowish	<ul style="list-style-type: none"> - retarder for mortar - extends the workability time purposefully - retards the hydration process of cement - increases mortar's water retention

Separating and Caring Agents

BETONLÖSER Item No. 1100	Application quantity: depends on dilution and degree of contamination Density: approx. 1.19 g/cm ³ Colour: light yellowish	<ul style="list-style-type: none"> - liquid remover that dissolves cement and concrete contaminations
ENTSCHÄUMER Item No. 2000	Application quantity: for 100 l foam approx. 100 ml are required Density: approx. 0.93 g/cm ³ Colour: light yellowish	<ul style="list-style-type: none"> - defoaming agent that removes foam out of mixer trucks, batching and residual water treatment facilities
MISCHER-SCHUTZ Item No. 1205	Application quantity: approx. 30 g/m ² Density: approx. 0.89 g/cm ³ Colour: yellowish	<ul style="list-style-type: none"> - agent that protects metal surfaces at stationary and mobile mixers from sticking mortar and concrete
MISCHER-SCHUTZ VH Item No. 1207	Application quantity: approx. 20 g/m ² Density: approx. 0.88 g/cm ³ Colour: yellow	<ul style="list-style-type: none"> - agent that protects metal surfaces at stationary and mobile mixers from sticking mortar and concrete - protects from corrosion by having special additives
PROTECT 30MS Item No. 1203	Application quantity: approx. 30 g/m ² Density: approx. 0.89 g/cm ³ Colour: yellowish	<ul style="list-style-type: none"> - agent that prevents metal surfaces from cement sticking - displaces water from surfaces - protects metal surfaces from corrosion
REINIGER Item No. 1181	Application quantity: depends on dilution and degree of contamination Density: approx. 1.10 g/cm ³ Colour: light yellow	<ul style="list-style-type: none"> - cleaning agent that removes dirt containing grease and mineral oil from mixing vehicles and construction machines
REINIGER Z Item No. 1110	Application quantity: depends on dilution and degree of contamination Density: approx. 1.10 g/cm ³ Colour: yellowish	<ul style="list-style-type: none"> - cleaning agent that removes cement residues as well as oily and fatty soiling from concrete surfaces and construction machines
VARIOL-EM Item No. 1356	Application quantity: 15–40 g/m ² depending on absorbing abilities and dilution Density: approx. 0.96 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - concentrate for manufacturing release agents - provides an easy release of formwork and moulds - suitable for steel, timber, plywood, plastic formwork and moulds - prevents from rusting on steel formwork
VARIOL-EM3 Item No. 1353	Application quantity: 15–40 g/m ² depending on absorbing abilities Density: approx. 0.98 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - release agent for producing high quality surfaces with reduced blowholes - achieves a clean release without any adhesion of formwork and moulds - suitable for metal formwork and moulds - inhibits corrosion
VARIOL-THERM Item No. 1358	Application quantity: 10–40 g/m ² depending on absorbing abilities Density: approx. 0.89 g/cm ³ Colour: yellowish to brownish	<ul style="list-style-type: none"> - release agent that enhances the durability of heated formworks - ensures an easy and clean release - sticks very good on vertical formwork - prevents from corrosion

VARIOL Item No. 1357	Application quantity: 10–40 g/m ² depending on absorbing abilities Density: approx. 0.89 g/cm ³ Colour: yellowish to brownish	<ul style="list-style-type: none"> - separating agent for surfaces with an impeccable quality without pores or spots - suitable for metal, wood and plastic formwork - separates excellently formwork from concrete - prevents formwork from corrosion
VARIOL-BIO Item No. 1315	Application quantity: If diluted with water 1:3 20–60 g/m ² depending on absorbing abilities Density: approx. 0.92 g/cm ³ Colour: amber	<ul style="list-style-type: none"> - concentrate for manufacturing biodegradable form release agents for surfaces with an impeccable quality - suitable for wooden production boards and formwork - adheres excellently - disposes a very good separating ability
VARIOL BIO3 Item No. 1323	Application quantity: 20–50 g/m ² depending on absorbing abilities Density: approx. 0.98 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - form release suitable for wooden production boards - achieves an easy and clean removal - protects both concrete blocks and boards from damages
VARIOL UNIVERSAL Item No. 1310	Application quantity: 15–20 g/m ² depending on absorbing abilities Density: approx. 0.78 g/cm ³ Colour: colourless to yellowish	<ul style="list-style-type: none"> - release agent suitable for heated and unheated steel, timber, plywood, plastic formwork and moulds - facilitates a clean release of formwork - reduces the incidence of blowholes in concrete - protects metal formwork from corrosion

Antifreeze Admixtures

ANTIFROST 15 Item No. 0550	Recommended dosage: 0.2–2.5 mass-% Density: approx. 1.03 g/cm ³ Colour: colourless	<ul style="list-style-type: none"> - chloride-free admixture for pouring and processing concrete under frosty weather conditions - accelerates the initial and final setting - achieves high early strengths - allows an early stripping of formwork
ANTIFROST 45 Item No. 0560	Recommended dosage: 0.2–2.5 mass-% Density: approx. 1.43 g/cm ³ Colour: colourless	<ul style="list-style-type: none"> - chloride-free admixture suitable for pouring and processing concrete under frosty weather conditions - accelerates the initial and final setting - ensures the necessary strength development to withstand freezing during the early stages - achieves high early strengths - allows an early stripping of formwork

Curing Compounds

CURING Item No. 1000	Application quantity: 150–300 g/m ² Density: approx. 0.99 g/cm ³ Colour: white	<ul style="list-style-type: none"> - solvent free curing agent that protects young and fresh concrete from evaporation - avoids shrinkage cracks and sanding-off effects - complies with the "Technical Delivery Conditions for Liquid Curing Agents TL-StB 09"
CURING TOP 10 Item No. 1050	Application quantity: 100–200 g/m ² Density: approx. 1.02 g/cm ³ Colour: white	<ul style="list-style-type: none"> - Solvent free curing agent that protects concrete from evaporation - reduces incidence of drying shrinkage cracks - improves the abrasion resistance - enhances durability of concrete floors - especially suitable for concreting under rapid drying conditions

Foam Formulating Agents

PANTAPOR FA Item No. 0260	Recommended dosage: for 100 l foam approx. 200 ml are required Density: approx. 1.13 g/cm ³ Colour: brown	<ul style="list-style-type: none"> - foam generating admixture suitable for producing cellular lightweight concrete - ensures a soft consistency in concrete - minimises concrete's segregation and bleeding tendencies - to be used in combination with „SCHAUMGERÄT FA“!
SCHAUMBILDNER 97 Item No. 0230	Recommended dosage: for 510 l foam approx. 1kg and 40 l water are required Density: approx. 1.01 g/cm ³ Colour: blue	<ul style="list-style-type: none"> - foam formulating admixture suitable for producing lightweight concrete - ensures a soft consistency in concrete - minimises concrete's segregation and bleeding tendencies

Fibres

PANTAFIL PP-Makrofaser Item No. 4510	Recommended dosage: 4–8 kg/m ³ Colour: transparent Length: 20–50 mm	<ul style="list-style-type: none"> - synthetic fibre based on polypropylene designed to optimise the load carrying performance of concrete, mortar and screed - prevents from rusting effects - improves fire-resisting properties of concrete - long term durability especially in corrosive environments - particularly suitable for tunnel constructions
PP Faser Item No. 4505	Recommended dosage: for concrete: 0,7–0,9 kg/m ³ for mortar: approx. 0,3 kg/m ³ Colour: white Length: 3, 6, 12, 18 mm	<ul style="list-style-type: none"> - synthetic fibre based on polypropylene - reduces crack formation in concrete and mortar - improves resistance to shrinkage cracking
STAHLFASER HE 1/50 Item No. 3005	Recommended dosage: 20–40 kg/m ³ Colour: silver/grey Length: 50 mm	<ul style="list-style-type: none"> - steel fibre - optimises static properties - prevents from cracks - maximises the load carrying performance of concrete

Additives

EMSAC 500 S (SF) Item No. 3333	Recommended dosage: 5–22 mass-% Density: approx. 1.4 g/cm ³ Colour: grey	<ul style="list-style-type: none"> - liquid microsilica for producing high performance concrete - improves concrete's density and durability - improves concrete's strengths development - optimises concrete's resistance against chemical attacks
®MOWILITH LDM 6880 Item No. 0320	Recommended dosage: 5–20 mass-% Density: approx. 1.03 g/cm ³ Colour: white	<ul style="list-style-type: none"> - additive for producing concrete with good resistances against acids, salty solvent, combustibles and similarly aggressive substances - improves concrete's strengths development
QUELLMITTEL (ST) Item No. 0640	Recommended dosage: 0.2–2.0 mass-% Density: approx. 1.2 g/cm ³ Colour: light grey	<ul style="list-style-type: none"> - additive for producing expansive concrete that expand itself into the hollow space surrounded - minimises concrete's shrinking tendencies

Surface Protection Systems

Hydrophobic Agents

ANTIPOR® aqua proof Item No. 2340	Recommended dosage: 0.8–2.1 mass-% Density: approx. 1.04 g/cm ³ Colour: white	<ul style="list-style-type: none"> - plasticizer suitable for producing concrete goods and wetcast elements - hydrophobises the entire concrete structure - protects from water penetration in hardened concrete - inhibits efflorescence and optimises concrete's frost and freeze-thawing salt resistance - increases strength development and achieves an even and intense colour vibrancy - ensures an homogeneous and even structure with closed surfaces
PROTECT HWA Item No. 2510	Recommended dosage: 1–4 mass-% Density: approx. 0.99 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - hydrophobising agent for semi-dry concrete - protects hardened concrete from water penetration - reduces efflorescence - optimises concrete's frost and freeze-thawing salt resistance - homogenises concrete's structure
PROTECT HWA-C Item No. 2515	Recommended dosage: 0.5–2.0 mass-% Density: approx. 0.98 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - high concentrated hydrophobic agent for semi-dry concrete - protects hardened concrete from water penetration - reduces efflorescence - optimises concrete's frost and freeze-thawing salt resistance - homogenises concrete's structure

Film-Formulating Impregnations

PROTECT NTP Item No. 2920	Application quantity: approx. 80–160 g/m ² Density: approx. 1.02 g/cm ³ Colour: white	<ul style="list-style-type: none"> - film-formulating impregnation for mineral surfaces - protects concrete from environmental influences, algae growth and from oil and fat penetration - protects from efflorescence and frost damages - formulates a satin shining finishing that slightly deepens the primary concrete colour - is applied either on the dry or wet side of production
PROTECT TAO Item No. 2640	Application quantity: approx. 100–200 g/m ² Density: approx. 1.02 g/cm ³ Colour: milky	<ul style="list-style-type: none"> - film-formulating impregnation for mineral surfaces - protects concrete from environmental influences, algae growth and from oil and fat penetration - protects from efflorescence and frost damages - formulates a satin shining finishing that slightly deepens the primary concrete colour - is applied on the dry side of production

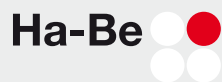
Impregnations

PROTECT nano Item No. 2662	Application quantity: approx. 50–100 g/m ² Density: approx. 1.01 g/cm ³ Colour: colourless to yellowish	<ul style="list-style-type: none"> - reactive impregnation for concrete and natural stone surfaces - protects from moss and algae growth and from water, oil and fat penetration - forms an invisible, nanocrystalline film that optimises the ordinary and aggressive stain resistance - inhibits efflorescence - retains the surface structure and its colour - is applied on the dry side of production
PROTECT TIR Item No. 2660	Application quantity: approx. 100–200 Density: approx. 1.01 g/cm ³ Colour: colourless	<ul style="list-style-type: none"> - reactive impregnation for concrete and natural stone surfaces - protects from moss and algae growth and from water, oil and fat penetration - forms an invisible, protective film that optimises the ordinary and aggressive stain resistance - retains the surface structure and its colour - facilitates surface cleaning - is applied on the dry side of production



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