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.

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 advises 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.

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

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 constructions 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

SolUtionS for ProjectS

Photo: PeRI gmbh
Concrete Admixtures

UNDERGROUND PROJECTS

Sprayed concrete, concrete for casting the tunnel inner shell or tubing 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. Beside 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.
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.

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.

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 spray- 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.
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 Dosientechnik 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
We are looking forward to getting in touch with you.

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

### Product Assortment

**ADMIXTURE SOLUTIONS FOR EUROPE**

We are looking forward to getting in touch with you.

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#### Plasticizer for Ready-Mix Concrete

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Name</th>
<th>Recommended dosage</th>
<th>Density</th>
<th>Colour</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0105</td>
<td>PANTARHIT® 25 (BV)</td>
<td>0.2–1.0 mass-%</td>
<td>approx. 1.18 g/cm³</td>
<td>dark brown</td>
<td>- plasticizer suitable for producing F2 consistency concrete and soft concrete (F3) - improves concrete’s pumpability, placeability, levelability and compactorbility</td>
</tr>
<tr>
<td>0101</td>
<td>PANTARHIT® 35 (BV)</td>
<td>0.2–0.9 mass-%</td>
<td>approx. 1.21 g/cm³</td>
<td>brown</td>
<td>- plasticizer suitable for producing F2 consistency concrete and soft concrete (F3) - improves concrete’s pumpability, placeability, levelability and compactorbility</td>
</tr>
<tr>
<td>0100</td>
<td>PANTARHIT® 45 (BV)</td>
<td>0.2–1.2 mass-%</td>
<td>approx. 1.15 g/cm³</td>
<td>dark brown</td>
<td>- plasticizer with slight retarding effects - suitable for producing F2 consistency concrete and soft concrete (F3) - improves concrete’s pumpability, placeability, levelability and compactorbility</td>
</tr>
<tr>
<td>0180</td>
<td>PANTARHIT® 550 (BV)</td>
<td>0.2–1.6 mass-%</td>
<td>approx. 1.13 g/cm³</td>
<td>brown</td>
<td>- plasticizer for producing concrete in the consistency range F3 - improves concrete’s pumpability, placeability, levelability and compactorbility</td>
</tr>
</tbody>
</table>

#### Superplasticizer for Ready-Mix Concrete

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Name</th>
<th>Recommended dosage</th>
<th>Density</th>
<th>Colour</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0820</td>
<td>PANTARHIT® RC310 (FM)</td>
<td>0.2–2.2 mass-%</td>
<td>approx. 1.04 g/cm³</td>
<td>brown</td>
<td>- 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</td>
</tr>
<tr>
<td>0827</td>
<td>PANTARHIT® RC173 (FM)</td>
<td>0.2–2.1 mass-%</td>
<td>approx. 1.05 g/cm³</td>
<td>amber</td>
<td>- high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an extended workability time</td>
</tr>
<tr>
<td>0832</td>
<td>PANTARHIT® RC180 (FM)</td>
<td>0.2–2.2 mass-%</td>
<td>approx. 1.06 g/cm³</td>
<td>amber</td>
<td>- high performance superplasticizer for producing C1, C2 and C3 concrete - suitable for mad constructions - ensures an extended workability time in any consistency class</td>
</tr>
<tr>
<td>0867</td>
<td>PANTARHIT® RC310 (FM)</td>
<td>0.2–2.1 mass-%</td>
<td>approx. 1.04 g/cm³</td>
<td>brown</td>
<td>- high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an extended workability time in the consistency classes F3 - F6 - attains high early strength - minimises compaction energy applied to concrete</td>
</tr>
<tr>
<td>0872</td>
<td>PANTARHIT® RC330 (FM)</td>
<td>0.2–2.2 mass-%</td>
<td>approx. 1.07 g/cm³</td>
<td>amber</td>
<td>- high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ECC and SCC) - ensures an extended workability time - minimises compaction energy applied to concrete</td>
</tr>
<tr>
<td>0825</td>
<td>PANTARHIT® RC550 (FM)</td>
<td>0.2–2.16 mass-%</td>
<td>approx. 1.08 g/cm³</td>
<td>brown</td>
<td>- high performance superplasticizer suitable for producing concrete in the consistency class F2 up to F6 - ensures an extended workability time</td>
</tr>
<tr>
<td>0820</td>
<td>PANTARHIT® S (FM)</td>
<td>0.2–2.0 mass-%</td>
<td>approx. 1.13 g/cm³</td>
<td>dark brown</td>
<td>- superplasticizer suitable for producing concrete in the consistency classes F2 up to F5 - optimises concrete’s workability time, its processing and compactability - minimises compaction energy applied to concrete</td>
</tr>
<tr>
<td>0868</td>
<td>PANTARHIT® TB100 (FM)</td>
<td>0.2–2.2 mass-%</td>
<td>approx. 1.07 g/cm³</td>
<td>amber</td>
<td>- 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</td>
</tr>
</tbody>
</table>

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Ha-Be adMiXtUre SolUtionS eUroPe
Superplasticizer for both Ready-Mix and Precast Concrete

**PANTARHIT® (FM)**
- Item No. 0830
  - Recommended dosage: 0.2 – 2.5 mass-%
  - Density: approx. 1.15 g/cm³
  - Colour: dark brown
  - superplasticizer suitable to transform stiff concrete (F1) into flow concrete (F5)
  - ensures high early strength development particularly at early ages even at low temperatures
  - improves concrete's workability time, its processing and compactability

**PANTARHIT® C120 (FM)**
- Item No. 0826
  - Recommended dosage: 0.2 – 2.1 mass-%
  - Density: approx. 1.06 g/cm³
  - Colour: amber
  - 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® L (FM)**
- Item No. 0821
  - Recommended dosage: 0.2 – 2.15 mass-%
  - Density: approx. 1.07 g/cm³
  - Colour: amber
  - high performance superplasticizer suitable for producing high consistency, easily and self compacting concrete (ESCC and S SCC)
  - ensures an enhanced strength development even at low ambient temperatures

**PANTARHIT® M (FM)**
- Item No. 0832
  - Recommended dosage: 0.2 – 2.4 mass-%
  - Density: approx. 1.19 g/cm³
  - Colour: dark brown
  - 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/cm³
  - Colour: dark brown
  - superplasticizer suitable for producing stiff concrete (F1) up to flow concrete (F5)
  - optimises concrete's workability time, its processing and compactability

**PANTARHIT® H (FM)**
- Item No. 0810
  - Recommended dosage: 0.2 – 3.3 mass-%
  - Density: approx. 1.12 g/cm³
  - Colour: light brown
  - 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/cm³
  - Colour: dark brown
  - 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/cm³
  - Colour: dark brown
  - 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

**PANTARHIT® FT500 (FM)**
- Item No. 0878
  - Recommended dosage: 0.2 – 2.65 mass-%
  - Density: approx. 1.05 g/cm³
  - Colour: brown
  - high performance superplasticizer that ensures high early strength development particularly at early ages even at low temperatures
  - minimises compaction energy applied to concrete

**PANTARHIT® FT750 (FM)**
- Item No. 0858
  - Recommended dosage: 0.2 – 2.65 mass-%
  - Density: approx. 1.07 g/cm³
  - Colour: amber
  - 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
  - may allow the elimination of heat treatment
  - 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/cm³
  - Colour: light yellow
  - 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/cm³
  - Colour: dark brown
  - plasticizer for producing semi-dry concrete
  - suitable for manufactured concrete goods like paving stones, slabs, tubes
  - attains 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/cm³
  - Colour: dark brown
  - 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/cm³
  - Colour: red
  - plasticizer for manufactured concrete goods like paving stones, slabs, tubes
  - ensures good water/cement ratios
  - improves concrete's early and final strength
### Air Entaining Admixtures

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Item No.</th>
<th>Description</th>
<th>Recommended Dosage</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANTAPOR 66 (LP)</td>
<td>Item No. 0209</td>
<td>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</td>
<td>0.02 – 0.8 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTAPOR 66K (LP)</td>
<td>Item No. 0206</td>
<td>Air entraining agent that improves concrete’s durability by optimising its frost and freeze-thawing salt resistance especially suited for highway and road constructions</td>
<td>0.02 – 1.0 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTAPOR 88 (LP)</td>
<td>Item No. 0200</td>
<td>Air entraining agent that improves concrete’s durability by optimising its frost and freeze-thawing salt resistance especially suited for highway and road constructions</td>
<td>0.01 – 0.4 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTAPOR 1200 (LP)</td>
<td>Item No. 0212</td>
<td>Air entraining agent that optimises concrete’s frost and freeze-thawing resistance suited for highway and road constructions improves concrete’s workability minimises its bleeding and segregation tendencies</td>
<td>0.01 – 0.8 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTAPOR 2000 (LP)</td>
<td>Item No. 0220</td>
<td>Air entraining agent that optimises concrete’s frost and freeze-thawing salt resistance especially suited for highway and road constructions</td>
<td>0.01 – 0.8 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTAPOR 500 LP</td>
<td>Item No. 0210</td>
<td>Air entraining agent for producing mortar</td>
<td>0.01 – 0.4 mass-%</td>
<td>Colour: light blue</td>
</tr>
</tbody>
</table>

### Stabiliser

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Item No.</th>
<th>Description</th>
<th>Recommended Dosage</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>STABILISIER (ST)</td>
<td>Item No. 0710</td>
<td>Stabiliser for manufacturing easily compactable concrete and self-compacting concrete (ECC and SCC)</td>
<td>0.2 – 2.0 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>STABILISIER 72 (ST)</td>
<td>Item No. 0720</td>
<td>Stabiliser for producing semi-dry concrete with optimised frost and freeze-thawing salt resistance improves concrete’s protection against chemical attacks ensures an even and intense colour vibrancy reduces deformation and reduces segregation, bleeding and workability</td>
<td>0.2 – 4.0 mass-%</td>
<td>Colour: light blue</td>
</tr>
</tbody>
</table>

### Retarder

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Item No.</th>
<th>Description</th>
<th>Recommended Dosage</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANTARHOL 85 (VZ)</td>
<td>Item No. 0410</td>
<td>Retarding agent that extends the workability time of the concrete by optimising its frost and freeze-thawing salt resistance</td>
<td>0.2 – 1.4 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTARHOL 90 (VZ)</td>
<td>Item No. 0400</td>
<td>Retarding agent that extends the workability time of the concrete by optimising its frost and freeze-thawing salt resistance</td>
<td>0.2 – 1.0 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTARHOL 100</td>
<td>Item No. 0900</td>
<td>Admixture for mortar that combines an air entraining agent with a stabiliser and a retarder to one product reduces the hydration process reduces bleeding and segregation tendencies improves processing characteristics</td>
<td>0.2 – 2.3 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTARHOL 100 LM</td>
<td>Item No. 0904</td>
<td>Admixture for lightweight concrete that optimises the workability of the concrete and reduces segregation tendencies improves processing characteristics</td>
<td>0.2 – 2.4 mass-%</td>
<td>Colour: light blue</td>
</tr>
</tbody>
</table>

### Admixtures for Mortar

<table>
<thead>
<tr>
<th>Product Name</th>
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<th>Recommended Dosage</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANTAPOR 100</td>
<td>Item No. 0900</td>
<td>Air entraining agent that improves concrete’s durability by optimising its frost and freeze-thawing salt resistance especially suited for highway and road constructions</td>
<td>0.01 – 0.8 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTAPOR 2000</td>
<td>Item No. 0220</td>
<td>Air entraining agent that optimises concrete’s frost and freeze-thawing salt resistance especially suited for highway and road constructions</td>
<td>0.01 – 0.8 mass-%</td>
<td>Colour: light blue</td>
</tr>
<tr>
<td>PANTAPOR 500 LP</td>
<td>Item No. 0210</td>
<td>Air entraining agent for producing mortar</td>
<td>0.01 – 0.4 mass-%</td>
<td>Colour: light blue</td>
</tr>
</tbody>
</table>
### Separating and Caring Agents

**BETONLOSER**
- **Item No. 1100**
  - Application quantity: depends on dilution and degree of contamination
  - Density: approx. 1.19 g/cm³
  - Colour: light yellow
  - Agent that protects metal surfaces at stationary and mobile mixers from sticking mortar and concrete
  - Dissolves cement residues as well as oily and fatty soiling from concrete surfaces and construction machines.

**ENTSCHÄUmer**
- **Item No. 2000**
  - Application quantity: for 100 l foam approx. 150 – 300 g/m²
  - Density: approx. 0.69 g/cm³
  - Colour: light yellow
  - Cleaning agent that removes dirt containing grease and mineral oil from mixing vehicles and construction machines.

**MISCHER-SCHUtz**
- **Item No. 1225**
  - Application quantity: approx. 30 g/m²
  - Density: approx. 0.89 g/cm³
  - Colour: yellowish
  - 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/m²
  - Density: approx. 0.88 g/cm³
  - Colour: yellow
  - Agent that protects metal surfaces at stationary and mobile mixers from sticking mortar and concrete.

**PROTECT 30MS**
- **Item No. 1233**
  - Application quantity: approx. 30 g/m²
  - Density: approx. 0.89 g/cm³
  - Colour: yellowish
  - Agent that prevents metal surfaces from cement sticking.

**REINIGER**
- **Item No. 1181**
  - Application quantity: depends on dilution and degree of contamination
  - Density: approx. 1.10 g/cm³
  - Colour: light yellow
  - Cleaning agent that removes cement residues as well as oily and fatty soiling from concrete surfaces and construction machines.

**REINIGER Z**
- **Item No. 1110**
  - Application quantity: depends on dilution and degree of contamination
  - Density: approx. 1.10 g/cm³
  - Colour: yellowish
  - 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/m² depending on absorbing abilities and dilution
  - Density: approx. 0.96 g/cm³
  - Colour: milky
  - Concentrate for manufacturing release agents.

**VARIOL-EM3**
- **Item No. 1353**
  - Application quantity: 15–40 g/m² depending on absorbing abilities
  - Density: approx. 0.98 g/cm³
  - Colour: milky
  - Release agent for producing high quality surfaces with reduced blowholes.

**VARIOL-TERM**
- **Item No. 1358**
  - Application quantity: 10–40 g/m² depending on absorbing abilities
  - Density: approx. 0.89 g/cm³
  - Colour: yellowish to brownish
  - Release agent that enhances the durability of heated formworks.

### Antifreeze Admixtures

**ANTIFROST 15**
- **Item No. 0550**
  - Recommended dosage: 0.2 – 2.5 mass-%
  - Density: approx. 1.03 g/cm³
  - Colour: colourless
  - Chloride-free admixture suitable for pouring and processing concrete under frosty weather conditions.

**ANTIFROST 45**
- **Item No. 0560**
  - Recommended dosage: 0.2 – 2.5 mass-%
  - Density: approx. 1.43 g/cm³
  - Colour: colourless
  - Chloride-free admixture suitable for pouring and processing concrete under frosty weather conditions.

### Curing Compounds

**CURING**
- **Item No. 1000**
  - Application quantity: 100 – 200 g/m²
  - Density: approx. 1.25 g/cm³
  - Colour: white
  - Solvent free curing agent that protects concrete from evaporation.

**CURING TOP 10**
- **Item No. 1050**
  - Application quantity: 100 – 200 g/m²
  - Density: approx. 1.42 g/cm³
  - Colour: white
  - Solvent free curing agent that protects concrete from evaporation.

### Foam Formulating Agents

**PANTAPOR FA**
- **Item No. 0260**
  - Recommended dosage: for 100 l foam approx. 200 ml are required
  - Density: approx. 1.13 g/cm³
  - Colour: brown
  - Foam generating admixture suitable for producing cellular lightweight concrete.

**SCHAUMBILDNER 97**
- **Item No. 0230**
  - Recommended dosage: for 510 l foam approx. 1 kg and 40 l water are required
  - Density: approx. 1.01 g/cm³
  - Colour: blue
  - Foam formulating admixture suitable for producing lightweight concrete.
**Fibres**

**PANTAFIL PP-Makrofaser**
- Item No. 4510
- Recommended dosage: 4 – 8 kg/m³
- Colour: transparent
- Length: 20 – 50 mm
- - 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/m³ for mortar: approx. 0.3 kg/m³
- Colour: white
- Length: 3, 6, 12, 18 mm
- - synthetic fibre based on polypropylene
- - reduces crack formation in concrete and mortar
- - improves resistance to shrinkage cracking

**STAHLSAFER HE 1/50**
- Item No. 3005
- Recommended dosage: 20 – 40 kg/m³
- Colour: silver/grey
- Length: 50 mm
- - steel fibre
- - optimises static properties
- - prevents from cracks
- - maximises the load carrying performance of concrete

**Additives**

**EMDAC 500 S (SF)**
- Item No. 3333
- Recommended dosage: 5 – 22 mass-%
- Density: approx. 1.4 g/cm³
- Colour: grey
- - liquid microsilotia for producing high performance concrete
- - improves concrete’s density and durability
- - improves concrete’s strength development
- - optimises concrete’s resistance against chemical attacks

**#MOWILITH LDM 6880**
- Item No. 5320
- Recommended dosage: 5 – 20 mass-%
- Density: approx. 1.03 g/cm³
- Colour: white
- - 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. 0840
- Recommended dosage: 0.2 – 2.0 mass-%
- Density: approx. 1.2 g/cm³
- Colour: light grey
- - additive for producing expansive concrete that expands itself into the hollow space surrounded
- - minimises concrete’s shrinking tendencies

**Surface Protection Systems**

**Hydrophobic Agents**

**ANTIPOR® aqua proof**
- Item No. 2340
- Recommended dosage: 0.5 – 2.1 mass-%
- Density: approx. 1.04 g/cm³
- Colour: white
- - 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/cm³
- Colour: milky
- - 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 – 20 mass-%
- Density: approx. 0.98 g/cm³
- Colour: milky
- - 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. 2500
- Application quantity: approx. 60 – 160 g/m²
- Density: approx. 1.02 g/cm³
- Colour: white
- - 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/m²
- Density: approx. 1.02 g/cm³
- Colour: milky
- - 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. 2602
- Application quantity: approx. 50 – 100 g/m²
- Density: approx. 1.01 g/cm³
- Colour: colourless to yellowish
- - 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 g/m²
- Density: approx. 1.01 g/cm³
- Colour: colourless
- - 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