



## Admixture Solutions for the Ready-Mixed Concrete Industry

EXPERTISE  
READYMIX





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Baustellenfahrzeug

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## Ensuring Mixture Stability

High-tech concrete is essential when it comes to design. It needs to be durable and stable, as well as resistant against weathering, acids and ageing. It also needs to be easy-flowing and/or self-compacting. Ideally, this should be combined with the very best in surface finish and a uniformly high quality that exceeds standard specifications. In short, you are looking for concrete that can meet your most stringent requirements. We make it possible.

In ready-mixed concrete, we share a common objective with you. Optimising consistency and workability is essential for the quality of the end product – its stability, durability and appearance. The ideal combination of starting materials, internal planning and logistics is crucial in order to achieve the precise consistency required on-site. With MC's high-performance flow-improving and plasticizing admixtures, as well as its air-entraining agents and stabilizers, you can accurately control your formulations for a wide range of cements and applications and so deliver maximum outcome reliability for your customers.

From classic product lines such as **Centrament** or **Muraplast** through to the perfect combination of flow enhancement and robustness with the new **MC-TechniFlow** and **MC-PowerFlow** series, we offer you a truly comprehensive range of admixtures. We have the right solution for every requirement, for terraces and industrial floors, bridges and cooling towers. And thanks to **Centrilit NC**, we can also ensure your ability to supply acid-resistant, high-performance concrete.

- Accurate optimisation of the fresh and hardened concrete properties
- Exceptional flow improvement
- Long-term retention of consistency
- Innovative logistics solutions







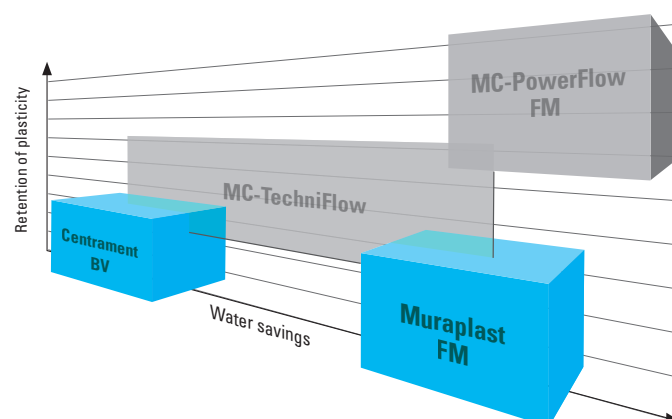
## Wide Range of Requirements – Reliable Solutions

Plasticizing concrete admixtures from MC ensure the smooth production, supply and placement of ready-mixed concrete, combined with high quality and excellent consistency.

Classic plasticizers have long been successfully employed to optimise ready-mixed concrete formulations, both technically and economically. Centrament plasticizers are applied in the factory in order to achieve concretes of the F3 consistency class. For a higher level of concrete consistency and quality, MC's Muraplast superplasticizers offer a wide range of performance features and application versatility.

Process reliability and, above all, robustness in application, are among the reasons why these classic plasticizers and superplasticizers are still being used for concretes in the mid performance range. A further advantage lies in the high level of cost-effectiveness offered by these plasticizers. Indeed, for many applications such as industrial floor construction, the planning engineers themselves will explicitly specify this class of admixture.

MC's global experience with Centrament and Muraplast in the ready-mixed concrete industry has provided the company with an excellent platform to develop new generations of concrete admixtures.



## Concrete Optimisation in Every Respect

For more than 20 years now, MC has been researching polycarboxylate ethers and developing its own PCE polymer feedstocks for high-performance superplasticizers. The result of this continuous development is the MC-PowerFlow product family. Through its own ultra-modern polymerisation plant, MC is able to develop specific solutions for a wide range of requirements.

MC-PowerFlow superplasticizers are characterized by their extensive performance capabilities in every core requirement of ready-mixed concrete manufacturing and application. Short mixing times facilitate high volume outputs. The significant improvement in fluidity, coupled with long-lasting effectiveness, means that the concrete can be adjusted to each site's specific requirements before it even leaves the factory. Consistency corrections on site – for so long a daily requirement with classic plasticizers – can now be considered a thing of the past. MC-PowerFlow delivers concrete with outstanding application and compaction properties. The result: high-quality, high-appeal concrete components with an exceptional surface finish.

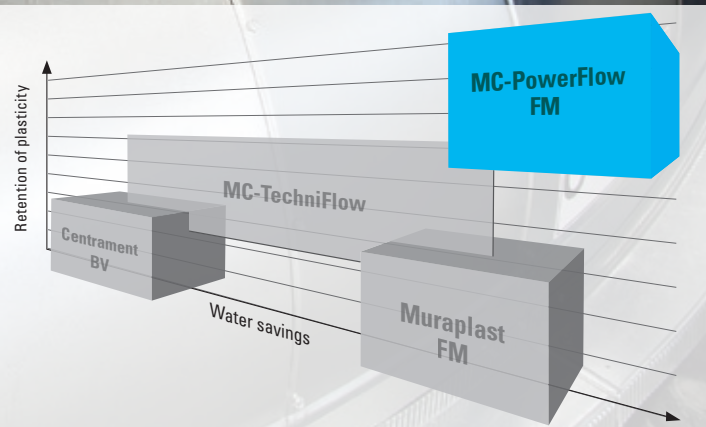
We offer two different MC-PowerFlow product series that cover the wide spectrum of concrete requirements and starting materials encountered.

The **MC-PowerFlow 2200** line offers not only a powerful superplasticizer with long-lasting effectiveness, but also improved concrete cohesion. This ensures the manufacture of homogeneous concretes with high flowability, even when starting with less-than-ideal materials such as low-fines sands and low-grade ground aggregates.

Meanwhile, the **MC-PowerFlow 5000** product range reduces the viscosity of the concrete, ensuring ready, rapid flow for easier workability.







## The Perfect Combination of Flow Improvement and Formulation Resilience

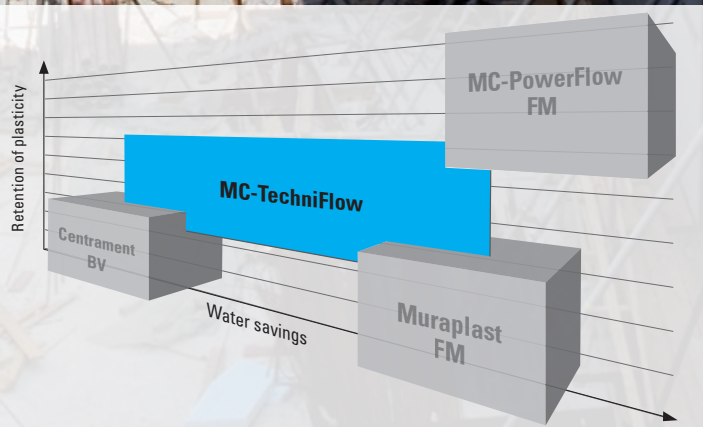
The constant fluctuation of aggregates and technical requirements places high demands on the ready-mixed concrete manufacturing process. Meanwhile, the ongoing development of conventionally plasticized concrete from easy-flow to self-compacting has led to further property optimisation with ever faster on-site placement.

This has become possible thanks to a number of new aggregate and admixture combinations. The final link in this development chain takes the form of MC's ultra-high-performance polycarboxylate ethers (PCE). However, their highly sensitive reaction to changes in concrete feedstocks demands a considerable degree of care and product knowledge if the required concrete properties are to be reliably achieved. There has thus been increasing demand from industry for high-performance superplasticizers capable of offering greater resilience in both their handling and their interaction with other concrete admixtures.

This is where **MC-TechniFlow 30** offers a significant advantage. Classic plasticizing admixtures are now frequently combined with PCE-based high-performance superplasticizers in the same ready-mixed concrete plant. However, these classic materials and PCEs are not totally compatible with one another, which leads to the question as to which material needs to be carried on the vehicle in the event that adjustments should be required on site.

This potential source of error is eliminated through the universal applicability of MC-TechniFlow. Regardless of which plasticizer is employed to mix the concrete in the factory, MC-TechniFlow 30 can be used to add to the mix on site without such incompatibility problems arising.





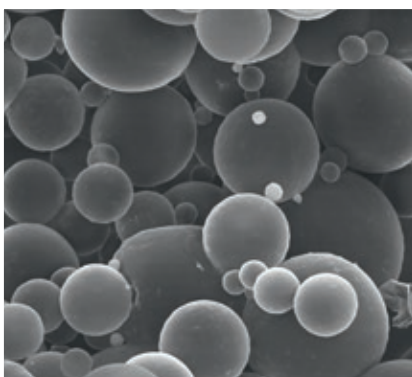
## Controlled Creation of Microporosity

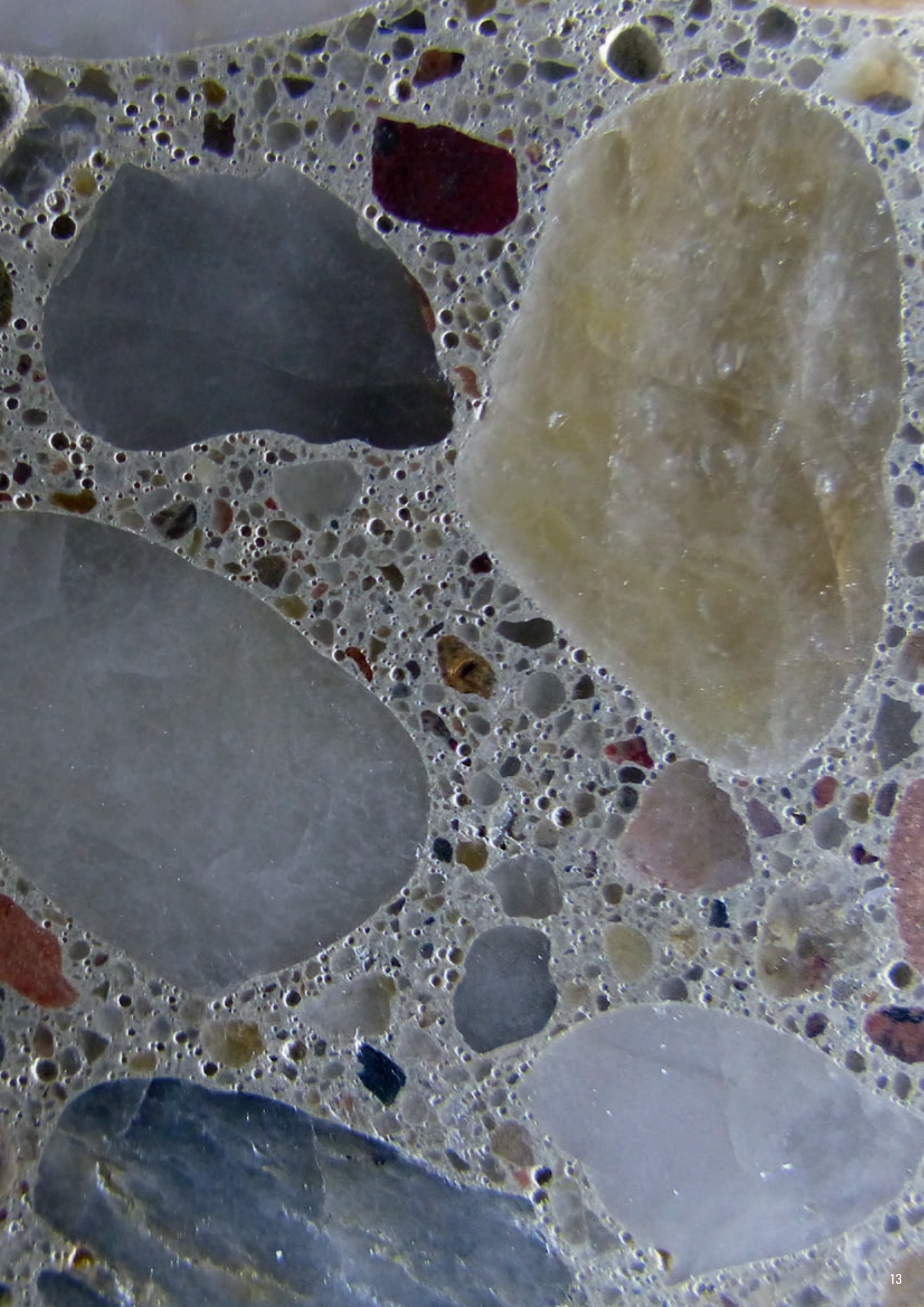
The manufacture of air-entrained concrete for XF exposure classes represents a significant challenge to concrete technology.

Air-entraining admixtures can be used to achieve higher resistance to frost and de-icing salt attack. These admixtures interrupt what is known as the 'frost suction mechanism' by creating escape passages for water and de-icing solutions as they increase in volume in freezing temperatures. Without specifically entrained micropores, this phenomenon leads to damage to the concrete structure, resulting in well-documented problems of spalling at the surface.

The functionality of **Centrament Air** air-entraining admixtures is underpinned by the fact that they generate very fine micropores that are evenly distributed throughout the solidified concrete. MC's portfolio of air-entraining agents includes various ingredient combinations that can facilitate individual adjustment of your concrete formulations.

A technological innovation for such applications, **Centrament Airpolymer** contains prefabricated polymer particles in the form of hollow microspheres. Reliably distributed throughout the fresh mix, these create spherical voids in the solid concrete into which the freezing water can expand.



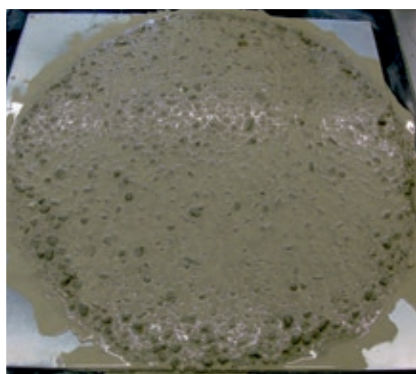


## Imparting Application Flexibility to Concrete

In addition to its plasticizing admixtures, MC also has a wide range of further concrete-improving agents capable of achieving specific properties in both fresh and hardened concrete.

MC offers a product range with specific activities capable of achieving any desired effect. Each range is aligned to certain requirements with respect to the properties of fresh and hardened concrete and the manufacturing process, as well as the concrete aggregates and feedstocks available. As a result, concrete manufacturers are able to create the optimum solution for each application profile.

| Function                 | Product Range     |
|--------------------------|-------------------|
| Retarder                 | Centrament Retard |
| Stabilizer               | Centrament Stabi  |
| Viscosity modifier       | Centrament VMA    |
| Swelling agent           | MC-Quellmittel    |
| Shrinkage reducing agent | Centrament SRA    |





## Maximum Performance and Resistance

Centrilit admixtures enable concrete to significantly exceed relevant standard requirements, whether flexural and compressive strength, density or resistance to corrosive and otherwise deleterious substances. Centrilit improves the durability of the concrete components, their surface quality, the coloration of the concrete and the cost-efficiency of your manufacturing process. This in turn opens up new possibilities for your positioning with respect to architects and clients.

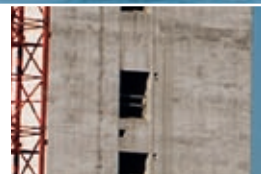
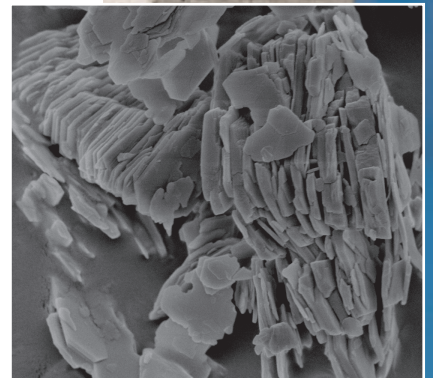
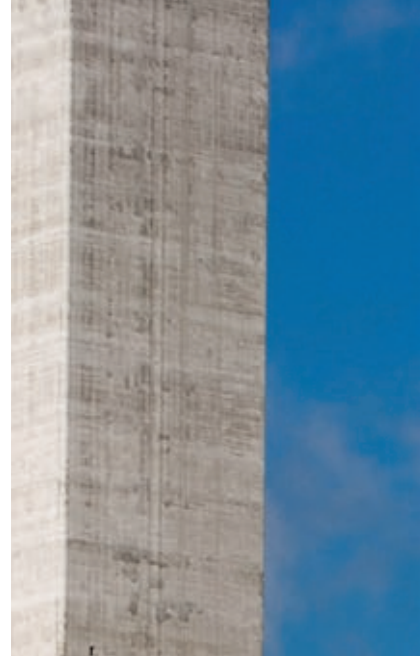
### New horizons for high-performance concrete

The concrete addition **Centrilit NC** is based on a nanocrystallizer developed by MC. It significantly improves the properties that are critical to the performance and durability of speciality concretes and can raise the bar in terms of chemical resistance, acid resistance and strength.

Centrilit NC is particularly suitable to builds in which durability and aesthetics need to be combined. It can produce brighter concrete surfaces than is achievable with conventional admixtures, particularly when using white cement and fully pigmented concretes. The high flexural and compressive strengths achievable open up new design possibilities for your customers. Centrilit NC can be used in powder form or as a suspension.

### The classics among the additions for high-performance concrete

With the microfine and ideally graded grain structure of **Centrilit Fume SX**, you can optimise the packing density of your concrete down to the micron range. Its pozzolanic properties strengthen the bond zone between the cement stone and the aggregate grain. This leads to high compressive strength and can fully satisfy strict requirements such as those contained in Germany's ZTV-ING specifications. Centrilit Fume SX is supplied as an easily dispensed suspension.





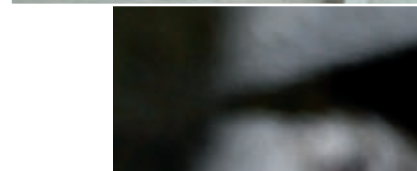
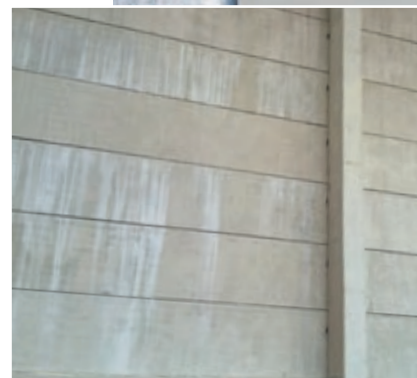


## Removing Stubborn Deposits With Ease

MC's cleaning and maintenance products can be relied on to remove rust and oil stains, efflorescence and cement residues, as well as other deposits on both concrete surfaces and construction equipment. Even in the most stubborn of cases, these high-performance solutions are effective, cost-efficient and easy to apply.

| Substrate | Stain                    | Product solution       |
|-----------|--------------------------|------------------------|
| Concrete  | Rust                     | MC-Rost Ex             |
|           | Oil                      | MC-Entoeler            |
|           | Efflorescence            | Donnitil 3X            |
|           | Cement residues          |                        |
| Equipment | Hydraulic binding agents | Donnitil BGR 81        |
|           | Limestone residues       |                        |
|           | Water residues           | Donnitil Concretex 101 |
|           | Concrete residues        |                        |

When it comes to construction equipment cleaners, it is important that dirt and deposits are effectively removed while avoiding any kind of corrosive attack on the machinery and tools concerned. **Donnitil Concretex 101** takes this one step further. It not only removes stubborn concrete and mortar residues but also actually protects your construction equipment from corrosion.





## Concrete and Mortar Residues Wiped Out

The Intaktin range of products is designed to significantly minimise the adhesion of concrete and mortar residues on machinery and equipment. Regularly applied, they provide long-lasting protection, thus increasing your equipment's service lifetime.

MC offers a mixer surface protection agent for each requirement profile and type of substrate. All Intaktin products are solvent-free and, thanks to their ease of use, offer fast and efficient cleaning.

### Intaktin 71

A basic mixer protection agent for use on damp surfaces, offering reliable protection and ready release of deposits.

### Intaktin 72

A powerful mixer protection agent capable of quickly infiltrating water and forming a uniform and waterproof protective barrier. Applicable both to damp and wet surfaces.

### Intaktin 73

An environmentally compatible and easy-to-use mixer protection agent offering excellent protection and release of deposits. It can be applied to both damp and wet substrates and is made up of ingredients that render it completely non-hazardous.

### Intaktin 74

This ultra-effective mixer protection agent, similarly based on environmentally compatible oils, is characterized by its active corrosion protection capability. It can be applied effortlessly to rusty, damp and wet surfaces.





## Our Service Portfolio – Offering More Than Any Standard

### We support you from specification preparation through to production go-live

As developers and manufacturers of high-performance product systems for the ready-mixed concrete industry, we offer you far more than just the security of a reliable product solution.

We are capable of supporting partners around the world in the creation of high-quality, special-purpose concrete formulations. With a global network of laboratories and application engineers, together with ongoing know-how transfer between our concrete technologists and highly qualified on-site employees, our service levels are high by any standard. Our ability to optimise selection of the most suitable concrete admixtures with regard to the desired hardened concrete property profile, the regional aggregates available and metering technology ensures that you are consistently one step ahead in terms of product quality. The competitive advantages available through MC's innovative admixtures and additives give you the edge you need.

We can provide you with the additional security of a smooth manufacturing process right from the start of the initial production phase. And we will coordinate your formulations to ensure optimum ready-mixed concrete quality so as to secure customer satisfaction further down the line.

We are serious about ensuring concrete excellence. Of that you can be sure.





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