



MasterCem®

Solutions for the cement industry



 **BASF**

The Chemical Company



Master Builders Solutions from BASF

The Master Builders Solutions brand brings all of BASF's expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry.

The know-how and experience of a global community of BASF construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global BASF technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

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



MasterCem®



Industry challenges

Cement manufacturers operate in one of the world's toughest industries. A vast number of new challenges are emerging, pushing plant and human resources to the limits. Mill operators are faced with the sometimes conflicting tasks of lowering the clinker factor, increasing production efficiency, improving performance, and cutting carbon dioxide emissions – all while complying with ever-changing regulatory requirements.

Innovative solutions

BASF grinding aids and performance enhancers help cement producers master these challenges. MasterCem grinding aids reduce agglomeration forces, increasing grinding and separation efficiency. Our performance enhancers go one step further, improving cement properties such as early and late strength, setting time and workability. In addition to our standard products, we offer customized solutions for a wide variety of composite cements.

Unparalleled expertise

BASF is committed to developing cutting-edge products for the cement industry – today and in the future. The MasterCem portfolio is rooted in our rich tradition and experience in cementitious materials. We possess extensive grinding expertise, and in-depth knowledge of chemical and mineralogical interactions. More importantly, we understand the cement industry's current and emerging imperatives.



Comprehensive range of innovative products

Meeting the needs of cement producers





Our comprehensive and innovative range of grinding aids and performance enhancers are targeted to cement manufacturers' current and emerging needs. To meet your specific requirements, BASF offers tailor-made solutions adapted to a variety of composite cements based on granulated blast furnace slag, fly ash, limestone, natural pozzolan and other supplementary cementitious materials (SCMs).

MasterCem liquid cement additives are easy to meter onto the mill feed belt or directly into the mill. Only standard storage and dosage equipment is needed – minimizing expense and capital investment.

Grinding aids

MasterCem grinding aids neutralize agglomeration and creates a dispersion effect that improves cement fineness. They increase grinding and separator efficiency, reduce energy consumption, prevent pack set, and increase mill throughput.

Performance enhancers

In addition to acting as grinding aids, MasterCem performance enhancers improve strength, setting time, and workability. Our product line includes early and late age strength enhancers, strength and workability improvers, and air-entraining agents.

MasterCem Series

Grinding aids

MasterCem GA 1000
Grinding aids

Performance enhancers

MasterCem ES 2000
Early-strength enhancers

MasterCem LS 3000
Late-strength enhancers

MasterCem SW 4000
Strength and workability improvers

MasterCem AE 5000
Air-entraining agents

MasterCem SP 6000
Specialty products

Product performance depends, to a large extent, on raw materials, grinding equipment, and process parameters.



Benefits

Greater efficiency,
smaller ecological footprint,
higher performance



Cost reduction

- Lower grinding energy
- Greater integration of supplementary cementitious materials (SCMs) and mineral fillers
- Increased capacity lowers need for future expansion

Production Efficiency

- Higher mill throughput
- Easier material handling due to greater cement fluidity
- Decreased pack set
- Increased efficiency of grinding media and separators
- Reduced plant downtime
- Longer intervals between scheduled maintenance

Product Quality

- Greater early and late-age compressive strength
- Higher cement performance
- Compensation for dilution of clinker with less reactive SCMs and mineral fillers

Contributes to sustainable development

- Reduced energy consumption
- Lower CO₂ emissions
- Lower clinker factor
- Conservation of natural resources
- Extended quarry lifespan

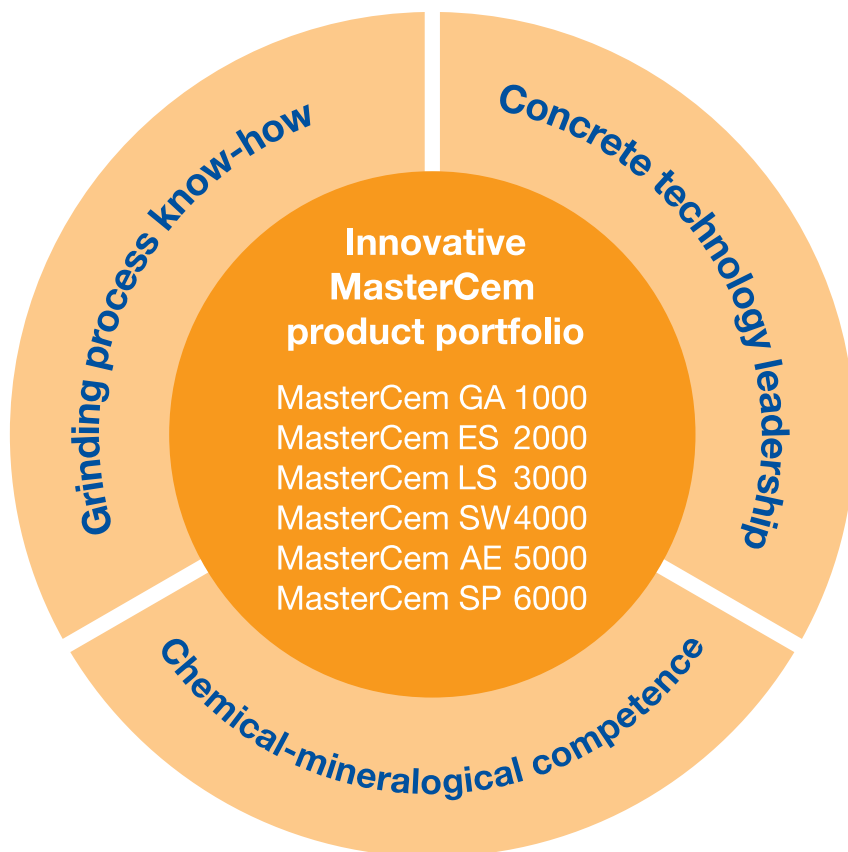






Our offer

Helping cement producers be more competitive



Innovative products

Our comprehensive portfolio is the result of continuous assessments of evolving market requirements and intense R&D work in our laboratories around the world by a dedicated group of scientists focused on meeting the industry's current and emerging challenges.

Grinding process expertise

Mastering the grinding process is essential for creating state-of-the-art cement additives. Thanks to our in-depth understanding of industry processes, we can assist cement manufacturers on-site during all phases of cement additive implementation.

Chemical-mineralogical competence

We are experts in cement chemistry, mineralogy, and complex cement hydration mechanisms. Our scientists analyze raw materials and cements in BASF's laboratories to formulate cutting-edge cement additives and ensure material compatibility.



Our service offer to you

Supporting
you in the
implementation
of cement
additives from
Master Builders
Solutions







Pilot mill

A unique facility for industrial-scale testing



Our pilot mill, located in the BASF development center in Treviso, Italy, simulates actual production conditions, allowing us to create new cement recipes and develop tailor made MasterCem additives. The facility is ideal for testing specific cement formulations, and is a valuable resource for research.

Technical data

- 1:10 scale grinding plant
- Closed-circuit, two-chamber ball mill
- First-generation dynamic separator
- Reproduction of real mill temperature
- Airflow rate regulation
- Performance control via noise measurement
- Programmable Logic Controller

The pilot mill is a key asset of our development center. It enables our researchers to develop innovative technologies and products, and to conduct thorough testing and evaluations prior to market release, reassuring our customers that our additives have proven their performance under industrial conditions.

Benefit from our expertise

We understand the challenges that our customers face
– and have the resources to provide leading-edge solutions

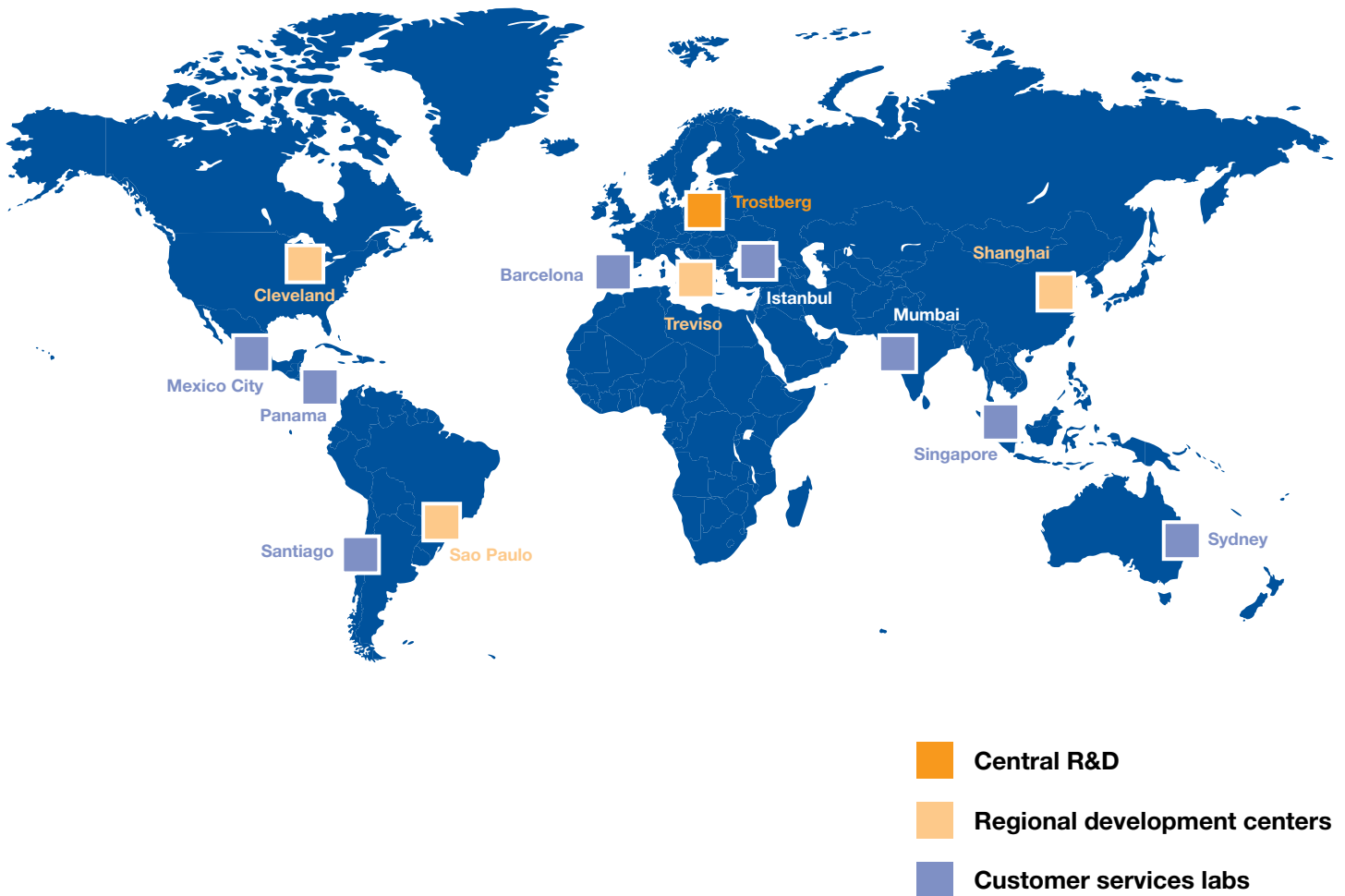


As a leader in concrete technology, BASF has a keen understanding of the industry as a whole, and of the challenges that cement manufacturers are facing. Our customers can draw on our global network of chemists, physicists, civil engineers, mineralogists and geochemists – experts who know what cement producers require to become more competitive. We have the resources to carry out a variety of chemical and mineralogical analyses, as well as analysis of cement-concrete interactions. Additionally, due to the extensive number of BASF sites around the world, we are able to provide excellent local support.

Equipment and cement analytics expertise

- Cement grinding
- Physical cement characterization
- Qualitative and quantitative mineralogic characterization
- Elemental composition in solid state and pore solution
- Thermal analysis and calorimetry
- Optical and electron microscopy
- Mechanical testing of concrete and mortar

Master Builders Solutions global network of central R&D facilities,
regional development centers and customer service labs





Master Builders Solutions from BASF for the Construction Industry

MasterAir®

Complete solutions for air entrained concrete

MasterBrace®

Solutions for concrete strengthening

MasterCast®

Solutions for the manufactured concrete product industry

MasterCem®

Solutions for cement manufacture

MasterEmaco®

Solutions for concrete repair

MasterFinish®

Solutions for formwork treatment

MasterFlow®

Solutions for precision grouting

MasterFiber®

Comprehensive solutions for fiber reinforced concrete

MasterGlenium®

Solutions for hyperplasticized concrete

MasterInject®

Solutions for concrete injection

MasterKure®

Solutions for concrete curing

MasterLife®

Solutions for enhanced durability

MasterMatrix®

Advanced rheology control solutions for self-consolidating concrete

MasterPel®

Solutions for water tight concrete

MasterPolyheed®

Solutions for high performance concrete

MasterPozzolith®

Solutions for water-reduced concrete

MasterProtect®

Solutions for concrete protection

MasterRheobuild®

Solutions for superplasticized concrete

MasterRoc®

Solutions for underground construction

MasterSeal®

Solutions for waterproofing and sealing

MasterSet®

Solutions for retardation control

MasterSure®

Solutions for workability control

MasterTop®

Solutions for industrial and commercial floors.

Master X-Seed®

Advanced accelerator solutions for pre-cast concrete

Ucrete®

Flooring solutions for harsh environments

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