



Silo Sprayed Concrete Solutions

In partnership with

ROMBOLD UND
GFRÖHRER



Master Builders Solutions

Leading industry positions in

**UK, Europe, USA,
Canada, Australia &
New Zealand**

Net sales in 2023

> €900m



35

Production sites



1600

Employees



3%

of spend on Innovation,
R&D, and Technical Support



80+

Current R&D pipeline
projects



> 300

Highly specialized technical
experts tailoring global
innovation to local needs



Company Overview – UK & Ireland

- **>55** employees based over two sites in the UK
- **>98%** of all deliveries “On Time In Full”
- **>90%** of all admixture products manufactured in the UK
- **>5,000 days** of LTI free manufacturing
- **ISO 14001** certified for Environmental Management Systems
- **ISO 9001** certified for Quality Management

Concrete Admixture Solutions for:

- Low Clinker Concrete
- Ready-Mixed Concrete
- Precast Concrete
- Below Ground Waterproofing
- Power Floated Concrete Floors
- 3D Printed Concrete

Underground Construction Solutions for:

- Ground Engineering/Injections
- Mining Industry
- Rock Bolting
- Sprayed Concrete
- TBM systems
- Water Management



Our commitment to sustainability

>7,000

customers in over 25 countries

Our products enable **reductions of greenhouse gas emissions** associated with concrete by **15–50%**, compared to the current industry average

>35%

reduction in wastewater per produced ton compared to 2020 baseline

>42%

of R&D budget attributed to projects with a sustainability focus in 2022

Ranked

11th out of 538

chemicals companies by Sustainalytics I, earning us recognition as an **ESG Industry Top Rated company**

>48%

of our sales are from products that enable sustainable construction

Partnered with a specialist third party to analyse the regional **environmental and human rights risks** in our operations and supply chain

100%

of our sites assessed for solar panel installation



Silo Sprayed Concrete Solutions (Shotcrete)

Sprayed concrete technology has revolutionized tunnel construction and mining operations since the middle of the 20th century. The development of material science and performance together with advances in spraying equipment technology have made sprayed concrete the building material of choice for today's underground construction projects.

Due to its nature as a spray-applied material, sprayed concrete offers excellent surface sealing and ground strengthening as it perfectly fits the excavation contour, hardening and gaining strength in a remarkably short time frame.

This has allowed the construction of underground subsurface structures that were not possible before. The development of modern wet-mix sprayed concrete in particular has contributed considerably to this effort.

Furthermore, the proven quality of sprayed concrete has led to it being used more and more as a permanent support solution, replacing the traditional cast in-situ inner concrete lining.



ROMBOLD Silos

Spray silo 23.5 m³ / 10bar with filling flange in the lid for automatic filling

The spraying system from Rombold & Gfrohrer is used to produce shotcrete using the dry spraying process. It consists of a silo pressure vessel with an internal screw conveyor, pneumatic slide and corresponding control device.

The container is built as a pressure silo for combination lift vehicles and can be transported on a truck with a roll-off system, for example.

This spray silo can be set up at any suitable location outdoors and can be built directly under a normal storage silo (e.g. 50m³ silo) and is then connected to it via a flap, slide and fittings. In the second use, the spray silo can be used as a stand-alone spray tank; then the filling flange is closed at the top.



Dry Silo / Wet Spray Benefits

Full range of variations for ground engineering and tunnelling

- 0/2mm; 0/4mm; 0/8mm – grain size
- Up to C 50/60 covering all exposure classes
- Early strength developments depending in accelerator
- On plant / site admixture of fibres
- Includes powdered superplasticizer and optional powdered accelerator
- Option of chemical resistant concrete

ROMBOLD UND
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Silo Sprayed Concrete Solution

Complete Dry Silo & Accelerator Admixture Solution

- Admixtures for dry silo mortar refer to chemical formulations added to pre-mixed dry mortar products stored in silos.
- These admixtures are designed to enhance various properties of the mortar, such as workability, setting time, and durability.
- Admixtures play a key role in optimizing the properties of dry silo mortar, contributing to improved workability, durability, and overall construction quality.
- In partnership with Rumbold silos, Master Builders Solutions has come up with an approved concrete mix design with an alkali free accelerator, for on site silo sprayed concrete solutions.



Video:

Click here to see one example of a Silo Sprayed Concrete Solution set up



Dry Silo Admixture Solution

MasterAir 760

Air entraining and plasticizing admixture

MasterAir 760 is a ready-to-use powder mortar admixture, designed to entrain air, plasticise and extend workability for use in dry silo systems.

- Reduces bleed and segregation in the mix.
- Improves cohesiveness and bond strength.
- Improves frost resistance.
- Air entrained mixes produce greatly enhanced working properties with a reduced demand for mixing water.

MasterGlenium 399

Powdered high range water reducing admixture for concrete

MasterGlenium 399 is a unique blend of powdered super-plasticizers based on modified polycarboxylic ether for use in dry silo systems.

- Flowable concrete with the lowest water/cement ratio without segregation or bleeding
- Increases initial and final compressive strength
- Increase initial and final flexural and tensile strength
- Decreases risk of shrinkage and creep



MORE INFORMATION

MasterAir 760:

Air entraining and plasticizing admixture



MORE INFORMATION

MasterGlenium 399:

Powdered high range water reducing admixture for concrete



Accelerator Admixture Solution

MasterRoc SA I84

Alkali-free, liquid high performance set accelerator for sprayed concrete

MasterRoc SA I84 is a high-performance, suspension type alkali-free set accelerator for sprayed concrete. The dosage can be varied to the desired setting and hardening requirements.

- Chloride free: no impact on reinforcement steel
- The quick setting property allows rapid work progress and the ability to construct thick sprayed concrete linings via layered application during one construction sequence.
- The unique product formulation provides fast setting, continuous early-age strength development high durability and good long-term strength.
- Very low dust generation during application and therefore a good working environment.
- Non-aggressive properties provide improved working safety, reduced environmental impact and lower handling costs.



MORE INFORMATION

MasterRoc SA I84:

Alkali-free, liquid high performance set accelerator for sprayed concrete



Contact Us

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