



Materials

When Precision Becomes a Competitive Advantage: Next-Generation Hydration Plant

GERWIN, a METZEN brand, has delivered a high-performance hydration plant that combines technical precision, standardisation, and sustainable efficiency – a milestone for the lime industry. The customer benefits from a future-proof system that ensures process reliability, optimises throughput, and reduces energy consumption and CO₂ emissions. In a demanding project, four identical 150 m³ silos were integrated with high-performance bucket elevators and precise screw conveyors into a modular, economical, and robust plant that guarantees the highest dosing accuracy and material flow.

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Solution Modular precision – efficient processes

For a customer in the lime industry, a high-performance hydration plant was realised that combines efficiency, standardisation, and technical precision. The core elements are four identical silos, each with a capacity of 150 m³, 4,000 mm diameter, and a cylinder height of 10,800 mm. Feeding is handled by a high-performance bucket elevator, which reliably transfers the material to downstream screw conveyors that distribute the hydrate accurately into the individual silos.

The material discharge is equally process-safe: screw conveyors fill the silo trains while simultaneously performing precise weighing. This ensures consistent, safe, and traceable material transfer. The project also included the complete foundation concept, including formwork and reinforcement planning, to create a stable and permanently load-bearing plant structure.

Result Future-proof hydration plant – optimised material flow

The project demonstrates how technically precise planning, thoughtful standardisation, and sustainable engineering create a modern, economical, and future-proof hydration plant. Energy-optimised construction and a high-performance dust extraction system reduce both emissions and operating costs. At the same time, robust silo technology ensures reliable material flow and accurate dosing – a plant that combines sustainable efficiency with high production standards.

Highlights

- **Modular efficiency:** Four 150 m³ silos provide a robust foundation for a standardised and economical hydration plant.
- **Consistent process reliability:** Every step, from high-performance bucket elevator to weighed silo discharge, is precisely coordinated.
- **Technical challenge solved:** High requirements for dosing accuracy and throughput were reliably met, while maintaining a compact design.
- **Sustainable impact:** Energy-optimised construction and modern dust extraction reduce energy consumption and deliver measurable CO₂ reduction.
- **Solid expertise:** Holistic planning, including foundation, formwork, and reinforcement design, ensures maximum execution reliability.

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