



Baumit - European Center for Fine Plaster

Scope of Project	Production planning as well as batch and control system for the fine plaster plant
Particularities	Integrated system from order handover to production control, flexible production control from small quantities to bulk orders
Plant Location	Wopfing / Austria
Client	Wopfinger Baustoffindustrie GmbH

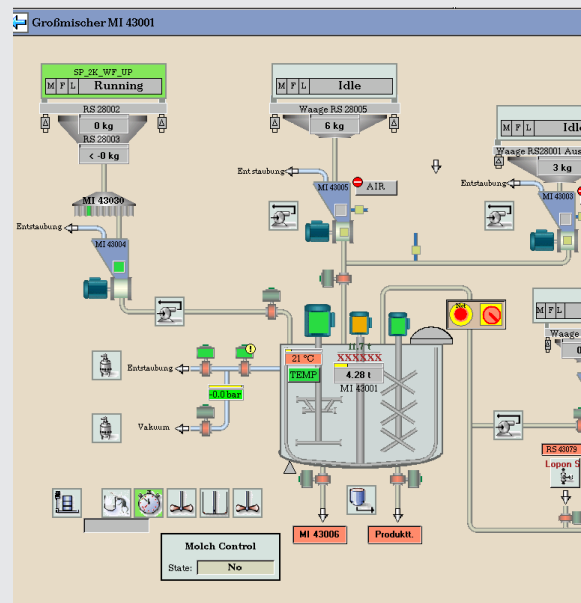
KEY FACTS

aX Software	automationX, redundant aXbatch aXproduction
aX Server	1 redundant server pair 1 Oracle server
aX Client	3 operator stations, every with 4 monitors 1 operator station for production scheduling and production planning 8 operator stations for production planning und production control
I/O's	3.500, via Siemens ET200S
Interfaces	ERP-System AS400
Network	Control technology: Ethernet Field: 4 autonomous Profibus DP lines
Field	80 frequency converter ABB 50 metering and weighing devices 12 mixer 14 scales 80 motors 400 valves



OUR PARTNER

The Wopfinger Baustoffindustrie is a family-owned group in the third generation and is based in Wopfing in Lower Austria. Cement, lime, dry plasters, screeds and façade plasters are produced in this plant. The Wopfinger Baustoffindustrie is one of the most important employers of the region and at the same time is one of the largest customers of numerous regional firms (e.g. freighters, commercial enterprises, the restaurant trade etc.).



THE CHALLENGE

According to the current usual industrial production of paints and coatings in Europe, the finished products are produced by a feed mixer and are filled into storage tanks or directly into ready-for-sale containers. The palletized goods then reach the dealers and construction sites via shelf storage systems and picking stations. The new production plant, on the other hand, individually mixes each product in the quantities desired by the customer! The range for orders extends from 25 to 12,000 kg. In addition, this production method provides for high quality in terms of colour constancy and evenness of the façade structure. This concept combines the flexibility of small-scale production with the performance and efficiency of industrial manufacturing. The exceptional requirements in terms of system control and production logistics were covered by automationX software. This system has opened up completely new avenues in automation engineering by replacing traditional automation components by software and has thus made it possible to more closely network the production engineering and the commercial system.

THE SOLUTIONS

automationX is responsible for all the control systems in the Wopfinger fine plaster plant. The philosophy of automationX provides for a close link between traditional automation engineering and information technology, which is a decisive advantage for the new plant. The following aspects of system control were carried out by automationX in this project:

Traditional control technology

The entire basic control is performed by means of automationX-Soft-PLC. In this technology, the control program does not run in the traditional programmable logic controllers (PLC), but in automation servers, which are 100% compatible with usual IT standards. A pair of redundant servers was deployed to increase the plant availability. The connections to the field were established by 4 autonomous Profibus DP lines. The Siemens ET200M and Siemens ET200B series were installed as I/O systems. A total of 3,500 I/O points were connected to the redundant server pair. In addition, there are 80 frequency-controlled motors (frequency converter by ABB) and 50 metering and weighing devices (Siemens Siwarex).

Process visualisation and operation

A total of 8 terminals are available for process visualisation and operation. 3 are set up in the central control room, and the rest are distributed at important production-related points throughout the plant. The client/server technology makes it possible to export the entire user interface (including the development environment) to any network PC.

Batch system

The core of the plant is a S88 compatible batch system, which grants process engineers and production managers as much flexibility as possible in the production system without altering the program technology of the system. In this way, the entire production process is described in an intuitive way by means of "recipes". Phases, which can be understood as the interface to individual parts of the plant, act as the basic building blocks for all the recipes. The arbitrary combination of phases and the application of the phases with parameters (which are only fixed in the recipe) result in a flexibility by means of which both new product developments as well as optimisations in product technology can be carried out without the aid of programming. A special feature of the Baumit Wopfinger plant is that the packaging plant is also integrated into the batch system and can be controlled by it.

Production management

The automationX system is closely connected with the commercial system (IBM AS/400) at Baumit Wopfinger. All of the production orders are collected directly by the commercial system and status messages are returned to it. Likewise, the material compositions for the recipes, which originate from the commercial system, are converted by means of computer assistance into production-related recipes. The result of the close networking of both systems is a high degree of transparency in all the technical and commercial processes, which are fully used for the economic optimisation of the plant.

Quality assurance

For quality assurance, all the production-related data is stored in an individual automationX database server (Oracle 9.0). In this way, the sequence of any batch at any time can be reproduced. In addition, the development of process values (e.g. pump performance, temperature etc.) within individual recipes is recorded and displayed graphically. The curves of different batches can also be overlaid. In this way, conclusions can easily be made on modifications of the product and plant properties.

