

Industry: Chemicals

sia Abrasives Industries

www.sia-abrasives.com



“The automated management of scheduling activities and online information coming directly from plant floor facilitates the coordination with other divisions. Response time to changes in scheduling has been substantially reduced.”

Thomas Brandes,
Work Order Planning Department,
sia Abrasive.

A Comprehensive Plant Solution for the Production of Coated Abrasives

by Wonderware Switzerland

Goals:

- Paperless connection between production and production management systems.

Challenges:

- Outdated, inconsistent systems;
- Local loss of data causing discontinuity and frequent errors.

Wonderware Solution:

- ActiveFactory software;
- Development Studio;
- Wonderware Historian;
- Wonderware Information Server;
- Wonderware Manufacturing Execution Module.

Results:

- Unified dataflow;
- Elimination of paper records;
- Higher product quality and work simplification;
- Faster reaction times thanks to the availability of real-time data;
- Better coordination between production and other departments.

Frauenfeld, Switzerland - sia Abrasives Industries AG at Frauenfeld (Switzerland) is one of the world's leading manufacturers of coated abrasives. The company offers a product range of several thousand items that are subject to continuous improvement.

sia Abrasives employs about 1.100 persons worldwide, 690 of which work in Frauenfeld. In 2007, the business volume reached 298 million CHF, and great attention is being paid to the performance and efficiency of the enterprise.

The Products: Coated Abrasives for Various Fields of Application

The coated abrasives produced at Frauenfeld are made up of a carrier material such as paper, tissue, vulcanized fibre or plastic film. Through a continuous process, abrasive grains are applied to the backing and anchored by bonding adhesives. sia Abrasives products are distributed worldwide and are used in metalworking, woodworking, automotive bodywork, panel production et al.

Starting the Project

sia Abrasives produces coated abrasives on several production lines based on specific products and each consisting of a number of subordinate units.

Before the introduction of production management



Figure 1: A wide product range for various fields of application.

system, there was no connection between the controls of the individual production units. Thus, the planning of the various production processes and the management of the machines' setup were highly laborious and inefficient. Moreover, manufacturing data were administered via different, non-compatible systems which led to errors caused by media conversions.

As process data accumulated locally, great efforts had to be made for consistent quality control because of the lack of a common database. sia Abrasives therefore decided to introduce an extensive automation solution that facilitates production control and reporting.

After evaluating different options, sia Abrasives decided to entrust this challenge to Wonderware software and acs ag, a Wonderware system integrator from Wil / Switzerland. The implementation began in 2003 with the final goal of creating a paperless solution that connects the plant floor to the production planning and control (PPC) system.

Developing a Comprehensive Plant Solution

All plant information is now stored centrally through a Wonderware Historian. Thanks to this high-performance real-time database, the information from the control system used for planning and reporting are available to all work stations based on the different roles and authorization of the personnel.

The Manufacturing Execution Module and the open interfaces provided by Wonderware software enables the standardization of data flow. The solution enables production orders to be centrally dispatched via a PPC (production planning and control) work station.

At any time it is possible to check and supervise the status of batches in the various process steps. Plant floor is constantly updated with real-time production order information.



Figure 2: Each production line consists of a number of subordinate units.

The Results: a Secure and Open System

Thanks to the newly established connection between control units and database, it is possible to manage machine setup automatically. Since it is no longer necessary to input data manually, the Wonderware solution helped eliminate an important source of errors.

Thanks to the network connection, it is now

possible to comprehensively evaluate, analyze and supervise several production lines. It is also possible to easily expand the system in connection with the production scheduling and control system (PPC): Due to the use of state-of-the-art technologies and non-proprietary interfaces provided by Wonderware software, further equipment and applications can be integrated with the existing system.

Success Thanks to System Integrator

The Swiss company acs ag has been successfully realizing projects in automation and MES (Manufacturing Execution System) with Wonderware software solutions for more than 15 years. Thanks to this considerable experience, they were able to satisfy completely the customer's requests. An in-depth analysis of the given situation, as well as the best combination and set-up of software components, led to maximum benefit for the end customer.

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