R&W INDUSTRIEAUTOMATION

Munich 1, Wet line

Efficiency
Munich 1, Wet line

67,7 %

Item	Value	Unit
Worktime	2.03	h
Count layer	309	Pcs
Regular cycle time	16	sec
Cycle time	23.7	sec
Efficiency	67.7	%
Product	Athena Autumn Red	

Production Data Management

Production efficiency
at a glance

CONTROL

The different control units of the production line record production data.

They communicate via Ethernet with the R&W DB-BOX and are able to send data to a database or receive data from the database on request.

Database commands are created in the programming language SQL. Thus, it is possible to use the full range of database functions.

Database commands are managed in the control units; this is the location where data is present.

R&W provides tools for the design and test of database commands. Afterwards, it is possible to convert the commands in data blocks such as Siemens-S7.

Suitable functional modules communicate to the DB-BOX.

The system is optimised for the Siemens S7 family, but it is also possible to combine it with other control systems.

Control

R&W DB-BOX

The R&W DB-BOX is the interface between control units and database.

The control units communicate with the DB-BOX via simple telegrams.

The DB-BOX translates several data formats of the control units and database systems and provides a smooth communication.

The DB-BOX connection may take place in different databases.

Parameterisation is done via the integrated webserver. Two independent Ethernet interfaces provide a strict separation between the network on a field level and the network on a database level.

The R&W DB-BOX is freely scalable. From a simple data connection via an integrated database up to the integrated webserver with evaluations - several performance classes are available.

In stand-alone mode, data is stored on an integrated memory card.

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DATABASE

Data is stored in a SQL database. This database can be installed in the DB-BOX or on an external PC.

The R&W DB-BOX supports databases with MS SQL server, MySQL, Oracle, Access and other systems. The database structure is individually composed according to its line configuration, and thus, it is optimised for quick access.

Databases at different locations can be synchronised with each other via internet.

Thus, it is possible to view and compare data company-wide.

Furthermore, the database may be used as interface to other systems (ERP, ...).

Database

VISUALISATION

Visualisation

Visualisation is done via websites. So, no special software is required for the display units, only a web browser shall be installed.

The websites are individually created for the customer and for customer data in the database.

Data is displayed in the form of tables and graphs.

In addition to traditional PCs, smart-phones and visualisation calculators available in the lines are appropriate for access.

Special sides optimised for an access via Smartphone allow a quick over-view of the most important production figures en route.

Production and downtimes as well as line efficiency are displayed at a glance. Access to a website may be realised within the company net-work or via remote access.

DB-Box

WEB SERVER

The WEB server allows access to stored data.

It is a stand-alone application that may be installed on a separate PC or on the database PC.

The WEB server accesses to data on the database and provides data on websites.

In addition to data evaluation, the WEB server may also be used to enter required values.

WEB server

CUSTOMER VALUE

Production data is intelli-gently brought into relation to each other and its evalua-tion is provided to the users in the complete company via a WEB server in a timely and objective way.

R&W PDM provides current and reliable data from all production areas.

This is the basis for the mana-gement to make the right de-cisions.

From the concrete mix to the pallet
## PAVE IT - The R&W Production Data Management System in the concrete factory

Pave-IT records production data in the concrete factory.
In order to ensure a complete flow of information from the Wet-Line to the Dry-Line, identifiable base plates are used.

This technology is based on a RFID chip within the base plate allowing a clear identification of the plate along the production process.

A PLC collects quality-relevant data from the concrete mixer, Wet-Line, Dry-Line, quality measurement devices, etc. The chip number is used to allocate database information to the corresponding base plates.
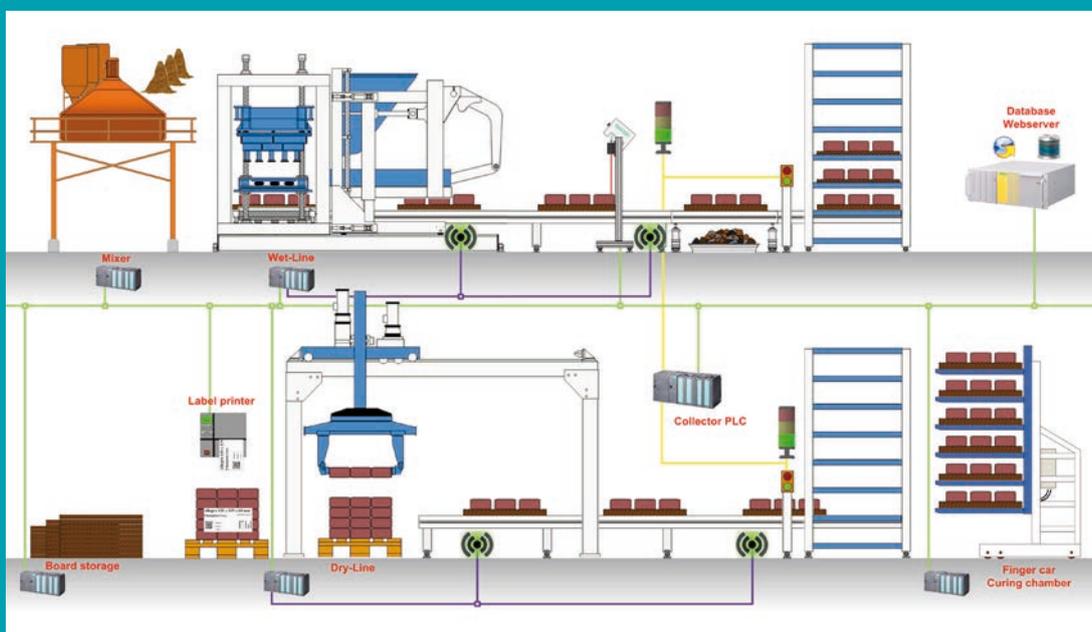
Overview of a concrete block plant with indicated reading systems for RFID chips

So, it is possible to allocate different information such as production data, quality features, etc. to each base plate - and, thus, also to one of the layers of blocks produced on this base plate.

The combination with the R&W height control system allows a continuous quality management as for each layer of blocks up to the packaging all data is available and traceable at any time. Quality variations on the Dry-Line are immediately displayed and can be used there for automated sorting.

By using the R&W block height measuring systems and Pave-IT, the complaint rate can significantly be reduced.