Plastics Systems

Wienerberger – brick manufacturing industry

Project: Automated unloading of tunnel kiln car with clinker bricks

Customer: Wienerberger – brick manufacturing industry

Technology: Automated unloading system - subsequent palletizing by means of vacuum technology

The company Wienerberger AG, founded in 1818 in Vienna, manufactures various brick products at a very high quality level.
To ensure careful handling when depalletizing paving bricks and facing bricks, SAR has been entrusted with the planning, construction and building of an automated unloading system the concept of which is based on the so-called vacuum suction technology.

Project scope realized by SAR

- Kuka unloading- and palletizing robot
- Complex conveyors and turning/inverting devices for complete brick layers
- Integration of already existing trades
- Engineering, commissioning of the overall system including programming the S7, visualization, robotics, safety technology and remote maintenance

So-called green bricks, made of a special clay mixture, dried, preheated and placed as packages onto special tunnel kiln cars, are baked in a kiln to become ready-to-use bricks and are then fed to the SAR system in rows of two via a rail connection.

Using the already existing wire rope hoist system, the tunnel kiln cars loaded with six packages each are transported to the automated unloading system. In a zone cordoned off with safety system components, a Kuka KR 360 L240 unloads the respective piles of brick by means of suction- or clamping grippers depending on the brick format and shape. For an optimized colour mixture brick layers of different zones of the stock consisting of up to 20-layers are picked up and deposited on a transport line. At this point the following steps take place: alignment of the overall layer, separation after the transverse rows and transport to a double transverse slide.

Following the transverse displacement, the single rows are pulled apart through different velocities to allow the worker doing a visual inspection of the so-called cut surfaces. “Bad” bricks are rejected and directed on to an integrated waste conveyor running in the middle between the transport conveyor sections.

In the palletizing station that follows the brick rows are separated to the specified quantity and joined to a double row in the center.

Palletizing of this double row is then ensured by a Kuka KR 180 PA being able to pick up all brick formats with a suction gripper and to stack them on the pallet made available.
An additional challenge with this project is certainly the large variety of different formats of paving bricks and facing bricks as well as their structure.

SAR Elektronic GmbH
Nürnberger Straße 96
91710 Gunzenhausen
Germany

Pho: +49-9831-8811-0
Fax: +49-9831-8811-111

www.sar.biz
kss@sar.biz