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DIGITAL WAREHOUSE MANAGEMENT:

From Paper Trails to Real-Time Transparency in Ceramic Logistics

To gain full visibility across its operations, Hagemeister implemented the Warehouse Execution System (WES) from IdentPro at its Nottuln facility. From the moment goods leave production, they are captured and digitally tracked in real time. Batch-level traceability ensures that each clinker can be located and delivered with precise color matching. Manual checks and paperwork have become obsolete – the entire process runs digitally via the software.

Hagemeister GmbH & Co. KG is a family-owned company in its fifth generation with 190 employees. Each year, the company helps create over 4,000 living spaces using high-quality clinker products, delivering facade solutions to 12 European countries. As one of the leading manufacturers of facade clinker, clinker slips, and paving clinker, Hagemeister stands for quality, continuity, and innovation.

HAGEMEISTER AT A GLANCE

Industry	Ceramic Building Materials (Clinker Manufacturing)
Company Size	190 employees
Location(s)	Nottuln, North Rhine-Westphalia, Germany
Implemented Solution	Warehouse Execution System (WES) by IdentPro
Primary Benefit	Complete transparency of pallet movements in real time
Export Reach	12 European countries

Initial Situation:
Manual Processes, Lack of Transparency

Before implementing IdentPro, Hagemeister's intralogistics were characterized by manual, undocumented processes. Pallets were booked late into the system, inventory levels were unclear, and many steps relied on paperwork or verbal communication.

> *Our motivation to implement IdentPro was primarily driven by the challenges in our warehouse processes – they were very analog and manual. And we simply couldn't find a way to improve them,* explains Bernd Johannes Hunke, Managing Director at Hagemeister.

> Warehouse Manager Raphael Tiekötter adds:
> *With the old system, we worked partly digitally and partly manually. In the yard, there was no digitization at all – everything was paper-based and passed on verbally. Orders in and out of production were handled by word of mouth.*

The result: time-consuming searches, high error rates, and incorrect deliveries – especially problematic with color-sensitive clinker batches. This led to returns and extensive coordination efforts. Additionally, the transfer of information between employees was inconsistent and heavily reliant on individual knowledge.

PROJECT OBJECTIVES

The WES was designed to bring reliable transparency to both the production and the extensive outdoor warehouse. Analog processes – such as manual picking – were to be digitized. The goal was to ensure full visibility of inventory at any time using a digital twin, without scanning or manual searching. Transport and order workflows were to be controlled via software and integrated with Hagemeister's ERP system from OGS.

Thanks to the reliable system, Hagemeister improved both its process quality and inventory accuracy. With full transparency starting at the production line, the company now has real-time visibility into every warehouse movement.

REQUIREMENTS

- Real-time documentation of pallets starting at production
- Seamless booking without delays
- Integration with OGS ERP system
- Batch traceability to avoid color deviations
- Scan-free and paperless processes
- Optimization of transport and picking orders
- Automation of reallocation and inventory adjustments
- Development of software-based warehouse strategies
- Minimization of inventory discrepancies
- Robust performance in dusty, outdoor environments

Solution & Implementation: A Digital Twin Built for the Real World

The solution is based on a digital twin that automatically documents all pallet movements in real time – regardless of warehouse type or physical environment. The core is high-precision LiDAR sensors installed on both forklifts and conveyor systems. The WES continuously processes this data, converts it into a 3D warehouse model, and enables fully digital process control.

> *IdentPro provides a digitalization solution for intralogistics – specifically, a digital twin that automatically tracks goods movements in real time. It's made possible by laser sensor technology on both manned and autonomous vehicles – indoors or outdoors, in racking, block, or open-air warehouses – all without scanning,* explains Benedikt Heinen, Project Manager at IdentPro.

Despite challenging conditions such as a dusty outdoor environment, the system was stably deployed. The conveyor systems were equipped with intelligent laser technology, enabling immediate identification and booking of pallets exiting production. New batches are automatically captured and managed within both the WES and ERP system.

A key milestone was the seamless connection to the ERP system from OGS. Data from conveyors and forklift operations flows directly into the ERP, creating a unified and transparent inventory landscape.

Project Timeline & Collaboration: Structured, Step-by-Step Digitalization

The project began with an on-site analysis workshop at the Nottuln facility. Together with the IdentPro team, existing warehouse processes were mapped, weaknesses identified, and strategic goals defined. All relevant stakeholders – from warehouse leadership to disposition and maintenance – were involved. The result was a clear process baseline, forming the foundation for the staged rollout.

A three-phase implementation plan was developed:

Phase 1

Pallet detection and booking via conveyor system

Phase 2

Outbound and picking based on delivery slips (managed)

Phase 3

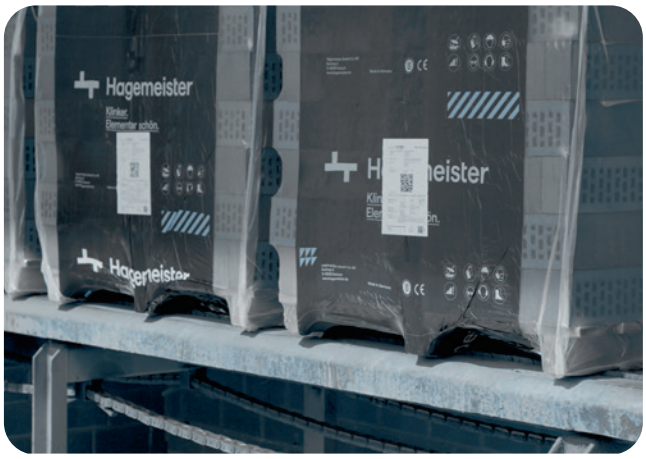
Inbound/reallocation based on software-driven warehouse strategies

In parallel, the forklift fleet was equipped with LiDAR and load detection sensors. For the complex outdoor yard, fixed reference points were installed to ensure positioning accuracy. Stable WLAN/LTE coverage provided reliable real-time data communication.

Working closely with ERP provider OGS, interfaces were coordinated and an alternative concept for conveyor scanning was developed. Employee training and strong internal engagement ensured smooth adoption of the new system.

Key Components at a Glance

- Forklifts equipped with LiDAR and load sensors
- Conveyor scanners for pallet identification
- Real-time ERP integration via standardized interface
- Intelligent pallet tracking with sequence logic and error clearing
- Fixed location anchors to support unstructured outdoor layouts
- WLAN/LTE infrastructure for stable real-time connectivity



Results & Benefits:
Transparency Drives Efficiency and Control

The introduction of the Warehouse Execution System brought a new level of process security to Hagemeister. All pallet movements are now traceable, batch mix-ups have been eliminated, and team communication has become standardized.

> *The biggest challenge before IdentPro was ensuring process quality and security. Now we know exactly where each pallet is, at any time – and that greatly relieves our team,* says Bernd Johannes Hunke.

> Raphael Tiekötter adds: *We can now verify every pallet – from production to loading. Our inventory accuracy has improved significantly. The WES from IdentPro is the ideal solution for us.*

With real-time capture at the production line, automated booking, and full ERP integration, Hagemeister has measurably improved inventory quality and reduced the time and effort required for warehouse operations.

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