

Innovations in Aluminium Storage and Handling

As the aluminium industry strives to enhance operational efficiency, optimise storage space, and pursue sustainability goals, AMOVA, a subsidiary of the SMS group, is leading the way with its cutting-edge automated storage and handling solutions.

AMOVA leverages decades of experience in heavy load handling to address the unique challenges of aluminium logistics. In an exclusive interview with Aluminium International Today during the ALUMINIUM Show in Düsseldorf, AMOVA's CEO, Bernd Klein, shared insights into the company's innovations, their impact on sustainability, and how AMOVA is shaping the future of aluminium logistics.

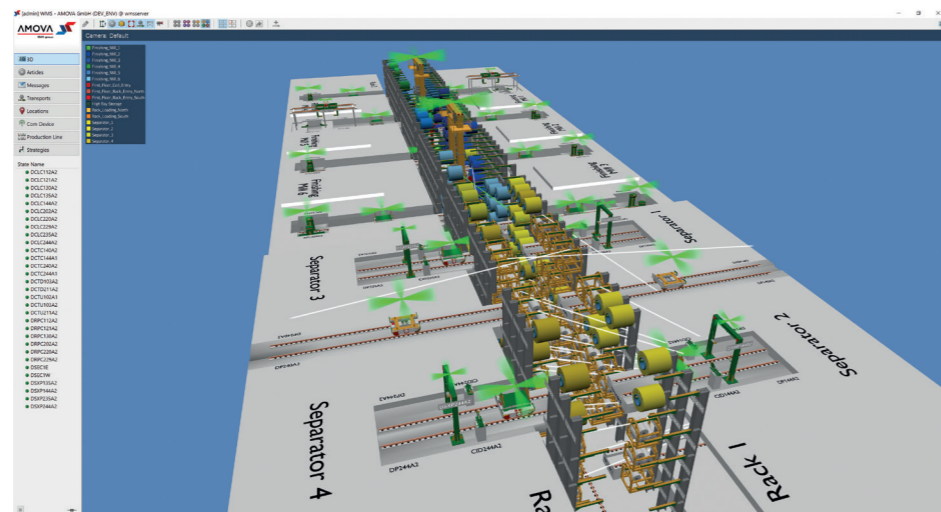
Addressing Aluminium Storage Challenges with Advanced Automation

The aluminium industry faces distinctive challenges due to the material's properties, which differ significantly from those of steel. Unlike steel, aluminium is softer and more susceptible to deformation, requiring customised storage solutions to maintain its quality. "It's very important to store aluminium coils individually and not stack them on top of each other," Klein explains. "This is why most of our high-bay storage systems are specifically designed for aluminium, ensuring that each coil remains undamaged during storage and handling."

AMOVA's high-bay storage systems, a core offering, are engineered to store large aluminium coils vertically, up to 10 coils high, minimising space requirements and preventing potential damage. "Fully automated processes eliminate the need for forklifts and manual handling, which often resulted in coil damage," Klein noted. "With automation, our clients have seen significant improvements in coil quality, as well as reductions in workforce requirements, which translates to operational cost savings."

Innovations in Digital and Data-Driven Logistics

AMOVA's advanced technology extends beyond mechanical solutions, incorporating digital tools that enable real-time tracking and inventory management. Klein highlighted the use of a warehouse management system that includes simulation software for plant planning. "Our clients can visualise their entire storage operation in 3D, much like a computer game. Operators can navigate the plant, click on any coil,



and access real-time data," he explains. This enhances operational oversight and enables predictive maintenance, where system data is used to forecast and address potential issues before they disrupt operations.

AMOVA's business intelligence (BI) systems collect data across the entire

operation, from equipment health to energy usage. "Our BI tools empower clients with actionable insights. They can monitor their operational data and perform predictive maintenance, which is critical for minimising downtime and extending equipment life," adds Klein.

Commitment to Sustainability and Energy Efficiency

In an industry increasingly focused on reducing carbon footprints, AMOVA has made significant strides in creating sustainable logistics solutions. The company's storage systems incorporate forced cooling techniques that significantly reduce the cooling time for aluminium coils between rolling stages. "Typically, natural cooling can take up to 31 hours, but with our forced cooling system, we can reduce that time to just 15 hours," Klein explained. This innovation not only accelerates production but also reduces storage requirements.

AMOVA's systems are also designed with energy recuperation capabilities, capturing energy generated during coil

lowering processes. This energy can be fed back into the system or used for other operations, promoting a more sustainable energy cycle. Additionally, AMOVA encourages clients to install solar panels atop their storage systems. "In many cases, these panels generate more power than the storage system needs, allowing our clients to offset some of their energy consumption with renewable sources," Klein added.

A Focus on Client-Centric Solutions and Global Reach

AMOVA prides itself on working closely with clients to create customised solutions that address specific operational challenges. This client-centric approach has been key to their success, allowing them to cater to both new facilities and retrofit existing ones. "Many clients need to maximise the limited space they have, particularly in urban areas," Klein said. "Our systems are designed to fit into Brownfield applications, where we integrate automation into existing facilities, improving efficiency and

reducing the need for additional space."

One such client, Murat Mr. AKKAS, Investment Projects Manager at Assan Alüminyum, expressed their appreciation for AMOVA's support. "We sincerely thank the AMOVA team for the dedication and professionalism demonstrated throughout our first and only High Bay Storage system project. The mutual efficiency of our partnership has made the project results even more meaningful. The deep knowledge, experience, and project management of AMOVA, combined with their contributions to the project, played a crucial role in our mutual success. We look forward to continuing this synergy in future collaborations to improve the effectiveness of our warehouse management, and we believe that many more successful projects will be held together."

Enhancing Safety and Productivity with Digital Twins

To further support safety and productivity, AMOVA utilises digital twin technology, allowing them to create virtual replicas of their storage systems. These digital

implementation testing, reducing on-site commissioning time and enhancing system reliability. "With digital twins, we can simulate the entire operation, test all movements and automation sequences, and identify potential issues before they occur on-site," Klein noted.

By simulating various scenarios, AMOVA can fine-tune systems to meet the specific demands of the aluminium sector, ensuring they are prepared to adapt to changes in market demands, supply chain challenges, and technological advancements.

Shaping the Future of Aluminium Logistics

Looking ahead, Klein envisions a future where aluminium logistics is even more automated, digitised, and sustainable. "The aluminium industry is moving towards more resilient and adaptable storage solutions, and we're focused on providing systems that not only meet current demands but also prepare our clients for future challenges," he shared. AMOVA continues to explore partnerships and collaborations that could further enhance their systems and expand their reach within the aluminium sector.

AMOVA's innovations in aluminium storage and handling not only optimise operational efficiency but also contribute to industry-wide sustainability efforts. By integrating advanced automation, digitalisation, and sustainable practices, the company is setting a new standard

in aluminium logistics, helping its clients achieve their sustainability goals. As the industry evolves, AMOVA remains committed to pioneering solutions that align with the shifting priorities of the aluminium sector. ■

