

Port of Antwerp-Bruges enhances bollard capacity at Noordzee Terminal

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The Port of Antwerp-Bruges has recently enhanced the bollard capacity at PSA Antwerp's Noordzee Terminal by upgrading four bollards from 150 tonnes to seven new 250-tonne bollards.

This upgrade aims to minimize wasted space between vessels during docking. Dynamic mooring analysis revealed that the older bollards were at risk of overloading due to the increasing size of ships mooring at the terminal.

The Noordzee Terminal was established approximately 26 years ago when most ships had a capacity of around 5,000 TEUs. Since then, the quay wall has been deepened by three meters to accommodate larger drafts of

incoming vessels. Various technical interventions have been implemented over the years to optimize the use of quay length.

Installing the new bollards represents the final step in ensuring that multiple 24,000 TEU ships can dock at the terminal most efficiently, minimizing wasted space.

Furthermore, calculating bollard capacity involves considering numerous factors such as the speed of passing vessels, their water displacement, wind, tide, and the type of mooring ropes utilized. The existing quay structure comprises an anchored diaphragm wall with a quay wall head at the top.

To accommodate the new bollards, cutouts were made in the quay wall head at four locations, where steel frames were sequentially installed. The new bollards were then mounted on these frames, which were chemically anchored and recessed into the completed cutouts. Additionally, to enhance overall stability and accommodate higher bollard loads, the frames were anchored into the subsoil using 50-meter-long tensioned anchors.

Before the implementation of this bollard expansion project, extensive study and review were conducted by the engineering, architecture, and consultancy firm Sweco, along with independent technical expert SECO Belgium. This comprehensive analysis pushed the boundaries of what was achievable.

"Collaborating closely with PSA Antwerp, we identified the optimal locations and prerequisites for the project. The construction works were executed by Hye NV from Burcht, showcasing excellent coordination and teamwork among all involved parties," stated a Port of Antwerp-Bruges spokesperson.