



Passing ship induced mooring forces Lighter process location IJmuiden

In the outer Port of Amsterdam (IJmuiden) a lighter location is present for coal carriers. The lighter operation enables the coal carriers to reduce their draft and pass the locks of IJmuiden.

The lighter location is close to the fairway to the locks and the lighter operation is therefore affected by passing ships. In the past mooring lines did break due to the effect of passing ships. This project is aiming to define safe passing speeds for large container vessels.

The forces on a moored coal carrier resulting from the passage of a container vessel have been simulated using the DELLPASS model of Delft University of Technology. The grid used for this simulation has been presented in the image above.

The results from DELLPASS (time series of forces and moments on the moored vessel) have been used as input for the TERMSIM model (MARIN, The Netherlands). With TERMSIM the individual mooring line and fender forces are calculated.

The results from these calculations are that low passing speeds (maximum 5 knots) are required to ensure safe lighter operations

Client
Amsterdam Port Authority

Location
IJmuiden

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Services
Simulation of passing ship induced forces and resulting mooring line forces

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