



## Pontoon movements due to passing ships during construction of Weesperbrug

The arch of the new Weesperbrug has been assembled to the roadway of the bridge while placed on pontoons in the Amsterdam-Rhine Channel (ARK). The roadway has been placed on three linked pontoons, which can move with respect to each other due to the influence of passing ships in the ARK. Due to the resulting pontoon movements, the connection points may move with respect to each other, by which it may become impossible to assemble the arch and the roadway of the bridge.

In order to determine the behaviour of the waves caused by passing ships, a flow model has been set up, in which sailing ships are simulated within the real geometry of the ARK. Hereto the numerical model FINEL2D has been used. This model has been validated during a similar project. In the simulations, different ship types, sailing speeds and distances between ship and bank have been applied. By means of the model results, the water level variation at several locations has been analysed, and the moments of the coupled pontoons has been assessed.

**Client**  
Mercon Steel Structures

**Location**  
Nigtevecht, the Netherlands

**Date**  
2012

**Services**  
Flow modelling