

SUMMARY

Container ships should only make very small horizontal movements at the berth for efficient (off) loading of containers. This is especially a concern in ports directly facing the open ocean, where high swells at sea can cause harbour oscillations and low-frequency surge motions of the ship. Cavotec MSL has developed a new mooring unit, the MoorMaster™, which replaces conventional mooring lines. The hydraulics of the system have a strong reducing effect on the motions of the moored ship. Measurements at a container terminal have shown that the surge motion of container ships was reduced from an amplitude in the order of 1 metre to an amplitude in the order of 5 centimetres, by using MoorMaster™ units. However, before MoorMaster™ units can be installed with

confidence in other (new) terminals and comparisons can be made with other mooring systems, the characteristics of MoorMaster™ units should be included in numerical models for motions of moored ships. This paper compares the results of numerical simulations and measurements for motions of ships moored with MoorMaster™ units. The comparison shows that the effect of the MoorMaster™ units on the ship motions is taken into account well by the numerical model. However, the exact magnitude and frequencies of the motions of the moored ships differs for measurements and simulations, mainly because of several unknown parameters during the measurements.