

ABSTRACT

The port of Le Havre is the largest French port in terms of TEU numbers. The container ships received are getting bigger and bigger, with an increasingly large hull area. The ships are therefore subject to extremely high forces due to global warming, but there are other factors, both internal and external to the ships, which have a strong impact on their performance at the quayside.

Faced with these mooring problems and the demands of the handling industry, a new technology has appeared in the Port of Le Havre: The Shore Tension Dynamic Mooring System.

The Shore Tension is a mobile system for reinforcing the mooring, it is used in pairs and complements the mooring of the vessel and consists of a hydraulic jack, a double mooring bitt and a Dyneema hawser.

Shore Tension is a system that allows ships to be stabilised at the quayside, mainly to avoid the phenomenon of drifting along the quayside. It is a tool that has required the training of dockworkers and a better cohesion among the various port and maritime actors.

It is efficient, autonomous, ecological, certified but expensive.

The objective of this thesis is to prove that the Shore Tension System is the solution to have a good holding of the ships at quay and is essential as well for the safety of the handling personnel as for that of the ships and the gantries.