



NAVAL ENGINEERING



Our custom designed tools and structures which allow you to perform installation projects safely and on time are often employed in an offshore environment, and hence influenced by vessel and ocean characteristics. In such cases, naval engineering analyses are essential to start with as they provide key input for the design works.

By having both naval engineering and design works under one roof, our collaborative teams provide robust solutions, with quick and seamless responses to changing circumstances. The interface between naval engineering and other TWD disciplines required for your project will ensure that the most smart, reliable and cost effective solution will be designed.

Although focused on installation jobs, we have all tools and knowledge available to perform complex theoretical analyses, as well as quick pragmatic calculations based on years of empirical information.



OUR SERVICES

- MOTION ANALYSES
- WORKABILITY ANALYSES
- STABILITY ANALYSES & BALLASTING PLANS
- MOORING ANALYSES
- BOLLARD PULL CALCULATIONS

MOTION ANALYSES

We are specialized in determining wave-induced motions and accelerations for all types of floating structures, including vessels, barges and buoys. Strip theory based motion analysis is used for slender vessels and barges. For more complicated hullforms, our Naval Architects are also experienced in performing motion analysis on a range of diffraction softwares.

 AMARCON OCTOPUS, MOSES, ANSYS AQWA & HYDRO-D.

WORKABILITY ANALYSES

Our Naval Engineering department is experienced in performing workability studies for offshore contractors for a variety of operations such as floating wind turbine installation, pipeline installation and lifts through the splash zone.

As a result of the dynamic analysis we advise our clients on parameters such as maximum allowable significant wave heights, limits of vessel headings etc. The workability tables provided are easy to interpret by your crane operator or technical superintendent.

Typical design applications include:

- Determining workability tables for monopile lifting, lowering and piling based on gripper loads and crane limits.
- Determine workability of fall pipe rock dumping operation based on total hydrodynamic forces on the fall pipe due to Morrison forces and vessel motion induced forces on the fallpipe.

 ORCAFLEX

MOORING ANALYSES & BOLLARD PULL CALCULATIONS

We have good understanding of the design and analyses of catenary and quay mooring systems. Vessel moorings have been successfully analysed using both quasi-static and full dynamic analysis solutions. Furthermore we perform bollard pull calculations, for the selection of a suitable tug to perform a successful towing operation.

 ORCAFLEX, IN-HOUSE DEVELOPED TOOLS

STABILITY ANALYSES & BALLASTING PLANS

Our team of Naval Architects are competent in performing both intact and damaged stability analysis for a wide range of vessels and structures including jack-ups, ships and barges. Emphasis is put on making detailed and clear reports for the Marine Warranty Survey. The ballast plan drawings, prepared by our draftsmen, are detailed and easy to use by your on-site teams.

Typical applications and services include:

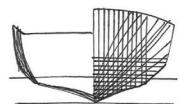
- Preparing intact, damage stability reports and ballast plans for a barge fully loaded with wind turbine generator components.
- Determine the ballast plans and ballasting sequence for Ro-Ro operations of LNG modules using SPMTs for loadout.

 GHS, IN-HOUSE DEVELOPED TOOLS

ADVANTAGES



- SPECIALIST TECHNICAL KNOWLEDGE IN THE FIELD OF TEMPORARY WORKS AND INSTALLATION ENGINEERING SERVES AS SOLID BASE TO RELY ON
- EASY TO INTERPRET LAYOUTS AND REPORTS FOR EVERY ANALYSIS
- SEAMLESS RESPONSE TO REQUIREMENTS AND DESIGN CHANGES DUE TO COLLABORATIVE IN HOUSE STRUCTURAL AND NAVAL TEAMS IS A HUGE ADVANTAGE FOR TIME SENSITIVE PROJECTS



GET IN TOUCH

TEMPORARY WORKS DESIGN

T +31 10 294 03 74
W www.twd.nl
E info@twd.nl

Rotterdam Science Tower - Marconistraat 16
3029 AK Rotterdam
The Netherlands