

# MODIFICATION OF VESSELS AS PER NEW PANAMA CANAL REGULATIONS

Zebec Marine Consultants & Services carries out design modifications of Panamax vessels (294.13m x 32.31m x 12.04m TFW Draft) for Actual Locks, Panamax Plus vessels (Panamax Size with 15.2m TFW Draft) and Neo Panamax vessels (366m x 49m x 15.2m TFW Draft) to meet the requirements of New Panama Canal Regulations as per OP Notice to Shipping No. N-1-2015 for transit through the newly constructed locks. The core processes and deliverables are described below.

## ➤ Core Processes

- Preliminary study on vessel specifications to find out the acceptability and modification requirement.
- Visibility check and preparation of visibility plan.
- Trim and Stability analysis.
- Panama Pilot Shelter design.
- Mooring outfitting arrangement.
- Design of under deck reinforcements for mooring equipments using manual calculations.
- Optimization of reinforcement size using FEA.
- Preparation of Wheelhouse Poster and Manoeuvring Booklet.

## ➤ Software

- Isymost – FEM tool which is the Pre and post processor for NSO.
- NSO – Finite Element programme for structural analysis.
- Maxsurf/ In House Stability Macro– For stability and trim checks

## ➤ Deliverables

- General Arrangement Drawing as per ACP requirements.
- Arrangement of wheelhouse and chart space.
- Visibility Plan
- Trim and stability booklet
- Manoeuvring booklet for new Panama Canal
- Mooring fitting arrangement drawings.
- Strength calculations/FEA report for under deck reinforcements for mooring outfitting
- Detailed drawings of under deck reinforcements and seats of mooring fittings.
- Obtaining Class approval on Owner's behalf

