

**The International Convention for the Control and Management of Ships' Ballast Water and Sediments, (BWM Convention) requires ships constructed after 8th Sept. 2017 to comply on delivery, while existing ships in general must comply by the first IOPP renewal after 8th Sept. 2019.**

Ballast Capacity (m3)	Construction Date	First Intermediate or Renewal Survey, whichever occurs first after anniversary date of delivery in the year indicated below									
		2009	2010	2011	2012	2013	2014	2015	2016	2017	
< 1500	< 2009	D1 or D2								D2	
	≥ 2009	D2									
≥ 1500 ≤ 5000	< 2009	D1 or D2						D2			
	≥ 2009	D2									
> 5000	< 2012	D1 or D2								D2	
	≥ 2012	D2									

Zebec Marine with its vast experience in Shipbuilding project management and Design & Engg. Services is equipped to offer the complete engineering solution for Ballast Water Treatment Retrofit.

### ➤ On Board Site Survey, Scanning and Data Registration

- Convert existing ships drawings into AutoCAD format
- Using 3D laser scanning equipment scan the proposed location and convert the cloud points into AutoCAD
- Superimposing the BWTS into prepared 3D Modeling of the proposed location
- Check the feasibility, detection of clashes, propose routing of piping to meet the OEM, Class and Operational requirements

### ➤ Detailed Engineering

- Update the existing P&ID diagram of Ballast system with the new BWTS and corresponding piping
- Prepare detailed 3D Model and generate Spool Drawings and arrangement drawing
- Prepare information required for the fabrication and installation of piping and Bill of material
- Submission of drawings to class for approval and technical liaison with class to obtain the approval

### ➤ Site Supervision

- Supervision of installation of the system to meet the class and operational requirements.

