

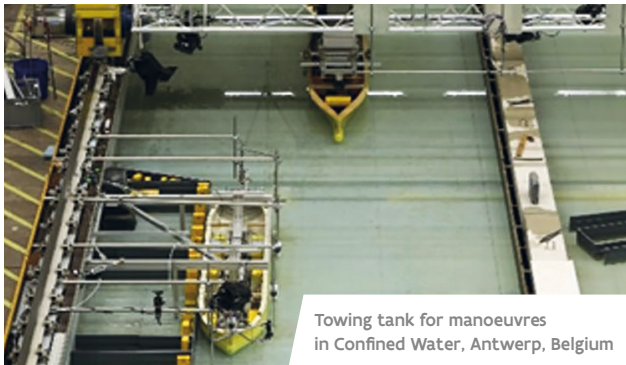
What we offer

Towing tank tests in shallow and confined water (extension to deep water possible on request)

- Flexible test program based on client's needs
- All test procedures according to most recent ITTC guidelines (7.5-02-06-02, 7.5-02-06-01, 7.5-04-02-01, ...)
- Full ownership of data
- Data supplied in requested data format
- Regulated access to facility during testing
- Camera registration available

Example test program (8 – 12 weeks)

- 1 ship
- 3 Under Keel Clearance (50%, 20%, 10%)
- 3 loading conditions (fully loaded, ballast even trim, ballast uneven trim)
- Acceleration test, propulsion test, harmonic sway, harmonic yaw, ...
- Possibility to test autonomous controls, ship-bank interaction, ship-ship interaction, ...



Towing tank for manoeuvres
in Confined Water, Antwerp, Belgium

Accessibility of the facilities

Both facilities are located in close proximity to the highway network (<1km). Our facility in Ostend is located 0.5km away from the nearest navigable waterway and 10km away from the Ostend-Bruges dedicated cargo airport. We ensure that if required we can welcome existing ship models, equip them at our facilities and ship them to their next destination. We also work closely together with various model workshops in Europe, making it possible to manufacture new models with minimal lead time.

Contact information

Thibaut Van Zwijnsvoorde, PhD

Flanders Hydraulics p.a.
Berchemlei 115
2140 ANTWERP, Belgium

VAT number BE 0873.746.603

M +32 473 73 42 89

thibaut.vanzwijnsvoorde@mow.vlaanderen.be
flandershydraulicsresearch.be

D/2022/3241/119
Edition April 2022



Responsible publisher: Stefan Geerts, acting director Flanders Hydraulics p.a.

Towing Tank Testing

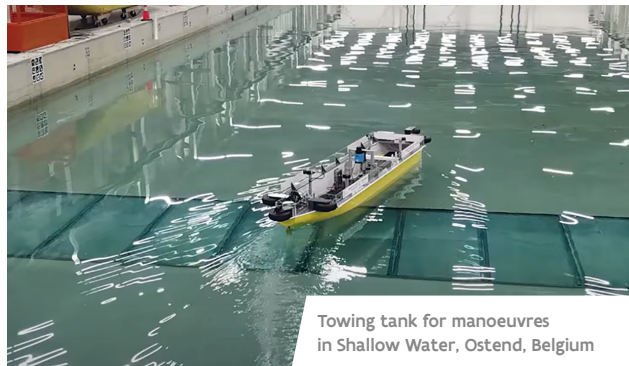
What we do

Flanders Hydraulics p.a. specialises in towing tank tests with scaled ship models in shallow and/or confined water ($h/T \leq 4$, ITTC).

Flanders Hydraulics p.a. has two towing tank facilities:

- Towing tank for manoeuvres in Confined Water (Antwerp, Belgium)
- Towing tank for manoeuvres in Shallow Water (Ostend, Belgium)

Both facilities offer fully automated 24/7 testing, using state-of-the-art towing carriages. The automated procedure allows to perform up to three times more tests than any other facility, guaranteed all-year around. A large number of tests is required to address shallow and confined water effects, hence the need for automated procedures to deliver results within the industry's expected project time scales. All systems are developed to obtain the highest level of accuracy, both in controlling as well as in measuring equipment.



Towing tank for manoeuvres
in Shallow Water, Ostend, Belgium

The tank bottom and side are accurate within ± 1 mm, meaning that minimum clearances of 10 mm with respect to the boundaries can be measured accurately (ITTC). For 8 m and 4 m long ship models respectively, accurate results at a UKC of 10% and lower can be obtained.

Tailormade solution

Flanders Hydraulics p.a. has a client centered approach in which towing tank testing can be supplemented with other offerings, such as mathematical model validation, numerical simulations, ship simulator studies in real and fast-time and full scale validation runs.

State-of-the-art test procedures

Not only ship design and control, but also towing tank testing itself is evolving rapidly, with ever increasing demands for test facilities and test procedures.

ITTC (International Towing Tank Conference) is an international association which disseminates the latest knowledge through issued procedures. Flanders Hydraulics is a participating member, with expert nautical researcher Guillaume Delefortrie being secretary/chair of the past 27, 28 and 29th Manoeuvring Committee (2011-2021).

ITTC acknowledges the continuous dedication towards qualitative model testing at Flanders Hydraulics by including various procedures developed for the Shallow and Confined towing tanks into their international guidelines. A (non-exhaustive) list of ITTC guidelines which are driving Flanders Hydraulics' test procedures are :

- ITTC Quality System Manual, Procedure 7.5-02-06-02: Captive Model Tests
- ITTC Quality System Manual, Procedure 7.5-02-06-01: Free Running Model Tests
- ITTC Quality System Manual, Procedure 7.5-04-02-01: Full Scale Manoeuvring Trails

