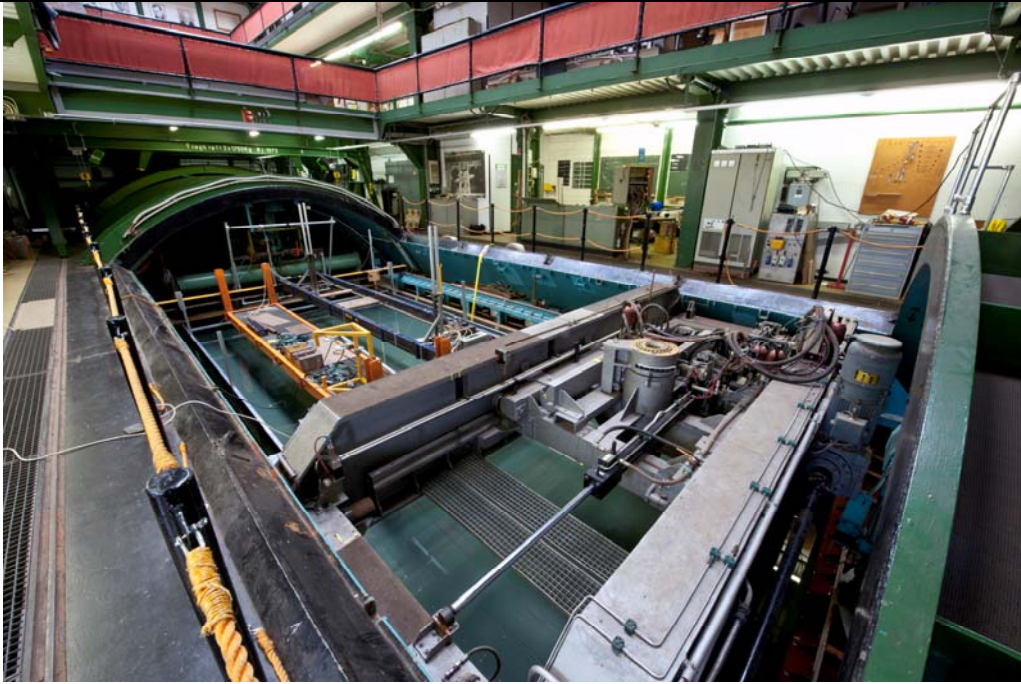


<b>Name of organization</b> Technische Universität Berlin Naval Architecture & Ocean Engineering Chair of Dynamics of Maritime Systems	<b>Year of information updating</b> 2017
<b>Year established</b> 1879	<b>Year of joining the ITTC</b> 2013
<b>Address</b> TU Berlin Sekr. SG 17 Salzufer 17-19 10587 Berlin Germany	<b>Status in the ITTC</b> Member
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<b>Type of facility</b> Cavitation Tunnel	<b>Year constructed/upgraded</b> 1971 / 2015 - 2018
<b>Name of facility</b> Large Circulating and Cavitation Tunnel UT2	<b>Location</b> Müller-Breslau-Str. 17, 10623 Berlin, Germany
<b>Main characteristics</b>  <p>One of the largest in the world, this tunnel functions as a conventional circulating tunnel at atmospheric pressure and as a cavitation tunnel with a free water surface.</p> <p>Propulsion tests are performed using geometrical similar models or, for the simulation of full-scale wakes, models with shortened fore ships. The cavitation tests in behind conditions are possible. Therefore, the wake and the three dimensional propeller inflow are maintained.</p> <p>From 2013 to 2018 the building and the technical facilities of the UT2 will be renovated.</p>	
<b>Drawings of facility</b>	
 <p>The image shows the Large Circulating and Cavitation Tunnel (UT2) in 2013. It features a large, blue, rectangular building with a glass facade, supported by a complex steel structure. Two large, pink, curved pipes are visible in the foreground, curving around the base of the building.</p>	 <p>The image shows the renovated building in 2017. The building is now a solid blue structure with a more modern, rectangular design. The pink curved pipes are still present in the foreground, but the overall appearance is more industrial and updated.</p>
Large Circulating and Cavitation Tunnel in 2013	Renovated Building in 2017



Test section with the planar motion mechanism

#### Detailed characteristics

Volume of water	3300 m <sup>3</sup>
Impeller power	4000 kW

#### Test section

Width	5 m
Length	11 m
Depth	1 to 3 m, variable by an adjustable floor panel
Max. Flow velocity	4 to 9 m/s
Min Abs. pressure	3.0 kPa

#### Measurement devices

Diverse measurement tools: open water dynamometer and embedded dynamometers for the measurement of propeller thrust and torque, load cells for the measurement of forces and moments, pressure sensors

Planar motion mechanism working space

Yaw	± 30°
Sway	± 1 m

#### Applications

The remarkable size of the test section together with the planar motion mechanism enables a wide range of unique applications. All tests can be performed in depressurised conditions.

- Long term tests under cavitation conditions
- Propeller tests in the wake field of ship models
- Open water tests with propellers and flow turbines
- Cavitation observation tests
- Resistance and propulsion tests
- Forced motion tests to determine manoeuvring derivatives

#### Published description