

Ship Design and Research Centre



OFFER

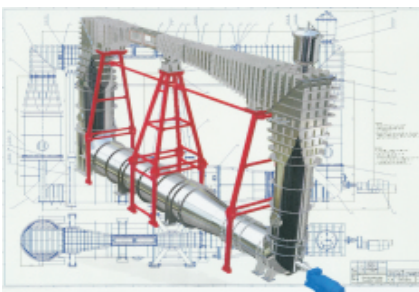
- cavitation tunnels
- wake survey devices
- devices for balancing ship models and objects demanding determination of the centre of gravity
- dynamometers for resistance and self-propulsion tests and POD dynamometers
- monitoring systems for ship hull deformations, acoustics and vibrations
- anti-fouling systems for water cooling systems (biocides, ions)
- systems for cathodic protection of ship hull and underground fuel tanks
- passive state metres
- polarization corrosion metres
- measuring reference electrodes (Cu/Cu²⁺)
- oil contents monitoring devices
- salinometers and water hardness indicators
- electric switchboards
- control panels for anti-fouling and cathodic protection systems
- systems of automatic protection against corrosion of marine and land water systems

RESEARCH OBJECTS

Large towing tank sized 260 m × 12 m × 6 m, fitted out with a towing carriage of a maximum speed of 12 m/s and a wave generator to generate irregular waves corresponding to the sea state up to approx. 8° to a scale 1:25 and regular waves of a maximum height of 0,7 m and length of up to 7 m or of a lesser height and length of up to 20 m. The towing carriage is equipped with a multi-purpose computerized logging stand.

Auxiliary towing tank sized 55 m × 7 m × (0,2 - 3,0) m (adjustable depth) fitted out with a towing carriage of a maximum speed of 4 m/s and a wave generator to generate irregular waves corresponding to the sea state of up to approx. 8° to a scale 1:50 and regular waves of a height of up to 0,5 m at a length of up to 7,0 m or of a height of 0,18 m and length of up to 14 m.

Side launching test basin sized 5 m × 5 m × 0,6 m.



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RESEARCH EQUIPMENT

- station for anti-rolling tanks model tests
- vibration and shock resistance test stand for testing equipment up to 0,5 t in weight with two horizontal and vertical fastening areas dimensioned 0,5 m x 0,5 m
- vibration and shock resistance test stand (also seismic shocks), in three perpendicular directions, for testing equipment up to 5 t in weight, with fastening area 3,4 m x 3,4 m
- attestation test stand for testing flexible coupling with nominal torques of up to 100 kNm
- ship speed and manoeuvrability measurement system consisting of the digital recorder operating together with DGPS
- set of field measuring equipment: vibrations, stresses, accelerations, torques and rotational speeds in rotating elements
- fire testing furnace for vertical structures (doors, walls, bulkheads, safes) and for horizontal ones (ceilings, decks)
- conical furnace for material non-combustibility tests
- chamber for material smoke generation testing
- Heraeus Votsch salt spray chamber for corrosion tests in salt mist of the following parameters: continuous or periodical spray according to free program, maximal temperature 55°C
- Feutron climatic chamber with following operation parameters: temperature from -75°C to 100°C, humidity 10-95%
- MARK III Analyser (British Maritime Technology) for coatings roughness tests



SHIP STRUCTURE DIVISION

Modern research and measuring equipment which allows to conduct tests, elaborate analyses and optimize recommendations along with workshop designs in the field of ship structure, vibrations and acoustics:

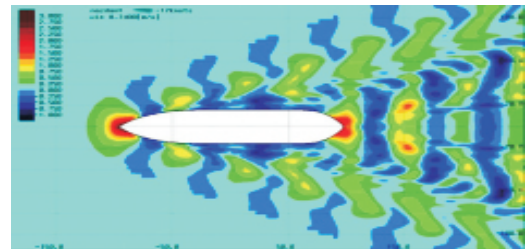
- static and dynamic calculation analyses
- analyses, evaluations and optimizations of ship and building structures
- measurements during ship sea trials
- noise measurements and strategic noise maps of urban areas and town districts
- laboratory and on-site tests
- technical consultancy in the field of ship structure, vibrations and acoustics during preparation of contracts

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DESIGN AND TECHNOLOGY DEPARTMENT

The scope of performed works:

- designs of merchant ships, special purpose ships, fishing boats and naval vessels
- designs of engine room outfit and modular engine room systems
- designs of deck equipment, anchors, hatch covers, ramps, flushing systems
- designs of fire-fighting systems
- designs of pipelines, air-conditioning and ventilation installations
- lofting documentation
- technical documentation of ship's repair or conversion
- construction supervision
- visualisations and 3D designs of machinery, ships, marine and land structures
- training on ship design with the use of 2D and 3D programs



MATERIALS SCIENCE, CORROSION AND ENVIRONMENT PROTECTION DIVISION

Research and development activities, expertises, technological studies, arbitration and post-failure tests in the field of materials science, corrosion and protection against corrosion as well as environment protection and fire-safety.

- tests on metals, welded joints and plastics
- tests needed for acknowledgement of welders and welding techniques
- tests of corrosion and protection against corrosion and fouling
- combustibility and fire-resistance
- environment protection

SHIP HYDROMECHANICS DIVISION

Tests and research in the field of hydromechanics, connected with design and operation of ships and other floating structures.

- predictions of ship performance in calm water deep or shallow, ship performance in waves in different sea states, ship manoeuvrability, sea keeping of ships and other floating structures, propeller cavitation properties, excitations on hull and shaft induced by working propellers
- predictions are made on the basis of model tests and numerical analyses in accordance with ITTC recommendations and many years' experience of the department.
- numerical analyses

