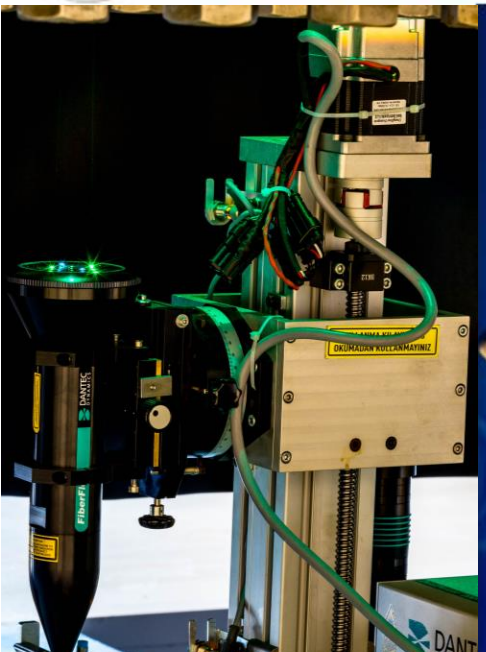
İTÜKAT TRtest Test ve Değerlendirme A.Ş.



CAVITATION TUNNEL

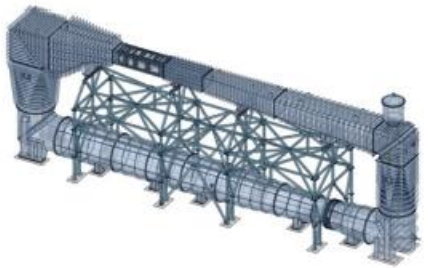
At the end of 2021, ITUKAT became operational and ranked seventh worldwide in terms of flow rate among its peers, with its large test section and a maximum achievable flow velocity of 16.5 m/s in the test section. The tunnel is powered by a 1 MW electric motor.

İTUKAT is equipped with measurement devices meeting international standards. Its wide range of equipment includes specially designed propeller dynamometers, a custom-designed hydroacoustic chamber, PIV (Particle Image Velocimetry), LDA (Laser Doppler Anemometry), and a contra-rotating propeller dynamometer.

In addition to its size, İTUKAT offers innovative possibilities for testing all types of propellers and underwater/surface vehicles. These possibilities are supported by the flow uniformity in the test section, low turbulence and acoustic noise characteristics, pressurization and vacuum capabilities within the test section, and a comprehensive array of advanced measurement devices.

- Test section dimensions: 5.5 m x 1.5 m x 1.2 m
- Maximum flow velocity: 16.5 m/s
- Electric motor power: 1 MW
- Pressurization/vacuum capability
- Low turbulence intensity
- High flow uniformity
- Low noise level
- Special acoustic chamber
- Approximately 1000 m² test facility area
- Crane capacity: 12.5 tons

- Performance, cavitation, and erosion tests of all types of propellers in uniform or non-uniform flows (in open water and behind ships)
- Performance and cavitation tests for contra-rotating propeller systems of torpedoes, submarines, and similar vehicles
- Hull pressure measurements
- Force and moment measurements for underwater shapes of torpedoes and submarines
- High-quality hydroacoustic measurements and frequency spectrum analysis using an acoustic chamber and hydrophone system
- Detailed flow visualization, wake region analysis, and boundary layer measurements with advanced laser-based velocity measurement systems (LDA, PIV)
- Boundary layer and resistance tests for flat plates and submerged bodies
- Performance evaluations of anti-fouling coatings, such as surface-enhancing treatments and anti-corrosion paints
- Specialized underwater flow experiments and noise measurements, leveraging the facility's extensive infrastructure



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