

Nome Laboratorio	LARGE SCALE TESTING
Acronimo del Laboratorio <i>(se presente)</i>	
Responsabile scientifico <i>(In caso di più responsabili, elencare i nominativi)</i>	prof. Vincenzo Crupi https://unifind.unime.it/get/person/025350
Indirizzo email <i>(Email di contatto istituzionale del laboratorio o dei responsabili scientifici)</i>	crupi.vincenzo@unime.it
European Research Council (ERC) <i>(Indicare la macro-area ERC e il/i sotto-settore/i ERC che meglio rappresentano le aree di attività del laboratorio. Selezionare una o più tra le seguenti opzioni)</i>	PE - Physical Sciences and Engineering • PE8 Products and Processes Engineering PE8_12 Naval/marine engineering PE8_7 Mechanical engineering PE8_10 Manufacturing engineering and industrial design PE8_3 Civil engineering, architecture, offshore construction, lightweight construction, geotechnics PE8_14 Automotive and rail engineering; multi-/inter-modal transport engineering
Ubicazione del laboratorio <i>(Indicare edificio/blocco e stanza/spazio di riferimento)</i>	Department of Engineering, Block A, ground floor, room 001
Tipologia del Laboratorio <i>(Selezionare una o più tra le seguenti opzioni)</i>	☒ Research activities ☒ Teaching activities ☒ Service activities
Descrizione sintetica del laboratorio <i>(Descrivere finalità e principali settori scientifico-disciplinari coinvolti - Max 600 caratteri)</i>	The dimensions of the grating floor and the frame, along with the presence of different types of actuators and the possibility of applying up to 10 actuators simultaneously, allow for both static and dynamic tests to determine the mechanical characterization and fatigue life of large structural components and welded joints. The head of the laboratory is Vincenzo Crupi, Full Professor of Naval constructions and implants (IIND-01/B) and responsible of the NETTUNO (Green and lightweight design of ship and offshore structures for sustainable mobility and blue growth) research group of the University of Messina. The expertise areas include Naval constructions and implants (IIND-01/B) and Mechanical Design and Machine Construction (IIND-03/A).
Descrizione delle attività principali e/o dei servizi offerti <i>(Descrivere le principali attività e/o i servizi offerti - Max 1000 caratteri)</i>	Main types of tests carried out in the laboratory: • Full-scale mechanical tests of fatigue, tension, compression, and bending. • Dynamic tests for fatigue characterization, with the possibility of different load configurations, on steel and composite structural elements for naval, offshore, railway, automotive, and mechanical applications. • Full-scale (1:1) tests on large structures subjected to service dynamic load conditions.

Attrezzature/Strumentazioni principali

(Indicare le principali macrocategorie di strumentazioni e attrezzature presenti nel laboratorio. Evitare elenchi puntuali o inventari dettagliati - Max 1000 caratteri)

Main equipment available in the laboratory:

1. Strong floor (12.5x8.5 m – h=1 m);
2. Frame structures (9x7 m - h= 5 m);
3. No. 2 Movable Test Benches (1x1m- h= 1.5m);
4. No. 2 Movable Reaction arms (0.8x4m and 0.8x2.5m),
5. Accessories for bending tests;
- 6 No. 12 servo-hydraulic actuators with nominal capacity and stroke as follows:
 - 1 MN and ± 100 mm (2 actuators)
 - 500 kN and ± 100 mm (2 actuators)
 - 250 kN and ± 100 mm (4 actuators)
 - 100 kN and ± 100 mm (4 actuators)
- 7 Manifold, hydraulic power unit equipped with chiller, oil distribution system, electronic control unit, and dedicated software.

Materiale fotografico

(Allegare foto rappresentative del laboratorio – Min 1, Max 3 foto)

