

# Labs

Laboratories and related equipment values						
Lab n.1				Lab n.2		
Unit	Description	Available equipments	Total value of equipments (€)	Description	Available equipments	Total value of equipments (€)
UNICAL (Bruno)	Research Laboratories "Materials and Structures Engineering"	FE software for multi-physics, structural analysis and design, high Performance Computing cluster for parallel large-scale computations and workstations	60.000,00	Laboratory of material tests and structures	Machines for construction materials processing and testing, uniaxial shaking table for large-scale dynamic tests	1.000.000,00
UNICT (Caddemi)	Structural Engineering Laboratory	Controls Advantest System for compression/bending tests on concrete (load/displacement/strain controlled). Instron System for cyclic dynamic and fatigue tests. Static/dynamic HBM MGC plus data acquisition system software HBM CatmanAP. Static/dynamic National Instrument data acquisition system. Set displacement transducers (24 Penny & Giles, 9 HBM), Set accelerometers (31), Set force transducers (HBM 200 kN, Novatech 500 kN, Controls 100 kN, Novatech 2000 kN, TMT 3000 kN, Laumas 25kN). Set hydraulic jacks: (n°6 Enerpac 10 ton, n°1 Europress 30 ton, n°1 Larzep +/- 50 ton, n°2 FPT 150 ton, n°1 FPT 30ton, n°1 FPT 56 ton). Modular contrast structure for cyclic testing of reinforced concrete frames and masonry panels. Equipment for in situ tests.	1.000.000,00	/	/	/
UNIPR (Carpinteri)	Materials and Structural Testing Laboratory	Testing machines and measurements devices allowing the performance of static and dynamics loading mechanical tests, a servo-hydraulic testing machine	400000,00	/	/	/
IJAV (Cecchi)	LabSco - IJAV	Universal testing machine "Dartec" with 1200 kN load capacity and automatic data acquisition and management system, Press with 6000 kN load capacity, Data acquisition System, Georadar GSSI Sir System-3000, System for Structural Dynamic Testing (hydraulic power unit, 4 actuators)	1'000'000,00	Centro Studi MIMESI - Material Investigation, Modeling, Environmental, and Structural Identification	Digital data acquisition system DRC Data 500; Digital data acquisition system DRC Data 500; High Sensitivity Accelerometers DRC KS48c; Ultrasound diagnostic system DRC D1000LF; Mortar Penetrometer; Digital Concrete Hammer; Digital video endoscope; Lightweight digital tomographs, acquisition systems for seismic noise and vibrations on soil and structures (Tomino® ENGY 3G)	40.000,00
POSITO (Chiesa)	Research Laboratory "MASTRLAB"	/	100.000,00	Sezione Forza del Laboratorio di Taratura ACCREDIA LAT n. 139	/	100.000,00
UNIPA (Di Paola)	Experimental Structural Dynamics Testing Laboratory	Environmental noise structural monitoring through laser scanner vibrometer, interferometric radar, high sensitive sensors and related acquisition board. Small scale lab testing through n.3 modal shakers, n.2 shaking tables, n.3 instrumented hammers and related sensor and acquisition board (NI PXI). Universal testing machine MTS axial/torsional.	590.000,00	L.E.D.A. - Laboratory of Earthquake engineering and Dynamic Analysis	Shaking tables system (two 6-DOFs 4mX4m tables, max payload 60t each and 100t coupled, max acc. 1.5g @ max payload, freq. range 0-60Hz). Real time control system able to drive the tables both separately and simultaneously (synchronous and asynchronous). TEAM Cube 6-DOFs hydraulic shaker (acc. 10g @ 450kg, freq. range 0-250Hz). LDS V875LS-440 1-DOF electromechanical shaker (acc. 100g @ 600kg, freq. range 5-3000Hz). Small-scale lab testing through n.2 modal shakers, n.1 shaking table, n.2 instrumented hammers, several piezoelectric force sensors, several piezoelectric accelerometers and NI PXI data acquisition system. Strong floor - strong wall reaction system (14m height, 14m large, 34m length). Hydraulic actuators (n. 4 @1000kN , n. 2 @500kN). Real time control system for static, pseudo dynamic and fatigue tests. Reaction frame equipped with a 2000 kN hydraulic actuator. Laboratory testing machines to perform mechanical characterization of building materials and advanced instrumentation to perform in situ destructive and non-destructive tests.	10.750.000,00
UNIME (Falcone)	L.A.M.A.S. (Experimental Materials and Structures Testing)	<ul style="list-style-type: none"> <li>Pseudo dynamic and static facility ITALSIGMA (6x6x5m) for large scale test, equipped by 6 servo - hydraulic actuators (load capacity 250 kN, 500 kN, 1MN, stroke +/-375 mm).</li> <li>Dynamic facility ITALSIGMA (9x7x5m) for large scale test, equipped by 12 servo - hydraulic actuators (load capacity 100 kN, 250 kN, 500 kN, 1MN,stroke +/-100 mm).</li> <li>Dynamic equipment for acceptance and qualification test on materials for anti-seismic devices ITALSIGMA compliant to UNI EN 1337.</li> <li>IDS - IBIS interferometric instrument for static and dynamic tests on bridges with sub-millimetric precision and high acquisition frequency (100-200 Hz), equipped by 2 couples of radar sensors.</li> </ul>	2.893.067,31	EUROLAB - laboratory of Structural Engineering of Center of Excellence, Research and Innovation for large Structures and Infrastructures (C.E.R.I.S.I.)	<ul style="list-style-type: none"> <li>Testing facility capable of real-time 6-DOF dynamic characterizations of full-scale bearing devices and dampers: the system is equipped by 4 vertical servo-hydraulic actuators (total load: 16 MN), 2 high speed and low friction actuators for longitudinal displacements (maximum load: 3.1 MN), 2 high speed and low friction actuators for transversal displacements (maximum load: 1.4 MN).</li> <li>Mechanical testing facility for fatigue and static test of Cable Systems up to 109 strands with 22m maximum length: the facility is equipped by 3 servo- hydraulic actuators TANDEM (maximum static load: 31 MN, superimposed dynamic load: 3,3 MN) an 1 servo-hydraulic for radial loads.</li> </ul>	3.390.765,84
UNISA (Feo)	Structural Engineering Testing Hall	High-Pressure Hydraulic Distribution System (maximum oil flow rate: 10 l/s), Shench Compression Testing Machine (capacity: 4000 kN) and ShenchHydropuls Testing Machine (capacity: 630 kN), recently upgraded with a ZwickRoell control system, Column Testing Machine, Rigid Steel Reaction Walls equipped with a MTS control system, oleodynamic actuators (range capacity: 250-2000 kN) and load cells.	2.000.000,00	/	/	/
UNIPG (Gusella)	Dynamics laboratory	Measuring devices: accelerometers; displacement transducers; load cells; CCD laser sensor for measuring displacements; inclinometers; pachometer; sclerometer; instrumented hammer; centesimal comparators; HF Force balance. Acquisition systems: HBM-Spider-8 (16 channels), IOTEC-HDATA SHUTTLE (8 channels), CRONOS-PL (16 channels), NI-PXI (48 channels) Actuator devices: shaker; load press; oleodynamic load jack; torsional electric drive.	250.000,00	Materials laboratory	Instruments for analysis and characterisation of granular materials. Static load press. Oledynamic load press for fatigue test. Triaxial press for dynamic test, programmable press with either load and displacement control.	300.000,00
UNIPD (Maiorana)	Construction materials testing laboratory	Hydraulic press, universal testing machine with automatic data acquisition, Charpy pendulum, system for fatigue testing, freeze-thaw machine equipment, 3D digital image correlation system, portable equipment (ultrasonic testing for rebars location, sclerometer, flat-jacks for masonry testing, strain-gauges and transducers of different types)	1.000.000,00	Laboratory for drawing and industrial engineering methods	OGP SmartScope Flash CNC 300 Multi-sensor, CAM2 Faro Laser ScanArm Platinum, Konica Minolta VIVID-910, Zprinter 450, 3D System Cubex duo, Gabaldini Sun 2500, 3D Topographic system+control software, acquisition system	350.000,00

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UNINA (Marotti de Sciarra)	LABORATORIO UFFICIALE PROVE MATERIALI E STRUTTURE "Adriano Galli"	Shaking table system, universal testing machine Italsigma, universal MTS810 machine	2.000.000,00	/	/	/
UNIROMA1 (Rega)	EXPERIMENTAL LABORATORY	Vibrating Table (Moog), Double effect jack (Schenck), Electrodynamic Shaker (Gearing & Watson), Electrodynamic Shaker (Dongling), Pulsating jacks, LVDT displacement transducers, various accelerometers	100.000,00	/	/	/
UNIROMA3 (Rizzi)	Modelling & Simulation Lab (LaMS)	In-house hardware comprises one cluster of multi-core processors workstations, one server SMP and one data server	30.000,00	LABoratory of computational MEchanics (LABMEC- SMARTLAB)	Linux Beowulf cluster of 18 CPU AMD Opteron at 2.4 GHz, Network of 16 workstations Pentium 4 at 3.2 GHz and 2GB of RAM, and 8 Workstation Pentium Intel® Xeon® Quad-Core 5450 3.0 GHz, and 4GB di RAM with printing and acquiring devices 8, Software library: compilers for the implementation of computational codes, scientific codes (Maple, Mathematica, Matlab, Femlab, Comsol) and finite elements computing tools (ABAQUS, ADINA, ANSYS CivilFEM, Lusas), scientific text editors	80.000,00
UNINA (Rosati)	LABORATORIO UFFICIALE PROVE MATERIALI E STRUTTURE "Adriano Galli"	Shaking table system, universal testing machine Italsigma, universal MTS810 machine	2.000.000,00	/	/	/
POLIMI (Talliercio)	Textiles and Polymers Research Lab (Textiles Hub)	Biaxial machine for testing technical textiles and polymeric foils, based on a rigid square frame, with 3 electromechanical actuators and load cells on each side (max force 50kN); displacement/force-controlled tests	150000,00	/	/	/
UNIMORE (Tarantino)	Materials and structures testing laboratory	Universal tensile machine 600 kN; bending three/four points machine 200 kN; compression machine 3000 kN; testing machine for diagonal compression on masonry walls; instrumentation DIC- Digital Imaging correlation system.	300.000,00	/	/	/
UNIROMA1 (Trovati)	"Heritage-Lab" laboratory in CISTeC- CR in Scienza e Tecnica per la Conservazione del Patrimonio Storico - Architettonico	Analytical instruments for the characterization of the properties of ancient and modern materials and their decay (microRaman, Surface Enhancement Raman (SERS) , FT- Raman and microFTIR spectroscopies, Microscopes, Thermal analysis, porosimeters, spin coaters, Hi-speed mixers, climatic chambers, system for the preparation of thin sections	450000,00	/	/	/
UNIBO (Ubertini)	Materials, structures, and geotechnical laboratory (LISG)	Two recently-purchased servo-hydraulic universal MTS machines, a 3D fully-equipped digital image correlation system with two high-resolution cameras, a servo-hydraulic jack, several data acquisition systems, non-destructive testing evaluation	450.000,00	/	/	/
UNISALENTO (Zavarise)	Development of Integrated Procedures for Restoration of Monuments DIAPREM ( <a href="http://www.unife.it/centri/diaprem">http://www.unife.it/centri/diaprem</a> )	Two 3D Laser Scanner flying time with millimeter prevision Leica (C10 and Leica P20), Two Portable 3D Laser Scanner with optical triangularization and sub-millimeter precision (Konica Minolta Vivid 910i e Rage5), 1 Total Station (Leica TCR1101), Total Station Leica TCR1202+ R1000 and GPS Leica RX1250GG and GPS1250GNSS ROVER. One Fiberscope for inspection with 2 meter cable, One Spectrophotometer Konica Minolta Cm 5300d, Two thermographic cameras IR (Flir EB60x, B4), One Thermohygrometer.	150.000,00	/	/	/