

Mobile Lab

Mobile Laboratory is a comprehensive & versatile portable laboratory to analyse and diagnose historic building materials in an easy and clear manner. By using this equipment the basic techniques to categorise natural and artificial stones as well as degradation phenomena are made available to all those working in cultural heritage preservation. It is a must to efficiently manage cultural heritage throughout the entire conservation process, from the fact-finding project to the conservation itself, paying special attention to programmed maintenance.

Degradation status

PROTECTIT uses the most advanced non-destructive or micro-invasive analytical techniques for the characterization of materials and the evaluation of related degradation phenomena.

Materials diagnostic analyses

PROTECTIT provides consultancy and diagnostic services in the field of cultural heritage to companies and professionals operating in the field of conservation. Particular attention is dedicated to the execution of tests provided for in current European legislation, UNI-Cultural Heritage, of CEN-TC 346 and those on stone materials defined by the NORMAL recommendations

Interpretation of collected data

PROTECTIT cooperates with specialised centres for laboratory analysis on Cultural Heritage to guarantee the best interpretation of data, also partnering in a multidisciplinary way with professional figures involved, such as Designers, Works Managers, Companies, Renovators, as well as Art Historians, and Museum Collectors or Curators.



TECHNICAL DATA

Optical microscopy Analysis:

portable USB microscope; magnification: 10X min, 150X max; built-in LED light;

Reflectance Spectrophotometry and Colorimetry Analysis:

reflectance spectrophotometer; spectral range: 410-740 nm; automatic calibration; colour space used: CIE L*a*b*; Illuminant: D65; Observer: 10°; Reference standards: EN 15886:2010 'Conservation of cultural property - Test methods - Colour measurement of surfaces';

Measurement of water absorption under low pressure:

cell to measure water absorption under low pressure by IBIX Mobile LAB ®; diameter of surface measured: 27-35-47 mm; measurement column volume: 0.2-1-2-5-10 ml; measurement on horizontal/vertical surfaces; Reference standards: NORMAL 44/93 "Water absorption under low pressure";

Water absorption test with contact sponge:

NORMAL UNI 11432:2011- Methodology for insight evaluation of the effectiveness of water-repellent treatments on monumental surfaces with contact sponge method.

Moisture content by gravimetric determination:

weighing set samples processed by IBIX Mobile LAB ®; Reference standards: UNI 11085:2003 - Cultural heritage - Natural and artificial stones - Moisture content determination - Gravimetric method;



Total soluble salt testing:

conductivity meter and pH meter; operating range: pH from 0.00 to 14.00; EC from 0 to 3999 µS/cm; resolution: 0.01 pH; EC: 1 µS/cm; precision: ±0.05 pH; EC: ±2% FS; temperature: ±0.5 °C; automatic temperature compensation; weighing set; dehydration;

Hygrometer: non-destructive electromagnetic induction measurement that leverages the ability of water molecules to attenuate, then modify, magnetic fields. The electric field penetrates the material through the instrument's contact tabs, creating a measuring range of approximately 5 cm in depth. The instrument provides water content in percentage weight in relation to the dry mass (%) on the basis of typical curves for each material.

Instrument used: TESTO 616;

Measurement range on wood: <50%; Measurement range on construction materials: <20%; Resolution: 0,1%; • Depth of measurement: up to 5 cm (N.B.: the outer layers of the material have a greater impact on the result of the measurement than inner layers).

USB memory: Equipped with a USB memory with all the technical and laboratory sheets to support the software procedures.

The methods of analysis used comply with European regulations by UNI-Beni Culturali (Cultural Heritage) and EN-Conservation of Cultural Property respectively.