

IBIX SYSTEMS



FOR DIAGNOSTICS





IBIX Mobile Lab® ST01 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.

The methods of analysis used comply with both Italian and European regulations by *UNI-Beni Culturali* (Cultural Heritage) and *EN-Conservation of Cultural Property* respectively. The equipment features a multilingual user interface.

IBIX Mobile Lab® 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.



IBIX MOBILE LAB®: ANALYSIS FUNCTIONS

- SAMPLES ARE TAKEN AND PREPARED TO BE ANALYSED IN SITU OR AT A LAB
- SURFACE ANALYSIS USING OPTICAL MICROSCOPY
- REFLECTANCE SPECTROPHOTOMETRY AND COLOURIMETRY
- MEASUREMENT OF WATER ABSORPTION UNDER LOW PRESSURE
- MOISTURE CONTENT BY GRAVIMETRIC DETERMINATION
- TOTAL SOLUBLE SALTS TESTING
- TESTS TO ANALYSE SULPHATE, NITRATE, CHLORIDE CONTENT
- AMBIENT PARAMETER MEASUREMENT





MISURA DEI SALI SOLUBILI TOTALI

- 1 - Localizza il prelievo
- 2 - Preleva il campione
- 3 - Foto post prelievo
- 4 - Essicca il materiale prelevato
- 5 - Macina il materiale e preleva il campione
- 6 - Estrazione dei sali
- 7 - Prepara conduttimetro
- 8 - Calibra conduttimetro
- 9 - Misura l'acqua distillata
- 10 - Misura il campione
- 11 - Salva la misura

Versa il campione in un beaker di vetro, aggiungi **100ml** di acqua bidistillata, poi chiudi con l'apposito coperchio/agitatore

Appoggia il beaker sull'agitatore (velocità livello 6) per **2 ore** e al termine filtra la soluzione ottenuta:

PROGETTO CORRENTE:
Restauro della facciata della Cattedrale di Notre Dame Parigi

Powered by

The dedicated software developed by START Apps S.r.l. controls all operations. It also guides the operator, step by step, on how to carry out chemical-physical tests in order to obtain objective results. These results will help designers, restorers and administrators of cultural heritage to devise a modern approach to conservation.

Diagnosis projects are easily managed via simply structured and intuitive software, with illustrative images of the test steps and procedures and a flexible site-related data management system.

In case further lab tests are required, the interface can help you prepare samples following internationally recognised standards and independently calculate the costs of surveys carried out at our multi-service centre. The results are automatically included in the technical report.



DETAILED DIAGNOSIS TESTS: IBIX EXTENDED LAB®

- ON-LINE ESTIMATE FOR LAB TESTS
- GUIDED SAMPLE PREPARATION
- RESULTS DOWNLOADED FROM THE WEB
- ANALYSES ARE AUTOMATICALLY INCLUDED IN THE PROJECT
- RESULTS ARE AUTOMATICALLY INTEGRATED INTO THE REPORT

Our multi-service centre is equipped with the most advanced lab techniques to categorise the physical and chemical characteristics of materials, and is staffed by professional technicians, highly trained in diagnosing cultural heritage.

The **IBIX Mobile Lab®** modular structure facilitates compiling customised reports automatically, thus reducing times and costs at the fact-finding process. Software can be updated via the web at any time.

YOUR TECHNICAL REPORT JUST A CLICK AWAY!



The 'PRINT REPORT' function included in the software that manages the **IBIX Mobile LAB** is used to create a comprehensive technical report of tests in PDF format, with a simple click of the mouse! The report shows charts and graphs with the results of the analyses carried out per sample; it includes the reference regulations and standards, test conditions, images to locate the collection points, and a guide to understand the readings.

The report can be customised by the user automatically- enter the data of the person that performs the analysis, the site data, the pictures and the results of the tests asked to the laboratory via **IBIX EXTENDED LAB**. All these are downloaded directly from our server as soon as they become available for download.

The comparisons set among the different measurements are arranged by the software following a graphic format that facilitates reading and interpreting data.



TECHNICAL SPECIFICATIONS

GENERAL:

CONTROL SOFTWARE:

IBIX Mobile Lab for Linux – 1.0 version; multilingual user interface (available in Italian, English, French, German and Portuguese), with interactive guide to carry out the tests, project database management, automatic technical report compilation, automatic updating functions via the web, calculation of estimates for lab tests, user manual

CASE PROTECTION GRADE: waterproof

DIMENSIONS: (55.9 x 47 x 21.6 cm)

WEIGHT: 12.1 kg

FUNCTIONS:

Optical microscopy:

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

Reflectance Spectrophotometry and Colourimetry:

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 'Assorbimento d'Acqua a bassa Pressione' (Water absorption under low pressure)

Moisture content by gravimetric determination

Weighing set; dehydration; samples processed by IBIX MOBILE LAB®; Reference standards: UNI 11085:2003 - Beni culturali - Materiali lapidei naturali ed artificiali - 'Determinazione del contenuto d acqua: Metodo ponderale' (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; samples processed by IBIX MOBILE LAB®; Reference standards: UNI 11087:2003 - Beni culturali - Materiali lapidei naturali ed artificiali - Determinazione del contenuto di sali solubili (Cultural heritage - Natural and artificial stones - Determination of soluble salt content)

Tests to analyse sulphate, nitrate, chloride content

Photometer for transmission measurements; light source: LEDs; wavelength: 525 nm; operating range: SULPHATES: 5-150 mg/L; NITRATES: 0.1-45 mg/L; CHLORIDES: 0-210 mg/L; weighing set; dehydration; samples processed by IBIX MOBILE LAB®; Reference standards: UNI 11087:2003 - Beni culturali - Materiali lapidei naturali ed artificiali - Determinazione del contenuto di sali solubili (Cultural heritage - Natural and artificial stones - Determination of soluble salt content)

Ambient parameter measurement

Infrared pyrometer to measure surface temperature; measurement range: -20_+270 °C; resolution: 1 °C; precision: ± 3 % of the measurement value - 1 °C; measurement point (distance / size ratio): 8:1; emissivity: 0.95 Psychrometer; measuring range: 0-100 % RH; 30...+100 °C; Resolution: 0.01 % RU; Temperature: 0.01 °C; Precision: ± 2.0 % RU at 25 °C; ± 0.5 °C at 25 °C; wet bulb temperature and dew point temperature calculation

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