



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

**TESTING
and METROLOGY**

UMOC

Organic Materials Laboratory

MATERIALS DEPARTMENT

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Scope

The Organic Materials Laboratory (UMOC) is a body accredited by IPAC in compliance with the Portuguese Standard NP EN ISO/IEC 17025 (Accreditation Certificate no. L0547). It is integrated in the Materials Department (DM) / Organic and Metallic Materials Unit (NMOM) of LNEC. It has the appropriate technical resources together with the qualified staffs to carry out numerous tests in compliance with standards EN, ISO, NP and ASTM on paints, varnishes, organic coatings, bituminous binders, plastic and elastomeric materials, as well as polymeric matrix composites. This capacity leads it to be in great demand at both national and international levels, for carrying out the characterisation of such materials, involving the issuing of test bulletins, and also for providing support to the certification and CE marking of construction products, the approval of international quality marks (Qualicoat, Qualideco and Qualisteelcoat), the awarding and renewal of LNEC Application and Approval Documents, as well as to research projects and expert advice reports and to the appraisal of the quality of materials.



Plastics (pipes, fittings and fixtures), elastomeric materials and polymer composites – Physicochemical and mechanical properties, performance evaluation tests and thermal analysis.

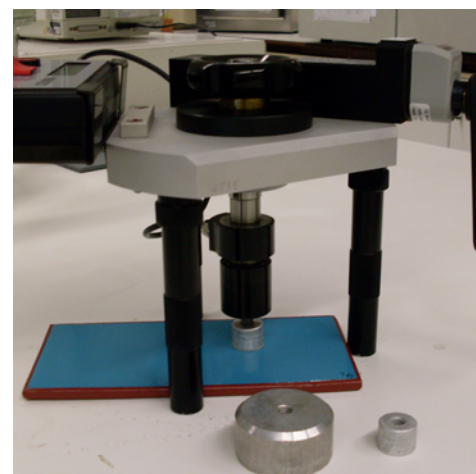
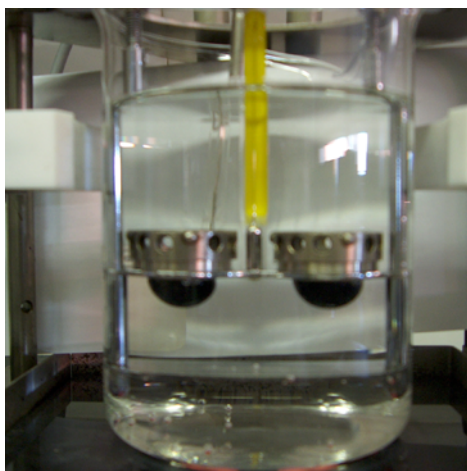
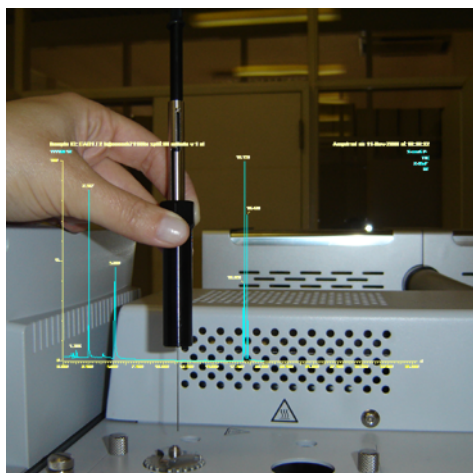
It has diverse equipment that includes, not only specific instruments for testing the organic materials referred to above, but also those necessary for their characterisation under the following points of view: chemical (FTIR spectroscopic methods, column and thin-layer chromatography techniques, means to determine the volatile organic compounds VOC), rheological and mechanical (tension, bending, shock and creep), as well as thermal (DSC, TG, TGA/DSC and DMA). It is also equipped with several types of chambers that make it possible to characterise the performance and durability of materials under the action of environmental factors (humidity and saline fog chambers, chamber with sulphur dioxide or with various types of lamps for simulating the sun radiation).

Field of expertise

UMOC Performs several laboratory tests according to standard or internally developed methods, both accredited and non-accredited, on a wide range of organic materials and products used in Civil Engineering, namely for the characterisation of:

Paints, varnishes and organic coatings – physicochemical and optical properties, durability and performance evaluation tests.

Bituminous binders (bitumen, modified bitumen and bitumen emulsions) – physicochemical, mechanical and ageing resistance properties.



Highlights

The experience gained by UMOC experts and their specific training in the field of characterisation of organic materials enables the NMO to respond to requests related with certification, approval, evaluation of the quality of materials and products or issuing of technical reports, in compliance with the ethical, impartiality and reliability standards required and ensured by LNEC.