



LABORATÓRIO NACIONAL  
DE ENGENHARIA CIVIL

**TESTING  
and METROLOGY**

**UBC-AEQ**

MATERIALS DEPARTMENT

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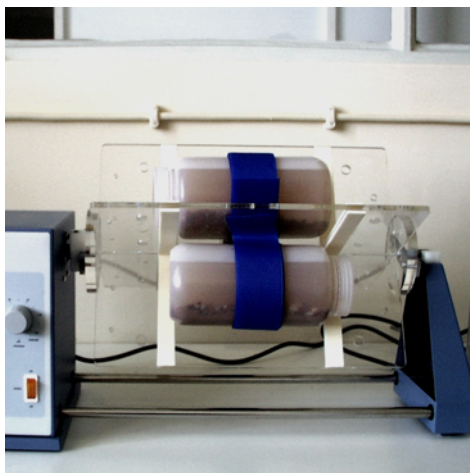
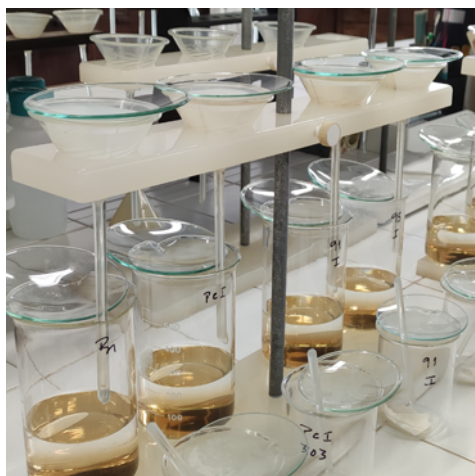
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Concrete and Cement  
Laboratory - Chemical Testing

## Scope

The Concrete and Cement Unit / Chemical Tests Area (UBC/AEQ), which is part of the Cementitious Materials Unit of LNEC's Materials Department, is accredited for the chemical characterisation of cements and fly ash, supporting the construction sector in the attribution of the conformity mark to cements and fly ash.

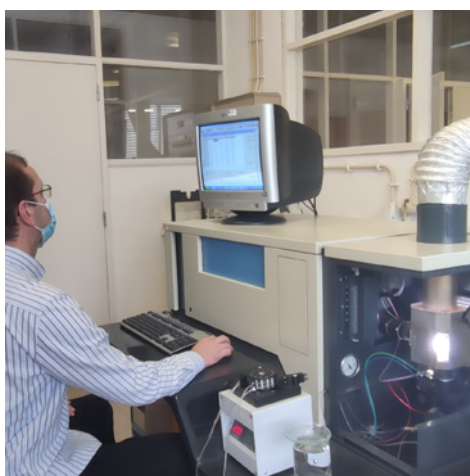
The activity developed at UBC/AEQ includes also the chemical characterisation of cement matrix construction materials and their constituents, as well as non-traditional materials, namely industrial wastes and by-products.



In the area of construction materials, the UBC/AEQ supports the development of research projects, the conduction of studies and the issue of opinions in the field of internal expansive reactions of concrete, the chemical characterization by qualitative and quantitative chemical analysis, using gravimetric, volumetric and instrumental methods (including WD-XRF, ICP AES and GF-AAS), according to internal or standardized procedures, and the assessment of the release of hazardous substances.

## Field of expertise

In its accredited activity, UBC/AEQ performs tests for determining the loss on ignition, the pozzolanicity of pozzolanic cements, the insoluble residue (sodium carbonate method), the heat of hydration (semi-adiabatic method) and the chloride, sulphate and potassium and sodium oxide contents in cements. In the same context, it determines the free calcium oxide content by volumetry in fly ash.



## Highlights

The accredited activity developed by UBC/AEQ on cements and fly ash contributes to the compliance verification of these materials and, consequently, to the safety and quality of their use in the built environment. The activity of UBC/AEQ also contributes to sustainability in the construction sector by analysing, from an environmental perspective, several recycled materials and by-products, in which recycled aggregates from construction and demolition waste stand out.

