



Laboratory Services **In Situ Material Analysis**



In Situ Material Analysis

Overview

To verify whether a metal component conforms to a particular standard or specification, the base properties of the material need to be checked. Normal routes of assessment include chemical analysis and mechanical testing. This assessment can form part of a failure investigation or part of the normal manufacture quality assurance process. Typically, sampling is carried out on test coupon material within the confines of a laboratory or test house through a destructive method of testing.

In some cases, it may not be feasible to move the sample item or destroy material for the purpose of testing. However, using the latest portable analysis equipment, it is possible to quickly obtain test results through in situ chemical analysis and mechanical testing. Our portable chemical analysis equipment includes LIBS (Laser Induced Breakdown spectrometry) and PMI-OES (Positive Material Identification – Optical Emission Spectroscopy). Our mechanical testing includes portable hardness (Leed D and UCI methods)

Chemical Analysis

LIBS is a portable method of chemical analysis for quick sorting of metal alloys. It is a particularly good method for magnesium and aluminium alloys for example. LIBS began as a laboratory technique which has now been modified into a highly portable application which is not reliant on gases or power supplies for the purpose testing.

Our PMI unit is portable version of OES technology and can provide full chemistry of alloy materials down to low detection limits. OES is common in mill certification of metals and test laboratories. Brookes Bell's PMI Master Smart OES allows for portable, laboratory quality assessment anywhere.

Our PMI includes UVTOUCH technology which can be used for low detection of critical elements such as carbon, phosphorous and sulphur making it suitable for reliable analysis of ferrous materials such as steels and stainless steel. We also have calibration standards for other alloy materials including aluminium, nickel and copper.



PMI OES unit used for chemical analysis



Portable Leeb D unit used for hardness testing



LIBS unit used for chemical analysis

Whatever your technical or scientific requirements Brookes Bell has a highly skilled and experienced team of experts ready to help you.

For more information please visit our website (www.brookesbell.com) or contact us on **+44 (0)151 236 0083**.