



**MATERIAL TESTING SERVICES**

**PROINSPECTION**



Prolnspection provides a professional and cost effective range of materials inspection services from its base in central Scotland.

With significant investment in the latest technology, Prolnspection is one of the best equipped testing laboratories in Scotland with a highly experienced team of experts able to advise on a broad range of materials.

**Our completely independent contract service includes:**

- Tensile testing (longitudinal and transverse)
- Bend testing can be performed as required by ASME IX
- Charpy Impact testing at temperatures from +100 down to -65°C
- Hardness readings utilising the Brinell or Vickers methods
- Micro structure reports and ferrite counts with photomicrographs are also available
- Corrosion Testing using the G28A or G48A methods
- Collection & Delivery Service (subject to agreement)



TENSILE  
TESTING



BEND  
TESTING



CHARPY IMPACT  
TESTING



BRINELL HARDNESS  
TESTING



VICKERS HARDNESS  
TESTING



METALLOGRAPHIC  
EXAMINATION



CORROSION TESTING



Tensile Testing of a full range of products and materials such as aluminium, carbon steel , Austenitic & Super Duplex Stainless Steel.

## TENSILE TESTING

### **Tensile Testing to ASTM and EN ISO Standards**

ProInspection offers tensile testing of carbon and stainless steel or other alloys such as aluminium in accordance with ASTM, BS or EN standards at room temperature or elevated temperatures up to 600°C.

Our computerised Avery Denison Tensile machine, capable of pulling samples up to a maximum capacity of 500KN (5 Tons), enables the strain rates to be kept within the different international standard strain rate requirements.

Elevated temperature tensiles can also be pulled utilising the Vecstar heating unit to test tensile samples at temperatures between 80°C and 660°C





## BEND TESTING

**Bend testing of Welds and Parent Products in accordance with ASME or API & DNV requirements.**

This test is provided to test the ductility and integrity of welds for Weld Procedure Qualifications or routine testing with attachments to the Denison T42 and can be done utilising full thickness samples up to 40mm thick or partial thickness specimens depending on the strength of the material.

## CHARPY IMPACT TESTING

**Charpy Impact testing in accordance with the requirements of British Standard Euro Norm or ASTM requirements.**

Charpy impact testing can be performed on a full range of materials from carbon steel to exotic alloys at temperatures ranging from +100°C down to -65°C for low temperature testing. Two fully calibrated machines are available, one in accordance with the ASTM standard requirements and one for EN ISO standard testing as required by the client.

The equipment is capable of testing 10 x 10, 10 x 7.5, 10 x 5 and 10 x 2.5mm where required.



## BRINELL HARDNESS TESTING

Brinell hardness testing in accordance with the requirements of British Standard Euro Norm or ASTM requirements

HB 10/3000, HB 10/1000 and HB 5/750 Brinell testing can be offered for surface hardness testing or through thickness surveys and uses tungsten carbide balls for accuracy. Tests can be performed on a variety of metals including steel, aluminium and bronze.

The maximum full sample size for testing is an equivalent round of 15" (380mm)



## VICKERS HARDNESS TESTING

Vickers hardness testing in accordance with the requirements of British Standard Euro Norm or ASTM requirements

Vickers hardness testing can be provided either as single surface points or full surveys either through thickness, across welds or on a surface traverse utilising a diamond indenter it can be utilised with Hv30, Hv10 or Hv5 loads.

Samples up to 6" thick can be tested utilising a through thickness hardness survey to identify hardness trends through material or localised surface hardening.



## CORROSION TESTING

Testing can be performed in accordance with various ASTM standards

ASTM G28A corrosion testing performed for 24 to 48 hours.

ASTM G48A and G48C corrosion testing can be performed at temperature increments between 20°C and 60°C for 24 to 48 hours





Proinspection can deliver accurate assessments of micro -structures, measurement of phase balances, inclusions and image analysis

## MICRO-STRUCTURES & PHOTO MICROGRAPHS

Our state of the art technology allows us to examine structures with lens magnifications between X50, x100, x200, x500 and x1000 which can be further enhanced utilising the computerised imaging system which can also provide instant annotated pdf or bitmap photographs.

The system is capable of laying on screen grids to facilitate point counting of phases as well as the measurement and identification of defects and inclusion types allowing for direct measurement. The polarised light analysis can be used to identify certain types of inclusions by noting the colour changes at different incidental light angles.



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