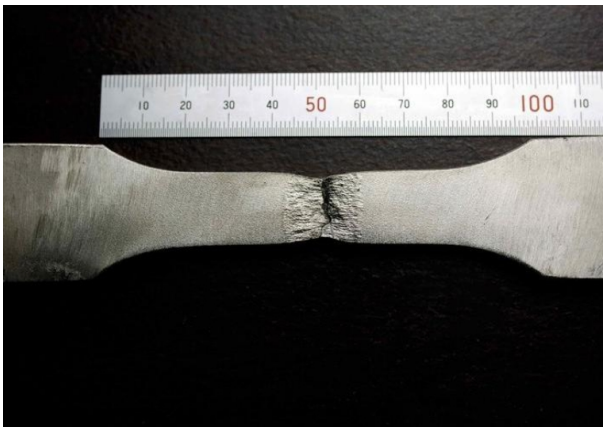
Contact: info@applus.com

Destructive Materials Testing

When engineers design equipment and structures, they specify the required physical properties of the construction materials. Destructive testing of materials is part of a material verification process to check the properties meet the specifications of the engineer's design of equipment and structures, with material compliance with regulatory body standards. Materials testing may be carried out when materials are initially manufactured, for example during a pipe mill or mill inspection. Destructive testing and material verification can also can also be included in structural welding tests to look at the properties of welds following fabrication. Welds have to be equal to, or better than, the material properties that the pieces have joined, so destructive testing can be carried out on representative weld samples, known as coupons, to confirm the properties of the weld.



THE Applus+ SOLUTION

Applus+ operates a global network of materials testing labs that are accredited to CSA, NADCAP and ISO standards and offer the following services:

- Uniaxial tensile-strength testing with computerised stress-strain plots
- Charpy impact tests (CVN)
- Macro and micro testing (Vickers hardness test, Brinell hardness test, Rockwell hardness test)
- Macro etching
- Metallurgical services and microscopy
- Bend testing

Our skilled lab technicians work closely with our materials and welding engineers, as well as NDT technicians to deliver fully integrated NDT services. We operate a modern network of materials testing laboratories with equipment verified and calibrated to industry requirements.

Target customers

Construction materials testing normally includes destructive materials testing at the start of a new project.

Our materials testing services include materials verification to confirm the properties of construction materials, as well as to welding procedure specification and welder qualification. Structural weld testing and materials testing may also be required during a retrofit or repair work, including positive material identification where the material composition of the structure is unknown.

Engineers may also require materials testing when defects have been detected in structures during non-destructive testing (NDT) testing so that defect-tolerance calculations (fracture mechanics) can be carried out.

Finally, materials testing is normally required during FMEA risk assessment and maintenance to determine how material properties may have evolved over time.

Key customer benefits

Benefits of the Applus+ destructive materials testing service include:

- Quick turnaround times
- Skilled technicians, using the latest material testing equipment
- Materials and construction materials testing laboratory network
- Integrated services with NDT inspection and engineering departments