

AGH Research Offer



Testing station for mechanical properties of ceramic materials



Technical description:

The Zwick/Roell Z150 testing machine allows measurements to be taken at a maximum load of up to 150kN. Depending on the equipment used, measurements can be taken in bending (three- and four-point support) compression or tension. The tensile fixtures enable flat specimens and bars with diameters from 4 to 25mm to be tested.

The Zwick/Roell Z2.5 testing machine allows for maximum loads of up to 2.5kN and is designed for smaller specimen sizes (minimum support spacing is 16mm).

Both machines are controlled via testXpert II testing software, which allows standard tests defined by many industry standards to be carried out, as well as the creation of customised, complex test programmes. This makes it possible to determine bending, compressive and tensile strengths, yield strengths, modulus of elasticity, elongation, work to failure and many other parameters.

Trade name: Zwick Z2.5 and Z150

More details: </equipment/stanowisko-badan-wasciwosci-mechanicznych-tworzyw/>

Access type: External

Type of accreditation / certificate: Not applicable

Contact person: Zych Łukasz

Contact person url: <https://skos.agh.edu.pl/osoba/lukasz-zych-6379.html>

Responsible body: Department of Ceramics and Refractories

Group / laboratory / team: Laboratory of Thermomechanical Analyses

Last update date: May 24, 2023, 2 p.m.

Year of commissioning: 2010

IDUB research areas:

(PRA 5) Materials, technologies, and processes inspired by nature: biotechnology, bioinspirations in engineering and materials science, biosensors, bioenergetics, biocatalysis, biocomputers, and biocomputation

(PRA 7) Design, production, and testing of modern materials and the technologies of the future based on a multidisciplinary approach combining materials engineering with chemistry, physics, mathematics, and medicine

Research capabilities:

flexural strength
compressive strength
tensile strength
yield strength
modulus of elasticity
elongation
work to failure

Measurement capabilities:

Maximum load 150 kN/2.5 kN

Test speed 0.0001 - 600 mm/s /0.0005 - 600 mm/s

Positioning accuracy and repeatability $\pm 2 \mu\text{m}/\pm 2 \mu\text{m}$

Force measurement class 0.5 / 0.5/1

Maximum measuring distance of the extensometer 30 mm

Conditions for providing infrastructure:

Work only through an employee operator