

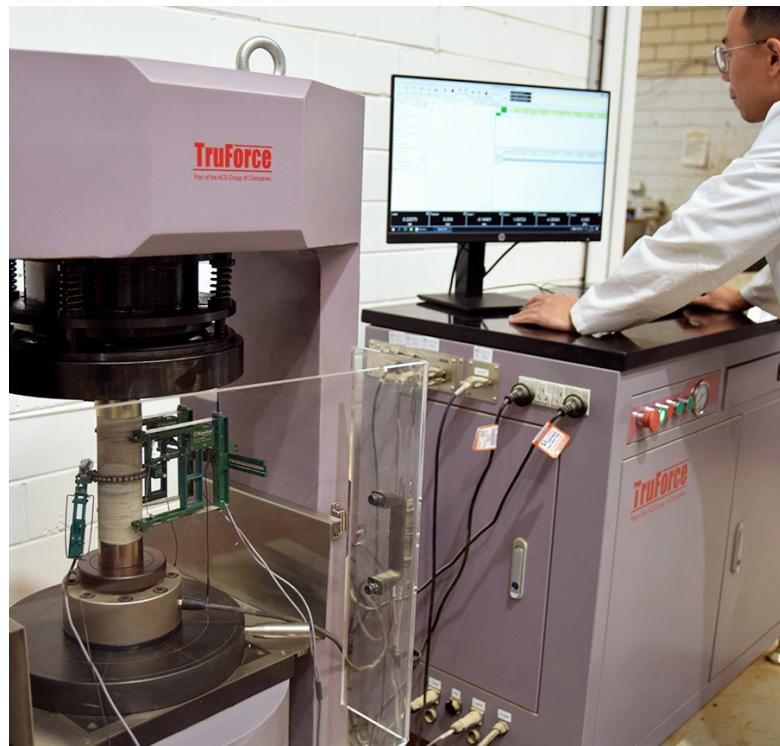
# /// UCS & ITS Testing

Determination of Rock Uniaxial Compressive Strength (UCS), Indirect Tensile Strength (ITS), and stress/strain characteristics.

These tests are conducted using the latest compressive strength equipment by experienced rock mechanic specialists. The use of high-accuracy extensometers (axial & circumferential) provides measurement for interpretation of rock deformability (stiffness).

Our sample storage preservation solutions considerably minimise drying out that causes irreversible detrimental alteration of the properties of a material for future testing. We can provide short, medium or long term non-contract storage solutions. Different types of samples may require different storage environments and preservation methods, we can also arrange temperature & humidity controlled long term storage environments if required.

We give you the right information, to make the right decisions



## Variables Determined

**ITS** Indirect Tensile Strength

**UCS** Uniaxial Compressive Strength

**E** Young's modulus

**u** Poisson's ratio

**G** Shear modulus

**K** Bulk modulus

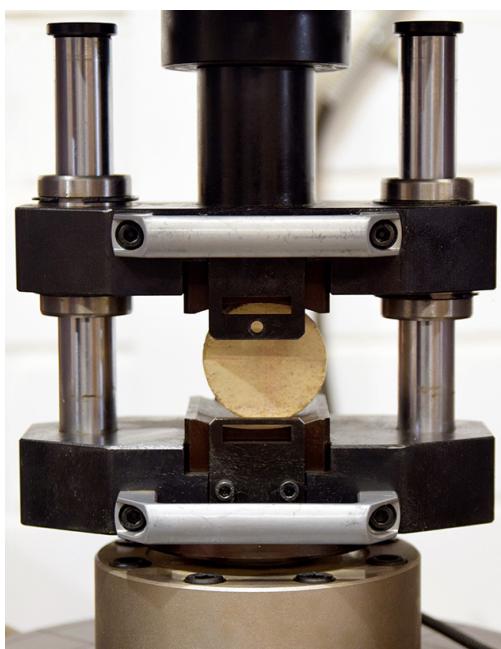
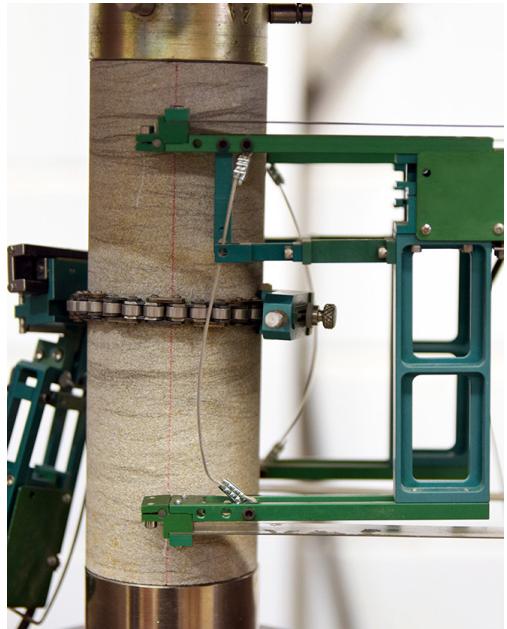


# UCS & ITS Testing

## Rock UCS and Deformability Test

Uniaxial Compressive Strength (UCS) is one of the most important mechanical properties of rocks widely used in different engineering related projects to evaluate the stability of structures against loads. The multi-range loading capacity of the Alliance's rock compression machine guarantees the high accuracy of load measurement.

Our axial and circumferential extensometers are used to capture the rock deformation during loading and this data helps to determine the key rock deformability characteristics, e.g., Young's modulus, Poisson's ratio, shear modulus and bulk modulus. Customers can choose their preferred testing method and data interpretation methods given by ASTM, ISRM, Australian Standards, and RMS, or customised procedures.



## Rock ITS Testing

The Indirect Tensile Strength (ITS) test, or so-called Brazil splitting test, is a widely adopted test method that uses a rock compression machine to indirectly measure the rock's tensile strength. This test can be conducted as per standard methods given by ASTM, ISRM, Australian Standards, and RMS testing methods or we can customize these tests on the request by clients for specific design requirements or research projects.

Being a brittle material, rocks may exhibit very different behaviours under tensile and compressive loading. The tensile strength of rock can be orders of magnitude less than its compressive strength, therefore it is critical to precisely determine the rock's tensile strength in engineering practices such as tunnelling, underground mining and underground repositories.