



APPLICATIONS

Tests performed on a series of rock specimens under different confining pressures allow the user to determine:

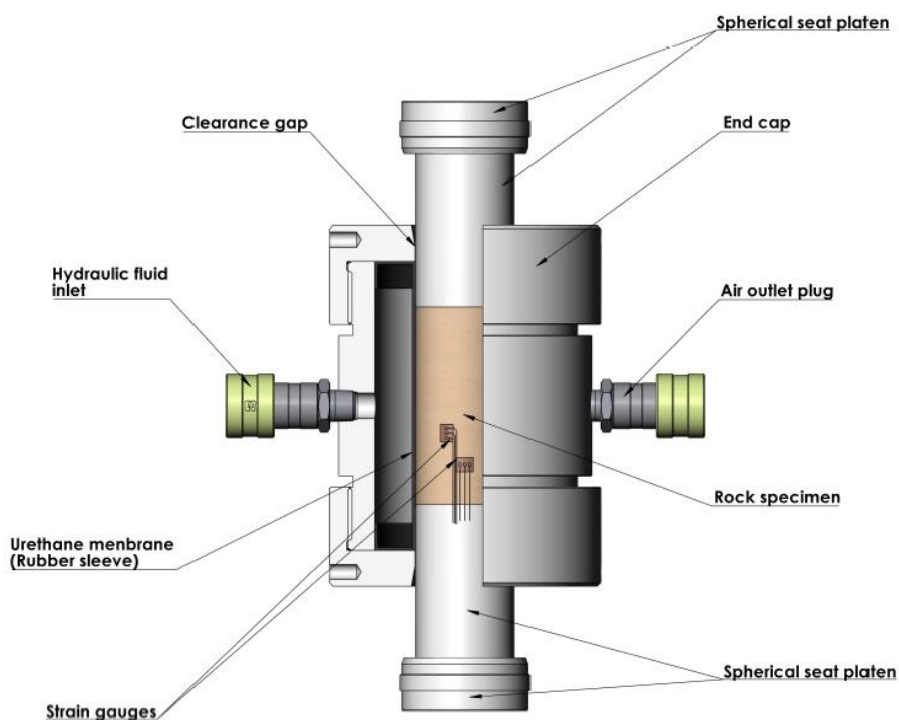
- Strength and elastic properties
- Shear strength at different confining pressures
- Angle of shearing resistance and cohesion
- Modulus of elasticity and Poisson's ratio



DESCRIPTION

The Hoek Cell is designed for use in triaxial compression tests that provide vital data on rock strength and elasticity, including variables such as shear strength under varying confining pressures, internal friction angle, cohesion intercept, and Young's modulus. This versatile cell can be customized to hold samples with diameters ranging from 21.5 mm to 63.5 mm (HQ). In the testing setup, the rock specimen is positioned between two mobile loading pistons and subjected to compression via a load frame. A specialized sleeve ensures that the sample remains isolated from the hydraulic confining fluid.

The Hoek Cell consists of a hollow steel cylinder with screw-on end caps, two high-resistance spherically seated loading pistons, and a protective sleeve. The cylinder features two self-sealing couplings: one for linking to the hydraulic pressure system and another for venting air from the cell chamber. For enhanced data capture, the cell can be optionally fitted with integrated strain gauges, allowing for detailed analysis of the failure envelope in addition to the aforementioned rock properties.



TEST PROCEDURE

Firstly, make sure that the rock sample has a minimum length-to-diameter ratio of 2. The ends of this specimen should be ground flat, achieving a parallelism between 0.025 mm and 0.012 mm, based on the sample's diameter. The rock sample along with the top and bottom loading platens are then inserted into a specialized sleeve. Position the two spherical seats such that the longitudinal axis of the cylindrical specimen is aligned with the axis of the cell chamber. Following this, apply a confining pressure to ensure the sleeve tightly adheres to the rock.

Next, position the Hoek cell, which includes its spherical seats, into a suitable loading frame and commence by applying an initial axial load. For the purpose of calculating Poisson's ratio, attach two strain gauges at orthogonal angles on the face of the core. The readings from these strain gauges are obtained through a Wheatstone bridge readout system. Once the desired confining pressure has been set, you can proceed to carry out the triaxial test.

ACCESSORIES AVAILABLE

- Rock specimen extruder
- Cell holder
- Rubber sleeves
- Permeability platens
- Compression load frame
- Confining hand pump

FEATURES

| | |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard: | ASTM (D2664) |
| Confining pressure: | 70 MPa (10,000 psi) |
| Loading length: | 400 mm |
| Specimen diameter: | 21.5 mm (0.845 inch) 25.4 mm (1.0 inch) 30.1 mm (1.185 inches) 38.1 mm (1.5 inches) 42.0 mm (1.654 inches) 54.7 mm (2.154 inches) 63.5 mm (2.5 inches) |
| Specimen length: | twice the diameter |
| Wetted part material: | stainless steel |
| Pore port: | 1/8 inch |
| Confining port: | 3/8 inch |

TEST RESULTS

floXlab Compression test result sheet

