

71 GDS Helpsheet



*World Leaders in Computer Controlled Testing
Systems for Geotechnical Engineers and Geologists*

Hardware

Triaxial Testing Systems

GDSTAS vs. STDTTS

1. Introduction

The following notes outline the principle differences between GDSTAS and STDTTS and the relative merits of each system.

The main difference between the two systems is the method of load application. The Triaxial Automated System (GDSTAS) utilises the traditional loading frame which was designed for testing at constant rates of deformation or strain. The loading frame is therefore not perfectly suited to tests carried out under load control or tests including reversals in the rate of axial loading. In contrast the Standard Triaxial Testing System is (STDTTS) uses the Bishop and Wesley Stress Path cell which was designed for this work. The GDS pressure controller which applies axial load and deformation in STDTTS has in-built capabilities for both load and displacement control.

The STDTTS system therefore performs much better where stress path or cyclic work is involved. However the GDSTAS system has the capability for higher loading if the 50kN loading frame is used.

In summary.

STDTTS was designed to incorporate stress path work using the Bishop and Wesley Stress path cell.

STDTTS has an internal, submersible load cell for reduced friction effects.

A wider variety of geotechnical tests may be carried out using STDTTS than GDSTAS.

STDTTS was designed for technical colleges and commercial testing companies and GDSTAS was designed for production commercial testing.

GDSTAS uses a traditional loading frame.

GDSTAS has a higher capacity than STDTTS when using 50kN loading frame.

GDSTAS is ideal for monotonic loading.