Australian Standard®

Geotextiles—Methods of test

Method 3: Determination of tearing strength—Trapezoidal method

FOREWORD

Failure of a geotextile by tear propagation after initial ripping or puncturing is thought to be a possible failure mode in many geotextile applications.

The pattern of failure in tear is different in non-woven fabrics from that in woven fabrics. Failure of woven fabric occurs essentially through the sequential rupture of yarns in tension, whereas, the failure of a non-woven fabric is significantly affected by inter-fibre friction forces.

METHOD

1 SCOPE

This Standard sets out a method for determining the tearing strength of geotextiles under in-plane loading, using the trapezoidal method.*

NOTE: The trapezoidal method is a tearing force tension test in which the strength is determined primarily by the individual fibres of the fabric structure, and their bonding or interlocking where applicable.

2 APPLICATION

This method is applicable to all types of geotextiles, but has limitations for high-strength materials (i.e. those having a wide-strip tensile strength in excess of approximately 80 kN/m) due to specimens slipping in the jaws.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

2193 Calibration and classification of force-measuring systems

3604 Geotextiles—Glossary of terms

3706 Geotextiles—Methods of test

3706.1 Method 1: General requirements, sampling, conditioning, basic physical properties and statistical analysis

* This method is based on ASTM D4533, *Test method for trapezoidal tearing strength of geotextiles*.