Australian Standard™

AS 3706.3

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 Methods for calibration and grading of force-measuring systems of testing machines

3704 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 D 4533-85, Test method for trapezoidal tearing strength of geotextiles. The original ASTM method appears in Volume 04.08 of the *Annual Book of ASTM Standards*, copyright American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103, USA. Copies of this ASTM method or the entire Volume 04.08, may be obtained either from Standards Australia or ASTM direct.