Australian Standard®

Geotextiles—Methods of test

Method 2: Determination of tensile properties—Wide-strip method

1 SCOPE. This Standard sets out the method for determining the tensile properties of geotextiles in both atmospheric and wet conditions using a wide-strip specimen.*

2 APPLICATION. This method is applicable to all types of geotextiles, but has limitations for high strength materials (i.e. those having a tensile strength in excess of approximately 85 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

BS
6906 Methods of test for geotextiles
Part 1: Determination of the tensile properties using a wide width strip

ASTM
D 4595-86 Test method for tensile properties of geotextiles by the wide width strip method

4 PRINCIPLE. The specimen is gripped across its entire width in the jaws of a tensile testing machine which is operated at a prescribed constant rate of extension. A longitudinal force is applied to the specimen until it ruptures (breaks). Various tensile properties of the test specimen are recorded.

5 DEFINITIONS. For the purpose of this Standard, the definitions given in AS 3704 apply.

6 APPARATUS AND REAGENTS. The following apparatus and reagents are required:

(a) Constant-rate-of-extension (CRE) tensile testing machine complying with the requirements for a Grade B machine in accordance with AS 2193, and having an extension rate of 20 mm/min.

The machine should have an autographic recorder with adequate pen response or an interfaced computer to properly record the force extension curve.

For machines with no autographic recorder, appropriate measuring instruments are required to allow readings of the applied force and the corresponding extension at a number of points up to failure.

The jaws of the machine shall be not less than 10 mm wider than the width of the test specimen and shall prevent the test specimen slipping. They shall also not damage the test specimen.

NOTES:

1. Flat plate type jaws, often supplemented by small G-clamps placed at X_1 and X_2, as shown in Figure 1, have been found to hold most wide strip specimens satisfactorily.
2. Flat plate pneumatic/hydraulic type jaws of appropriate size have also been found to be suitable.

* This method is based on ASTM D 4595-86, Test method for tensile properties of geotextiles by the wide width strip method. 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.