Test Method

Calculation of Robustness of Geotextile Material

RC 381.01

1. Scope

This test method defines the calculation of the robustness of a sample of geotextile material, using mean values determined from other tests.

2. Procedure

The procedure shall be as follows:

(a) Determine the mean CBR burst strength (L) in accordance with AS 3706.4 – *Detemination of burst strength - California bearing ratio (CBR) – plunger method*.

(b) Determine the mean diameter of the puncture hole for drop height of 500 mm (d_{500}), either by direct test using a drop height of 500 mm, or by calculation using one of equations A3, A4, A5, or A6 from Appendix A of AS 3706.5; both options to be in accordance with Appendix A of AS 3706.5 – *Determination of puncture resistance – Drop cone method*.

3. Calculation

Calculate Geotextile Strength Rating, or Robustness, from:

$$G = \sqrt{(L \times h_{50})}$$, where :

G = Geotextile Strength Rating, or Robustness

L = Mean CBR burst strength (Plunger failure load) (N), as determined at procedure step 2(a) above.

h_{50} = Puncture resistance, or normalised drop height, (mm) required to make a puncture hole of 50 mm diameter, and noting:

$$h_{50} = 500 \times \left[50 / d_{500} \right]^{1.47}$$,

(Equation A7, Appendix A of AS 3706.5),

where :

d_{500} = mean diameter of puncture hole for drop height of 500 mm, as determined at procedure step 2(b) above.

4. Report

Report the following:

(a) Sample identification and description.

(b) Date of test.

(c) Mean CBR burst strength (L), to the nearest 100 N.

(d) Puncture resistance (h_{50}), to the nearest 10 mm.

(e) Geotextile Strength Rating, or Robustness, to the nearest 50 units.

(f) Other parameters as required by relevant parts of AS 3706.

(g) Reference to this test method, RC 381.01.

Test Method - Revision Summary

RC 381.01 - Calculation of Robustness of Geotextile Material

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Date	Clause Number	Description of Revision	Authorised by
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