Australian Standard®

Geotextiles—Methods of test

Method 4: Determination of burst strength—California bearing ratio (CBR) plunger method

FOREWORD

This test is a means of judging the resistance of geotextiles to puncture forces, e.g. from aggregate placed and compacted during road construction. It utilizes the California Bearing Ratio (CBR) apparatus and principles of the method to determine burst strength of the geotextile and an approximate indication of the resulting strain.

METHOD

1 SCOPE. This Standard sets out the method for determining the burst strength and deformation properties of geotextiles using California Bearing Ratio (CBR) test apparatus for both atmospheric-conditioned and wet-conditioned specimens.*

2 APPLICATION. This method is generally applicable to non-woven and composite geotextiles, and may also be used for geomembranes. It may be used for woven fabrics, but if the material is anisotropic care should be taken in the interpretation of the results.

NOTES:

1. Being a burst test (the load is applied normal to the plane of the specimen), this method is specifically applicable to essentially isotropic geotextiles. Where composite fabrics are tested, the face of the fabric tested needs to be specified.
2. This method may not be suited for some woven fabrics with high tensile strengths exceeding approximately 90 kN/m because of clamping and equipment limitations.

3 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS		
1289	Methods of testing soil for engineering purposes	
1289.F1.1	Method F1.1:	Soil strength and consolidation tests—Determination of the California bearing ratio of a soil—Standard laboratory method for a remoulded specimen
2103	Dial gauges and dial test indicators	
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

4 PRINCIPLE. A circular specimen is gripped around its entire circumference by clamps in a loading frame. A cylindrical plunger is forced through the centre of the specimen, and the force applied by the plunger and corresponding deformation are measured.

* This method is based on DIN 54307, *Testing of textiles; plunger puncture test (CBR).* The equipment has been modified to allow the use of a CBR mould that would normally be available in soil testing laboratories.

COPYRIGHT