

LAB NEWS: Geotextiles and Geogrid Testing: Evaluating Strength and Performance

ExcelPlas Labs have a wide range of grips specially designed for geosynthetics. Standard grips can make it difficult to hold certain geotextiles and hence are not suitable for such purposes. With years of experience in the field, ExcelPlas uses a wide range of manual, hydraulic, and pneumatic grips that are particularly designed for geosynthetics such as geotextiles, geonets and geogrids. These grips can hold the sample without slippage or damage. ExcelPlas also offers a wide range of puncture rigs for geomembranes and geotextiles.

Figure 1. CBR Puncture Test on Geotextile Material

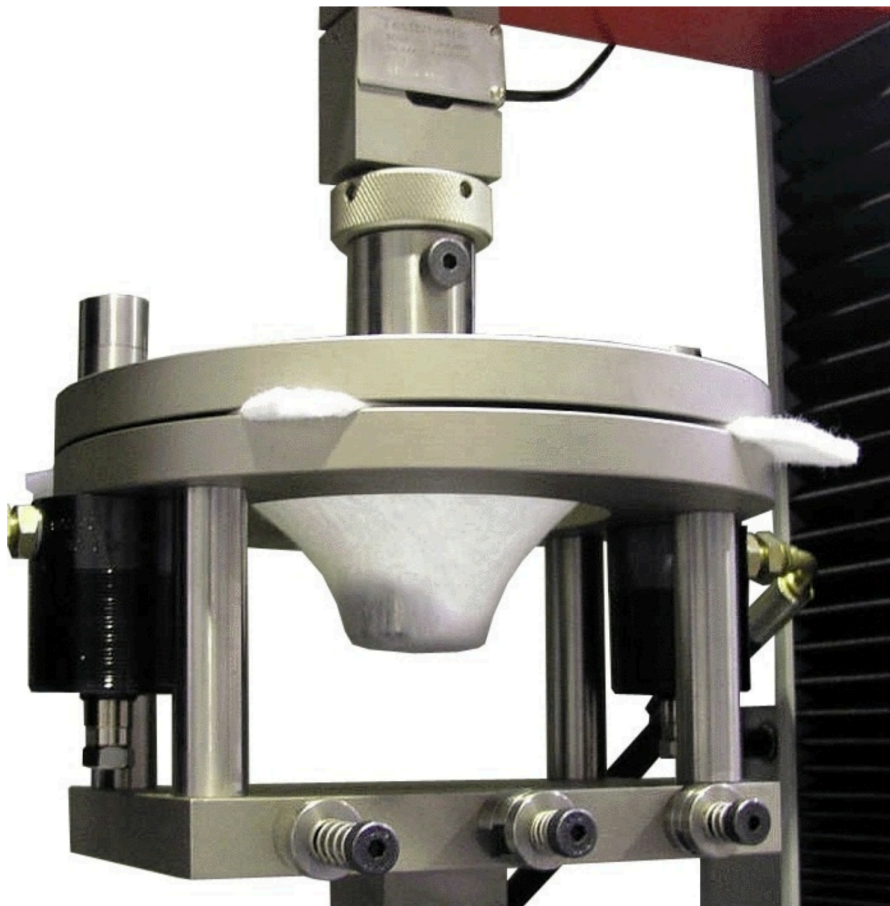
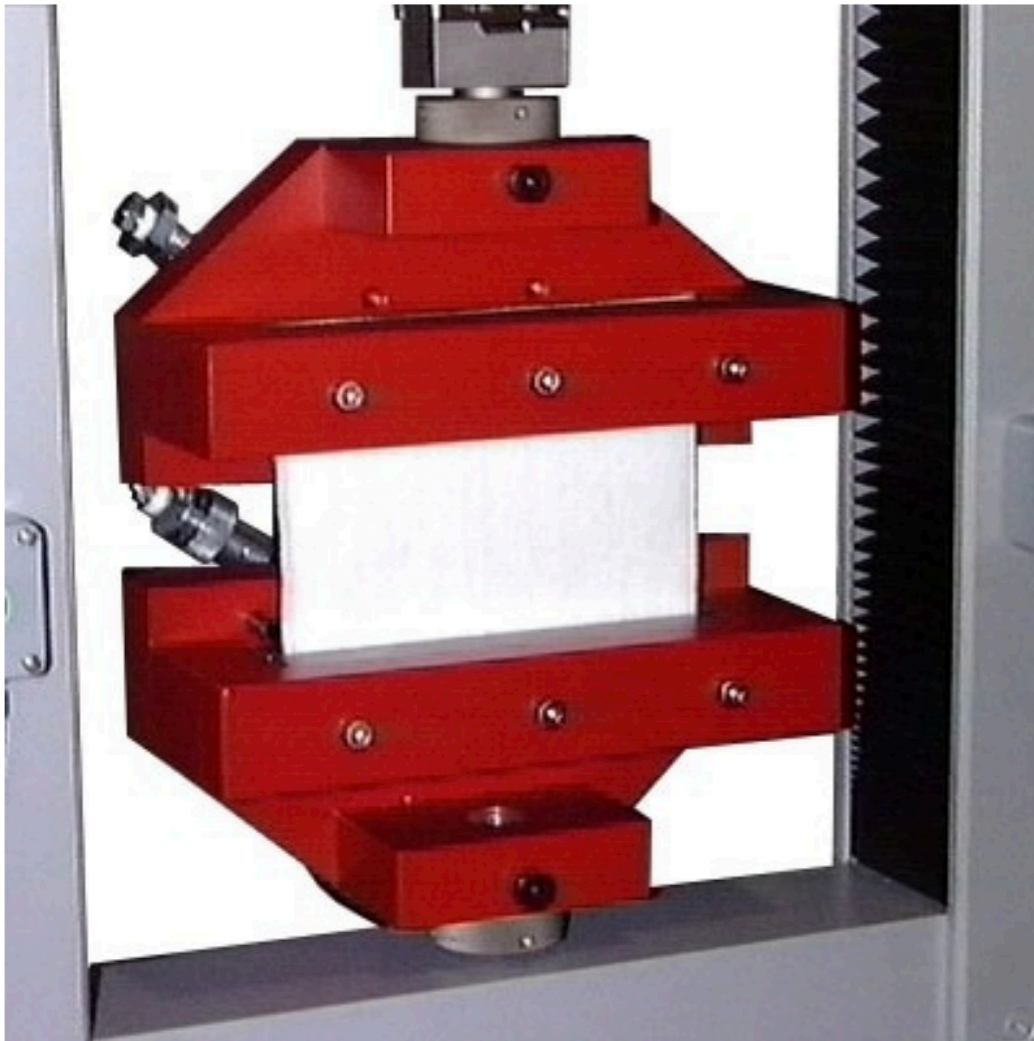
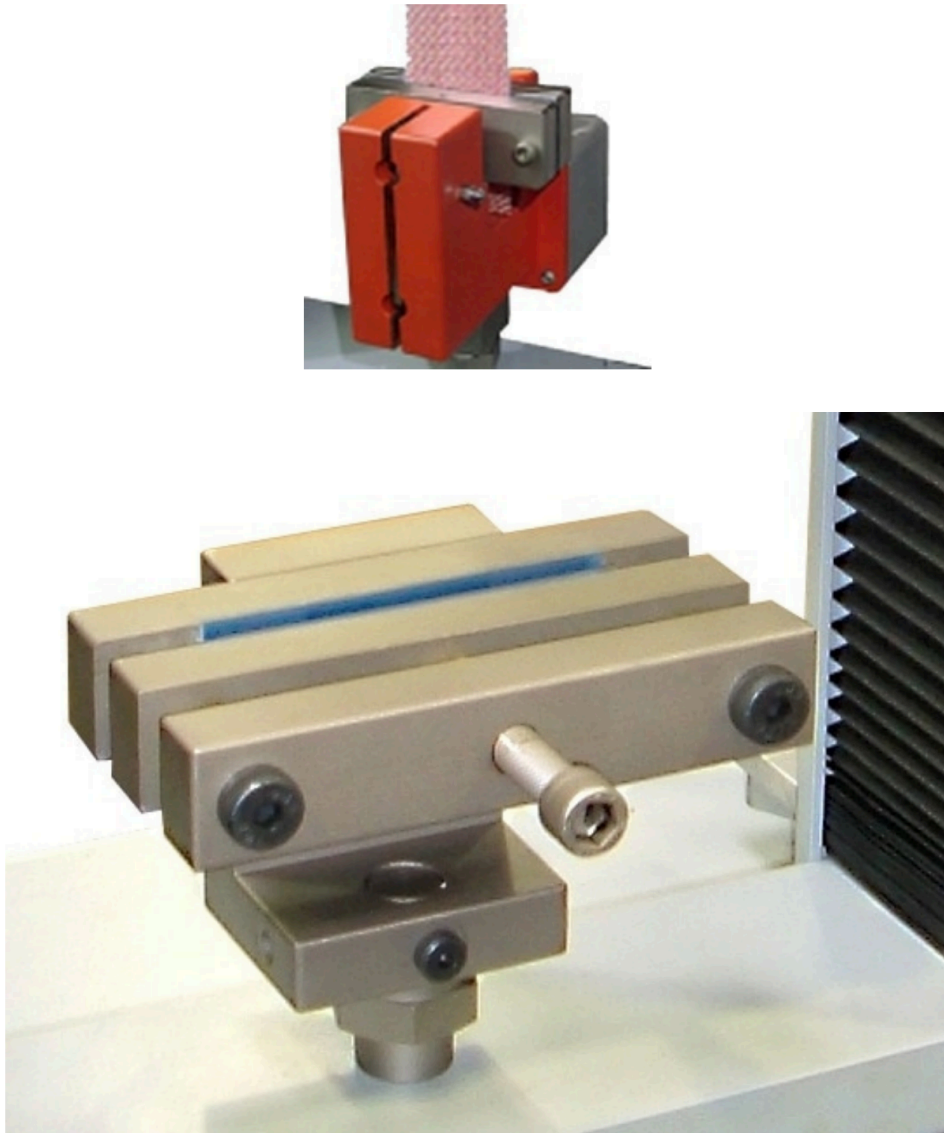


Figure 2. Tensile Testing of Geotextile Material



ExcelPlas has a wide range of strength testing machines and accessories that are designed specifically for testing geotextiles, capacities ranging from 5 to 300 kN.

Figure 3. Custom Grips for Tensile Testing of Geotextile Materials



ExcelPlas also has specialised equipment for accurately measuring elongation of geosynthetics. In some applications, elongation has to be accurately measured over the entire tensile test. ExcelPlas employs video extensometers and non-contact lasers that can record elongation and strain during tensile testing.

ExcelPlas tests geomembranes, geotextile and geogrids to the following international standards:

- ASTM D4533 Standard test method for trapezoid tearing strength of geotextiles
- ASTM D4595 Standard test method for tensile properties of geotextiles by the wide- width strip method
- ASTM D 4632 Standard test method for grab breaking load and elongation of geotextiles
- ASTM D 4833 Standard test method for index puncture resistance of geotextiles, geomembranes and related products
- ASTM D4884 Standard test method for strength of sewn or thermally bonded seams of geotextiles
- ASTM D4885 Standard test method for determining performance strength of geomembranes by the wide strip tensile method
- ASTM D5199 Standard test method for measuring the nominal thickness of geosynthetics
- ASTM D5262 Standard test method for evaluating the unconfined tension creep behaviour of geosynthetics
- ASTM D5323 Standard practice for determination of 2% secant modulus for polyethylene geomembranes
- ASTM D 5397 Standard test method for evaluation of stress cracking resistance of polyolefin geomembranes using notched constant tensile load test
- ASTM D5494 Standard test method for the determination of pyramid puncture resistance of unprotected and protected geomembranes
- ASTM D5884 Standard test method for determining tearing strength of internally reinforced geomembranes
- ASTM D6241 Document summary – Standard test method for the static puncture strength of geotextiles and geotextile-related products using a 50mm probe

- ASTM D6392 Standard test method for determining the integrity of non-reinforced geomembrane seams produced using thermo-fusion methods
- ASTM D6496 Standard test method for determining average bonding peel strength between the top and bottom layers of needle-punched geosynthetic clay liners
- ASTM D6693 Standard test method for determining tensile properties of nonreinforced polyethylene and nonreinforced flexible polypropylene geomembranes
- GRI GG1 Geogrid rib tensile strength
- GRI GG2 Individual geogrid junction strength
- GRI GM10 The stress crack resistance of HDPE geomembrane sheet
- GRI GM12 Asperity measurement of textured geomembranes using a depth gauge

Visit us at: <http://www.excelplas.com/>

