


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <b>4438</b> <b>Accredited to ISO/IEC 17025:2017</b>	<b>BICS Laboratories Ltd</b>	
	<b>Issue No: 027</b>	<b>Issue date: 18 August 2021</b>
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<b>Testing performed at the above address only</b>		

### DETAIL OF ACCREDITATION

BICS laboratories Ltd, is accredited for a flexible scope that enables it to:

- 1) Update currently accredited test methods to the latest versions of those test methods using the procedures documented in Procedure CP16
- 2) Include methods technically equivalent to those currently accredited within the scope of accreditation using the procedures documented in Procedure CP16

The limits of the flexible scope are given below:

#### Flexible Scope

BICS is accredited to ISO/IEC17025:2017 for testing activities in accordance with the test methods highlighted in the schedule. This may also include tests on the same or similar product types against standards, or customer-specified methods, that are not specifically listed in this Schedule, providing that:

- (1) The method or standard does not introduce new principles of measurement.
- (2) The method or standard does not require measurements to be made outside the parametric boundaries defined within the standard specifications already accredited and detailed within this Schedule of Accreditation.

Information about flexible scopes of accreditation is available in UKAS document Gen 4 and EA document EA-2/05.



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
GEOGRIDS	<u>Dimensional, Physical and Mechanical Tests</u>  Mass per unit area  Thickness  Tensile strength  Tensile strength - wide width strip	ASTM D5261-18 ASTM D3776-20 BS EN ISO 9864:2005  ASTM D5199-19 BS EN ISO 9863-1:2016+ A1:2019 ASTM D5994/D5994M-10(2015)e1  ASTM D6637/D6637M-15  ASTM D4595-17 BS EN ISO 10319:2015
GEOMEMBRANES	<u>Dimensional, Physical, Mechanical and Thermal Tests</u>  Thickness  Asperity height  Carbon black content  Carbon black dispersion in polyolefin geosynthetics  Density of plastics  Linear Dimensional Changes at Elevated Temperature  Melt - Flow Index  Oxidative Induction Time of polyolefins by Differential Scanning Calorimetry	ASTM D5199-19 BS EN ISO 9863-1:2016 ASTM D5994/D5994M-10(2015)e2  ASTM D7466/D7466M-10(2015)e1 Geosynthetic Research Institute test method GM 12  ASTM D4218-20 ASTM D1603-20  ASTM D5596-03(2016)  ASTM D1505- 18  ASTM D1204-14  ASTM D1238-13 BS EN ISO 1133-1:2011  ASTM D3895-19 ASTM D8117-17 BS ISO 11357-6:2018



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GEOMEMBRANES (cont'd)	<u>Dimensional, Physical, Mechanical and Thermal Tests</u> (cont'd)	
	Index Puncture Resistance of Geomembranes and Related Products	ASTM D4833/D4833M-20
	Determination of the pyramid puncture resistance of supported geosynthetics	BS EN 14574:2015
	Static puncture test (CBR)	BS EN ISO 12236:2006
	Stress cracking using notched constant tensile load	ASTM D5397-20 BS EN 14576:2005
	Seam strength (Shear & peel)	ASTM D6392-12(2018)
	Standard Test Method for Plastic Welding Personnel – Qualification Testing of Welders' Thermoplastic Assemblies	BS EN 13067: 2003 & 2012 ASTM D6392-12(2018)
	Tear resistance	ASTM D1004-13 BS ISO34-1:2015 Method B
	Tensile & Elongation	ASTM D6693/D6693M-19 BS EN ISO 527-3:2018 ASTM D7275-07(2018)
	Tensile properties of plastics	ASTM D638-14
Calculation of 2% secant modulus for polyethylene geomembranes	ASTM D5323-19	
Testing of welded joints of thermoplastics semi-finished products. Peel test, clause 5	BS EN 12814-4:2018	
GEOSYNTHETIC CLAY LINERS	<u>Dimensional, Physical and Mechanical Tests</u>	
	Mass per unit area	ASTM D5993-18 ASTM D5261-18 ASTM D3776-09a (2017) BS EN 14196:2016 BS EN ISO 9864:2005



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GEOSYNTHETIC CLAY LINERS (cont'd)	<u>Dimensional, Physical and Mechanical Tests</u> (cont'd)	
	Thickness	ASTM D5199-19 BS EN ISO 9863-1:2016
	Bentonite free swell	ASTM D5890-19
	Moisture content of bentonite	ASTM D4643-17 DIN 18121-2:2012-02 clause 6.3
	Water (Moisture) content	ASTM D2216-19 ISO 11465:1993
	Water Absorption	ASTM E946-92 (withdrawn)
	Water Absorption Capacity	DIN 18132:2012-04 BS EN ISO 10769:2011
	Hydraulic conductivity	ASTM D 5084-16a
	Index Flux	ASTM D5887/D5887M-20
	Standard Test Method for Evaluation of Hydraulic Properties of Geosynthetic Clay Liners Permeated with Potentially Incompatible Aqueous Solutions	ASTM D6766 – 20a
	Static puncture (CBR)	ASTM D6241-14 BS EN ISO 12236:2006
	Grab Breaking Load and Elongation	ASTM D4632/D4632M-15a
	Peel strength	ASTM D6496/D6496M-20
	Tensile strength of GCL	ASTM D6768/D6768M-20
Tensile strength - wide width strip	ASTM D4595-17 BS EN ISO 10319:2015	
Determination of the internal and interface shear strength of geosynthetic clay liners by the direct shear method	ASTM D6243/D6243M-20	



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BENTONITE CLAY	Bentonite free swell  Fluid Loss  Moisture content of bentonite  Montmorillonite Content  Water (Moisture) content  Water Absorption Capacity	ASTM D5890-19  ASTM D5891/D5891M-19  ASTM D4643-17 DIN 18121-2:2012-02 clause 6.3  API recommended Practice 13I CUR 33 VDG P69 (LFE3)  ASTM D2216-19 AS 1289.2.1.1-2005 ISO 11465:1993  DIN 18132:2012-04 ISO 10769:2011
GEOTEXTILES and related products	<u>Dimensional, Physical and Mechanical Tests</u>  Mass per unit area  Thickness  Apparent opening size  Hydraulic Transmissivity  In-plane water flow  Water flow – Constant head method  Water Permeability by Permittivity  Determination of the pyramid puncture resistance of supported geosynthetics	ASTM D5261-18 BS EN ISO 9864:2005 ASTM D3776-09a (2017) AS 2001.2.13-2001 AS 3706-1:2012  ASTM D5199-19 BS EN ISO 9863-1:2016 AS 2001.2.15-1989  BS EN 12956:2020 ASTM D4751-20 AS 3706.7-2014  ASTM D4716/D4716M-20  BS EN ISO 12958:2010  BS EN ISO 11058:2019 Clause 5  ASTM D4491/D4491M-20 AS 3706.9-2012  BS EN 14574:2015



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GEOTEXTILES and related products (cont'd)	<u>Dimensional, Physical and Mechanical Tests</u> (cont'd)	
	Resistance to perforation (Cone drop)	BS EN 13433:2006 AS 3706.5:2014
	Static puncture (CBR)	ASTM D6241-14 BS EN ISO 12236:2006 ASTM D 4833/D4833M-07(2013)e1 AS 3706.4-2012
	Grab Breaking Load and Elongation	ASTM D4632/D4632M-15a AS 2001.2.3.2:2001
	Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)	ASTM D5035 - 11(2019)
	Strength of internal structural junctions (Shear & peel)	BS EN ISO 13426-2:2005
	Tensile strength - wide width strip	ASTM D4595-17 BS EN ISO 10319:2015 AS 3706.2-2012
	Trapezoid tearing strength	ASTM D4533/D4533M-15 ASTM D4073/D4073M-06(2019)e1 AS 3706.3-2012
	Determination of the long term protection efficiency of geotextiles in contact with geosynthetic barriers	BS EN 13719:2016 Annex B
	Cylinder testing of protectors for geomembranes	Environment Agency methodology for Cylinder Testing of geomembranes and their protective materials - LFE2 version 2 July 2011
	Determination of resistance to weathering	BS EN 12224:2000
	Geosynthetics – Screening test method for determining the resistance of geotextiles and geotextile related products to oxidation	EN ISO 13438:2018



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GEOTEXTILES and related products (cont'd)	Effect of exposure of Unreinforced polyolefin Geomembranes using flouorescent uv condensation apparatus	ASTM D 7238-20
GEOSYNTHETIC – SOIL INTERFACE TESTS (The term geosynthetics includes geotextiles, geomembranes, geocomposites, geogrids, geonets and geosynthetic clay liners)	Determiration of shear strength of soil-geosynthetic and geosynthetic-geosynthetic interfaces by direct shear.  Determiration of friction characteristics  Geosynthetics Inter-face Shear Resistance Testing	ASTM D5321/D5321M-20  EN ISO 12957-1:2018  Landfill Guidance Group - Industry Code of Practice, LGG 115, February 2018
FLEXIBLE SHEETS FOR WATERPROOFING	Determiration of thickness and mass per unit area  UV ageing/irradiation  Bitumen, plastic and rubber sheets for roof waterproofing – determination of water tightness	BS EN 1849-2:2019  BS EN 1297:2004 BS EN ISO 4892-3:2016  BS EN 1928: 2000Method A
END		