


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 4438 Accredited to ISO/IEC 17025:2017	BICS Laboratories Ltd	
	Issue No: 025	Issue date: 09 April 2020
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Testing performed at the above address only		

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> Thickness Mass per unit area Tensile strength Tensile strength - wide width strip	ASTM D5199-19 BS EN ISO 9863-1:2016 ASTM D5994/D5994M-10(2015)e1 ASTM D5261-18 ASTM D3776-09a (2017) BS EN ISO 9864:2005 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 Melt - Flow Index Linear Dimensional Changes at Elevated Temperature 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 D4218-15 ASTM D1603-14 ASTM D5596-03(2016) ASTM D1505- 18 ASTM D1238-13 BS EN ISO 1133-1:2011 ASTM D1204-14 ASTM D3895-19 BS ISO 11357-6:2018



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GEOMEMBRANES (cont'd)	<u>Dimensional, Physical, Mechanical and Thermal Tests</u> (cont'd) Seam strength (Shear & peel) Testing of welded joints of thermoplastics semi-finished products. Peel test, clause 5 Standard Test Method for Plastic Welding Personnel – Qualification Testing of Welders' Thermoplastic Assemblies Index Puncture Resistance of Geomembranes and Related Products Static puncture test (CBR) Determination of the pyramid puncture resistance of supported geosynthetics Stress cracking using notched constant tensile load Tear resistance Tensile & Elongation Tensile properties of plastics Calculation of 2% secant modulus for polyethylene geomembranes	ASTM D6392-12(2018) BS EN 12814-4:2018 BS EN 13067: 2003 & 2012 ASTM D6392-12(2018) ASTM D4833/D4833M-07(2013)e1 BS EN ISO 12236:2006 BS EN 14574:2015 ASTM D5397-19a BS EN 14576:2005 ASTM D1004-13 BS ISO34-1:2015 Method B ASTM D6693/D6693M-04(2015)e1 BS EN ISO 527-3:2018 ASTM D7275-07(2018) ASTM D638-14 ASTM D5323-92(2011)
GEOSYNTHETIC CLAY LINERS	<u>Dimensional, Physical and Mechanical Tests</u> Thickness Bentonite free swell	ASTM D5199-19 BS EN ISO 9863-1:2016 ASTM D5890-19



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GEOSYNTHETIC CLAY LINERS (cont'd)	<u>Dimensional, Physical and Mechanical Tests</u> (cont'd)	
	Index Flux	ASTM D5887/D5887M-16
	Hydraulic conductivity	ASTM D 5084-16a
	Standard Test Method for Evaluation of Hydraulic Properties of Geosynthetic Clay Liners Permeated with Potentially Incompatible Aqueous Solutions	ASTM D6766 - 20
	Mass per unit area	ASTM D5993-18 ASTM D5261-18 ASTM D3776-09a (2017)BS EN 14196:2016 BS EN ISO 9864:2005
	Water (Moisture) content	ASTM D2216-19 ISO 11465:1993
	Moisture content of bentonite	ASTM D4643-17 DIN 18121-2:2012-02 clause 6.3
	Water Absorption Capacity	DIN 18132:2012-04 BS EN ISO 10769:2011
	Water Absorption	ASTM E946-92 (withdrawn)
	Tensile strength of GCL	ASTM D6768/D6768M-04(2019)e2
	Grab Breaking Load and Elongation	ASTM D4632/D4632M-15a
	Peel strength	ASTM D6496/D6496M-004a(2019)e1
	Static puncture (CBR)	ASTM D6241-14 BS EN ISO 12236:2006
	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	Water (Moisture) content Moisture content of bentonite Fluid Loss Water Absorption Capacity Bentonite free swell Montmorillonite Content	ASTM D2216-19 AS 1289.2.1.1-2005 ISO 11465:1993 ASTM D4643-17 DIN 18121-2:2012-02 clause 6.3 ASTM D5891/D5891M-19 DIN 18132:2012-04 ISO 10769:2011 ASTM D5890-19 API recommended Practice 13I CUR 33 VDG P69 (LFE3)
GEOTEXTILES and related products	<u>Dimensional, Physical and Mechanical Tests</u> Thickness Mass per unit area Grab Breaking Load and Elongation Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method) Resistance to perforation (Cone drop) Static puncture (CBR)	ASTM D5199-19 BS EN ISO 9863-1:2016 AS 2001.2.15-1989 ASTM D5261-18 BS EN ISO 9864:2005 ASTM D3776-09a (2017) AS 2001.2.13-2001 AS 3706-1:2012 ASTM D4632/D4632M-15a AS 2001.2.3.2:2001 ASTM D5035 - 11(2019) BS EN 13433:2006 AS 3706.5:2014 ASTM D6241-14 BS EN ISO 12236:2006 ASTM D 4833/D4833M-07(2013)e1 AS 3706.4-2012



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GEOTEXTILES and related products (cont'd)	<u>Dimensional, Physical and Mechanical Tests</u> (cont'd)	
	Determination of the pyramid puncture resistance of supported geosynthetics	BS EN 14574:2015
	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
	Apparent opening size	BS EN 12956:2010 ASTM D4751-20 AS 3706.7-2014
	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
	Water flow – Constant head method	BS EN ISO 11058:2010 Clause 5
	Water Permeability by Permittivity	ASTM D4491/D4491M-17 AS 3706.9-2012
	In-plane water flow	BS EN ISO 12958:2010
	Hydraulic Transmissivity	ASTM D4716/D4716M-14
	Strength of internal structural junctions (Shear & peel)	BS EN ISO 13426-2:2005
	Determination of resistance to weathering	BS EN 12224:2000
	Effect of exposure of Unreinforced polyolefin Geomembranes using flouorescent uv condensation apparatus	ASTM D 7238-06(2017)



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GEOSYNTHETIC – SOIL INTERFACE TESTS (The term geosynthetics includes geotextiles, geomembranes, geocomposites, geogrids, geonets and geosynthetic clay liners)	Determination of shear strength of soil-geosynthetic and geosynthetic-geosynthetic interfaces by direct shear. Determination of friction characteristics	ASTM D5321/D5321M-19 EN ISO 12957-1:2018
FLEXIBLE SHEETS FOR WATERPROOFING	UV ageing/irradiation Bitumen, plastic and rubber sheets for roof waterproofing – determination of water tightness	BS EN 1297:2004 BS EN ISO 4892-3:2016 BS EN 1928: 2000Method A
END		