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BAB-18-060-S-A-UK
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GDA Structural Waterproofing System

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SCOPE OF AGRÉMENT

This BDA Agrément® (hereinafter 'Agrément') relates to GDA Structural Waterproofing System (hereinafter the 'System'). The System comprises ActiTex (sodium bentonite sandwiched between two needle-punched polypropylene geotextiles) and ActiStop (high-swelling hydrophilic strip-waterstop of a formulated blend of sodium bentonite and butyl rubber). The System is for installation to the underside of foundations, slabs and the outside of walls and covered decks of reinforced concrete earth retaining structures, ranging from domestic basements to large civil engineering projects. The System is for new dwellings and buildings other than dwellings.

DESCRIPTION

The System is Type A waterproofing solution, providing a continuous and fully bonded protection of grades 1, 2 and 3, in accordance with BS 8102. The System allows for site handling, all-weather installation (temperature and humidity extremes), and can be applied directly to property line construction (secant and contiguous piling, steel sheet piling, etc.) and void-former installations.

ILLUSTRATION

THIRD-PARTY ACCEPTANCE

NHBC - for detailed information, see Section 3.3 (Third-Party Acceptance).

STATEMENT

It is the opinion of Kiwa Ltd. that the System is safe and fit for its intended use, provided it is specified, installed and used in accordance with this Agrément.

Craig Devine
Operations Manager, Building Products

Alpheo Mlotha CEng FIMMM MBA
Technical Manager, Building Products

SUMMARY OF AGRÉMENT

This document provides independent information to specifiers, specialists, engineers, building control personnel, contractors, installers and other construction industry professionals who are considering the safety and fitness for purpose of the System. This Agrément covers the following:

- Conditions of use;
- Production Control, Quality Management System and the Annual Verification Procedure;
- System components and ancillary items, points of attention for the Specifier and examples of details;
- Installation;
- Independently assessed System characteristics and other information;
- Compliance with national Building Regulations, other regulatory requirements and Third-Party Acceptance, as appropriate;
- Sources.

MAJOR POINTS OF ASSESSMENT

The System described in this Agrément meets the requirements defined on Kiwa Technical Requirement KTR-46.

Moisture control - see Section 2.2.7 - the System will resist the passage of water and any other form of moisture or vapour infiltration from the ground.

Strength - see Section 2.2.8 - the System will transmit dead and imposed loads to the ground safely without excessive deformation.

Fire performance - see Section 2.2.9 - the System may be classified as European Classification E, in accordance with BS EN 13501-1.

Durability - see Section 2.2.10 - the service life durability of the System will be dependent upon the environment (operating conditions) in which the System will be used.

UKCA and CE marking - see Section 2.2.11 - the manufacturers of the constituent products used within the System have responsibility for conformity marking, in accordance with all relevant British and European Product Standards.

CONTENTS

1 GENERAL CONSIDERATIONS

1.1 CONDITIONS OF USE

1.1.1 Limitations

This Agrément has been prepared in accordance with the mandatory requirements defined in Kiwa Technical Requirement KTR-46. Some information in this Agrément is provided for guidance or reference purposes only; this information falls outside the scope of the Technical Requirement.

1.1.2 Application

The assessment of the System relates to its use in accordance with this Agrément and the Agrément holder's requirements.

1.1.3 Assessment

Kiwa Ltd. has assessed the System in combination with relevant test reports, technical literature, the Agrément holder's quality plan, DoPs and site visit, as appropriate. The NHBC Standards have also been taken into consideration.

1.1.4 Installation supervision

It is recommended that the quality of installation and workmanship is controlled by the Agrément holder.

The System shall be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément.

1.1.5 Geographical scope

The validity of this document is limited to England, Wales, Scotland and Northern Ireland, with due regard to Section 3 of this Agrément (CDM, national Building Regulations and Third-Party Acceptance).

1.1.6 Validity

The purpose of this Agrément is to provide well-founded confidence to apply the System within the scope described. The validity of this Agrément is as published on www.kiwa.co.uk/bda.

1.2 PRODUCTION CONTROL AND QUALITY MANAGEMENT SYSTEM

Kiwa Ltd. has conducted an audit of the Agrément holder and determined that they fulfil all their obligations in relation to this Agrément in respect of the System.

The initial audit demonstrated that the Agrément holder has a satisfactory Quality Management System (QMS) and is committed to continuously improving their quality plan. Document control and record-keeping procedures were deemed satisfactory. A detailed Production Quality Specification (PQS) has been compiled to ensure traceability and compliance under the terms of this Agrément.

1.3 ANNUAL VERIFICATION PROCEDURE - CONTINUOUS SURVEILLANCE

To demonstrate that the System conforms with the requirements of the technical specification described in this Agrément, an Annual Verification Procedure has been agreed with the Agrément holder in respect of continuous surveillance and assessment, and auditing of the Agrément holder's QMS.

2 TECHNICAL ASSESSMENT

This Agrément does not constitute a design guide for the System. It is intended only as an assessment of safety and fitness for purpose.

2.1 SYSTEM COMPONENTS AND ANCILLARY ITEMS

2.1.1 Components included within the scope of this Agrément

The components listed in Table 1 below are integral to the System.

Table 1 - Integral components

Component	Description	Dimensions
ActiTex	grey, Type A waterproofing barrier of high strength polypropylene geotextiles encapsulating a granular sodium bentonite layer; the non-woven and woven geotextiles are needle-punched together to provide a robust and flexible system. Laps are typically 100 mm and self-sealing; additional products are not required in the laps, which are automatically sealed thanks to bentonite extrusion from the woven surface and cut ends of the membrane	5.0 m by 1.10 m roll, minimum 6.0 mm thick, 6.45 kg/m^2
ActiStop	a formulated blend of sodium bentonite and butyl rubber, forming a high-swelling hydrophilic strip waterstop which reacts with water to seal construction joints within concrete and has the ability to seal minor cracks and voids	25 mm by 19 mm by 5 m coil

2.1.2 Ancillary items falling outside the scope of this Agrément

The following ancillary items detailed in this Section may be used in conjunction with the System, but fall outside the scope of this Agrément:

- ActiSeal - a trowel grade sodium bentonite sealant;
- ActiFill - a treated granular sodium bentonite used primarily as a detailing accessory product within the System;
- Acti200 - a cementitious, ready-mixed waterproofing impregnator;
- Acti300 - an elastic cementitious waterproof coating, consisting of aggregates, cement-based binders and acrylic polymers;
- ActiDrain - consists of a pre-formed capsulated plastic core bonded to a geotextile filter;
- ActiMesh - a profiled expanded metal mesh strip, designed for mechanically fixing ActiStop to cast-in-place concrete joint surfaces;
- ActiFix - a high quality, neutral, moisture cured, elastic, one-component adhesive sealant based on MS Polymer.

2.2 POINTS OF ATTENTION TO THE SPECIFIER

2.2.1 Design

2.2.1.1 Design responsibility

A Specifier may undertake a project-specific design, in which case it is recommended that the Specifier co-operates closely with the Agrément holder. The Specifier or Installer is responsible for the final as-built design.

2.2.1.2 Basis of design

The characteristics detailed in the section titled 'Major Points of Assessment' shall be considered during the use of System.

2.2.1.3 General design considerations

The System is:

- an Active Waterproofing System;
- designed for below-ground vertical and horizontal structural foundation surfaces, walls and covered decks;
- satisfactory for use as Type A waterproofing and damp proofing protection of below-ground structures Grades 1, 2 and 3 as defined in BS 8102 and the NHBC Standards.

Waterproofing systems shall be designed by a waterproofing design specialist, such as designers who have successfully completed the Certified Surveyor in Structural Waterproofing (CSSW) qualification available from the Property Care Association (PCA).

The construction shall conform with current Building Regulations, British Standards and relevant Codes of Practice.

The design of the waterproofing of the earth retaining structure shall be in accordance with BS 8102.

New concrete shall be designed by a Structural Engineer to BS EN 1992-1-1 to be structurally capable for the intended use as an earth retaining structure, resisting loading from earth as well as water pressure, as recommended within BS 8102.

The following wall types may be waterproofed with the System:

- concrete structures;
- concrete blinding;
- clay heave boards;
- compacted Type 1 hardcore;
- Solid Mat®;
- removable formwork;
- sufficiently stable ground such as clay or chalk, free of chemical contamination;
- rigid insulation;
- adjacent substructures as permanent formwork;
- piled cut off walls;
- property-line construction, where temporary works are used to form the basement excavation (secant piling, contiguous piling, steel sheet piling, diaphragm walling, etc.).

The waterproofing of all elements, including walls, floors and foundations, forming below-ground structures shall be suitable for their intended use; issues to be taken into account include:

- grade of waterproofing protection;
- waterproofing systems, materials and components;
- interface with the above-ground structure;
- joints, abutments and service penetrations.

After the casting of the concrete against the System, the free ends of the needle-punched fibres of the ActiTex layer become embedded in the concrete, which gives a permanent bond between the concrete and the System.

The System is suitable for exposure of a typical construction period and must subsequently be protected from exposure to weather conditions.

The System is:

- resistant to normal construction site activities;
- not affected by organic contaminants;
- not affected by normal UK extremes of temperature and humidity, and does not require any form of protection (e.g. concrete blinding).

Being an Active Waterproofing System (as opposed to passive e.g. polyethylene), the swelling capacity of the System provides for the ability to self-heal/self-seal. This includes cuts, mechanical penetrations as part of the fixing system, and holes from punctures or other forms of indentation (tested up to 24 mm diameter / 450 mm^2 - following hydration and the isolated area of damage not being subject to subsequent interference).

To prevent damage in heavily trafficked areas, temporary protection shall be provided to the installed System and removed prior to the installation of reinforcement.

As part of the required technical consulting service the Agrément holder can provide, bespoke details, for example on connections, protrusions and movement joints.

The Agrément holder hosts regular training courses to provide contractors with the necessary skills and product knowledge to become a fully System specific certified GDA Approved Contractor.

2.2.1.4 Project-specific design considerations

The project-specific design shall:

- be determined by the Specifier;
- take into account the requirements of the relevant national Building Regulations (see Section 3.2);
- take into account the service life durability required (see Section 2.2.10).

A pre-installation survey is required to allow determination of the project-specific design (see Section 2.4.1).

The gelling of sodium bentonite is adversely affected by the presence of electrolytes (particularly trivalent ions) and may also be affected by the presence of soluble cations (such as those found in chalk or lime soils); in such cases seek the advice of the Agrément holder.

In chemically contaminated areas, the ActiTex layer is hydrated by deliberate soaking with mains water and leaving for two to three hours before pouring the concrete.

2.2.2 Applied building physics (heat, air, moisture)

A Specialist shall check the hygrothermal behaviour of a project-specific design incorporating the System and, if necessary, offer advice on improvements to achieve the final specification. The Specialist can be either a qualified employee of the Agrément holder or a suitably qualified consultant (in which case it is recommended that the Specialist co-operates closely with the Agrément holder).

2.2.3 Permitted applications

Only applications designed according to the specifications given in this Agrément are permitted. In each case, the Specifier and Installer shall co-operate closely with the Agrément holder.

2.2.4 Installer competence level

The System shall be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément.

Installation shall be by employees trained and approved by the Agrément holder.

2.2.5 Delivery, storage and site handling

The System components are delivered in suitable packaging bearing relevant identification information (such as the System name, production identification date or batch number, the Agrément holder's name etc.) and, where applicable, the BDA Agrément® logo incorporating the number of this Agrément.

Prior to installation, the System components shall be stored in accordance with the Agrément holder's requirements. Good housekeeping protocols shall be followed to avoid damage.

2.2.6 Maintenance and repair

Once installed, the System does not require regular maintenance provided that no part of the System remains permanently exposed. For advice in respect of repair, consult the Agrément holder.

The Agrément holder shall continue to provide a technical consulting service such as, but not limited to, typical/bespoke details.

Performance factors in relation to the Major Points of Assessment

2.2.7 Moisture control

The System will resist the passage of water and any other form of moisture or vapour infiltration from the ground.

Below-ground structures waterproofed with the System will lead to a Grade 3 waterproofing as defined in BS 8102 and comply with the relevant requirements of the national Building Regulations of England, Wales, Scotland and Northern Ireland.

2.2.8 Strength

The System, as installed beneath a below-ground concrete slab, will transmit dead and imposed loads to the ground safely without excessive deformation, provided it is adequately confined and not subjected to point loading.

Point loading and interference with engineered bearing planes includes tops of pile-heads, the plane between pile-caps and structural slabs, etc. In situations where point loading is anticipated or unavoidable, seek the advice of the Agrément holder.

2.2.9 Fire performance

The System may be classified as European Classification E, in accordance with BS EN 13501-1.

The System does not prejudice the fire-resistance properties of the building; the waterproofed earth retaining structure will be fully covered with earth, therefore the components of the System will not contribute to the development stages of a fire or present a smoke or toxic hazard.

2.2.10 Durability

The service life durability of the System will be dependent upon the environment (operating conditions) in which the System will be used. The expected service life durability will be in excess of 60 years.

Once installed, the System is not susceptible to damage from environmental conditions normally encountered in the UK. Where relevant, consideration shall be given to the exposure zones where the System is installed.

2.2.11 UKCA and CE marking

The British and European standard for the System is BS EN 13491.

2.3 EXAMPLES OF TYPICAL DETAILS

Diagram 1 - ActiTex - typical termination/continuity details

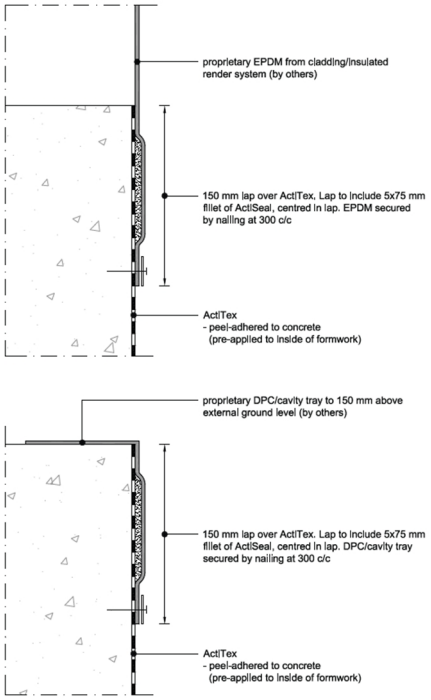


Diagram 2 - Secant/contiguous wall/slab junction

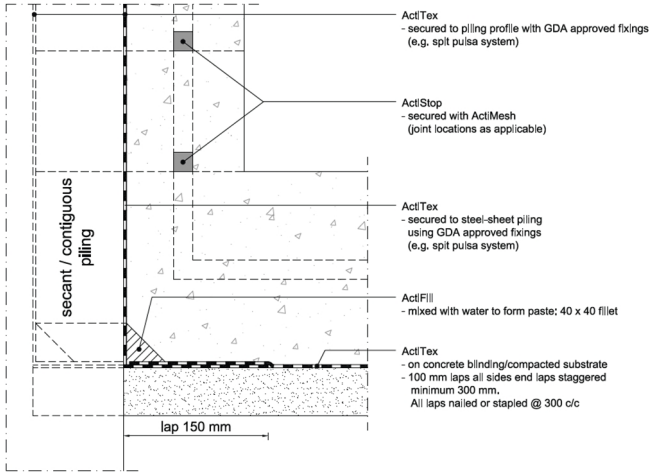


Diagram 3 - Wall/slab toe detail

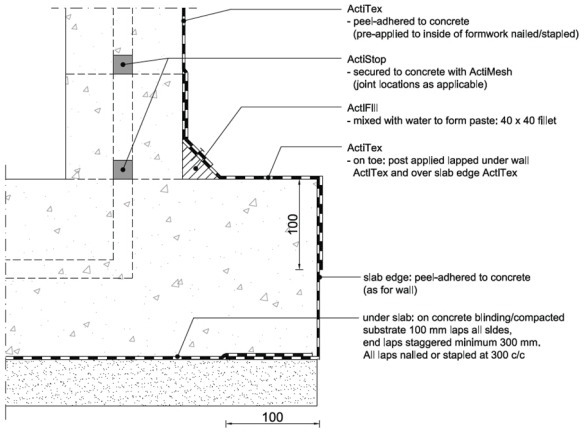


Diagram 4 - RC slab construction joint

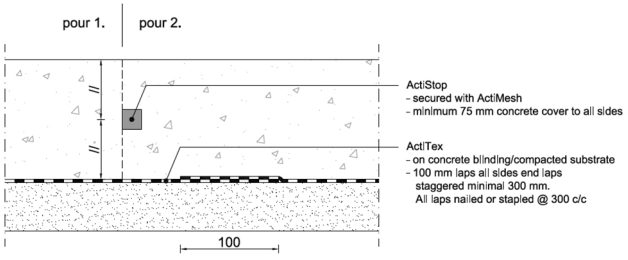


Diagram 5 - Contiguous piled wall, capping beam/lining wall

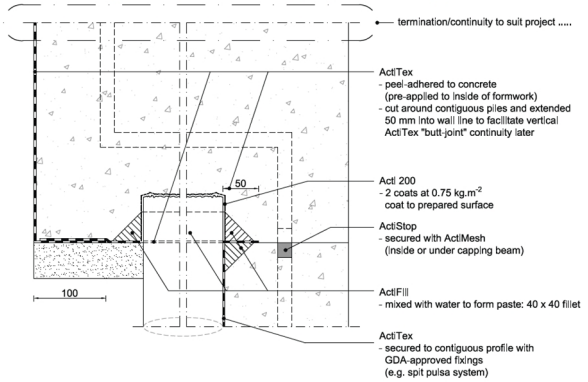


Diagram 6 - RC slab/wall junction with steel sheet piling

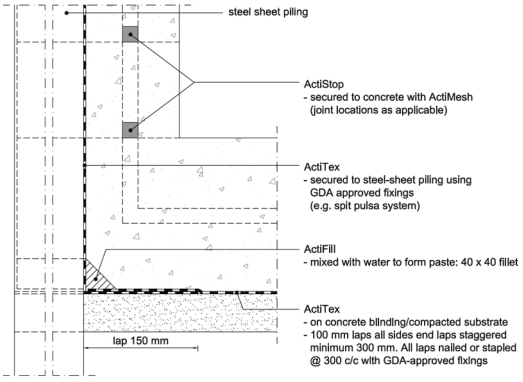


Diagram 7 - Tie-Bolt hole detail

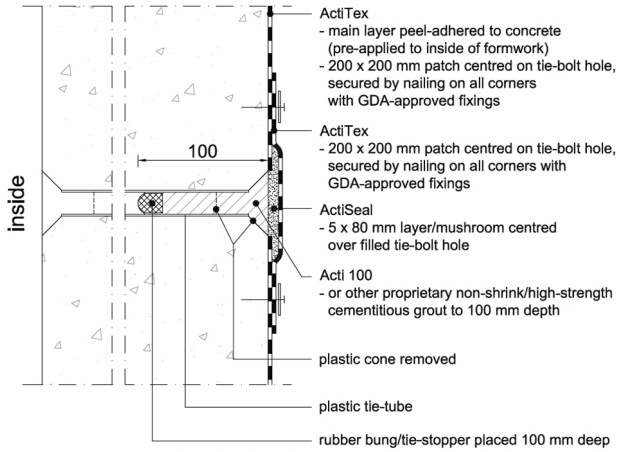


Diagram 8 - Lift pit detail

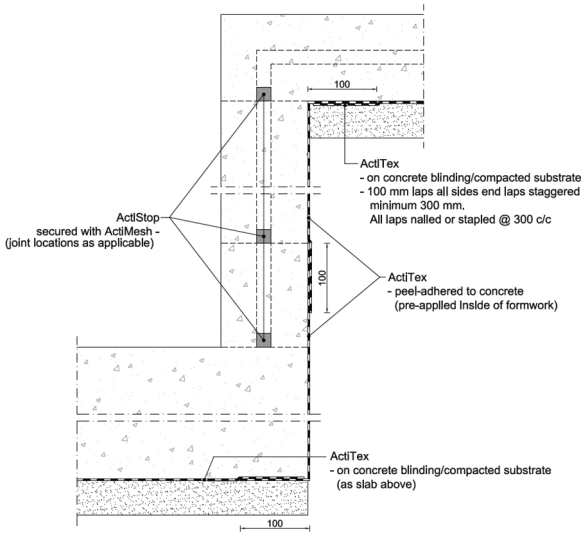
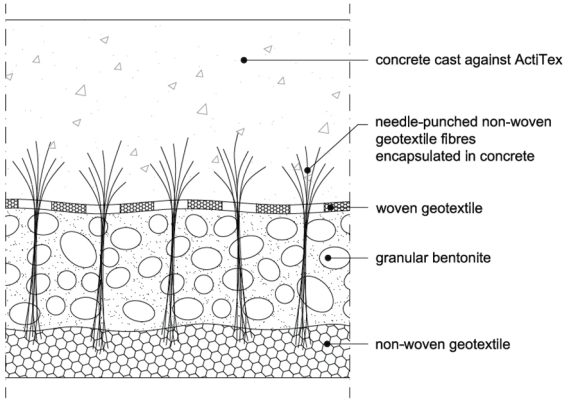


Diagram 9 - ActiTex orientation against concrete



2.4 INSTALLATION

The System shall be installed strictly in accordance with the instructions (hereinafter 'Installation Manual') of the Agrément holder, the requirements of this Agrément and the requirements of BS 8000-0.

2.4.1 Project-specific installation considerations

The project-specific design shall be determined from a pre-installation survey.

The primary requirement of the pre-installation survey is to determine the following:

- that the substrate:
  - is well compacted or blinded with lean-mix concrete, with the surface free from any excessive undulation or sharp projections; any irregularities in the surface shall be filled with a repair mortar or ActiSeal;
  - has durable adhesion and pre-treatment, and is suitably flat, in accordance with the relevant clauses of BS 8102;
  - has durable strength and stiffness, and is capable of absorbing all forms of external loadings as established by a Structural Engineer to BS EN 1991-1-1.

Where necessary, water/soil samples taken from site shall be tested appropriately to determine suitability for application of the System.

2.4.2 Preparation

The following considerations apply before starting the work:

- the System is designed:
  - for use under reinforced concrete slabs (minimum 150 mm thickness and 20 N/mm^2);
  - to be used in confinement and shall have a minimum 75 mm cover to all sides;
- the System shall be installed under footings and ground beams;
- the System shall not be applied to function in movement/expansion joints;
- the System shall not be subjected to submersion or remain in contact with water prior to installation;
- the System may be installed in all weather conditions, including all normal UK extremes of temperature and humidity;
- application of the System shall be scheduled to allow prompt concrete placement or backfill; concrete casting of retaining walls and floor slabs shall be carried out immediately after fixing the waterstops in position.

The following works shall be undertaken before the installation of the System:

- complete all detailing to lower sections e.g. lift pit, sump pit, ground beams and piling work;
- the substrate is adequately prepared (i.e. well compacted or blinded with lean-mix concrete, flat, free from undulation, sharp projections or irregularities);
- special attention shall be given to the cleaning and preparing of all areas and connections involved before the System components are installed;
- appropriate water management solutions are in place.

2.4.3 Outline installation procedure

Detailed installation procedures can be found in the Agrément holder's Installation Manual.

The outline procedure is as follows:

- lay the ActiText component onto the prepared substrate, dark grey (woven) geotextile side facing up;
- start on the slab edge, completing each corner;
- cover the main slab area by lapping all adjoining edges a minimum of 100 mm and stagger membrane end laps at least 300 mm;
- mechanically fix edges as required, to prevent displacement before and during concrete application;
- avoid the System being lapped more than three times;
- when concrete slab is poured in sections, the System shall extend at least 300 mm beyond the slab edge to allow for subsequent slab section pours;
- if the reinforced concrete slab thickness exceeds 500 mm, two layers of the System shall be applied;
- the System shall be installed in all applicable slab construction joints;
- the System shall be cut to fit tightly around pile heads and any slab penetrations, and secured with appropriate adhesives;
- if any lift pits are present; the System shall be installed on the vertical surfaces and on the substrate below the slab to form a continuous barrier, enveloping around the lift pit.

2.4.3.1 Property line wall installation

- after slab-to-wall transition sheet and bottom wall course have been installed, the System can be installed either vertically or horizontally;
- fasten the System into position with washer head mechanical fixings at maximum 600 mm centres around the System edge;
- install succeeding System, overlapping the previous System edge 100 mm.

2.4.3.2 Backfilled walls

- for applications without concrete blinding; apply a continuous 40 mm chase of ActiFill at the wall/footing junction;
- post apply the System with the dark grey (woven) geotextile side against the concrete wall;
- start at the bottom corner of the wall, install the System horizontally with 1 m on one wall and the remainder around the corner on the other wall surface;
- cut the bottom edge of the System at the corner a minimum of 150 mm, to allow the System to extend onto the footing;
- fasten the System into position with washer head mechanical fixings to maximum 300 mm centres;
- cut and install the System section over the uncovered footing corner area;
- apply ActiSeal at the System overlaps;
- install the adjacent System rolls of the bottom course horizontally and overlap the preceding roll a minimum of 100 mm, ensuring the System extends onto the footing a minimum of 150 mm;
- stagger all vertical overlap joints at least 300 mm.

2.4.4 Finishing

The following finishing is required on completion of the installation:

- damaged material outside of the form shall be cut off and disposed of;
- tape all membrane overlap seams with Butyl Tape;
- the System shall typically be finished using termination band with fixings to suit substrate into which it is incorporated;
- the System and its components shall be protected from exposure to weather conditions.

2.5 INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

2.5.1 Moisture control

Test		Standard	Result
Swelling capacity at 15 °C	water on carrier side	BS ISO 1817	81 % (V/V)
	water on cover side only		76 % (V/V)
Water flux index		ASTM D 5887	5.0 x 10^{-9} $m^3/m^2/s$

2.5.2 Strength

Test		Standard	Result
Tensile strength	MD	BS EN ISO 10319	8.0 ± 0.8 kN/m
	CD		8.0 ± 0.8 kN/m
Static puncture		BS EN ISO 12236	1.5 kN
Resistance to oxidation^	residual tensile strength MD	BS EN ISO 13438	104.0 %
	residual strain MD		105.1 %
	residual tensile strength CD		101.1 %
	residual strain CD		101.0 %
Peel strength on concrete		BRL 1511-1 MOAT No.64	133 N/(50 mm)
Water pressure resistance (full immersion) of ActiStop		Kiwa BDA Test Method 125	No leakage of waterbar connection at 650 kPa

^ tested on woven carrier

2.5.3 Fire performance

Test	Standard	Result
Reaction to fire	BS EN 13501-1	E

3 CDM, NATIONAL BUILDING REGULATIONS AND THIRD-PARTY ACCEPTANCE

3.1 THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 AND THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS (NORTHERN IRELAND) 2016

Information in this Agrément may assist the client, principal designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

3.2 THE NATIONAL BUILDING REGULATIONS

In the opinion of Kiwa Ltd., the System, if installed and used in accordance with Section 2 of this Agrément, can satisfy or contribute to satisfying the relevant requirements of the following national Building Regulations.

This Agrément shall not be construed to confer the compliance of any project-specific design with the national Building Regulations.

3.2.1 England

The Building Regulations 2010 and subsequent amendments

- A1 Loading - when adequately confined, the System contributes to satisfying this Requirement
- C2(a) Resistance to moisture - the System, including joints, will enable a below-ground structure to satisfy this Requirement
- Regulation 7 Materials and workmanship - the System is manufactured from suitably safe and durable materials for their application and can be installed to give a satisfactory performance

3.2.2 Wales

The Building Regulations 2010 and subsequent amendments

- A1 Loading - when adequately confined, the System contributes to satisfying this Requirement
- C2(a) Resistance to moisture - the System, including joints, will enable a below-ground structure to satisfy this Requirement
- Regulation 7 Materials and workmanship - the System is manufactured from suitably safe and durable materials for their application and can be installed to give a satisfactory performance

3.2.3 Scotland

The Building (Scotland) Regulations 2004 and subsequent amendments

3.2.3.1 Regulation 8(1)(2) Durability, workmanship and fitness of materials

- the System is manufactured from acceptable materials which are considered to be adequately resistant to deterioration and wear under normal service conditions, provided they are installed in accordance with the requirements of this Agrément

3.2.3.2 Regulation 9 Building Standards - Construction

- 1.1 (a)(b) Structure - the application of the System will not adversely affect the building's ability to transmit loadings
- 3.4 Moisture from the ground - the System will resist the passage of water and any other form of moisture or vapour infiltration from the ground
- 7.1(a) Statement of sustainability - the System can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard

3.2.3.3 Regulation 12 Building Standards - Conversions

- All comments given for the System under Regulation 9 also apply to this Regulation, with reference to clause 0.12 and Schedule 6 of this Standard

3.2.4 Northern Ireland

The Building Regulations (Northern Ireland) 2012 and subsequent amendments

- 23(a)(i)(iii)(b) Fitness of materials and workmanship - the System is manufactured from materials which are considered to be suitably safe and acceptable for use as waterproofing
- 28 Resistance to ground moisture and water - the System will resist the passage of water and any other form of moisture or vapour infiltration from the ground
- 30 Stability - being adequately confined and protected, the System contributes to satisfying this Requirement

3.3 THIRD-PARTY ACCEPTANCE

NHBC - In the opinion of Kiwa Ltd., the System, if installed, used and maintained in accordance with this Agrément, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards, Chapter 5.1 Substructure and ground bearing floors and Chapter 5.4 Waterproofing of basements and other below ground structures.

4 SOURCES

- Kiwa Technical Requirement KTR-46
- BS EN ISO 9001:2015 Quality management systems. Requirements
- BS EN ISO 10319:2015 Geosynthetics. Wide-width tensile test
- BS EN ISO 12236:2006 Geosynthetics. Static puncture test (CBR test)
- BS EN ISO 13438:2004 Geotextiles and geotextile-related products. Screening test method for determining the resistance to oxidation
- BS EN 1991-1-1:2002 Eurocode 1. Actions on structures - General actions - Densities, self-weight, imposed loads for buildings
- NA to BS EN 1991-1-1:2002 UK National Annex to Eurocode 1. Actions on structures - General actions. Densities, self-weight, imposed loads for buildings
- BS EN 1992-1-1:2004+A1:2014 Eurocode 2: Design of concrete structures - General rules and rules for buildings
- NA+A2:2014 to BS EN 1992-1-1:2004+A1:2014 UK National Annex to Eurocode 2. Design of concrete structures - General rules and rules for buildings
- BS EN ISO 10318-1:2015+A1:2018 Geosynthetics. Terms and definitions only 2005 version referenced
- BS EN 13491:2013 Geosynthetic barriers. Characteristics required for use as a fluid barrier in the construction of tunnels and associated underground structures
- BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests
- BS EN 14196:2016 Geosynthetics. Test methods for measuring mass per unit area of clay geosynthetic barriers
- BS 8000-0:2014 Workmanship on construction sites. Introduction and general principles
- BS 8102:2009 Code of practice for protection of below ground structures against water from the ground
- ASTM D5887:2009 Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter
- BRL 1511-1:2015 Tracked roofing systems - General provisions
- BS ISO 1817:2011 Rubber, vulcanized or thermoplastic. Determination of the effect of liquids
- Kiwa BDA Test Method 125:2017 Determination of water pressure resistance
- MOAT No.64:2001 UEAtc Technical guide for the assessment of roof waterproofing systems made of reinforced APP or SBS polymer modified bitumen sheets
- NHBC Standards 2018
- PD CEN/TS 14417:2014 Geosynthetic barriers. Test method for the determination of the influence of wetting-drying cycles on the permeability of clay geosynthetic barriers

Remark - Apart from these sources, technical information and confidential reports have been assessed; any relevant documents are in the possession of Kiwa Ltd. and are kept in the Technical Assessment File of this Agrément. The Installation Manual for the System may be subject to change; contact the Agrément holder for the clarification of revisions.

5 AMENDMENT HISTORY

Revision	Amendment description	Author	Approver	Date
-	First issue upon successful 3 Year Renewal of BAB 18-060/01/A	A Chapman	C Devine	July 2022

6 CONDITIONS OF USE

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Where a National Annex exists in respect of a BS EN (or other) standard, its use is deemed mandatory wherever the original standard is referenced.

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