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BAW-21-203-P-A-UK
BDA Agrément®
 Visqueen Zedex
 Non-Combustible DPC
 Damp-Proof Course and
 Cavity Tray

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SCOPE OF AGRÉMENT

This BDA Agrément® (hereinafter 'Agrément') relates to Visqueen Zedex Non-Combustible DPC (hereinafter the 'Product'). The Product is a composite, flexible strip to be used as a Type A damp-proof course (hereinafter 'DPC') and cavity tray. The Product is for installation in external cavity walls with a masonry outer leaf, including walls with a light gauge steel frame (hereinafter 'LGSF') or structural timber frame (hereinafter 'STF') inner leaf. The Product is for installation in new dwellings and buildings other than dwellings.

DESCRIPTION

The Product is a flexible, nominal 0.6 mm thick, strip of woven glass fabric coated with pigmented silicone, manufactured in accordance with BS EN 14909. The upper surface (facing the direction of moisture penetration) is red; the underside is pale grey. Where required, the Product sheets are overlapped by 100 mm and joints are bonded and sealed using Visqueen Zedex Mastic. Multiple ancillary items are available to aid and ease installation.

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 Product 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 Product. This Agrément covers the following:

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

MAJOR POINTS OF ASSESSMENT

Moisture control - the Product, including lap joints, when used as a (see Section 2.2.9):

-] DPC provides an effective barrier to the passage of rising damp when subject to hydrostatic pressure up to and including 2 kPa;
-] cavity tray provides an effective barrier to the passage of water in the form of precipitation.

Strength - the Product has adequate performance in respect of (see Section 2.2.10):

-] resistance to damage caused by impact and static loading;
-] tensile strength;
-] resistance to tearing.

Fire performance - the Product is classified as European Classification A2-s1, d0, in accordance with BS EN 13501-1 (see Section 2.2.11).

Durability - the Product shall have a service life durability equivalent to that of the building into which it is incorporated (see Section 2.2.12).

UKCA and CE marking - the product manufacturers have responsibility for conformity marking, in accordance with all relevant British and European Product Standards (see Section 2.2.13).

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1 GENERAL CONSIDERATIONS

1.1 CONDITIONS OF USE

1.1.1 Design considerations
See Section 2.2.

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

1.1.3 Assessment
Kiwa Ltd. has assessed the Product 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
The quality of installation and workmanship shall be controlled by a competent person who shall be an employee of the installation company (hereinafter 'Installer').

The Product 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 Product 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 determined that the Agrément holder fulfils all its obligations in relation to this Agrément in respect of the Product.

The initial audit demonstrated that the Agrément holder has a satisfactory Quality Management System (QMS) and is committed to continuously improving its 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 Product 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 Product. It is intended only as an assessment of safety and fitness for purpose.

2.1 PRODUCT COMPONENTS AND ANCILLARY ITEMS

2.1.1 Components included within the scope of this Agrément

The following components are integral to the use of the Product:

- J Visqueen Zedex Non-Combustible DPC - roll membrane with dimensions 450 to 900 mm wide by 20 m long by 0.6 mm thick; weight 695 g/m²;
- J Visqueen Zedex Mastic - sealant for lap joints between:
 - o Product and Product;
 - o Product and Visqueen Non-Combustible Preformed Units (hereinafter 'Visqueen NCPFU');
 - o Product and the supporting substrate.

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 Product, but fall outside the scope of this Agrément:

- J Visqueen Non-Combustible Fixing Strips - 304 stainless steel strip, 1240 mm long by 25 mm wide incorporating 8 mm diameter holes at 150 mm centres;
- J Visqueen NCPFU - 304 stainless steel three-dimensional profile;
- J Visqueen DPC Joint Supports - 304 stainless steel profile;
- J fixings - screws for steel structures or self-cutting anchors for concrete.

2.2 POINTS OF ATTENTION TO THE SPECIFIER

2.2.1 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.

2.2.2 Applied building physics (heat, air, moisture)

If necessary, a Specialist shall check the hygrothermal behaviour of a project-specific design incorporating the Product 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 General design considerations

The Product:

- J can act as a Type A DPC, in accordance with BS EN 14909;
- J is not a barrier to water vapour and will not have an adverse effect on interstitial condensation; a vapour barrier is required on the inner leaf of a wall to adequately limit water vapour transmission.

The Specifier shall consider the anticipated service life of the building into which it is incorporated. Each application shall be detailed in accordance with the requirements of BS 8215.

Installation of the Product shall be in accordance with principles and guidance detailed in PD 6697 and BS 8215.

The Product shall be installed with 100 mm minimum lapped joints in accordance with PD 6697 and NHBC Standard 6.1.17.

The durability requirements of masonry walls incorporating the Product shall be in accordance with PD 6697 and BS EN 1996-2.

2.2.4 Project-specific design considerations

The project-specific design shall:

- J be determined by the Specifier;
- J take into account the requirements of the relevant national Building Regulations (see Section 3.2);
- J take into account the service life durability required (see Section 2.2.12).

No pre-installation survey is required.

2.2.5 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.

2.2.6 Installer competence level

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

Installation can be undertaken by competent persons experienced in this type of work.

2.2.7 Delivery, storage and site handling

The Product is delivered in suitable packaging bearing the Product name, production identification date or batch number, the Agrément holder's name and, where applicable, the BDA Agrément® logo incorporating the number of this Agrément.

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

2.2.8 Maintenance and repair

Once installed, the Product:

- ✓ is not susceptible to damage from environmental conditions normally encountered in the UK;
- ✓ does not require regular maintenance. For advice in respect of repair, consult the Agrément holder.

Performance factors in relation to the Major Points of Assessment

2.2.9 Moisture control

When used as a:

- ✓ DPC, the Product, including lap joints, has adequate watertightness under positive hydrostatic pressure to provide a barrier to the passage of rising damp from the ground into the internal environment, in accordance with BS EN 1928.
- ✓ cavity tray, the Product, including lap joints, acts as a barrier to the passage of water in the form of precipitation.

2.2.10 Strength

The Product has adequate:

- ✓ resistance to:
 - impact, in accordance with BS EN 12691;
 - static loading, in accordance with BS EN 12730;
 - tearing (nail shank), in accordance with BS EN 12310-1;
 - shear of joints, in accordance with BS EN 12317-2;
- ✓ tensile stress and elongation properties, in accordance with BS EN 12311-2.

The Product remains flexible at low temperatures, in accordance with BS EN 495-5.

A masonry wall incorporating the Product has adequate characteristic:

- ✓ shear strength in accordance with BS EN 1052-4 (see Section 2.5.2);
- ✓ flexural strength in accordance with DD 86-1 (see Section 2.5.2).

2.2.11 Fire performance

The Product is classified as European Classification A2-s1, d0, in accordance with BS EN 13501-1.

The fire classification includes 100 mm-wide lap joints and is valid when the Product is installed in accordance with the requirements of Table 1.

Table 1

Air gap between Product and substrate	Substrate			
	Description	Density	Thickness	Fire classification
0 mm	mineral wool insulation	30-70 kg/m ³	20-30 mm	A1
40 mm	any with the following characteristics	600 kg/m ³	12 mm	A2-s1, d0 or better

2.2.12 Durability

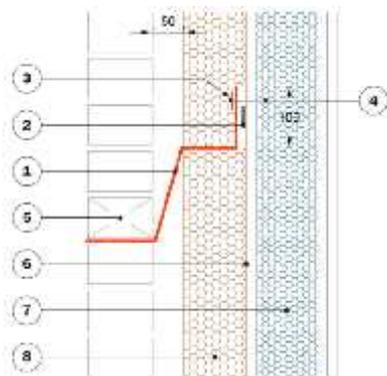
The Product shall have a service life durability equivalent to that of the building into which it is incorporated. The expected lifespan of the building itself shall be at least 60 years.

2.2.13 UKCA and CE marking

The British and European standard for the Product is BS EN 14909.

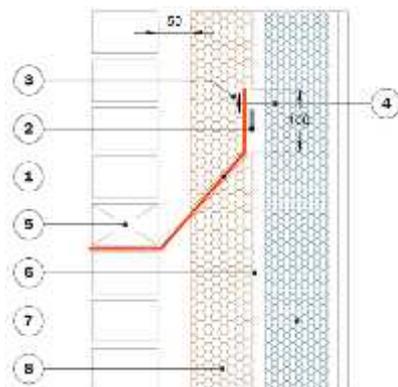
2.3 EXAMPLES OF TYPICAL DETAILS

Diagram 1 - typical detail surface fixing ledge



1. Product
2. Visqueen Zedex Mastic
3. Visqueen Non-Combustible Fixing Strip
4. stainless steel mechanical fixings suitable for substrate (by others)
5. weepholes
6. sheathing board or breather membrane (by others)
7. LGSF system or STF (by others)
8. non-combustible insulation (by others)

Diagram 2 - typical detail surface fixing



1. Product
2. Visqueen Zedex Mastic
3. Visqueen Non-Combustible Fixing Strip
4. stainless steel mechanical fixings suitable for substrate (by others)
5. weepholes
6. sheathing board or breather membrane (by others)
7. LGSF-system or STF (by others)
8. non-combustible insulation (by others)

Diagram 3 - detail Visqueen DPC Joint Support with ledge

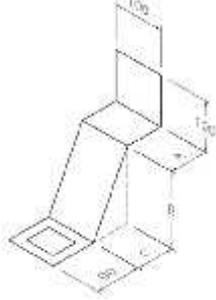


Diagram 4 - detail Visqueen DPC Joint Support

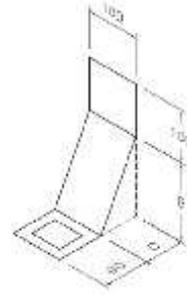


Diagram 5 - lap joint, including Visqueen Non-Combustible Fixing Strips



2.4 INSTALLATION

The Product 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 Installer competence level

See Section 2.2.6.

2.4.2 Delivery, storage and site handling

See Section 2.2.7.

2.4.3 Project-specific installation considerations

No pre-installation survey is required.

2.4.4 Preparation

The following considerations apply before starting the work:

-)] the product shall be installed with the red surface facing upwards or outwards i.e. facing towards the direction of moisture penetration;
-)] consider the use of Visqueen NCPFUs to simplify junctions and corners, e.g. steel columns, changes of level, etc.;
-)] if there is no permanent, rigid supporting substrate present, Visqueen DPC Joint Supports shall be used to support lap joints;
-)] do not apply the Product or ancillary items if the ambient temperature is below 5°C.

No specific works need to be undertaken before the installation of the Product.

2.4.5 Outline installation procedure

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

The outline of the procedure is as follows:

-)] construct the outer masonry leaf up to the DPC level;
-)] apply an even bed of fresh mortar and completely fill any perforations in adjacent courses of masonry;
-)] install the Product onto the mortar, extending the Product through the full thickness of the masonry wall (including pointing, applied rendering or other facing materials);
-)] after positioning the Product, lay a fresh bed of mortar over the Product and at least one course of masonry as soon as possible;
-)] the Product may be:
 - o built into the inner leaf;
 - o surface fixed to concrete/sheathing on the cavity face of the inner leaf; for surface fixing, Visqueen Zedex Mastic, Visqueen Non-Combustible Fixing Strip and stainless steel fixings suitable for the substrate shall be used;
-)] lap joints shall be 100 mm wide and sealed with three beads of Visqueen Zedex Mastic and finished with a seam roller to compress the mastic and create a seal the entire width of the joint;
-)] the minimum spacing between Product-to-Product lap joints shall be 900 mm; consider using back-to-back stop ends if the spacing is less than 900 mm.

2.4.6 Finishing

No finishing is required on completion of the installation.

2.5 INDEPENDENTLY ASSESSED PRODUCT CHARACTERISTICS

2.5.1 Moisture control

Test		Standard	Result
Watertightness at 2 kPa	Plain membrane	BS EN 1928 Method A	Pass, dry
	Jointed membrane [^]		
	After heat aging of plain membrane to BS EN 1296		
	After chemical aging of plain membrane to BS EN 1847 (alkali)		
Water vapour transmission (dry cup: 0/75 % RH)	Water vapour resistance factor μ	BS EN 1931 Method B	1210
	Water vapour diffusion equivalent air layer thickness S_d		0.73 m

[^] jointed membrane includes Product-to-Product joints and Product-to-Visqueen NCPFU

2.5.2 Strength

Test			Standard	Result
Tensile strength and elongation	Tensile stress	Machine direction	BS EN 12311-2 Method B	66.4 N/mm ²
		Cross direction		36.5 N/mm ²
	Elongation at break	Machine direction		5.7 %
		Cross direction		10.1 %
Resistance to tearing (nail shank)	Machine direction	BS EN 12310-1	460 N/100 mm	
	Cross direction		450 N/100 mm	
Shear strength of joints (mean)			BS EN 12317-2	>555 N/50 mm
Shear strength of masonry wall incorporating the Product			BS EN 1052-4	0.079 N/mm ²
Flexural strength of masonry wall incorporating the Product			DD 86-1	0.100 N/mm ²
Impact resistance			BS EN 12691 Method B	No damage at 2 m drop height
Static load resistance			BS EN 12730	>20 kg
Foldability at low temperature			BS EN 495-5	No visible cracks or fractures at -25 °C

2.5.3 Fire performance

Test	Standard	Result
Reaction to fire	BS EN 13501-1	A2-s1, d0

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 Product, 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

- J B4(1) External fire spread - the Product can adequately resist the spread of fire over walls and from one building to another
- J C2(a)(b)(c) Resistance to moisture - a wall incorporating the Product can contribute to adequately protecting a building from ground moisture (when used as a DPC) and moisture from precipitation penetrating an outer masonry leaf (when used as a cavity tray). The Product is not a barrier to water vapour and will not adversely affect interstitial condensation
- J Regulation 7(1) Materials and workmanship - the Product is manufactured from suitably safe and durable materials for the application and can be installed to give a satisfactory performance
- J Regulation 7(2) Materials and workmanship - the Product is adequate for use in the external wall of a relevant building

3.2.2 Wales

The Building Regulations 2010 and subsequent amendments

- J B4(1) External fire spread - the Product can adequately resist the spread of fire over walls and from one building to another
- J C2(a)(b)(c) Resistance to moisture - a wall incorporating the Product can contribute to adequately protecting a building from ground moisture (when used as a DPC) and moisture from precipitation penetrating an outer masonry leaf (when used as a cavity tray). The Product is not a barrier to water vapour and will not adversely affect interstitial condensation
- J Regulation 7(1) Materials and workmanship - the Product is manufactured from suitably safe and durable materials for the application and can be installed to give a satisfactory performance
- J Regulation 7(2) Materials and workmanship - the Product is adequate for use in the external wall of a relevant building

3.2.3 Scotland

The Building (Scotland) Regulations 2004 and subsequent amendments

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

- J The Product is manufactured from acceptable materials and is adequately resistant to deterioration and wear under normal service conditions, provided it is installed in accordance with the requirements of this Agrément

3.2.3.2 Regulation 9 Building Standards - construction

- J 2.7 Spread on external walls - the Product can adequately resist the spread of fire
- J 3.4 Moisture from the ground - the Product, when used as a DPC, will resist moisture penetration from the ground
- J 3.10 Precipitation - the Product, when used as a cavity tray, will adequately resist moisture from precipitation penetrating to the inner face of a building
- J 3.15 Condensation - the Product is not a barrier to water vapour and will not adversely affect interstitial condensation

3.2.3.3 Regulation 12 Building standards - conversions

- J All comments given under Regulation 9 also apply to this Regulation, with reference to Schedule 6 of The Building (Scotland) Regulations 2004 and subsequent amendments, and clause 0.12 of the Technical Handbook (Domestic)

3.2.4 Northern Ireland

The Building Regulations (Northern Ireland) 2012 and subsequent amendments

- J 23(a)(b) Fitness of materials and workmanship - the Product is manufactured from materials which are suitably safe and acceptable, as described in this Agrément
- J 28(a)(b) Resistance to moisture and weather - a wall incorporating the Product can contribute to adequately protecting a building from the passage of moisture from the ground (when used as a DPC) and from the weather (when used as a cavity tray)
- J 29 Condensation (dwelling only) - the Product is not a barrier to water vapour and will not adversely affect interstitial condensation
- J 36 External fire spread - the Product can adequately resist the spread of fire over walls and from one building to another

3.3 THIRD-PARTY ACCEPTANCE

NHBC - In the opinion of Kiwa Ltd., the Product, 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 6.1 External masonry walls.

4 SOURCES

- J BS EN ISO 9001:2015 Quality management systems. Requirements
- J BS EN 495-5:2013 Flexible sheets for waterproofing. Determination of foldability at low temperature. Plastic and rubber sheets for roof waterproofing
- J BS EN 1052-4:2000 Methods of test for masonry. Determination of shear strength including damp proof course
- J BS EN 1296:2001 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roofing. Method of artificial ageing by long term exposure to elevated temperature
- J BS EN 1847:2009 Flexible sheets for waterproofing. Plastics and rubber sheets for roof waterproofing. Methods for exposure to liquid chemicals, including water
- J BS EN 1928:2000 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of watertightness
- J BS EN 1931:2000 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of water vapour transmission properties
- J BS EN 1996-2:2006 Eurocode 6. Design of masonry structures. Design considerations, selection of materials and execution of masonry
- J NA to BS EN 1996-2:2006 UK National Annex to Eurocode 6. Design of masonry structures. Design considerations, selection of materials and execution of masonry
- J BS EN 12310-1:2000 Flexible sheets for waterproofing. Determination of resistance to tearing (nail shank). Bitumen sheets for roof waterproofing
- J BS EN 12311-2:2013 Flexible sheets for waterproofing. Determination of tensile properties. Plastic and rubber sheets for roof waterproofing
- J BS EN 12317-2:2010 Flexible sheets for waterproofing. Determination of shear resistance of joints. Plastic and rubber sheets for roof waterproofing
- J BS EN 12691:2018 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of resistance to impact
- J BS EN 12730:2015 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of resistance to static loading
- J BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests
- J BS EN 14909:2012 Flexible sheets for waterproofing. Plastic and rubber damp proof courses. Definitions and characteristics
- J BS 8000-0:2014 Workmanship on construction sites. Introduction and general principles
- J BS 8215:1991 Code of practice for design and installation of damp-proof courses in masonry construction
- J DD 86-1:1983 Damp-proof courses. Methods of test for flexural bond strength and short term shear strength
- J NHBC Standards 2022
- J PD 6697:2019 Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2

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 Product 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	C Devine	C Vurley	January 2022
A	Issue with NHBC acceptance	A Chapman	C Devine	June 2022

6 CONDITIONS OF USE

This Agrément may only be reproduced and distributed in its entirety.

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.

Kiwa Ltd. has used due skill, care and attention in the preparation of this BDA Agrément®.

Whilst all due diligence has been used, no liability or warranty is extended by Kiwa Ltd.

The Agrément holder is responsible for advising Kiwa Ltd. immediately if there is a variation to the Product specification or constituent elements/components after initial publication of this BDA Agrément®.

For full terms and conditions, refer to Kiwa Ltd.