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# BAR-19-095-S-A-UK
# BDA Agrément®
# RapidRoof Waterproofing System
# Liquid-Applied Waterproofing

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## SCOPE OF AGRÉMENT

This BDA Agrément® (hereinafter 'Agrément') relates to RapidRoof Waterproofing System (hereinafter the 'System'). The System is a cold liquid-applied waterproofing used in new buildings with flat roof surfaces. The System is used in new residential and non-residential buildings of flat roof surfaces with limited pedestrian access for maintenance.

## DESCRIPTION

The System is a two-component cold liquid-applied waterproofing, formed by a layer of primer on the substrate, followed by a layer of basecoat and a layer of topcoat with embedded reinforcement matting in-between. Available in a variety of colours upon request.

## 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
Head of Operations, 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

**Moisture control** - see Section 2.2.7 - the System:

- will resist the passage of water and any other form of moisture infiltration into the substrate, details and the building;
- can adequately limit the risk of interstitial and surface condensation.

**Strength** - see Section 2.2.8 - the System has adequate strength and resistance to damage for its intended application.

**Fire performance** - see Section 2.2.9 - the System is classified as $B_{ROOF}(t4)$ in accordance with BS EN 13501-5.

**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, UKNI 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 the relevant Kiwa Technical Requirement. 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 |
|---|---|---|
| RapidRoof Primer | clear liquid primer comprising of a methyl-methacrylate (hereinafter 'MMA') resin, that can be applied to a clean substrate by either brush or roller application. Used for sealing porous surfaces in preparation for waterproofing | primer supplied in 1.5 kg, 3 kg and 5 kg buckets |
| RapidRoof Waterproof | grey or black, two-component system, comprising of an MMA resin base and a white catalyst, applied over a clean and primed surface by either brush or roller application. Suitable for mixing on site. Once catalysed, the mix shall be applied within 20 minutes from preparation | waterproofing resin supplied in 7.5 kg and15 kg buckets, catalyst supplied in 200 g tubs |
| Reinforcement Matting | 150 g/m$^2$ chopped strand glass-fibre matting, embedded between the basecoat and topcoat in RapidRoof System | 1 m width x 25 m length<br>1 m width x 180 m length |

### 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:

- RapidRoof Crack and Joint Filler - for rapid and permanent repairs;
- RapidRoof Anti-Skid - applied in designated trafficable surfaces including walkways, balconies or other;
- RapidRoof Detailer - providing waterproofing for upstands, pipes and hard to reach detailed areas that are difficult to reinforce;
- mineral granules finish.

## 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 the System.

2.2.1.3 General design considerations

The System shall be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément and only by contractors whose employees have been trained and approved by the Agrément holder.

Installation of the System shall be in accordance with the Agrément holder's specifications and the requirements of the national Building Regulations.

Roof design:

- within the geographical scope (see Section 1.1.5), the System will be appropriate in practically all cases; in cases where, due to unusual circumstances, relatively high surface temperatures (> 40 °C) could occur during relatively long periods (> 4 weeks), advice shall be sought from the Agrément holder;
- the roof construction shall conform with current national Building Regulations, British Standards and relevant Codes of Practice;
- the access to the roof shall be limited, meaning roofs subjected only to pedestrian traffic for maintenance of the roof substrate and cleaning of gutters, etc.;
- the minimum finished fall of a flat roof surface shall be 1:80;
- the substrate for the System shall be designed, constructed and prepared in accordance with the relevant clauses of BS 6229 and BS 8217.

The following roof types and substrates are allowed to be waterproofed with the System (see also the Diagrams in Section 2.3):

- roof types:
  - warm exposed flat roofs;
  - cold exposed flat roofs;
  - inverted roof build-ups with aggregate or paver ballast on flat roofs;
- roof substrates (see also Section 2.5.2):
  - concrete;
  - bitumen roofing felt;
  - oriented strand board (hereinafter 'OSB');
  - single ply polyvinyl chloride (hereinafter 'PVC');
  - metal tiles;
  - atactic polypropylene (hereinafter 'APP')-modified bitumen.

The suitability of the System on the intended substrate shall be assessed prior to installation. It is recommended to perform a pulling test according to BS EN 1607 on the adhesion; the tensile strength perpendicular to the roof surface shall be at least 4 kPa. It is essential that the following specific performance requirements are met:

- flatness, in accordance with the relevant clauses of BS 6229 and BS 8217;
- durable strength of the structure, which must be capable of absorbing all forms of external loading as established by the Specifier to relevant parts of BS EN 1991-1 (such as BS EN 1991-1-1);
- stiffness, durable adhesion and pre-treatment of the substrate, in accordance with the relevant clauses of BS 6229 and BS 8217;

The System must comply where appropriate, with NHBC Standards 2023, Chapter 7.1.

The System shall be applied at ambient temperature between 0 to +35 °C.

The System working pot life is:

- 15 minutes at 20 °C;
- 20 minutes at 10 °C.

When applying the System, it is advisable to pour directly onto the surface to avoid any accelerated curing that can occur from excess heat generated within the tin by the catalysing process.

2.2.1.4 Project-specific design considerations

The project-specific design shall:

- be determined by the Agrément holder;
- consider the exposure zones where the System is installed;
- 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.

No pre-installation survey is required.

**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 an Approved Installer, 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.

System components shall be stored at temperatures between 5 to 20 °C.

**2.2.6 Maintenance and repair**

Once installed, the System does not require regular maintenance under normal usage. However, the System shall be subject to annual inspections, by a competent approved contractor, to highlight any defects or damage, which can then be isolated for attention. Roof drains and gutters shall be kept clear. For advice in respect of repair and maintenance, consult the Agrément holder.

**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 infiltration into the substrate and the building.

Roofs incorporating the System will:

- adequately limit the risk of interstitial condensation, when designed in accordance with BS 5250;
- meet or comply with the relevant requirements of the national Building Regulations.

**2.2.8 Strength**

The System has adequate resistance to:

- wind uplift;
- the effects of thermal or other minor movements of the roof surface.

The System will resist the effects of limited foot traffic and loads associated with installation and maintenance of the System.

### 2.2.9 Fire performance

The System has an external fire performance Class of $B_{ROOF}(t4)$, in accordance with BS EN 13501-5.

The System is unrestricted with respect to proximity from a boundary by the documents supporting the national Building Regulations.

A flat roof is not required to have any specific fire resistance, except when it forms part of a means of escape, when it performs the function of a floor or where part of it is near a boundary.

When a flat roof forms part of a means of escape route, including its supporting structure, and any opening within 3m of the escape route, should be of fire resisting construction of minimum REI 30.

### 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 20 years.

Once installed, the System is not susceptible to damage from environmental conditions normally encountered in the UK. The System has a maintenance regime in accordance with Section 2.2.6.

### 2.2.11 UKCA, UKNI and CE marking

There is no relevant Product standard for the System.

## 2.3 EXAMPLES OF TYPICAL DETAILS

**Diagram 1** - typical detail of build-up of flat roof application of the System in combination with RapidRoof Anti-Skid

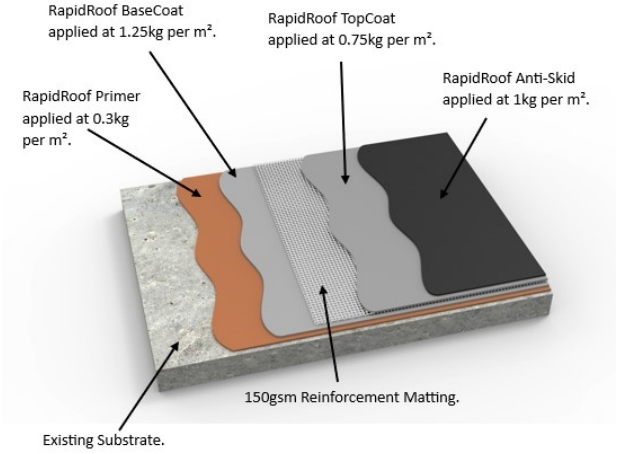



**Diagram 2** - detailing cracks and joints

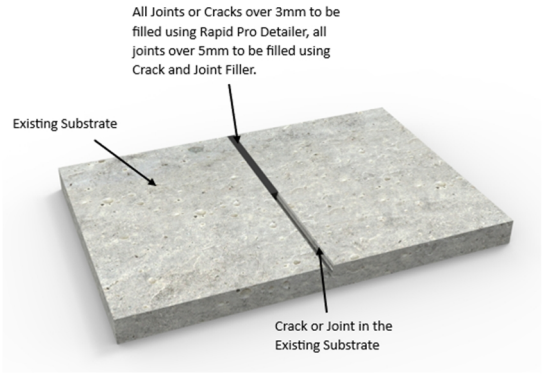
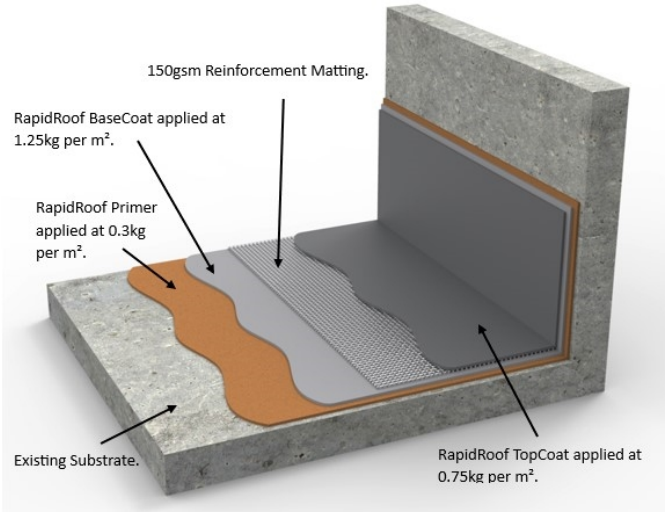



**Diagram 3** - detailing angles




## 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

No pre-installation survey is required.

### 2.4.2 Preparation

The following works shall be undertaken before installing the System:

- the surface shall be free from irregularities (such as cracks, blisters and plies);
- substrate damage and deterioration shall be repaired prior to installation of the System in accordance with installation instructions of the Agrément holder (also see Diagram 2) and the relevant clauses of BS 6229 and BS 8217;
- all surfaces shall be structurally stable, clean, dry and free from release agents, dust, laitance, oils, paints or other forms of contamination.

### 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:

**Priming**

- apply RapidRoof Primer using a suitable brush or roller on the cleaned surface of the substrate at a minimum application rate of 0.3 kg/m$^2$;
- allow to dry for 1 hour before overcoating to ensure primer is sufficiently cured.

**Waterproofing**

RapidRoof Waterproof shall be applied in two stages:

- mix the MMA resin base component and the catalyst for approximately 1 minute at the required ratio (2 % of the resin, 20 g of catalyst to every 1 kg of resin); once catalysed, the product shall be applied within 20 minutes of preparation;
- apply a first layer of RapidRoof Waterproof basecoat on a primed surface, at a minimum coverage rate of 1.25 kg/m$^2$ using a roller or brush;
- ensure all roof areas are covered, including corners and around penetrations;
- embed the 150 g/m$^2$ Reinforcement Matting into the wet RapidRoof Waterproof coating, ensuring it is fully saturated and embedded;
- ensure the membrane is free from creases and pinholes;
- remove any wicks created whilst applying the basecoat; this can be done by lightly sanding the wick to remove it with 80 grit sandpaper or similar;
- apply a second layer of RapidRoof Waterproof topcoat at a minimum coverage rate of 0.75 kg/m$^2$ using a roller; cross roll where possible to ensure the topcoat is applied evenly across the area.

### 2.4.4 Finishing

The following finishing is required on completion of the installation:

- allow the System to set for at least 20 minutes after application and 1 hour before subject to traffic.
- clean all equipment after use.

## 2.5 INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

### 2.5.1 Moisture control

| Test | | Standard | Result |
|---|---|---|---|
| Water vapour diffusion resistance | (tabulated value) | BS EN 13986 | >100 MNs/g |
| | factor, μ-value | | >40,000 |
| | s = t•μ (t in m) | | 80 m |

### 2.5.2 Strength

| Test | | | Standard | Result |
|---|---|---|---|---|
| Minimum tensile strength for 2 mm minimum thickness | | | - | 1.5 N/mm$^2$ |
| Elongation at break for 2 mm minimum thickness | | | - | 200 % |
| Resistance to fatigue movement after 1000 cycles at -10 °C | | | EOTA TR 008 | Pass (small cracks) |
| Resistance to mechanical damage | static indention of concrete at loading with 150 N (Level of resistance L2 & User Load Category P2) | control | EOTA TR 007 | Pass |
| | | after water ageing | | Pass |
| | impact on 3 mm-thick aluminium | drop height of 900 mm | BS EN 12691 | Pass |
| | | drop height of 1500 mm, after 4000 h of UV ageing (prEN 1297) | | Pass |
| | impact on 50 mm-thick EPS CS(10)150, drop height of 1250 mm | control | | Pass |
| | | after 4000 h of UV ageing (prEN 1297) | | Pass |
| Delamination strength | concrete | control | EOTA TR 004 | 1619 kPa |
| | | after 7 days 70°C/90% RH | | 1037 kPa |
| | felt | control | | 255 kPa |
| | | after 7 days 70°C/90% RH | | 830 kPa |
| | OSB | control | | 623 kPa |
| | | after 7 days 70°C/90% RH | | 337 kPa |
| | PVC | control | | 1137 kPa |
| | | after 7 days 70°C/90% RH | | 1203 kPa |
| | metal tiles | control | | 2033 kPa |
| | | after 7 days 70°C/90% RH | | 963 kPa |
| | APP | control | | 283 kPa |
| | | after 7 days 70°C/90% RH | | 320 kPa |

### 2.5.3 Fire performance

| Test | Standard | Result |
|---|---|---|
| External fire exposure to roofs | BS EN 13501-5 | $B_{ROOF}$(t4) |

## 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**

- B4(2) External fire spread - the System can adequately resist the spread of fire over flat roofs and from one building to another
- C2(b) Resistance to moisture - the System can adequately protect a building from precipitation, including wind-driven spray
- Regulation 7(1) 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**

- B4(2) External fire spread - the System can adequately resist the spread of fire over flat roofs and from one building to another
- C2(b) Resistance to moisture - the System can adequately protect a building from precipitation, including wind-driven spray
- Regulation 7(1) 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 and is adequately resistant to deterioration and wear under normal service conditions

3.2.3.2 Regulation 9 Building Standards - construction

- 2.8 Spread from neighbouring buildings - the System can inhibit the spread of fire to a building
- 3.10 Precipitation - the System can resist precipitation penetrating the inside of a building

3.2.3.3 Regulation 12 Building Standards - conversions

- 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, clause 0.12 of the Technical Handbook (Domestic) and clause 0.12 of the Technical Handbook (Non-Domestic)

**3.2.4 Northern Ireland**

**The Building Regulations (Northern Ireland) 2012 and subsequent amendments**

- 23(1)(a)(i)(iii) Fitness of materials and workmanship - the System is manufactured from materials which are suitably safe and acceptable as described in this Agrément
- 28(b) Resistance to moisture and weather - the System can be constructed to prevent the passage of moisture
- 36(b) External fire spread - the System can adequately resist the spread of fire over flat roofs and from one building to another

### 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 7.1. Flat roofs, terraces and balconies.

## 4 SOURCES

- BS EN ISO 9001:2015 Quality management systems. Requirements
- BS EN 1607:2013 Thermal insulating products for building applications. Determination of tensile strength perpendicular to faces
- 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 12691:2018 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of resistance to impact
- BS EN 13501-5:2016 Fire classification of construction products and building elements. Classification using data from external fire exposure to roofs tests
- BS EN 13986:2004+A1:2015 Wood-based panels for use in construction. Characteristics, evaluation of conformity and marking
- BS 5250:2021 Management of moisture in buildings. Code of practice
- BS 6229:2018 Flat roofs with continuously supported flexible waterproof coverings. Code of practice
- BS 8000-0:2014 Workmanship on construction sites. Introduction and general principles
- BS 8217:2005 Reinforced bitumen membranes for roofing. Code of practice
- prEN 1297:1994 Flexible sheets for roofing. Determination of resistance to UV and water ageing. Part 1: Bitumen sheeting
- EOTA Technical report TR 004:2004 Determination of the resistance to delamination
- EOTA Technical report TR 007:2004 Determination of the resistance to static indentation
- EOTA Technical report TR 008:2004 Determination of the resistance to fatigue movement
- NHBC Standards:2023

**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 | C Forshaw | P Oakley | March 2019 |
| A | Migration to UK format, company rebranding and update to Fire Performance | A Chapman | C Devine | September 2023 |
| | | | | |
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| | | | | |

## 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 System specification or constituent elements/components after initial publication of this BDA Agrément®.

For full terms and conditions, refer to Kiwa Ltd.