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Agrement Certificate

21/5875

Product Sheet 1

WYKAMOL WATERPROOFING SYSTEMS

HYDRADEK FLAT ROOF PODIUM DECKS AND BALCONY WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Hydradek Flat Roof Podium Decks and Balcony Waterproofing System, a single component, cold liquid-applied polyurethane roof waterproofing membrane for use on pitched and flat roofs, including those with protected zero falls, and in roof garden and green roof specifications with limited access on new or existing roofs.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Weathertightness — the system will resist the passage of moisture into a building (see section 6).

Properties in relation to fire — the system can enable a roof to be unrestricted under the national Building Regulations (see section 7).

Resistance to wind uplift — the system will resist the effects of any likely wind suction acting on the roof (see section 8).

Resistance to mechanical damage — the system will accept the limited foot traffic and loads associated with installation and maintenance (see section 10).

Resistance to root penetration — the system will resist the penetration by plant roots (see section 11).

Durability — under normal service conditions, the system will provide a durable roof waterproofing with a service life of at least 25 years (see section 13).



The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 26 March 2021

Hardy Giesler
Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers **MUST** check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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Regulations

In the opinion of the BBA, the Hydradek Flat Roof Podium Decks and Balcony Waterproofing System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	B4(2)	External fire spread
Comment:		The system can enable a roof to be unrestricted under this Requirement. See sections 7.1 to 7.3 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The system will enable a roof to satisfy this Requirement. See section 6.1 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The system is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The use of the system satisfies the requirements of this Regulation. See sections 11.1 and 12 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when applied to a non-combustible substrate, can be regarded as having low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See sections 7.1 to 7.3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of the system will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 6.1 of this Certificate.
Standard:	7.1(1)	Statement of sustainability
Comment:		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.
Regulation:	12	Building standards applicable to conversions
Comment:		Comments in relation to the system under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ .

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23(a)(i)	Fitness of materials and workmanship
Comment:		The system is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The use of the system will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		The system can enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 to 7.3 of this Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: *3 Delivery and site handling* and *9 Slip resistance* of this Certificate.

Additional Information

NHBC Standards 2021

In the opinion of the BBA, the Hydradek Flat Roof Podium Decks and Balcony Waterproofing System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roof and balconies*.

Technical Specification

1 Description

1.1 The Hydradek Flat Roof Podium Decks and Balcony Waterproofing System consists of:

- Hydradek Primer — a two component, polyurethane-based primer for use over concrete substrates
- Hydradek PU — a one-component waterproofing based on polyurethane resin
- Hydradek Topcoat — a two-component polyurethane resin UV-protection finishing layer.

1.2 The waterproofing components and primers have the nominal characteristics given in Tables 1 and 2 respectively.

Table 1 Nominal characteristics of waterproofing components

Characteristic (unit)	Component	
	Hydradek PU	Hydradek Topcoat
Colour	grey, red tile, white	Component A: grey, black, red tile, white Component B: orange
Percentage solids (%)	90	60
Viscosity at 23°C (cps)	2.0–8.0	Component A: 600 ± 10 Component B: 80 ± 100
Specific gravity (g·cm ⁻³)	1.30–1.40	1.30

Table 2 Nominal characteristics of primer

Characteristic (unit)	Hydradek Primer
Colour	Component A: brown Component B: yellow
Percentage solids (%)	Component A: 0 Component B: 0
Viscosity at 23°C (mPa·s)	Component A: 450 Component B: 900
Specific gravity (g·cm ⁻³)	1.11

2 Manufacture

2.1 The liquid components of the system are manufactured by a batch-blending process.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken

- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 The liquid components are delivered to site in packaging bearing the product name, company name, batch number, health and safety information and weight of contents in kilograms. The packaging details for the liquid components are given in Table 3.

Component	Packaging	Package weights (kg)
Hydradek primer	Clamp top tins	5
Hydradek PU	Clamp top tins	6, 25
Hydradek Topcoat	Clamp top tins	Component A: 4.3, 17.20 Component B: 0.7, 2.80

3.2 The system components must be stored in a dry, well-ventilated area, under cover, within the temperature range recommended by the Certificate holder and away from heat sources.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the system components under the *CLP Regulation (RC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Hydradek Flat Roof Podium Decks and Balcony Waterproofing System.

Design Considerations

4 General

4.1 The Hydradek Flat Roof Podium Decks and Balcony Waterproofing System is satisfactory for use as a waterproofing layer on new and existing pitched and flat roofs with pedestrian and limited access, including green roofs and roof gardens.

4.2 The system is for use on concrete substrates.

4.3 The system is also satisfactory for use on protected zero fall roofs with limited access on concrete substrates.

4.4 The following terms are defined for the purpose of this Certificate as:

- roof garden (intensive) — a roof with a substantial layer of growing medium with planting that can include shrubs and trees, and generally accessible to pedestrians
- green roof (extensive) — a roof with a shallow layer of growing medium planted with low-maintenance plants such as mosses, sedums, grasses and some wild flower species.

4.5 Limited access roofs are defined for the purposes of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc. Where traffic in excess of this is envisaged, special precautions, such as additional protection to the membrane, must be taken. Pedestrian access roofs are defined for the purposes of this Certificate as those not subject to vehicular traffic.

4.6 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80⁽¹⁾. For design purposes, twice the minimum finished fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc.

4.7 Pitched roofs are defined for the purpose of this Certificate as those having a fall greater than 1:6.

4.8 Flat roofs are defined for the purpose of this Certificate as those having a finished fall of between 0 and 1:80⁽¹⁾. Recommendations for the design of roof falls are available in the Liquid Roofing and Waterproofing Association (LRWA) Note 7 — *Specifier Guidance for Flat Roof Falls*.

(1) *NHBC Standards 2020* require a minimum fall of 1:60 for green roofs and roof gardens.

4.9 On zero fall roofs it is particularly important to identify the correct drainage points to ensure that the drainage provided is effective.

4.10 Concrete decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 Sections 5.1.2 and 6.7, and, where appropriate, *NHBC Standards 2020*, Chapter 7.1. Attention is drawn to the requirements of these Standards to ensure that reinforced concrete roof slabs are finished to an acceptable standard, allow free drainage of water and are allowed to dry prior to the installation of the waterproofing. When these conditions are not satisfied, appropriate remedial treatment is essential.

4.11 Structural decks to which the system is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Allowance needs to be made for loading deflections to ensure that the free drainage of water is maintained.

4.12 Imposed loads, dead loading and wind load specifications should be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003 and BS EN 1991-1-4 : 2005, and their UK National Annexes.

4.13 Recommendations for the design of green roofs and roof garden specifications are available within the latest edition of *The GRO Green Roof Code – Green Roof Code of Best Practice for the UK*.

4.14 The drainage system for both green roofs and roof gardens must be correctly designed, and provision made for access for maintenance purposes. Dead loads for green roofs and roof gardens can increase if the drains become partially or completely blocked causing waterlogging of the drainage layer.

4.15 Insulation materials to be used in conjunction with the system must be in accordance with the Certificate holder's instructions and be either:

- as described in the relevant clauses of BS 8217 : 2005, or
- the subject of a current BBA Certificate and used in accordance with, and within the scope of, that Certificate.

5 Practicability of installation

Installation of the system must be carried out only by specialist roofing contractors trained and approved by the certificate holder.

6 Weathertightness



6.1 The system will adequately resist the passage of moisture into the building and enable a roof to comply with the requirements of the national Building Regulations.

6.2 The system is impervious to water and, when used as described will achieve a weathertight roof capable of accepting minor structural movement without damage.

7 Properties in relation to fire



7.1 When tested to DD CEN/TS 1187 : 2012, Test 4, a system comprising 12 mm calcium silicate board, a coat of Hydradek PU and an overcoat of Hydradek Topcoat achieved a classification of B_{ROOF}(t4) under BS EN 13501-5 : 2016.

7.2 The designation of other specifications, should be confirmed by:

England and Wales — test or assessment in accordance with Approved Document B, Appendix A, Clause 1

Scotland — test to conform to Mandatory Standard 2.8, clause 2.8.1⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

Northern Ireland — test or assessment by a UKAS-accredited laboratory, or an independent consultant with appropriate experience.

7.3 In the opinion of the BBA, irrigated green roofs and roof gardens will also be unrestricted under the national Building Regulations.

7.4 If allowed to dry, plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants for the roof. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire-rating of the roof is not compromised.

8 Resistance to wind uplift

8.1 The adhesion of the system to concrete is sufficient to resist the effects of any wind suction, elevated temperatures, thermal shock or minor movement likely to occur in practice.

8.2 The soil used in roof gardens must not be of a type that will be removed or become delocalised due to wind scour.

8.3 It should be recognised that the type of plants used in roof gardens could significantly affect the wind loads experienced in service.

9 Resistance to mechanical damage

9.1 The system, can accept without damage the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

9.2 When applied over polyurethane insulation, the system must only be accessed when a suitable protection, such as pavers, is used.

9.3 Results of testing for static and dynamic indentation are given in Table 4.

Table 4 Static and dynamic indentation

Test	Result	Method
Dynamic indentation		
unaged hard substrate ⁽¹⁾		
23°C	I4	
-20°C	I4	EOTA TR-006
hard substrate ⁽¹⁾ at -20°C		
heat aged ⁽²⁾	I4	
hard substrate ⁽¹⁾ at -10°C		
UV aged ⁽³⁾	I4	
Static indentation		
unaged hard substrate ⁽¹⁾		
23°C	L4	
60°C	L4	
80°C	L4	
unaged soft substrate ⁽⁴⁾		EOTA TR-007
23°C	L1	
60°C	L1	
hard substrate ⁽⁴⁾ at 23°C		
water exposure ⁽⁵⁾	L4	
water exposure ⁽⁶⁾	L4	
soft substrate ⁽⁴⁾ at 23°C		
water exposure ⁽⁵⁾	L1	

- (1) Steel substrate.
- (2) Heat aged at 80°C for 200 days.
- (3) UV aged for 5000 hours for an exposure of 1000 MJ·m-2 .
- (4) Polyurethane (PU) substrate.
- (5) Water exposure at 60°C for 60 days.
- (6) Water exposure at 60°C for 180 days.

10 Resistance to root penetration

The system will resist penetration by plant roots and can be used as a waterproofing system in green roof and roof garden specifications.

11 Maintenance



11.1 The system must be the subject of biannual inspections and maintenance in accordance with BS 6229 : 2018, Chapter 7, to ensure continued performance.

11.2 Green roofs and roof gardens must be the subject of regular inspections, particularly in autumn after leaf fall and in spring, to ensure unwanted vegetation and other debris are cleared from the roof and drainage outlets (see section 4.14). Guidance is available within the latest edition of *The GRO Green Roof Code - Green Roof Code of Best Practice for the UK*.

11.3 Where damage has occurred it should be repaired in accordance with section 17 and the Certificate holder’s instructions.

12 Durability



Under normal service conditions, the system will provide a durable roof waterproofing with a service life of at least 25 years.

13 General

13.1 The Hydradek Flat Roof Podium Decks and Balcony Waterproofing System must be installed in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, BS 6229 : 2003, the Certificate holder's instructions and this Certificate.

13.2 The system must be applied when the air and substrate temperatures are greater than 5°C. Special precautions may be necessary when temperatures exceed 30°C, as shown in the Certificate holder's Technical Data sheets.

13.3 Substrates to which the system is to be applied must be sound, clean, frost free, dry, free from fatty/oily residues, contaminants and from sharp projections such as nail heads and concrete nibs. Concrete surfaces must have a moisture content of less than 5%. The Certificate holder's advice must be sought for the suitability of the substrate to receive the system and for suitable cleaning procedures, including the use of a proprietary surface cleaner/HSE approved fungicidal wash, where required.

14 Site and surface preparation

14.1 Substrates to which the system is to be applied must be properly prepared in accordance with the Certificate holder's instructions.

14.2 Adhesion to substrates will depend on the condition and cleanness of the substrate. Substrates must be visibly dry, sound and free from loose materials or contamination (eg moss or algae).

14.3 Substrates are high-pressure washed and rinsed to remove loose or flaking materials, but must be visibly dry before application of the system. Areas contaminated with moss and lichen are treated with a proprietary HSE approved biocidal wash and allowed to dry.

14.4 Deck surfaces must be free from sharp projections, such as protruding fixing bolts and concrete nibs.

14.5 Gutters and outlets must be checked to ensure that they are, and remain, clear of all debris.

14.6 All points of potential weakness such as splits, cracks, joints and crazed surfaces must be reinforced in accordance with the Certificate holder's instructions prior to application of the system.

14.7 Substrates are primed with the appropriate primer at the recommended coverage rate (see section 16.2) in accordance with the Certificate holder's instructions.

15 Application

15.1 Hydradek Primer components (Parts A and B) must be thoroughly mixed for two minutes using a rod stirrer.

15.2 The mixed primer is applied by to the substrate. Application rate is typically 0.2 kg·m⁻². The primer must be completely dry before the waterproofing layer is applied.

15.3 Hydradek PU is applied to the roof at a coverage rate of 1.8 kg·m⁻², using a roller.

15.4 On completion, the surface must be inspected for any pinholes and a second layer applied if required.

15.5 Hydradek Topcoat is applied as a topcoat to increase UV stability. Components A and B must be thoroughly mixed and applied at a coverage rate of 250 g·m⁻².

16 Repair

The repair of minor damage to the system can be achieved effectively by cleaning back to unweathered material and recoating the damaged area with the membrane at the application rates stated in section 16.

17 Tests

17.1 Tests were carried out in accordance with ETAG 005 : 2000, Parts 1 and 6, and the results assessed by the BBA to determine:

- tensile strength and elongation
- water vapour diffusion resistance coefficient μ
- watertightness
- tensile bond strength on concrete
- dynamic indentation
- static indentation
- resistance to fatigue cycling
- resistance to low temperature
- resistance to high temperature
- heat ageing
- resistance to UV ageing
- resistance to water exposure
- effect of application temperatures
- effect of day joints
- external fire performance.

17.2 Additional characteristic tests were carried out on the system and its component parts in respect of density, ash content and viscosity. The results obtained were satisfactory for this type of system.

18 Investigations

18.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

18.2 Data on fire performance were evaluated.

Bibliography

- 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 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*
- BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*
- 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 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 : Actions on structures — General actions — Snow loads*
- NA +A1 : 15 to BS EN 1991-1-3 : 2003 +A1 : 2015 UK National Annex to *Eurocode 1 : Actions on structures — General actions — Snow loads*
- BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 : Actions on structures — General actions — Wind actions*
- NA to BS EN 1991-1-4 : 2005 +A1 : 2010 UK National Annex to *Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*
- DD CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*
- DD ENV 12633 : 2003 *Method of determination of unpolished and polished slip/skid resistance value*
- ETAG 005 : 2000 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits Part 1: General*
- ETAG 005 : 2000 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits Part 6: Specific stipulations for Kits based on polyurethane*

19 Conditions

19.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

19.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

19.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

19.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

19.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

19.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.