

Widopan Produkte GmbH

Ostereichen 3
21714 Hammah
Germany

Tel: 00 49 4144 69 821-0
e-mail: info@widopan.de
website: www.widopan.de



Agrément Certificate

07/4488

Product Sheet 2

WIDOPAN ROOF WATERPROOFING SYSTEMS

WIDOCRYL-PM/-DETAIL

This Agrément Certificate Product Sheet⁽¹⁾ relates to Widocryl-PM/-Detail, a two-part polymethacrylic resin reinforced with a non-woven polyester fleece or mesh, for use as a liquid-applied waterproofing on flat roofs including protected zero fall applications, balconies, terraces and covered walkways.

(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 to the interior of a building (see section 6).

Properties in relation to fire — the system may contribute to a structure being unrestricted under the national Building Regulations (see section 7).

Adhesion — the adhesion of the system is sufficient to resist the effects of any likely wind suction and the effects of thermal or other minor movement likely to occur in practice (see section 8).

Slip resistance — the system, when wet or dry, has a satisfactory co-efficient of friction to enable its use in pedestrian areas (see section 9).

Resistance to mechanical damage — the system will accept, without damage, the limited foot traffic and loads associated with installation and maintenance (see section 10).

Durability — under normal service conditions the unprotected system will have a service life in excess of 25 years (see section 12).



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 Third issue: 15 December 2020

Originally certificated on 20 September 2010

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.*

British Board of Agrément

Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

©2020

Regulations

In the opinion of the BBA, Widocryl-PM/-Detail, 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(1)	External fire spread
Comment:		The system, in some circumstances, is restricted by this Requirement. See sections 7.1 and 7.2 of this Certificate.
Requirement:	B4(2)	External fire spread
Comment:		On a suitable substructure, the system can enable a roof to be unrestricted under this Requirement. See sections 7.1 to 7.2 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.
Regulation:	7(2)	Materials and workmanship
Comment:		When used on balconies the system is acceptable under this Regulation. See section 7.3 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The system is acceptable and 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 used on suitable substructure, can be regarded as having low vulnerability and can enable a roof to be unrestricted under this Standard, with reference to clause 2.8.1 ⁽¹⁾⁽²⁾ . See sections 7.1 and 7.2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		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(a)	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:		All comments given for 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)(b)(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 system can 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, when used on suitable substructures, can enable a roof to be unrestricted under the requirements of this Regulation. See section 7.1 and 7.2 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 section: **3 Delivery and site handling** of this Certificate.

Additional Information

NHBC Standards 2020

In the opinion of the BBA, Widocryl-PM/-Detail, 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 roofs and balconies*.

The NHBC Standards do not cover the use of the system in the refurbishment of existing roofs.

CE marking

The Certificate holder has taken the responsibility of CE marking the system in accordance with European Technical Assessment 05/0237, issued under ETAG 005 : 2004, Parts 1 and 4.

Technical Specification

1 Description

1.1 Widocryl-PM/-Detail is a two-part polymethacrylic resin reinforced with a non-woven polyester fleece or mesh.

1.2 Widocryl-PM/-Detail resin has the nominal characteristics of:

Specific gravity (g·cm ⁻³)	1.38
Pot life (minutes)	20 – 30
Flashpoint (°C)	11.5
Viscosity at 25°C (mPa·s)	600 – 1000
Colour	grey ⁽¹⁾ .

(1) Other colours from the RAL colour chart are available upon request.

1.3 The levels of Use Categories in accordance with ETAG 005 : 2004 from ETA 05/0210 are:

External fire performance class	B _{ROOF} (t1)
Reaction to fire Euroclass	E

Categorisation by working life	W3 (25 years)
Categorisation by climatic zones	M (moderate) and S (severe)
Categorisation by imposed loads	
most compressible substrate	P4
least compressible substrate	P4
Categorisation by roof slope	S1 (<5%) to S4 (>30%).
Categorisation by surface temperature	
lowest	TL4 (-30°C)
highest	TH4 (90°C)
Resistance to wind loads	>50 kPa
Statement on dangerous substances ⁽¹⁾	none contained.

(1) Dangerous substances as listed in the European Commission database.

1.4 Other items which are part of the system and which are included in the scope of this Certificate are:

- Widocryl-Clear-PM — a clear version of the standard resin used to seal the wearing course
- Widocryl Top Coat Colour — a version of the standard resin, used to seal the wearing course, in a choice of colours matched to the RAL colour chart
- Widocryl Hardener — a catalyst powder used for curing
- 120 Gram and 165 Gram reinforcements — non-woven polyester mesh (120 g) and fleece (165 g) used for reinforcing the system
- kiln-dried sand (for basecoat) and bulking powder — mixed into the Widocryl-PM/-Detail resin for application as the surface waterproofing layer of the system (grain size 0.1 – 0.3 mm)
- Widocryl PM Thixo filling powder — mixed with the Widocryl-PM/-Detail resin and kiln-dried sand (grain size 0.1 – 0.3 mm)
- PVA chips — for addition to the wearing course as a decorative finish (available in a standard range of colours)
- kiln-dried sand (for wearing coat) — for addition to the wearing course as an anti-slip finish (grain size 0.8 – 1.1 mm). Decorative coloured quartz sand can be used as an alternative.

1.5 Other items or components, which may be used with the system, but which are outside the scope of this Certificate, are:

- Widocryl-Primer-PM
- Special Widocryl-PM/-Detail Concrete Primer for damp concrete substrates
- special primer for metal and glass substrates.

Details of suitable products/specifications may be obtained from the Certificate holder.

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.

2.3 The management system of Widopan Produkte GmbH has been assessed and registered as meeting the requirements of EN ISO 9001 : 2015 by United Registrar of Systems Ltd (Certificate 60699).

3 Delivery and site handling

3.1 The system components are delivered to site bearing the product's name, health and safety data, the Certificate holder's name and the BBA logo incorporating the number of this Certificate. The components are available in the pack sizes detailed in Table 1.

Component	Pack sizes
Widocryl-PM/-Detail PMMA resin reinforcement	13 kg cans 1.05 m length roll, weighs 11 kg
Widocryl Hardener	0.3 kg Plastic Bag
Widocryl Primers	10 kg cans
kiln-dried sand	25 kg Plastic Bag

3.2 The resin components, hardener and primer must be kept tightly sealed, and stored in a cool, ventilated location away from ignition sources and other chemicals. Storage temperatures of between 0 and 25°C will give the component a shelf-life of six months; at higher temperatures the shelf-life will reduce progressively.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the system components under the *CLP Regulation (EC) 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 Widocryl-PM/-Detail.

Design Considerations

4 General

4.1 Widocryl-PM/-Detail is satisfactory for use as a liquid-applied waterproofing layer on flat roofs, balconies, terraces and covered walkways for pedestrian access, including protected zero fall applications.

4.2 The system is suitable for use on the following substrates:

- concrete
- reinforced bitumen membranes (including mineral-surfaced)
- metal
- timber
- PUR or PIR insulation boards.

4.3 Pedestrian access roofs are defined for the purposes of this Certificate as those not subjected to vehicular traffic.

4.4 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80.

4.5 When designing flat roofs, twice the minimum fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc.

4.6 Zero fall roofs are defined, for the purpose of this Certificate, as those having a finished fall of between 0 and 1:80 degrees. 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*.

4.7 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005, and, where appropriate, *NHBC Standards 2020*, Chapter 7.1.

4.8 Insulation materials to be used in conjunction with the system must be in accordance with the Certificate holder's instructions and must 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 limitations of, that Certificate.

5 Practicability of installation

The system must only be installed by installers who have been trained and approved by the Certificate holder.

6 Weathertightness



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

6.2 To achieve a weathertight coating it is essential that the application rate is as quoted in the Certificate holder's literature for the relevant system.

7 Properties in relation to fire



7.1 When tested to BS 476-3 : 2004, a system comprising 24.4 mm plywood primed with Widocryl-Primer-PM at a coverage rate of $0.5 \text{ kg}\cdot\text{m}^{-2}$, a layer of Widocryl-PM/-Detail at a coverage rate of $1.0 \text{ kg}\cdot\text{m}^{-2}$, a layer of 120 g reinforcement and a layer of Widocryl-PM/-Detail at a coverage rate of $0.5 \text{ kg}\cdot\text{m}^{-2}$, achieved a fire classification of EXT.F.AC⁽¹⁾ and so is unrestricted with respect to proximity to a boundary by the national Building Regulations.

(1) Exova Warringtonfire, Test report No 189012. Report available from the Certificate holder.

7.2 The designation of other specifications should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.



7.3 When used in balcony specifications the systems are unrestricted.

7.4 The system should not be used on terraces on buildings that are over 11 m above the lowest ground level nor within 3 m of a vertical façade.

8 Adhesion

8.1 The adhesion of the system to the substrates listed in section 4.2, is sufficient to resist the effects of any wind suction, elevated temperatures, thermal shock or minor movement likely to occur in practice.

8.2 Where the system is installed over insulation boards, the resistance to wind uplift will be dependent on the cohesive strength of the insulation and the method the boards are secured to the roof deck. This must be taken into account when selecting a suitable insulation material.

9 Slip resistance

9.1 The system, with a sand finish, has satisfactory slip resistance in both dry and wet conditions, and may be used in pedestrian access.

9.2 The system, with a PVA chip finish, has a satisfactory slip resistance in dry conditions and has a moderate risk of slip when wet, as defined in *The Assessment of Floor Slip Resistance — The UK Slip Resistance Group Guidelines; Issue 3, 2005*.

10 Resistance to mechanical damage

10.1 The system can accept, without damage, the foot traffic likely to occur in practice, and light concentrated loads associated with installation and maintenance operations. However, reasonable care should be taken to avoid puncture by sharp objects or concentrated loads. In cases of doubt advice is available from the Certificate holder.

10.2 The system is capable of accepting minor structural movement while remaining weathertight.

11 Maintenance



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

11.2 Where damage has occurred it should be repaired, at the earliest opportunity, in accordance with section 16 and the Certificate holder's instructions.

12 Durability



Under normal service conditions, the system will have a service life in excess 25 years.

Installation

13 General

13.1 Installation of the Widocryl-PM/-Detail must be in accordance with the relevant clauses of BS 6229 : 2018, BS 8000-0 : 2014, BS 8000-4 : 1989, Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*, the Certificate holder's instructions and the provisions of 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 Detailing (eg upstands) is carried out in accordance with the Certificate holder's instructions.

14 Site and surface preparation

14.1 Substrates on which the system is 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 High-pressure sand-blasting or water-jetting may be used to remove loose or flaking materials, but the substrate must be completely dry before application of the system.

14.4 Damaged areas of the substrate (eg blistered bitumen roofing felt) must be removed, replaced or repaired.

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

15 Application

15.1 The system is mixed on site by adding the hardener to the resin in the correct proportion, and the hardener in the proportion given in Table 2 in respect of the surface/air temperature. The resin is stirred prior to addition of the hardener.

Table 2 Hardener proportion to give a 20 to 30 minute cure time

Surface and/or air temperature (°C)	Hardener per litre of Widocryl-PM/-Detail (ml)
-5	100
5	75
15	50
25	25
30	15

15.2 The Widocryl-PM/-Detail is mixed in proportion with the hardener in accordance with Table 2. The resin is then mixed at a volume ratio of 1 litre of resin to 1 litre of kiln-dried sand to 1 litre of Widocryl PM Thixo filling powder, and mechanically mixed.

15.3 The polyester mesh reinforcement is laid out on the surface to be sealed, and the resin/sand mixture is poured onto the surface and spread evenly with a trowel at a rate of $3 \text{ kg}\cdot\text{m}^{-2}$.

15.4 At penetrations and other weak points in the substrate, an additional coating resin (including hardener) with reinforcement is applied at a rate of $3 \text{ kg}\cdot\text{m}^{-2}$.

15.5 The wearing course is applied using either a fleece roller or serrated spatula. The resin (including hardener) is applied at a rate of $2 \text{ kg}\cdot\text{m}^{-2}$, producing a wearing layer approximately 1.5 mm thick. PVA chips, natural quartz sand, coloured granite granules or crushed marble can be broadcast into the resin layer while still wet as a decorative finish.

15.6 The wearing surface is sealed with Widocryl-Clear-PM or a Widocryl Top Coat Colour, which is available in a choice of colours matched to the RAL colour chart.

16 Repair

The repair of minor damage to the system is carried out by cleaning back to the unweathered material and recoating the damaged area with the membrane at the total application rate stated in section 15.

Technical Investigations

17 Tests

Tests were conducted on Widocryl-PM/-Detail and the results assessed to determine:

- water vapour diffusion resistance coefficient (μ)
- tensile strength and elongation at break
- watertightness at a one metre head of water
- tensile bond strength on concrete, steel, bitumen felt, softwood and plastic
- dynamic indentation at -30°C on mineral wool and concrete
- static indentation on mineral wool and concrete at 23 and 90°C
- fatigue cycling
- root resistance
- coefficient of friction
- UV ageing ($1000 \text{ MJ}\cdot\text{m}^{-2}$ at 60°C) (severe conditions)
- heat ageing (200 days at 80°C)
- water exposure (180 days at 60°C)
- the effect of application temperatures
- the effect of day joints

- reaction to fire.

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 assessed.

Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures – Part 3: Classification and method of test for external fire exposure to roofs*

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*

EN ISO 9001 : 2015 *Quality management systems — Requirements*

EN 13501-1 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

ETAG 005 : 2004 — Part 1 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits — General*

ETAG 005 : 2004 — Part 4 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits — Specific Stipulations for Kits Based on Flexible Unsaturated Polyester*

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.