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Agrément Certificate

11/4843

Product Sheet 1

3M ROOF WATERPROOFING SYSTEMS

3M SCOTCHKOTE POLY-TECH EC 661/UV 662 PREMIER PLUS ROOF WATERPROOFING SYSTEM

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the 3M ScotchKote Poly-Tech EC 661/UV 662 Premier Plus Roof Waterproofing System, a reinforced liquid applied polyurethane waterproof membrane for use on flat or sloping roofs.

AGRÉMENT 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 the building (see section 5).

Properties in relation to fire — the system will enable a roof to be unrestricted under the Building Regulations (see section 6).

Resistance to wind uplift — the system will resist the effects of any likely wind suction acting on the roof (see section 7).

Resistance to foot traffic — the system will accept the limited foot traffic and loads associated with installation and maintenance (see section 8).

Durability — under normal service conditions the system will provide a durable roof waterproofing with a service life in excess of 25 years (see section 10).

The BBA has awarded this Agrément 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

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

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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 are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, the 3M Scotchkote Poly-Tech EC 661/UV 662 Premier Plus Roof Waterproofing System, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales)

Requirement: B4(2)	External fire spread
Comment:	On a suitable substructure, the use of the system will enable a roof to be unrestricted under this Requirement. See sections 6.1 and 6.2 of this Certificate.
Requirement: C2(b)	Resistance to moisture
Comment:	The system will enable a roof to meet this Requirement. See section 5.1 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The system is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)(2)	Fitness and durability of materials and workmanship
Comment:	The use of the system satisfies the requirements of this Regulation. See sections 9.1 to 9.3, 10 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards – construction
Standard: 2.8	Spread from neighbouring buildings
Comment:	The system, when applied to a suitable substructure, is regarded as having low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ and Annex C2 of this Standard. See sections 6.1 and 6.2 of this Certificate.
Standard: 3.10	Precipitation
Comment:	The use of the system will enable a roof to meet the requirements of this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 5.1 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 – conversions
Comment:	Comments made in relation to the membranes 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) 2000 (as amended)

Regulation: B2	Fitness of materials and workmanship
Comment:	The system is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation: B3(2)	Suitability of certain materials
Comment:	The system is acceptable. See sections 9.1 to 9.3 of this Certificate.
Regulation: C4(b)	Resistance to ground moisture and weather
Comment:	The system will enable a roof to meet the requirements of this Regulation. See section 5.1 of this Certificate.
Regulation: E5(b)	External fire spread
Comment:	On a suitable substructure, the use of the system will enable a roof to be unrestricted under the requirements of this Regulation. See sections 6.1 and 6.2 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

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

See section: 2 *Delivery and site handling* (2.2 and 2.3) of this Certificate.

Non-regulatory Information

NHBC Standards 2011

NHBC accepts the use of the 3M Scotchkote Poly-Tech EC 661/UV 662 Premier Plus Roof Waterproofing System, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies* and Chapter 7.2 *Pitched roofs*.

1 Description

1.1 The 3M Scotchkote Poly-Tech EC 661/UV 662 Premier Plus Roof Waterproofing System is based on cold, liquid-applied polyurethane membranes, reinforced with an embedded fibreglass mat.

1.2 The system is built up by applying the following components on site:

- 3M Scotchkote Urethane Primer FB 856 — a single-component, polyurethane primer for use on wood and porous substrates prior to the application of 3M Scotchkote Poly-Tech EC 661
- 3M Scotchkote Epoxy Primer MC135 — a two-component, anti-corrosive epoxy primer for use on metal substrates prior to the application of 3M Scotchkote Poly-Tech EC 661
- 3M Scotchkote Poly-Tech EC 661⁽¹⁾ — a one-component, liquid-applied, polyurethane coating that cures to form an elastomeric waterproof membrane
- 3M Scotchkote Poly-Tech UV 662⁽²⁾ — a one-component, liquid-applied, UV-resistant polyurethane coating for application over 3M Scotchkote Poly-Tech EC 661
- 3M Scotchkote O55 Premier Plus Reinforcing Mat — a chopped strand glass mat reinforcement with nominal weight per unit area of 225 g·m⁻², used embedded into the 3M Scotchkote Poly-Tech EC 661.

(1) Formerly known as Poly-Tech EC.

(2) Formerly known as Poly-Tech UV.

1.3 Other materials available for use with the system include:

- 3M Scotchkote Bond Break Tape — a bond breaking tape for use over cracks and joints
- 3M Scotchkote O20 Cleaner — a PMA-based solvent for general cleaning.

Quality control

1.4 Quality control checks are performed on raw materials, during production and on the finished components.

2 Delivery and site handling

2.1 The liquid components of the system are delivered to site in sealed containers labelled with the manufacturer's name, product description and the appropriate hazard and risk labels (see clause 2.4). They are available in the pack sizes given in Table 1.

Table 1 Pack weights and storage lives

Component	Pack size (litres)/Weight (kg)	Storage life (months)
3M Scotchkote Urethane Primer FB 856	5/5.5 and 25/26	24
3M Scotchkote Epoxy Primer MC135, Part A	5/6.5	24
3M Scotchkote Epoxy Primer MC135, Part B	5/6.5	24
3M Scotchkote Poly-Tech EC 661	12.5/17.5	6
3M Scotchkote Poly-Tech UV 662	12.5/18.0	6
3M Scotchkote O20 Cleaner	5/4.5	n/a

2.2 All containers should be stored under cover in a cool, dry and ventilated place away from other chemicals and protected from frost in accordance with the Certificate holder's instructions. Components kept in sealed unopened containers and stored in accordance with the manufacturer's instructions will have a shelf-life as detailed in Table 1.

2.3 3M Scotchkote O55 Premier Plus Reinforcing Mat is delivered to site in rolls with the following nominal dimensions and weight:

Length (m)	100
Width (cm)	100
Roll weight (kg)	22.5

2.4 The materials are classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP4)* and bear the appropriate hazard warning label. The flashpoints and hazard classifications for the components are given in Table 2.

Table 2 Flashpoint and hazard classification of components

Component ⁽¹⁾	Flashpoint (°C)	Hazard classification
3M Scotchkote Urethane Primer FB 856	41	Flammable, Harmful
3M Scotchkote Epoxy Primer MC135, Part A	30	Flammable, Irritant, Dangerous to the environment
3M Scotchkote Epoxy Primer MC135, Part B	≥12	Highly Flammable, Harmful
3M Scotchkote Poly-Tech EC 661	≥30	Flammable, Dangerous to the environment
3M Scotchkote Poly-Tech UV 662	≥30	Flammable, Harmful
3M Scotchkote O20 Cleaner	23	Flammable, Harmful

(1) These components should be stored in accordance with *The Dangerous Substances and Explosive Atmospheres Regulations 2002*.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the 3M Scotchkote Poly-Tech EC 661/UV 662 Premier Plus Roof Waterproofing System.

Design Considerations

3 Use

3.1 The 3M Scotchkote Poly-Tech EC 661/UV 662 Premier Plus Roof Waterproofing System is satisfactory for use as a fully adhered exposed waterproofing layer on flat and pitched roofs with limited access.

3.2 Limited access roofs are defined for the purpose of this Certificate as those roofs subjected only to pedestrian traffic for maintenance of the roof covering and cleaning of gutters, etc. Where traffic in excess of this is envisaged, additional protection to the membrane must be provided (see section 8).

3.3 Flat roofs are defined for the purpose of this Certificate as those roofs having a minimum finished fall of 1:80. 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. Pitched roofs are defined for the purpose of this Certificate as those having a fall greater than 1:6.

3.4 Decks to which the membranes are to be applied must comply with the relevant requirements of BS 6229 : 2003 and, where appropriate, *NHBC Standards 2011*, Chapter 7.1 *Flat roofs and balconies* and 7.2 *Pitched roofs*.

3.5 The system can be used on the following substrates:

- concrete
- plywood⁽¹⁾
- steel⁽²⁾
- roofing felt⁽¹⁾⁽³⁾
- mastic asphalt (roofing grade)⁽³⁾.

(1) Primed with 3M Scotchkote Urethane Primer FB 856.

(2) Primed with 3M Scotchkote Epoxy Primer MC135 (previously known as 3M Scotchkote 145).

(3) Due to the variable nature of these materials acceptable adhesion should be confirmed by test.

4 Practicability of installation

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

5 Weathertightness



5.1 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:

England and Wales — Approved document C, Requirement C2(b) Section 6

Scotland — Regulation 9, Mandatory Standard 3.10, clauses 3.10.1 and 3.10.7

Northern Ireland — Regulation C4(b).

5.2 The system is impervious to water and will achieve a weathertight roof capable of accepting minor structural movement.

6 Properties in relation to fire



6.1 When tested in accordance with BS 476-3 : 1958 the system, comprising 1.5 l·m⁻² Poly-Tech EC with an embedded 200 g·m⁻² glass mat and overcoated with 0.5 l·m⁻² Poly-Tech UV applied to a substructure comprising a 12.5 mm Supalux calcium silicate board (unprimed), achieved an EXT.F.AA rating.

6.2 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

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

7 Resistance to wind uplift

The adhesion of the system to the substrates listed in section 3.5 is sufficient to resist the effects of wind suction, thermal cycling or other minor structural movement likely to occur in service. Acceptable adhesion to other substrates should be confirmed by test.

8 Resistance to foot traffic

The system can accept 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. Where traffic in excess of this is envisaged, such as maintenance of lift equipment, a walkway should be provided, for example, using concrete slabs supported on bearing pads.

9 Maintenance



9.1 Systems must be the subject of annual inspections and maintenance to ensure continued performance.

9.2 Maintenance should include checks and operations to ensure the following where applicable:

- the membrane and drainage outlets are free from the build-up of silt and other debris
- protection layers, eg walkways, are in good condition.

9.3 In the event that the system is contaminated by oil, grease or other chemicals then the advice of the Certificate holder must be sought.

10 Durability



Accelerated weathering tests and evidence from existing installations confirm that satisfactory retention of physical properties is achieved. Under normal conditions, the system will have a service life in excess of 25 years.

Installation

11 General

11.1 Installation of the 3M Scotchkote EC 661/UV 662 Premier Plus Roof Waterproofing System must be in accordance with the relevant Clauses of BS 8000-4 : 1989, BS 6229 : 2003, the Certificate holder's instructions and this Certificate.

11.2 Installation should not be carried out during inclement weather, eg rain, fog or snow, and the ambient temperature at the time of laying must lay between 5°C and 30°C. Surfaces to be coated must be at least 3°C above the dew-point.

11.3 Substrates to which the system is to be applied must be sound, dry, clean and free from sharp projections such as nail heads and concrete nibs. The Certificate holder's advice should be sought for suitable cleaning procedures and the use of a proprietary surface cleaner/fungicidal wash.

11.4 Previously coated areas must be checked for integrity and adequate adhesion to the substrate. Defects such as cracks and blisters should be repaired prior to application of the system in accordance with the Certificate holder's instructions.

11.5 Adhesion checks should be carried out to ensure that the system is compatible with the existing surfaces and to determine the necessity for a primer.

11.6 Where the use of 3M Scotchkote Urethane Primer FB 856 is required, surfaces must be clean and dry and have a moisture content of less than 7%.

11.7 Active cracks, joints and other areas subject to movement should first be covered with 3M Scotchkote Bond Break Tape and then reinforced with 3M Scotchkote O55 Premier Plus Reinforcing Mat embedded in 3M Scotchkote Poly-Tech EC 661. The Certificate holder should be consulted for details.

11.8 Detailing such as upstands and penetrations must be carried out in accordance with the Certificate holder's instructions.

11.9 All equipment should be cleaned after use with 3M Scotchkote O20 Cleaner.

12 Precautions

12.1 Vapours from components of the system may cause sensitisation and irritation to the respiratory system, eyes and skin. The system should be used only in areas with sufficient ventilation to prevent the build-up of vapours. Contact with the skin, eyes and clothes must be avoided. The manufacturer's material safety data sheets must be consulted for detailed information on the safe handling and use of the products.

12.2 The system components must not be allowed to get into the waste drainage system.

12.3 The system can become slippery when wet. If additional slip resistance is required the advice of the Certificate holder should be sought.

13 Procedure

13.1 A first coat of 3M Scotchkote Poly-Tech EC 661 is applied by brush or roller to the clean, prepared and, if required, primed substrate at a minimum application rate of 1 l·m⁻².

13.2 3M Scotchkote O55 Premier Plus Reinforcing Mat is then embedded into the wet 3M Scotchkote Poly-Tech EC 661 coating, avoiding creasing. Adjacent lengths of the reinforcement must overlap by a minimum of 20 mm ensuring that there is sufficient coating to fully encapsulate it, applying additional coating if required.

13.3 A second coat of 3M Scotchkote Poly-Tech EC 661 is then applied by brush or roller at a minimum application rate of 1 l·m⁻².

13.4 3M Scotchkote Poly-Tech UV 662 is then applied by brush or roller over the dry and clean 3M Scotchkote Poly-Tech EC 661 at a minimum application rate of 0.5 l·m⁻².

13.5 At each stage a check should be made for the presence of pinholes and missed areas. These should be rectified by applying additional coating as necessary.

14 Repair

14.1 Damage to the system must be repaired as soon as possible to ensure the waterproofing integrity is maintained.

14.2 The system can be repaired by cutting back the damaged or debonded coating to sound, well-bonded material and reinstating it to the original specification ensuring an overlap of at least 50 mm onto the existing coating.

14.3 Overlapped areas on the existing coating must be cleaned using 3M Scotchkote O20 Cleaner prior to overcoating.

14.4 If repairs to the substrate are required, the Certificate holder's advice should be sought for suitable repair materials.

14.5 On completion of the repair, when the coating has fully cured, the repair should be inspected to ensure it is sound and well bonded to the existing coating.

Technical Investigations

15 Tests

The results of tests conducted by the BBA are summarised in Tables 3 and 4.

Table 3 Physical properties — 3M Scotchkote O55 Premier Plus Reinforcing Mat

Test (units)	Mean result	Method
Mass per unit area (g·m ⁻²)	223	BS EN 29073-1 : 1992
Tensile strength/elongation (N·mm ⁻² /%)		BS EN 29073-3 : 1992
longitudinal	21.3/0.5	
transverse	29.5/0.5	

Table 4 Physical properties — general

Test (units)	Mean result	Method
Water vapour permeability (g·m ⁻² ·day ⁻¹)	6.45	BS 3177 : 1959 ⁽¹⁾
Water vapour permeability (MN·s·g ⁻¹)	31.8	BS 3177 : 1959 ⁽¹⁾
Resistance to static loading ⁽²⁾		EOTA TR007
control	L ₃	
exposure to surface water ⁽³⁾	L ₃	
Resistance to dynamic impact		EOTA TR006
control at 23°C on plywood	I ₄	
control at 23°C on steel	I ₄	
at -30°C on steel	I ₄	
at -30°C on steel after heat ageing ⁽⁴⁾	I ₄	
at -30°C on steel after UV ageing ⁽⁵⁾	I ₄	
Resistance to fatigue after heat ageing ⁽⁴⁾	Pass	EOTA TR 008

(1) 25°C/0–75% RH.

(2) On steel substrate tested at 90°C.

(3) 60 days at 60°C.

(4) Heat aged at 80°C for 200 days.

(5) 1000 MJ·m⁻² at 60°C.

16 Investigations

16.1 Existing test data relating to the 3M Scotchkote 661/662 Roof Waterproofing System, subject of BBA Certificate 08/4572 and ETA-05/0056 was assessed to evaluate the following characteristics:

- tensile strength/elongation
- watertightness
- resistance to delamination
- resistance to fatigue
- resistance to static loading
- resistance to dynamic impact.

16.2 Existing installations which were at least five years old were visited to provide additional evidence of the system's in-service durability.

16.3 Existing data on roof fire exposure tests to BS 476-3 : 1958 were assessed.

16.4 The manufacturing processes were evaluated, including methods for quality control. Details were also obtained of the quality and composition of the materials used.

Bibliography

BS 476-3 : 1958 *Fire tests on building materials and structures — External fire exposure roof test*

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

BS 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*

BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*

BS EN 29073-1 : 1992 *Methods of test for nonwovens — Determination of mass per unit area*

BS EN 29073-3 : 1992 *Methods of test for nonwovens — Determination of tensile strength and elongation*

EOTA Technical Report TR 006 (May 2004), *Determination of the resistance to dynamic indentation [Liquid Applied Roof Waterproofing Kits (LARVK)]*

EOTA Technical Report TR 007 (May 2004), *Determination of the resistance to static indentation [Liquid Applied Roof Waterproofing Kits (LARVK)]*

EOTA Technical Report TR 008 (May 2004), *Determination of the resistance to fatigue movement [Liquid Applied Roof Waterproofing Kits (LARVK)]*

17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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
- individual 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.

17.6 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.