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Agrément Certificate
21/5955
Product Sheet 1

CPG UK LTD AIR AND WEATHERTIGHT PRODUCTS

ILLBRUCK ME220 EPDM MEMBRANE SYSTEMS

This Agrément Certificate Product Sheet(1) relates to illbruck ME220 EPDM Membrane Systems, for use as airtight and weathertight seals around glazing units.

(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 systems will resist the passage of wind-driven rain, snow, run-off water and dust into the interior of the building (see section 6).
Properties in relation to fire — illbruck ME220 EPDM Membrane is Classified as Class E in accordance with EN 13501-1 : 2010. The use of illbruck EPDM membranes is restricted in some cases by the national Building Regulations (see section 7).
Air barrier continuity — the systems will contribute to maintaining air barrier continuity at lintels, jambs and sills (see section 8).
Resistance to damage — the systems are suitably robust so as not to be damaged during installation (see section 10).
Durability — the systems will continue to function for the lifetime of the frame around which they are installed (see section 12).

The BBA has awarded this Certificate to the company named above for the systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

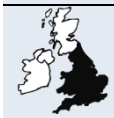
On behalf of the British Board of Agrément

Date of First issue: 4 November 2021

Hardy Giesler
Chief Executive Officer

Regulations

In the opinion of the BBA, illbruck Membrane Systems, 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:	**B3(4)**	**Internal fire spread (structure)**
Comment:		illbruck ME220 EPDM Membrane can contribute to satisfying this Requirement. See sections 7.1 and 7.3 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The use of illbruck ME220 EPDM Membranes are restricted by this Requirement. See sections 7.1 and 7.2 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The systems will contribute to satisfying this Requirement. See section 6 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The systems can contribute to minimising heat loss at lintels, jambs and sills. See section 8.1 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The systems are acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy consumption rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings (applicable to Wales only)**
Comment:		The systems can contribute to satisfying these Regulations. See section 8.1 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Durability, workmanship and fitness of materials**
Comment:		The use of the systems can contribute to satisfying the requirements of this Regulation. See section 12 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.4	Cavities
Comment:		The systems can contribute to satisfying this Standard, with reference to clause 2.4.2[(1)(2)]. See sections 7.1 and 7.3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The systems will resist the effects of driving rain and enable an installation to satisfy the requirements of this Standard, with reference to clause 3.10.1[(1)(2)]. See section 6 of this Certificate.
Standard:	6.1b	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The systems can contribute to minimising heat loss at lintels, jambs and sills. See section 8.1 of this Certificate.

Standard:	7.1(a)	Statement of sustainability
Comment:		The systems 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 systems 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) (iii)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The systems are acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**28**	**Resistance to moisture and weather**
Comment:		The systems have adequate resistance to the ingress of rain and wind-driven spray and so can contribute towards the wall satisfying this Regulation. See section 6 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread - structure**
Comment:		illbruck ME220 EPDM Membrane can contribute to satisfying this Regulation. See sections 7.1 and 7.3 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Comment:		The systems can contribute to minimising heat loss at lintels, jambs and sills. See section 8.1 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: 1 *Description* (1.3) and 3 *Delivery and site handling* (3.2 and 3.4) of this Certificate.

Additional Information

NHBC Standards 2021

In the opinion of the BBA, illbruck ME220 EPDM Membrane Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.1 *External masonry walls*, 6.2 *External timber framed walls*, 6.7 *Doors, windows, and glazing*, 6.9 *Curtain walling and cladding* and 6.10 *Light steel frame walls and floors*.

Technical Specification

1 Description

1.1 illbruck ME220 EPDM Membrane Systems consist of:

- illbruck ME220 EPDM Membrane – unreinforced EPDM membrane for use as a seal in fenestration for perimeter sealing and/or linear joint sealing

- OT015 High Tack Membrane Adhesive – a paste adhesive which is the primary bonding agent for illbruck ME220 EPDM membrane
- CT113 EPDM Membrane Adhesive – a viscous liquid adhesive for use in adhering the illbruck ME220 EPDM Membrane to substrates
- ME241 EPDM Corners – 3D corners moulded from EPDM.

1.2 The following are for use with the system but are outside the scope of the Certificate:

- Primers - CT113 diluted with AW421 Solvent (when bonding with CT113 or OT015) Further advice on use and application should be sought from the Certificate holder.
- Illbruck ME220VV EPDM Membrane - an EPDM based membrane with a fully self-adhesive backing for use as a seal in fenestration for perimeter sealing and/or linear joint sealing.

1.3 illbruck membranes dimensions are given in Table 1.

Table 1 illbruck ME220 EPDM Membrane grades

illbruck membrane grade	Thickness of membrane (mm)	Length (m)	Width (mm)	Mass per unit area ($kg \cdot m^{-2}$)
illbruck ME220 EPDM Membrane	0.75	25	60 - 1500	860

2 Manufacture

2.1 illbruck ME220 EPDM is manufactured by blending polymers, processing oils and other additives. The sheets are produced by calendering or extruding and vulcanising.

2.2 The adhesives are manufactured by a batch mixing process.

2.3 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 membranes are delivered to site in rolls which are either palletised or a container and shrink wrapped. Each box bears the product name, roll number, date of manufacture, roll width, roll thickness, roll length and the BBA logo.

3.2 The non-membrane products are packaged as shown in Table 2. The packaging bears the product code, product description, product name, production date, batch number and the BBA logo incorporating the number of this Certificate.

Table 2 Packaging for non-membrane products

Product	Packaging	Unit type	Unit size	Number of units per pack
OT015 High Tack Membrane Adhesive	box	wrapped	600 ml	12
CT113 EPDM Membrane Adhesive	-	pail	4.7 kg	-
ME241 EPDM Corners	box	-	-	As required

3.3 All of the systems components should be stored undercover on a dry, even surface as per the product datasheets.

3.4 The Certificate holder has taken the responsibility of classifying and labelling the systems 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 illbruck ME220 EPDM Membrane Systems.

Design Considerations

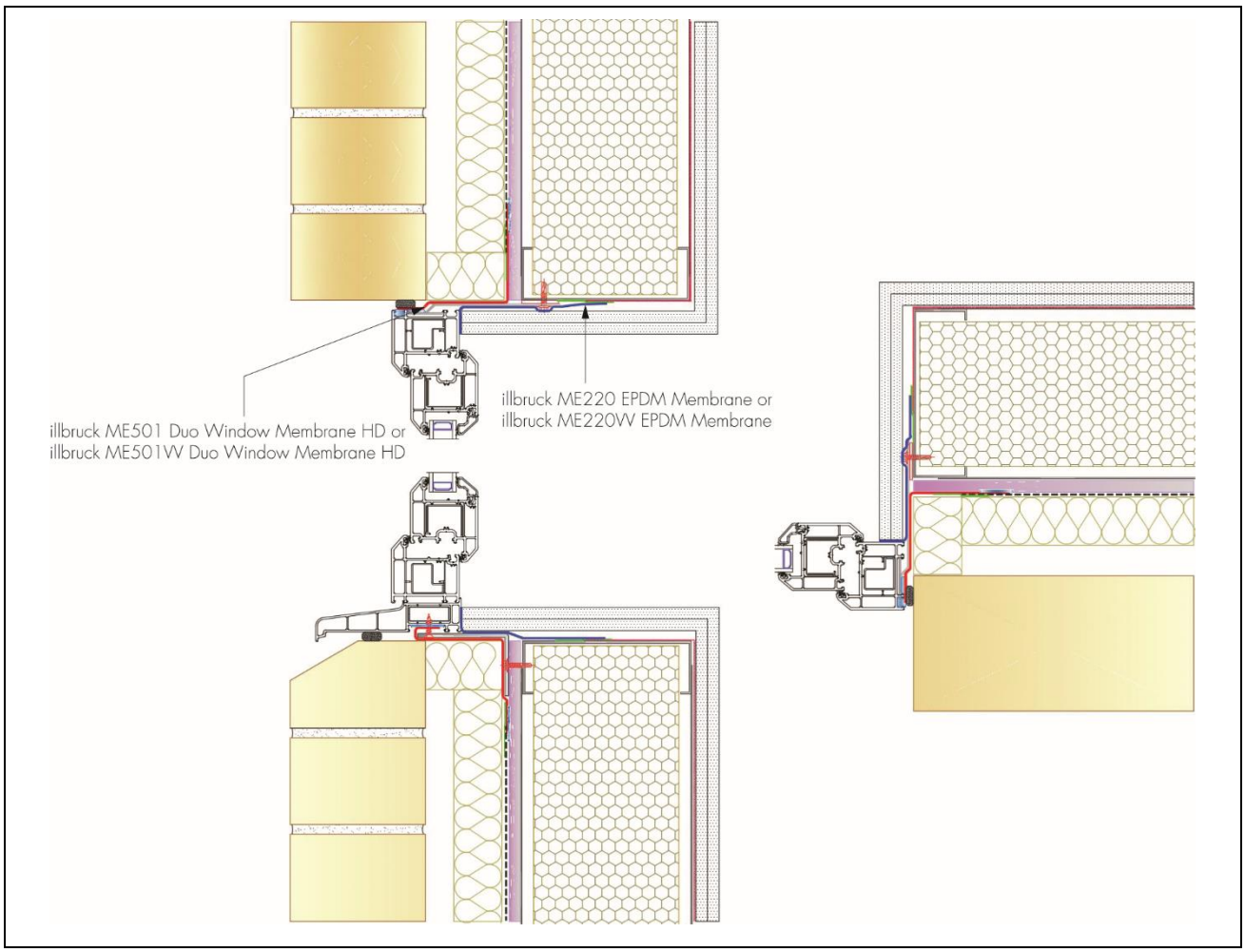
4 Use

4.1 illbruck ME220 EPDM Membrane Systems are satisfactory for use in providing a weathertight and airtight seal around glazing units.

4.2 The systems are suitable for use on the following substrates:

- PVC-U
- wood
- aluminium
- galvanized steel
- concrete
- masonry
- cementitious renders
- cement particle board
- other sheathing boards.

Figure 1 Typical installation detail



5 Practicability of installation

The systems are designed to be installed by a trained competent general builder. illbruck best practice guidance is available from the Certificate holder.

6 Weathertightness

6.1 The systems will resist the passage of water, wind-driven rain and dust into the interior of a building.

6.2 The systems were tested in accordance with BS EN 1027 : 2000, no detectable water or moisture penetration occurred up to a pressure of 600 Pa. The systems can therefore satisfy the Class 9A requirements of BS EN 12208 : 2000.

7 Properties in relation to fire

7.1 When classified in accordance with DIN EN 13501-1 : 2010, the membranes have the following reaction to fire classes:

- illbruck ME220 EPDM Membrane – Class E(1)

(1) Test certificate number P-NDS04-531 by MPA (Materials Testing Institute Hannover Construction Engineering to DIN EN 13501-1 : 2010), available from Certificate the holder.

7.2 In England and Wales, the systems should not be used on buildings that have a storey at least 18 m above ground level and which contain: one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.

7.3 Cavity barriers should be used to satisfy the requirements of the documents supporting the national Building Regulations.

8 Air barrier continuity

8.1 The membranes are air barriers and, when installed correctly, can contribute to elements and junctions, minimising heat loss by unplanned air infiltration. The membranes have been tested according to BS EN 12114 : 2000 and achieved an air permeability of <0.1 $m^3 \cdot (m \cdot h \cdot daPa^{2/3})^{-1}$. In the opinion of the BBA, the air infiltration classification according to BS EN 12207 : 2016 for suitable windows used in combination with the systems components will be Class 4. Guidance documents in this respect can be found in the documents supporting the national Building Regulations.

8.2 When used and installed in accordance with this Certificate and the Certificate holder's instructions, the illbruck ME220 EPDM Membranes can contribute towards an exterior building envelope satisfying a minimum air leakage of less than 0.1 $m^3 \cdot hr^{-1} \cdot m^{-2}$ at 50 Pa, and also less than 0.6 air change per hour at 50 Pa for passive houses.

9 Condensation

The systems will not adversely affect the risk of surface condensation, provided they are used in conjunction with a suitable vapour control layer. The risk of interstitial condensation will depend on the construction and should be assessed for each project. It is recommended to use illbruck ME220 EPDM Membrane Systems internally in conjunction with an 'intelligent' or breathable membrane externally - see BBA Certificate 12/4891.

10 Resistance to damage

As the various components of the systems are suitably robust, they should not be damaged during installation if reasonable care is taken.

11 Maintenance

As the components of the systems are confined within the final construction and have suitable durability (see section 12), maintenance is not required. However, any damage occurring before enclosure must be repaired (see section 15).

12 Durability

The systems will continue to function for the lifetime of the frame around which they are installed.

Installation

13 General

13.1 Installation of illbruck Membrane Systems must be carried out by trained installers working in accordance with the relevant clauses of the Certificate holder's instructions and this Certificate.

13.2 When using bonded components, substrates should be clean, dry and free of loose material prior to the installation of the component, to ensure an effective adhesive bond.

13.3 Application of the adhesives is carried out between temperatures of 5 to 35°C.

13.4 On porous substrates, such as brick or concrete, the minimum width of membrane surrounding the frame is 100 mm when using C113 Adhesive and 50mm when using OT015 Adhesive. For non-porous substrates the recommended width is approximately 20 to 30 mm - consult the certificate holder for further guidance. The head detail for all substrates is a minimum 100 mm overlap onto the construction substrate.

13.5 Irrespective of installation method, the membrane must be tension free once installed.

13.6 The Certificate holder's recommendations on compatibility of the adhesives with other building materials must be followed and in cases of doubt the Certificate holder should be consulted (see also section 4.2).

14 Procedure

14.1 Bonding of illbruck ME220 EPDM Membrane is achieved by using OT015 High Tack Membrane Adhesive or CT113 EPDM Membrane Adhesive. When bonding with OT015 or CT113 Adhesives, depending on the condition of the substrate, priming may be required, using CT113 diluted with AW421 Solvent in ratio of 1:3. The primers are outside the scope of the Certificate.

14.2 OT015 High Tack Membrane Adhesive is applied as a uniform 10 mm diameter bead to form a continuous ribbon. The adhesive is applied directly to the substrate and placed 15 mm inside of where the leading or trailing edge of the membrane will begin or terminate. The leading edge (attached to the window, door, or another element) should be applied first. The membrane is then located by hand directly onto the adhesive ribbon and pressed into place taking care to ensure the edge of the membrane overlaps the ribbon by the stated 15mm. Once the membrane is located as desired, the adhesive ribbon is consolidated by applying firm pressure with a seam roller, (illbruck AB004 Seam Roller is used).

14.3 The pressure is applied by rolling over the top of the membrane with the adhesive underneath. Consolidation is complete when the adhesive is seen to be extruding out from under the edge of the membrane. This should be uniform and between 2-5 mm wide along the whole run of the membrane. The extrudate is left intact, not scraped away, or flattened. This serves as a visual quality check, indicating that the adhesive has been applied in the correct location to the correct proportions and has been sufficiently consolidated. The original 10 mm diameter bead will have become flattened out to around 30 mm to 35 mm x 2 mm.

14.4 CT113 EPDM Membrane Adhesive is applied by brush or roller to the frame and surrounding area to which the membrane is to be bonded, including both the substrate and the membrane bonded face. The adhesive is left until touch dry, in normal conditions approximately 10 to 15 minutes, before the membrane is pressed firmly and rolled with a silicone or similar suitable roller to ensure the maximum bond.

14.5 When using the wider membranes, it may be necessary to temporarily fix the membrane until the adhesive is sufficiently cured to maintain the membrane in position.

14.6 Where required, ME241 EPDM Corners are installed using OT015 High Tack Membrane Adhesive.

14.7 The edges of the membranes and corner units are sealed using a bead of OT015 High Tack Membrane Adhesive. The adhesive is spread to ensure that the membranes and corner units have no open edges.

14.8 Full application guidelines are available from the Certificate holder.

15 Repair

Any damage to the membranes must be repaired as soon as possible, and before the installation of the outer facade. The membranes may be repaired by applying a patch of membrane over the damaged area. In case of doubt, advice on a suitable repair method should be sought from the Certificate holder.

Technical Investigations

16 Tests

Tests were carried out and the results assessed to determine:

- resistance to peel from powder coated aluminium, PVC-U and concrete
- resistance to air permeability
- weathertightness
- heat ageing for resistance to peel and tear resistance
- dimensional stability
- Water vapour transmission
- Low temperature foldability.

17 Investigations

17.1 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.

17.2 The method of installation and the installation instructions have been assessed.

17.3 Data on the membranes were examined for the following properties:

- resistance to air permeability
- weathertightness.

17.4 Reaction to fire data were examined.

Bibliography

BS EN 1027 : 2000 *Windows and doors — Watertightness — Test method*

BS EN 12207 : 2016 *Windows and doors — Air permeability — Classification*

BS EN 12208 : 2000 *Windows and doors — Watertightness — Classification*

BS EN 12114 : 2000 *Thermal performance of buildings — Air permeability of building components and building elements — Laboratory test methods*

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

18 Conditions

18.1 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.

18.2 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.

18.3 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.

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

18.5 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.

18.6 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.

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