Delta Membrane Systems Limited
Delta House
Merlin Way
North Weald, Epping
Essex CM16 6HR

Tel: 01992 523523
e-mail: info@deltamembranes.com
website: www.deltamembranes.com

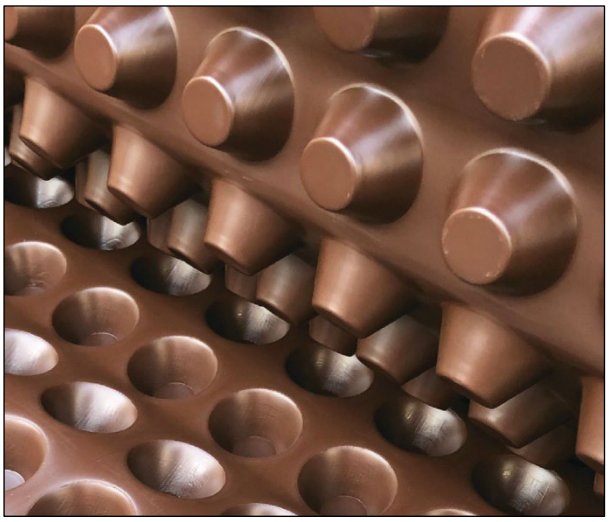
Agrément Certificate
00/3742
Product Sheet 2 Issue 6

DELTA MEMBRANE SYSTEMS

DELTA-MS20

This Agrément Certificate Product Sheet(1) relates to Delta-MS20, a moulded high-density polyethylene (HDPE) membrane for waterproofing and damp-proofing walls, floors and vaulted ceilings in new construction or existing buildings. It is used above or below ground, over a contaminated or damp background, to support a dry lining and flooring.

(1) Hereinafter referred to as 'Certificate'.



The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

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 Sixth issue: 9 September 2025
Originally certified on 24 November 2000

Hardy Giesler
Chief Executive Officer

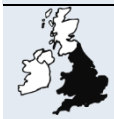
British Board of Agrément
1st Floor, Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG
tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that Delta-MS20, 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 Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**B3(4)**	**Internal fire spread – structure**
Comment:		The system can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The system is restricted by this Requirement. See section 2 of this Certificate.
Requirement:	**C2(a)(b)**	**Resistance to moisture**
Comment:		The system adequately resists the passage of moisture. See section 3 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Fitness and durability of materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards - construction**
Standard:	2.4	Cavities
Comment:		The system can contribute to satisfying this Standard, with reference to clause 2.4.2[(1)(2)]. See section 2 of this Certificate.
Standard:	3.3	Flooding and ground water
Comment:		The system can contribute to satisfying this Standard, with reference to clause 3.3.1[(1)(2)]. See section 3 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The system can contribute to satisfying this Standard, with reference to clauses 3.4.1[(1)(2)], 3.4.2[(1)(2)], 3.4.5[(1)(2)], 3.4.6[(1)(2)] and 3.4.7[(1)(2)] . See section 3 of this Certificate.
Standard:	3.6(a)	Surface water drainage
Comment:		The system can contribute to satisfying this Standard, with reference to clause 3.6.3[(1)(2)]. See section 3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system can contribute to satisfying this Standard, with reference to clause 3.10.1[(1)(2)]. See section 3 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 - conversion**
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(1)(a)(i) (iii)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**28(a)(b)**	**Resistance to moisture and weather**
Comment:		The system can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread – structure**
Comment:		The system can contribute to satisfying this Regulation. See section 2 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The system is restricted by this Regulation. See section 3 of this Certificate.

Additional Information

NHBC Standards 2025

In the opinion of the BBA, Delta-MS20, 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 5.1 *Substructure and ground bearing floors*, 5.2 *Suspended ground floors* and 5.4 *Waterproofing of basements and other below ground structures.*

Where Grade 3 waterproofing protection is required, and the below-ground wall retains more than 600 mm (measured from the top of the retained ground to the lowest finished floor level), the system must be used in combination with either a Type A or B waterproofing protection.

In the opinion of the BBA, the use of the system on existing structures, when installed and used in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards for Conversions and Renovations*, taking account of other relevant guidance within the chapter and the suitability of the substrate to receive the system.

The opinion of the BBA does not amount to any endorsement or approval by NHBC and does not in any way guarantee that NHBC will approve such product / system as compliant with the NHBC Technical Requirements and Standards.

Fulfilment of Requirements

The BBA has judged Delta-MS20 to be satisfactory for use as described in this Certificate. The system has been assessed as a moulded HDPE membrane for waterproofing and damp-proofing walls, floors and vaulted ceilings in new construction or existing buildings. It is used above or below ground, over a contaminated or damp background, to support a dry lining and flooring.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. Delta-MS20 is a brown, HDPE sheet with moulded studs.

The system has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Thickness (mm)	1
Stud height (mm)	20
Weight per unit area ($kg \cdot m^{-2}$)	1
Roll length (m)	20
Roll width (m)	2
Weight of roll (kg)	40
Air gap volume ($l \cdot m^{-2}$)	14

Ancillary Items

The following ancillary items are essential to use with the system and have been assessed with the system:

- Flexidri-Plus Fixing Plug — a plastic plug supplied with preformed rubber seal and plastic expansion pin. After fixing, the pin is inserted into the hollow shaft of the plug and hammered home. This slightly expands the shaft and provides a more secure fixing. The pin will accept a 5 mm diameter screw to enable a secondary fixing
- Delta Qwik-Seal Plug — a plastic plug supplied with preformed rubber seal for use in masonry walls and concrete (see Figure 1)
- Delta Plug — a glass-filled nylon plug for use in masonry walls and concrete (see Figure 2)
- Delta Tape — a black butyl tape for sealing joints in the membrane
- Delta Rope — a black butyl beading for sealing the membrane around pipes and openings, joining floor and wall membranes, and to seal around the head of Delta Plugs prior to fixing the membrane
- Delta Mastic — an acrylic sealant for sealing the membrane around pipes and openings
- Delta Corner Strip — a self-adhesive membrane strip for sealing junctions between walls and floors, and for sealing joints at corners
- Delta Fleece-Tape — a 100 mm wide butyl tape with fleece backing for sealing joints in the membrane. The fleece backing will form a bond with the plaster when used with meshed membranes
- Delta Primer — a solvent-based primer for sealing porous substrates prior to application of the Delta range of butyl-based sealing products.

Applications

Delta-MS20 is satisfactory for use to waterproof and damp-proof walls, floors and vaulted ceilings, above and below ground, in new construction or in existing buildings over a contaminated or damp background. It can support a dry lining, screed or flooring in the following situations:

- on damp walls and floors in underground situations subject to high groundwater levels and perennial moisture
- on vaulted ceilings of archways or cellars subject to water ingress
- in conjunction with a remedial damp-proof course (DPC) system where the walls and floors have a high salt content, and/or where it is necessary to complete the installation immediately without allowing a period for initial drying
- over walls and floors which have a friable or painted surface, are contaminated (eg with oil or mould) or have a high salt content
- as a waterproofing membrane in areas subject to vibration
- an underfloor damp-proof membrane
- a dry lining for walls, ventilated into the room via aeration slots at the top and bottom of the wall or via passive air vents, where access through an external wall is available
- a sealed system covering wall, floor and ceiling, with provision made for disposing of water build-up behind the membrane via a sump and pump.

Delta-MS20 has not been assessed for use in chemically contaminated areas, such as brownfield sites.

The system is satisfactory for use in Type C (drained protection) constructions in accordance with BS 8102 : 2022.

Product assessment – key factors

The system was assessed for the following key factors, and the outcomes of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Data were assessed for the following characteristics.

1.1 Mechanical properties

1.1.1 The system was tested for mechanical properties and the results are given in Table 2.

Table 2 Mechanical properties

Product assessed	Assessment method	Requirement	Result
A representative related product	Short term compression to SPF Verksnorm 2200 : 1995	Value achieved	0.07 $N \cdot mm^{-2}$
	Resistance to nail tear to EN 12310-1 : 2000	Value achieved	
	Longitudinal direction		257 N
	Transverse direction		273 N
	Short-term compression to a BBA method	Value achieved	12.88 N

1.1.2 On the basis of data assessed, the system will not be damaged by normal foot traffic during installation or while laying concrete or screeding to BS 8204-1 : 2003.

1.1.3 The system can support the long-term imposed loadings defined in the UK National Annex to BS EN 1991-1-1 : 2002, Table NA.2, Categories A to D, without undue deformation.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The Certificate holder has not declared a reaction to fire classification for the system in accordance with BS EN 13501-1 : 2018.

2.1.2 On the basis of data assessed, the system will be restricted in use by the documents supporting the national Building Regulations in some cases.

2.1.3 In England, the system must not be used above ground on residential buildings with a storey 11 m or more in height or on other 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, student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.

2.1.4 In Wales and Northern Ireland, the system must not be used above ground 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, and additionally in Northern Ireland, nursing homes and places of lawful detention.

2.1.5 In Scotland, the use of the system is unrestricted with respect to building height and proximity to a relevant boundary. However, restrictions on the overall construction may apply, depending on the reaction to fire classification achieved by the built-up system, which must be established on a case-by-case basis.

2.1.6 Where the system forms the face of a cavity, the permissible areas of use and the spacing of cavity barriers are restricted by the documents supporting the national Building Regulations.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Properties in relation to water

3.1.1 Results of properties in relation to water tests are given in Table 3.

Table 3 Properties in relation to water

Product assessed	Assessment method	Requirement	Result
A representative related product	Puncture resistance to PR EN 12730 : 2001	No damage at 20 kg loading	Pass
	Water absorption to a BBA method 28 days	Value achieved	0.02 %

3.1.2 Watertightness was assessed on the basis of existing test data for representative related systems.

3.1.3 The system is water-resistant and has a high resistance to water vapour transmission. However, as installed, it is not resistant to hydrostatic pressure and, consequently, the measures described in the installation section of this Certificate must be followed to ensure that the system acts as a drainage layer with no excessive build-up of water behind it.

3.1.4 The system provides an effective barrier to the transmission of salts or other contaminants from the substrate.

3.2 Condensation

In common with most waterproofing membranes, the system has a very high resistance to vapour diffusion, and when placed on the cold side of a construction may increase the risk of interstitial condensation. A calculation must be carried out to BS 5250 : 2021 and designers must consider appropriate techniques for managing the safe egress of moisture vapour with care (such as control of the internal room environment or use of a vapour control layer on the warm side of the insulation).

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

The system comprises HDPE, which can be recycled.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the system were assessed.

8.2 Specific test data were assessed as given in Table 4.

Table 4 Durability

Property tested	Assessment method	Requirement	Result
A representative related product	Resistance to long-term loading to a BBA method	Value achieved	0.97 mm 12.3 % Compression

8.3 Service life

Under normal service conditions, the system will have a life at least as long as the building in which it is incorporated, provided that it is designed and installed in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed by the BBA against the requirements of BS 8000-4 : 1989, CP 102 : 1973 Section 3, this Certificate and the Certificate holder's instructions, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Where the installation area is below ground, or where conditions are damp, a full survey by a specialist waterproofing surveyor must be carried out, to diagnose the cause and to establish if treatment is required.

9.1.3 If rising damp is found, a remedial treatment must be conducted in accordance with the relevant BBA Certificate, BS 6576 : 2005 and the Property Care Association *Code of Practice for Installation of Remedial Damp-proof Courses in Masonry Walls*.

9.1.4 Appropriate remedial measures must be taken to rectify major causes of damp conditions or water ingress, and to repair structural defects.

9.1.5 When used in new constructions, the concrete base must be laid in accordance with BS 8204-1 : 2003.

9.1.6 If a board covering is to be laid directly on the membrane, the concrete base must have a surface regularity with a maximum permissible departure of 5 mm from the underside of a 2 m straight edge resting in contact with the floor, in accordance with BS 8204-1 : 2003.

9.1.7 All joints and fixings must be sealed with Delta sealing products; drainage channels and gullies, or sumps and pumps, must be installed as necessary to disperse excess or standing water.

9.1.8 As with any room, there is a need to control the generation and dispersal of moisture in the internal environment and to select appropriate and robust designs to minimise the risk of both surface and interstitial condensation, especially where insulation is used over the membrane.

Figure 1 Delta Qwik-Seal Plug fixing detail

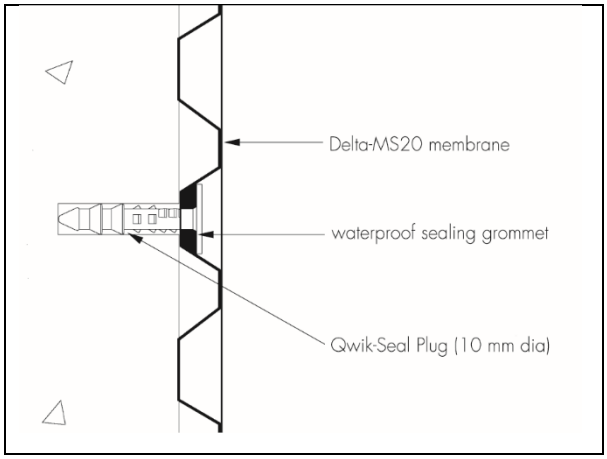
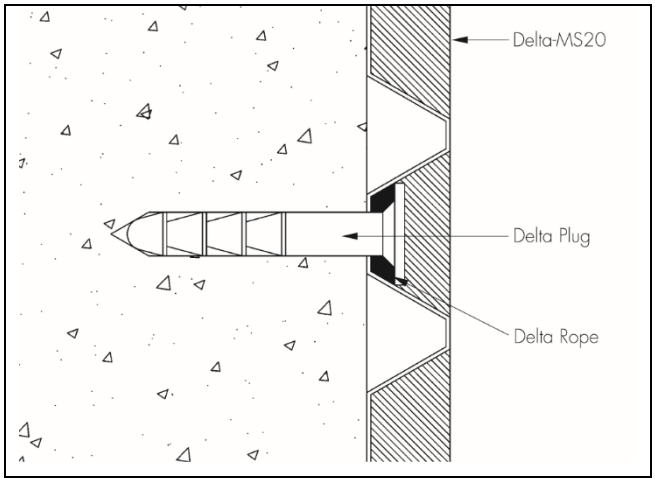


Figure 2 Delta Plug fixing detail



9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance are provided in Annex A of this Certificate.

General

9.2.3 Any unsound plaster, render or screed must be removed to expose the substrate which is then cleaned with a stiff brush to remove loose material, laitance, salt residue, mould or adhesive. If mould is present, the substrate must be treated with an HSE-approved fungicidal wash. The Certificate holder can advise on suitable materials and procedures to be used but such advice and products are outside the scope of this Certificate.

9.2.4 The membrane must be used by overlapping the previously installed membrane width by a minimum of three studs, which must interlock, and positioning Delta Tape between the last two rows of studs. Alternatively, joints can be over-sealed using Delta Corner Strip.

9.2.5 Fixings are made through the membrane into 10 mm holes drilled centrally through the studs. Delta Qwik-Seal Plugs are inserted into the holes and hammered flush with the membrane with a club hammer. Alternatively, Flexidri-Plus Fixing Plugs can be used and hammered flush with the membrane. The fixing pin is then inserted into the shaft and hammered home. The seal must be compressed to function as a barrier against water ingress; this must be visually checked as each plug is fixed. See Figures 1 and 2.

9.2.6 Alternatively, fixings are made through 11 mm holes drilled centrally through the studs. Delta Plugs (to which Delta Rope has been applied around the shaft, next to the head) are inserted into the holes and hammered flush with the membrane. Delta Rope forms a sealing gasket between the plug and the membrane.

9.2.7 Where internal or external corners occur, they must be oversealed using Delta Corner Strip or Delta Fleece-Tape, in accordance with the Certificate holder's installation instructions.

Walls

9.2.8 Installation of the membrane is usually commenced at the top of the construction. The membrane may require initial fixing on a ceiling or along the upper edge of a wall, prior to final fixings along batten runs. For joints where the flanged edge is not used, the two sheets must be overlapped by a minimum of 100 mm. For horizontal joints, the lower sheet is always positioned in front of the upper sheet.

9.2.9 Spacing between fixings will depend on the application and the nature of the substrate, but must be kept to a maximum of one metre.

9.2.10 The installation is conducted over windows, and the membrane is cut away to expose them. The surfaces are primed with Delta Primer and the gaps oversealed with Delta Corner Strip.

9.2.11 For doors and some obstructions, the technique covered in section 9.2.8 cannot be used. Instead, the membrane must be installed up to the perimeter and the gap sealed in the same manner.

Ceilings

9.2.12 Ceilings to be covered must always have a fall, as per vaulted cellar constructions, to ensure water does not build up against the membrane or a joint. Membrane sheets must have an overlap of 200 mm.

9.1.13 Delta Qwik-Seal Plugs, or Delta Plugs sealed with Delta Rope must be used to fix the membrane to vaulted ceilings. Any sagging of the membrane between fixing points on ceilings must not be great enough for ponding to occur. The Certificate holder can advise on specific applications, but such advice is outside the scope of this Certificate.
The membrane is fitted as necessary to the curve of the ceiling and the joints sealed with Delta-Tape, Delta Rope or Delta Corner Strip.

9.1.14 At the end walls of vaulted constructions, the membrane must butt up tightly to the end wall. The wall membrane is cut to fit the curve of the ceiling, butting up to the ceiling membrane. This joint is then sealed with Delta Corner Strip.

Floors

9.2.15 Floors must have a drainage outlet point. There must be a fall towards the outlet point, or a drainage channel made around the perimeter of the floor, to ensure that water can flow to the outlet.

9.2.16 Uneven floor substrates must be dubbed out with a cement-sand (1:4) or cement-lime-sand (1:1:6) render or screed, to the tolerance described in section 9.1.6 and allowed to dry thoroughly before Delta-MS20 is installed above.

9.2.17 The membrane is rolled out 'studs down' over the floor, and consecutive sheet widths must be laid so the flanged edge overlaps the first sheet by three studs and interlocks. Joints must be sealed using Delta Tape. Stud-to-stud joints can be over-sealed using Delta Corner Strip or Delta Fleece-Tape in accordance with section 9.2.4.

9.2.18 The membrane is cut within 5 mm of any pipes and services in the floor, and the gap filled with Delta Rope. If necessary, a patch of the membrane is overlaid and sealed to the service with Delta Rope, and its perimeter sealed with Delta Tape or Delta Corner Strip.

9.2.19 Fixings must not be applied through the floor membrane.

9.2.20 Where appropriate, at wall/floor junctions and corners of the installation, the membrane may be cut flush and the gap between the wall and floor membranes sealed with Delta Corner Strip. Alternatively, the floor membrane may be turned up by 100 mm at the wall.

9.3 Workmanship

Practicability of installation was assessed by the BBA and on the basis of Certificate holder's information. To achieve the performance described in this Certificate, installation of the system must be carried out by competent specialist contractors experienced with damp-proofing work.

9.4 Maintenance and repair

9.4.1 As the system is confined within a wall or floor space and has suitable durability, maintenance is not required.

9.4.2 Regular maintenance of all gullies, sumps and pumps must be carried out to ensure that a build-up of water does not occur behind the membrane. The advice of the Certificate holder must be sought but such advice is outside the scope of this Certificate.

10 Manufacture

10.1 The production processes for the system have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the system is delivered to site in packaging bearing the system and Certificate holder's names and the BBA logo incorporating the number of this Certificate.

11.2 The packaging details of the ancillary items are shown in Table 5.

Table 5 Packaging details

Item	Dimensions/volume	Packaging/quantity
Delta Qwik-Seal Plug	10 mm diameter, 58 mm long	Boxes of 100
Delta Plug	11 mm diameter, 70 mm long	Boxes of 100 or 1000
Flexidri-Plus Fixing Plug	10 mm diameter, 90 mm long	Boxes of 100
Delta Tape	22.5 m long, 28 mm wide, 2 mm thick	1 roll per box, 10 rolls per outer box
Delta Rope	4.75 m long, 10 mm diameter	1 roll per box, 10 rolls per outer box
Delta Mastic	0.4 litre cartridges	25 cartridges per box
Delta Corner Strip	20 m long, 150 mm wide	Single rolls, 2 rolls per box
Delta Fleece-Tape	20 m long, 100 mm wide, 0.9 mm thick	1 roll per box
Delta Primer	10 litres	Tins

11.3 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.3.1 Rolls must be stored on end, under cover and protected from sharp objects, sunlight and high temperatures.

ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the system but has not formed part of the material assessed for the 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.

CLP Regulation

The Certificate holder has taken the responsibility of classifying and labelling the system under the *GB CLG Regulation* and *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).

CE marking

The Certificate holder has taken the responsibility of CE marking the membrane in accordance with harmonised European Standard EN 13967 : 2012.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by TÜV (Certificate 01 100 041012/3)

Additional information on installation

A.1 Delta-MS20 may be used in combination with any of the appropriate Delta membranes that are the subjects of other Product Sheets of this Certificate.

A.2 Power cables, points and light switches should preferably be remounted in front of the membrane.

A.3 In below-ground installations, the practice of leaving the top of the wall membrane unsealed where there is no requirement for a ceiling membrane to be installed may need to be reconsidered in cases where ingress of gases, odours or vermin is a concern (such as in proximity to food preparation areas). The advice of the Certificate holder should be sought in these situations, but such advice is outside the scope of this Certificate.

A.4 In above-ground installations, the build-up of water vapour behind the membrane is controlled by ventilating into the room via ventilation gaps provided at the ceiling and skirting board levels or via passive air vents, where access through an external wall is available.

A.5 On walls and ceilings, preservative-treated timber battens of minimum dimensions 25 by 38 mm are fixed into the Delta Plug's fixing hole using No 12 screws, or Delta Qwik-Seal Plug's fixing hole using No 10 screws, with a maximum screwing-in depth of 30 mm. The membrane can also be dry-lined, using free-standing framework, blockwork or similar. Where necessary, these should be tied back by fixing into the Delta Plug sealed with Delta Rope, or Delta Qwik-Seal Plug.

A.6 Wall-mounted fittings (apart from lightweight items such as framed pictures) should be fixed where possible into battens, whose position and number of support fixings into the loadbearing structure are predetermined.

A.7 After the system has been installed and the walls dry-lined, permanent decorations (such as vinyl paper or oil paint) may be applied. Temporary permeable decorations (necessary with traditional, cement-based waterproofers) are not necessary with the system.

Dry lining of walls

A.8 Gypsum plasterboard to BS EN 520 : 2004, or similar dry lining boards covered by a current BBA Certificate, are fixed to the battens with galvanized screws or nails, positioned a minimum of 12 mm from the edge of the board. Care must be taken to ensure that penetration of the plasterboard by screws or nails is less than the depth of the batten, to avoid puncturing the membrane.

Floor membrane coverings

A.9 If required, extruded, closed-cell polystyrene insulation boards (minimum density 30 $kg \cdot m^{-3}$) are laid over the membrane.

A.10 Under normal operating conditions, Delta-MS20 is not affected by underfloor heating.

A.11 Suitable tongue-and-groove flooring board should be selected in accordance with BS EN 12871 : 2013, and loose-laid over the membrane to within 10 mm of the walls. The panels are staggered and the joints sealed with a thermoplastic wood adhesive to BS EN 204 : 2016.

A.12 Alternatively, the membrane is covered by concrete or screed of minimum thickness 50 mm (or of minimum thickness 65 mm if laid over insulation boards) in accordance with BS 8204-1 : 2003. Care should be taken to ensure that the membrane is not displaced when placing the concrete or screed. The concrete or screed should be reinforced to inhibit shrinkage cracks.

A.13 Proprietary screeds, which can generally be laid at thicknesses less than 50 mm, may also be considered but use of these systems has not been assessed by the BBA, and is outside the scope of this Certificate.

Bibliography

BS 5250 : 2021 *Management of moisture in buildings — Code of practice*

BS 6576 : 2005 + A1 : 2012 *Code of practice for diagnosis of rising damp in walls of buildings and installation of chemical damp-proof courses*

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

BS 8102 : 2022 *Code of practice for protection of below ground structures against water from the ground*

BS 8204-1 : 2003 + A1 : 2009 *Screeds, bases and in-situ floorings — Concrete bases and cement sand levelling screeds to receive floorings — Code of practice*

BS EN 204 : 2016 *Classification of thermoplastic wood adhesives for non-structural applications*

BS EN 520 : 2004 + A1 : 2009 *Gypsum plasterboards — Definitions, requirements and test methods*

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 12871 : 2013 *Wood-based panels — Determination of performance characteristics for load bearing panels for use in floors, roofs and walls*

BS EN 13501-1 : 2018 *Fire Classification of construction products and building elements*

BS EN ISO 9001 : 2015 *Quality management systems – Requirements*

CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*

EN 13967 : 2012 + A1 : 2017 *Flexible sheets for waterproofing — Plastic and rubber damp proof shoes including plastic and rubber basement tanking sheet — Definitions*

EN 12310-1 : 2000 *Flexible Sheets for Waterproofing — Determination of Resistance to Tearing (Nail Shank)*

SPF Verksnorm 2200 :1995 -*Material property report — type testing by National institute of Technology, Norway*

PR EN 12730 : 2001 *Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of resistance to static loading*

Conditions of Certificate

Conditions

1 This Certificate:

- relates only to the product 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
- 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
- and any matter arising out of or in connection with it or its subject matter (including non-contractual disputes or claims) is governed by and construed in accordance with the law of England and Wales.
- the courts of England and Wales shall have exclusive jurisdiction to settle any matter arising out of or in connection with this Certificate or its subject matter (including non-contractual disputes or claims).

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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:

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- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.

British Board of Agrément
1st Floor, Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG
tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk