



**Q-MARK REGISTRATION SCHEDULE
FOR
BREATHER MEMBRANE
REFLECTASHIELD TF**



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<u>Contents</u>	<u>Page</u>
1 INTRODUCTION	4
2 DEFINITIONS & ABBREVIATIONS	4
3 SCOPE	4
4 PRODUCT DESCRIPTION	4
4.1 General	4
4.2 Table 1: Nominal Characteristics	5
4.3 Intended Use	5
5 BUILDING REGULATIONS	5
6 SCHEME REQUIREMENTS	5
6.1 Quality Management System (QMS)	5
6.2 Documentation	5
6.2.1 Manufacturing Documentation	6
7 MINIMUM QMS REQUIREMENTS	6
7.1 Factory Production Control	6
7.2 Management Responsibility	6
7.3 Company Representative	6
7.4 Internal Audits	6
7.5 Documentation	6
7.6 Work Instructions	6
7.7 Procedures for Non-conforming Product	6
7.8 Traceability	6
7.9 Training	7
7.10 Complaints	7
7.11 Document Control	7
7.12 Machinery Maintenance and Calibration	7
8 OTHER REQUIREMENTS OF THE SCHEME	7
8.1 Product Specification/Range Documentation and Assessment	7
9 TRANSPORT STORAGE AND INSTALLATION INSTRUCTIONS	7
9.1 General	7
9.2 Transport and Storage	7
9.3 Installation	8
9.3.1 Timber Frame Wall with Reflectashield TF	8
9.3.2 Fixing Frequency	8
9.3.3 Factory Fixing	9
10 TEST AND VERIFICATION REQUIREMENTS	9
10.1 Test Reports and Sampling	9
10.2 Initial Type Testing	9
10.2.1 Mechanical Resistance and Stability	9
10.2.2 Safety in Case of Fire	10
10.2.3 Hygiene, Health and Environment	10
10.2.4 Safety in Use	10
10.2.5 Protection against Noise	11
10.2.6 Energy Economy and Heat Retention	11
10.3 Aspects of Durability	11
11 IDENTIFICATION AND USE OF THE BM TRADA AND Q-MARK LOGOS	11
12 GUARANTEES	11

13	ANNEX 1: EVIDENCE/DOCUMENTS USED IN THIS ASSESSMENT	12
14	ANNEX 2: NORMATIVE REFERENCES	13

1 INTRODUCTION

The Q-Mark Scheme is a third party Product Certification Scheme operated by BM TRADA Certification Ltd.

The Scheme is based on the principles of ISO 9001, EN 45011, ISO 17021, ISO Guide 62/65 and confirms compliance with EN 13859-2: 2008, together with a specific set of performance criteria set by BM TRADA (as defined in Clause 4 of this document) in order to attain a product which performs to a high standard. The relevant standards listed above are to be read in conjunction with this document.

The Scheme covers Factory Production Control, documentation and test/assessment evidence, and the resultant certification is specific to clearly defined products and their constituent components.

The objectives of the Scheme are:

- To improve the quality and performance of Building Products.
- To provide unambiguous evidence of compliance with the standards or methods listed.
- To provide specifiers, regulators and inspection authorities with the appropriate information for them to identify suitable products.

2 DEFINITIONS & ABBREVIATIONS

The following definitions and abbreviations are used throughout the document. Other definitions are as given in the relevant standards.

Assessment	A considered judgement to consider whether products meet the criteria laid down in the relevant Technical Specification
Audit	Visit by BM TRADA or other certification body to examine the quality management system and production processes of a manufacturer or supplier, usually to determine appropriate compliance to ISO 9001, with specific emphasis on the factory production control elements
Member	Company holding membership of the Q-Mark Scheme
QMS	Quality Management System (e.g. one meeting BS EN ISO 9001)
Schedule	The certification schedule, which identifies the scope and range of products covered by the membership certificate
Scheme	The BM TRADA Q-Mark Construction Products Scheme

3 SCOPE

The Scheme is applicable to construction products which fall within the scopes of the product standards referenced in Clause 1 of this document, and applies to products as manufactured and supplied, and before being installed into the works.

4 PRODUCT DESCRIPTION

4.1 General

Reflectashield TF Breather Membrane is a composite membrane comprising of a UV stabilised polypropylene spunbond non woven, bonded to a perforated aluminium foil. The membrane has a low emissivity reflective outer surface and a white inner surface.

4.2 Table 1: Nominal Characteristics

Property	Reflectashield
Membrane Thickness (mm)	0.55
Membrane weight/unit area (g/m ²)	134
Roll length (m)	100
Roll width (m)	Up to 3.0
Roll weight (kg)	Up to 40

4.3 Intended Use

Under the scope of this certification, 'Reflectashield' has been approved for use as a factory or site-applied breather membrane in suitably designed timber frame walls and are considered to meet or contribute to meeting the minimum requirements of the Building Regulations in the UK and Ireland. It is conditional on the use being in accordance with the guidelines detailed in this document.

5 BUILDING REGULATIONS

Reflectashield is certified under the BM TRADA Q-Mark Construction Products Scheme. It is the opinion of BM TRADA that if used in accordance with the requirements of this Scheme and in accordance with the installation manual, then the product will satisfy, or contribute to satisfying the relevant requirements of the following Regulations:

- The Building Regulations 2000 (England and Wales)
- The Building (Scotland) Regulations 2004
- The Building Regulations (Northern Ireland) 2000.
- The Building Regulations (Ireland) 1997

6 SCHEME REQUIREMENTS

BM TRADA has determined that the Member conforms with the requirements within these clauses by auditing and/or other forms of verification where appropriate.

6.1 Quality Management System (QMS)

The manufacture of the products has been conducted under the control of an appropriate QMS.

The QMS is subject to periodic audit (not less than once per year).

All new Members are subject to an Initial Inspection.

6.2 Documentation

The following documents are controlled under the requirements of this Scheme:

- Manufacturing documentation (e.g. Quality Manual, procedures)
- Product specification/range documentation and Assessment
- Installation instructions
- Test Reports and Sampling
- Q-Mark Certificate and Schedule(s)

6.2.1 Manufacturing Documentation

The Member has supplied details of his manufacturing documentation to BM TRADA for review. This comprised of the Quality Manual, procedures, works instructions and test data.

7 MINIMUM QMS REQUIREMENTS

7.1 Factory Production Control

As part of the documented process control procedures the company has:

- Demonstrated that the products are being fabricated in accordance with documented manufacturing procedures from purchase of raw material to the production of the finished product.
- These procedures control all critical aspects of the production.
- Target limits are defined at each one of these areas.
- All performance characteristics claimed are controlled in order to remain consistent by including appropriate checks or testing in the QMS to ensure a consistent and similar product is produced.

7.2 Management Responsibility

The management of the company carries out regular reviews of the system, which includes production records and any complaints that have been received. Notes are kept of any topics discussed and decisions made.

7.3 Company Representative

A member of the management team is responsible for the QMS.

7.4 Internal Audits

Routine internal audits are carried out to ensure compliance with the requirements of the Scheme is met.

7.5 Documentation

Inspection and test records are kept in a format that is acceptable to BM TRADA Certification for a minimum of 5 years.

7.6 Work Instructions

Work instructions and target values are placed at the critical production points throughout the manufacturing process.

7.7 Procedures for Non-conforming Product

Where factory production control/target values are out of specification there is a procedure for identifying and correcting these deficiencies. The factory production control system has been assessed and found to be able to detect non-conforming product quickly enough so that affected product can be quarantined.

7.8 Traceability

There are procedures, which enable appropriate traceability of production runs through to dispatch.

7.9 Training

The company maintains records to show that staff has been satisfactorily trained to undertake the manufacturing and inspection tasks that they have been assigned. Records are kept of this training and the personnel's job description shall be clearly defined.

7.10 Complaints

The company maintains a register of all complaints received on the quality of their product, which shows the steps they have taken to deal with the problem and their analysis of the causes. These records are kept for a minimum of 5 years.

7.11 Document Control

There are procedures in place for effectively controlling the quality of documentation issued to the relevant personnel, so that they have up-to-date procedures.

7.12 Machinery Maintenance and Calibration

All machinery and measuring / testing equipment that could affect the quality of the product is properly maintained and calibrated so that a consistent product can be produced and tested. There is a maintenance and calibration schedule. A record is kept of the maintenance and calibration carried out.

8 OTHER REQUIREMENTS OF THE SCHEME

8.1 Product Specification/Range Documentation and Assessment

The member has supplied BM TRADA with product details for review. These included material specifications, dimensions, tolerances and components. This product specification forms part of the manufacturing procedure.

Should the product specification of the certified product/s change, the member shall inform BM TRADA of the changes. A decision on the way forward shall be made to ensure continuation of certification.

9 TRANSPORT STORAGE AND INSTALLATION INSTRUCTIONS

9.1 General

The member shall ensure that adequate installation, storage and transport instructions are supplied with each pack or consignment of product. Any alterations to the instructions shall only be made following consultation with BM TRADA.

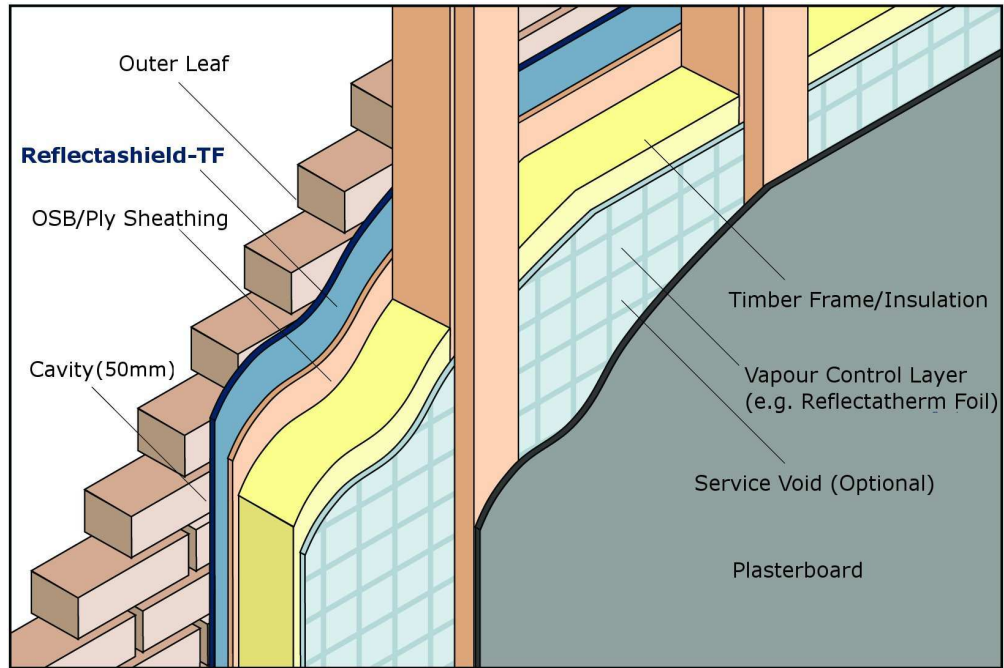
Reflectashield TF can be damaged by high winds, prolonged exposure to UV, careless handling or by vandalism and must be covered as soon as practically possible on completion of installation. Any damaged areas should be repaired or replaced before completion.

9.2 Transport and Storage

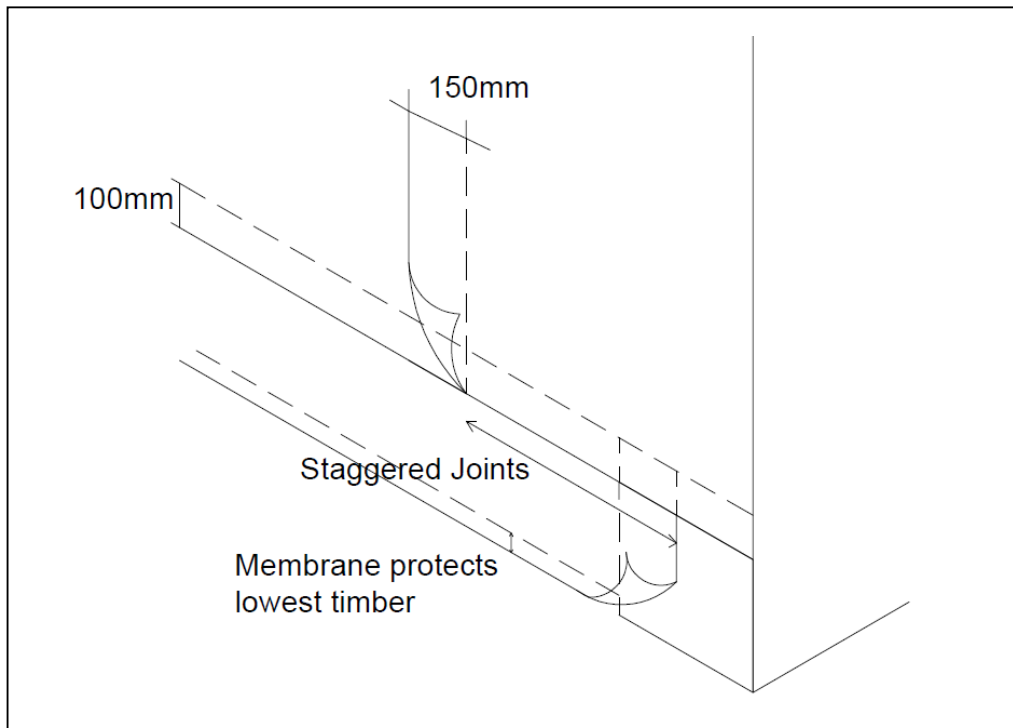
Reflectashield TF should be stored horizontally in a cool dry environment, out of direct sunlight.

9.3 Installation

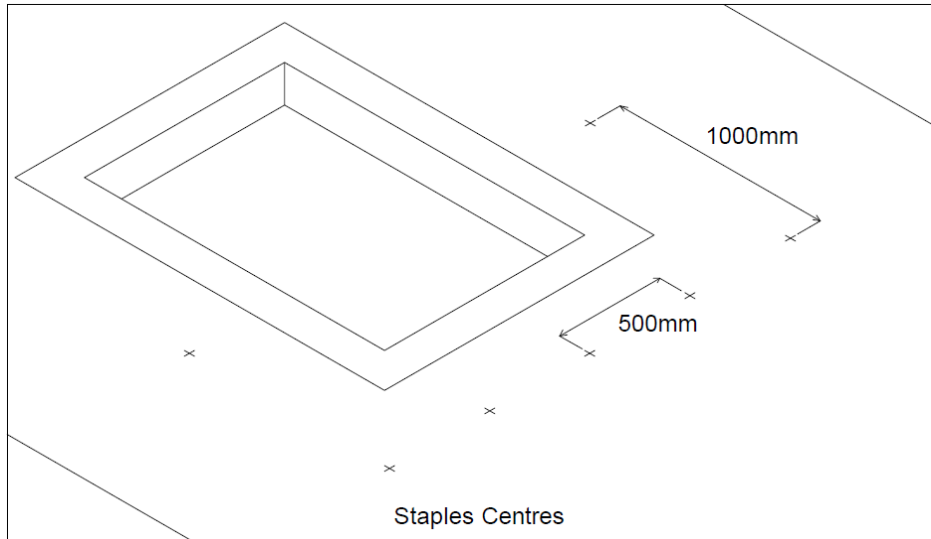
9.3.1 Timber Frame Wall with Reflectashield TF



9.3.2 Fixing Frequency



9.3.3 Factory Fixing



10 TEST AND VERIFICATION REQUIREMENTS

10.1 Test Reports and Sampling

BM TRADA has assessed the results of testing and sampling, and/or calculation that has been carried out in accordance with the scheme rules.

10.2 Initial Type Testing

10.2.1 Mechanical Resistance and Stability

Testing of the product has been carried out to determine the following properties and performance characteristics:

- Tensile Strength before and after UV and Heat ageing
- Resistance to nail tearing (nail shank)
- Water penetration resistance before and after UV and Heat aging
- Dimensional stability
- Water Vapour Resistance
- Thermal Resistance

The test results are summarised in the Tables below.

10.2.1.1 Table 2: Tensile Strength (N/50mm) to BS EN 12311-1 (with modifications)

Direction	Reflectashield	
	Before Ageing	After Ageing
Machine	225	210
Cross	115	110

10.2.1.2 Table 3: Resistance to Nail Tearing (N) to BS EN 12310-1 (with modifications)

Direction	Reflectashield
Machine	240
Cross	235

10.2.1.3 Table 4: Resistance to Water Penetration to BS EN 13111

	Reflectashield	
	Before Ageing	After Ageing
Class	W2	W2

10.2.1.4 Table 5: Dimensional Stability (% Change) (BS EN 1107-2)

Direction	Reflectashield
Machine	-0.20
Cross	0.00

10.2.1.5 Table 6: Water Vapour Resistance (Sd & MNs/g) (BS EN ISO 12572, Method C)

	Reflectashield
Sd	0.083
MNs/g	0.415

10.2.2 Safety in Case of Fire

The product will have similar performance to polyolefin membranes in relation to fire, tending to burn and shrink away from a heat source. This should be considered when assessing the overall fire risk.

10.2.2.1 Reaction to Fire

Reflectashield has been classified as 'Class D' in accordance with BS EN 13501-1 in relation to Reaction to Fire.

10.2.2.2 Resistance to Fire

Resistance to fire would be determined for the wall element as a whole.

10.2.3 Hygiene, Health and Environment

10.2.3.1 Risk of Condensation

The risk of condensation occurring within the wall will depend on the thermal properties and vapour resistance of other materials used in the construction, the internal and external conditions and the effectiveness of the internal VCL.

The external wall should be designed and constructed to avoid condensation in accordance with the supporting documents to the applicable building regulations.

10.2.4 Safety in Use

Not relevant

10.2.5 Protection against Noise

Protection against noise has not been evaluated. This would be evaluated for the structure as a whole.

10.2.6 Energy Economy and Heat Retention

The thermal performance of Reflectashield has been determined by testing the product in accordance with BS EN ISO 8990. The product was fixed by means of stapling to the sheathing substrate at 0.5m centres vertically and 1.0m horizontally as illustrated in 9.3.3.

10.2.6.1 Table 7: Thermal Performance (BS EN ISO 8990)

Building Element	Reflectashield
	Thermal Resistance (m ² K)/W
<p>The single sided reflective breather membrane was fixed to the warm wall of the cavity using staples. The staples were 8mm in from the perimeter of the aperture, at 496 mm vertical centres and 984 mm horizontal centres. No top or bottom central fixing was used.</p> <p>The walls of the 50mm unvented cavity were made up of 18mm thick Plywood and the thermal resistance was measured from the face of the warm wall to the internal surface of the cold side cavity wall.</p>	0.81

10.3 Aspects of Durability

The membranes will be unaffected by the normal conditions found in the space between the cladding and the timber frame structures and will have a life comparable with other elements of construction, such as vapour control layers.

11 IDENTIFICATION AND USE OF THE BM TRADA AND Q-MARK LOGOS

Correct identification of approved construction products is vital in order that purchasers and controlling authorities clearly understand the status of products presented to them. It is therefore a requirement that all products or at least the packaging of the products, covered under the Scheme are identified as “BM TRADA Q-Mark Certified” or with other similar wording, and/or display the Q-Mark badges. This will assist subsequent inspection authorities to recognise acceptable products. For similar reasons, Members are encouraged to make use of the Marks on marketing and Technical documentation.

12 GUARANTEES

The Scheme makes no requirement on its Members to give a minimum guarantee. This is entirely up to the discretion of the Member.

13 ANNEX 1: EVIDENCE/DOCUMENTS USED IN THIS ASSESSMENT

1. National Physical laboratory Test Report, 27 September 2012
2. BTTG High Performance Materials, Test Report Ref. 11/14443/PJH, 12 February 2010
3. BTTG Fire Technology Services, Test Report Ref. 2702340/08/11, 21 September 2011

14 ANNEX 2: NORMATIVE REFERENCES

1. BS EN 1107-2:2001 Flexible Sheets for Waterproofing. Determination of Dimensional Stability. Plastic and rubber sheets for roof waterproofing.
2. BS EN 1849-2:2001 Flexible Sheets for Waterproofing. Determination of thickness and mass per unit area. Plastic and rubber sheets for roof waterproofing
3. BS EN 12310-2:2000 Flexible Sheets for Waterproofing. Determination of Resistance to tearing (nail shank). Plastic and rubber sheets for roof waterproofing.
4. BS EN 12311-2:2000 Flexible Sheets for Waterproofing. Determination of Tensile Properties. Plastic and rubber sheets for roof waterproofing.
5. BS EN 13111-2:2001 Flexible Sheets for Waterproofing. Underlay's for discontinuous roofing and walls. Determination of Resistance to water penetration.
6. BS EN 13859:2001 Flexible Sheets for Waterproofing. Definitions and Characteristics for Underlay's. Underlay's for Walls
7. BS EN ISO 6946:1997 Building Components and Building Elements. Thermal Resistance and thermal transmittance. Calculation method.
8. BS EN ISO 12572:2001 Hygrothermal performance of building materials and products. Determination of water vapour transmission properties.
9. BS EN ISO 13788:2002 Hygrothermal performance of building components and building elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation. Calculation method.