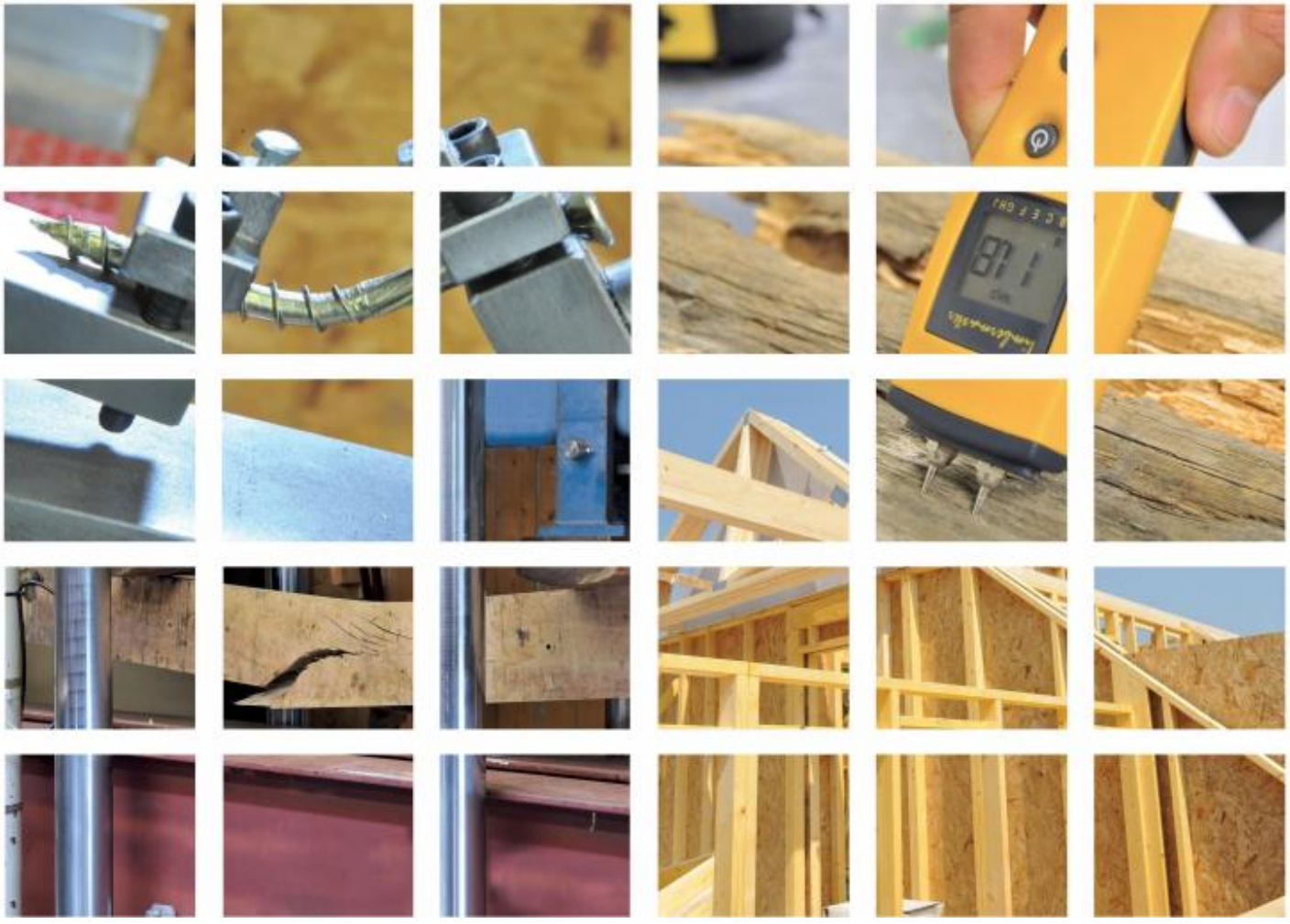
Q-Mark Registration Schedule

Breather Membrane

Protect TF200 & TF200 Thermo

Protect Membranes
2 Brooklands Road
Sale
Cheshire
M33 3SS



Q-Mark Registration Schedule

Holder of Q-Mark		Protect Membranes
Product Name		Protect TF200 & TF200 Thermo
Type and Use of Product		Breather Membranes
Validity:	**From**	02/06/2022
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Manufacturing Address/s		2 Brooklands Road Sale Cheshire M33 3SS
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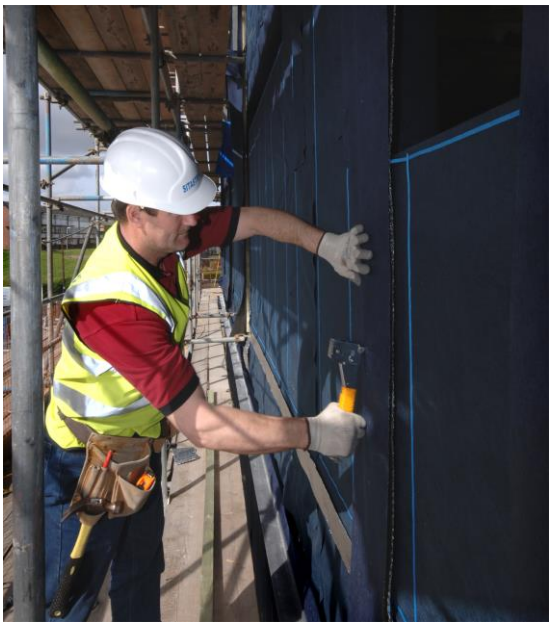

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1 INTRODUCTION

The Q-Mark Scheme is a third-party product certification scheme operated by BM TRADA.

The Scheme is based on the principles of ISO 9001, ISO 17065, ISO 17021 and confirms compliance with EN 13859-2, 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

Protect TF200 Thermo Breather Membrane is a flexible micro-perforated, multi layer laminated, low emissivity breather membrane sheet comprising of a white non-woven Polypropylene (PP) spun-bound fibre core , co-extruded low density polyethylene (LDPE) layer and a reflective aluminium foil surface that is thermally bonded together.

Protect TF 200 Breather Membrane is manufactured by extruding polypropylene to produce fibres. These fibres are then spun and bonded together using a combination of heat and pressure in a continuous process.

4.2 Table 1: Nominal Characteristics

Property	Protect TF200 Thermo		Protect TF200
Membrane Thickness (mm)	0.48		0.45
Membrane weight/unit area (g/m^2)	150		100
Roll length (m)	100	50	100
Roll width (m)	0.3, 0.6 2.7, 3.0	1.5	1.35, 2.7, 3.0
Roll weight (kg)	4.6, 9.2, 42, 46	12	14.0, 28.0, 31.0

4.3 Intended Use

Under the scope of this certification, Protect TF200 Thermo and Protect TF 200 have been approved for use as factory or site-applied membranes 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.
The membranes meet the requirements for a Type 1 breather membrane in accordance with TRADA Wood Information Sheet 1/35, '*Breather Membranes for Timber Frame Walls'* and STA Advice Note 18, "*Breather Membranes for Structural Timber Walls*".

5 BUILDING REGULATIONS

Protect TF200 Thermo and Protect TF 200 are certified under the BM TRADA Q-Mark Building 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 2010 (England and Wales)
- The Building (Scotland) Regulations 2004
- The Building Regulations (Northern Ireland) 2012.
- 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 shall be 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 shall include 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.

9.2 Transport and Storage

The products shall be supplied in rolls wrapped in polyethylene on pallets. Each roll shall bear a label indicating the manufacturers name, the product name, nominal dimensions and the BM TRADA Q-Mark logo and Certificate Number.

9.3 Installation

9.3.1 General

- All wood treatments, i.e. wood preservatives, damp proofing shall be allowed to dry out before installation of the membrane/s.
- In accordance with good building practice and guidance, the membranes should be fully restrained and be covered as soon as practically possible after installation and preferably not more than a month after initial exposure. This is to prevent potential damage by high winds, prolonged exposure to UV, incorrect handling or vandalism. If the exposure period exceeds one month, then advice must be sought from the Protect technical department.

9.3.2 Protect TF200 Thermo

Particular attention shall be paid to the following:

- The reflective foil surface faces the cavity (see Figure 1)
- Fixing of the membrane and laps shall follow the manufacturer's fixing instructions (see Figures 2 & 3)

Figure 1: Timber Frame Wall with Protect TF200 Thermo

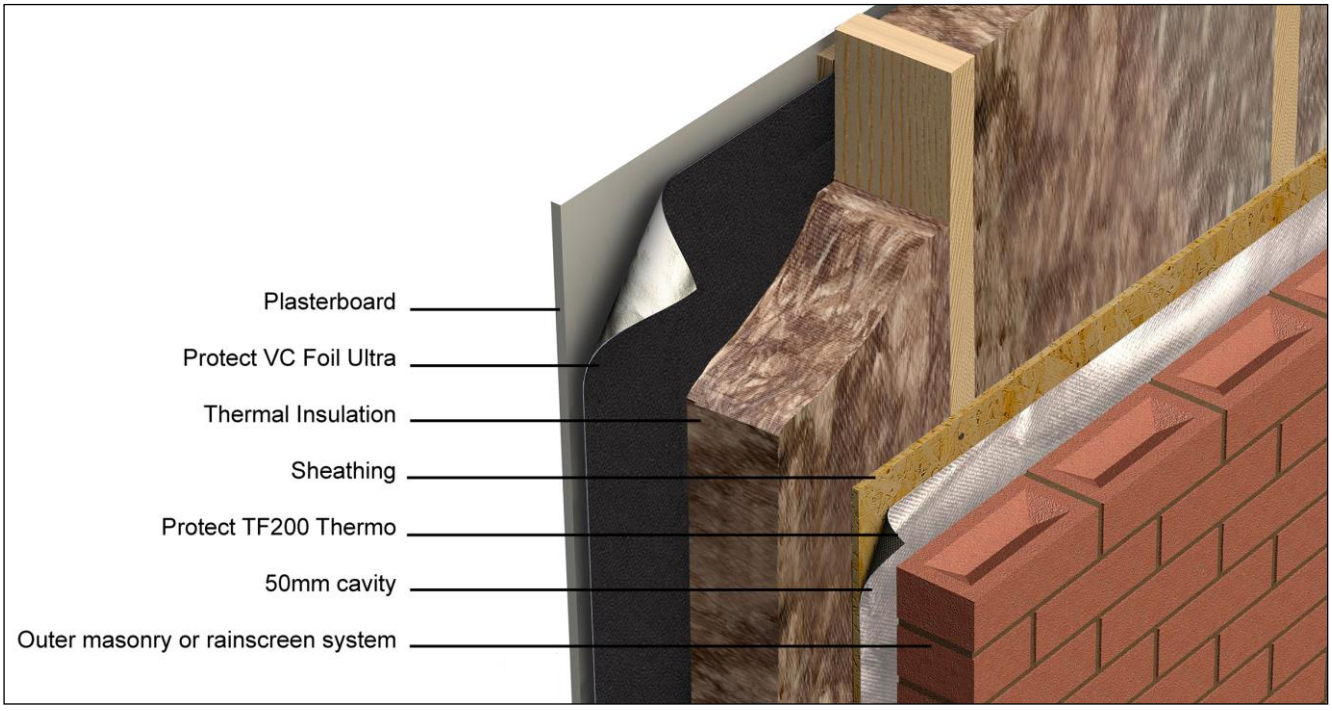


Figure 2: Drawing indicating side and vertical laps

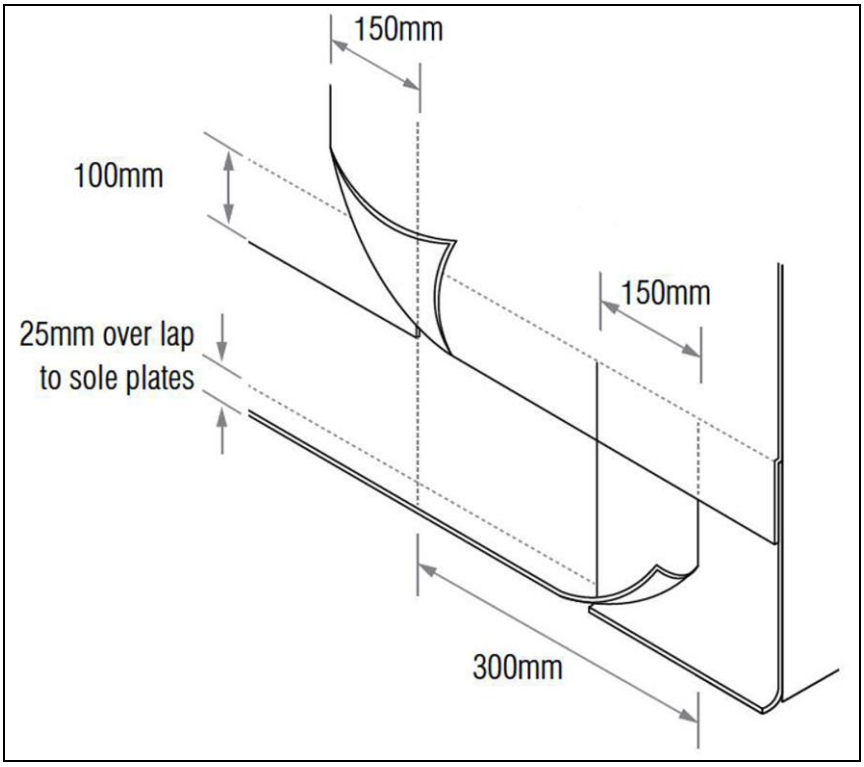
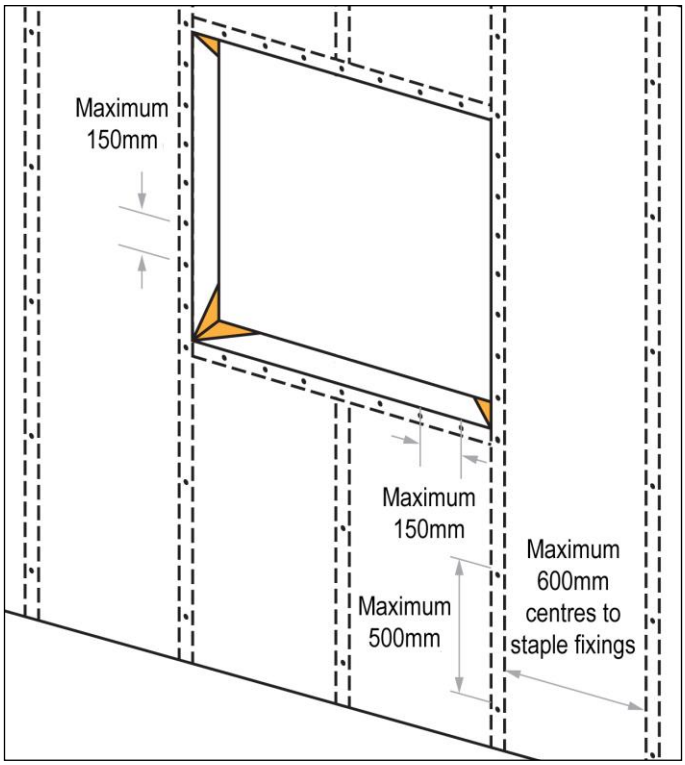


Figure 3: Drawing indicating fixing frequency in factory/on site



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	Protect TF200 Thermo		Protect TF200	
	Before Ageing	After Ageing	Before Ageing	After Ageing
Machine	210	210	220	185
Cross	185	205	225	187

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

Direction	Protect TF200 Thermo	Protect TF200
Machine	239	230
Cross	243	245

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

	Protect TF200 Thermo		Protect TF200	
	Before Ageing	After Ageing	Before Ageing	After Ageing
Class	W2 (No Leakage)	W2 (No Leakage)	W2 (No Leakage)	W2 (No Leakage)

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

Direction	Protect TF200 Thermo	Protect TF200
Machine	- 0.21	- 0.28
Cross	- 0.21	+0.04

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

	Protect TF200 Thermo	Protect TF200
Sd	0.071	0.005
MNs/g	0.36	0.030

10.2.2 Safety in Case of Fire

The fire performance of the products has not been determined. Fire performance shall be determined for the structure as a whole.

10.2.2.1 Reaction to Fire

The products are likely to have similar fire properties to those of other polypropylene sheets. It will melt and shrink away from a heat source and will burn in the presence of an ignition source.

10.2.2.2 Resistance to Fire

Protect TF200 has no contribution to the fire resistance of the wall construction.

Protect TF200 Thermo has a Class 1 Surface spread of flame when tested in accordance with BS 476-7 and Class E when tested in accordance with BS EN 11925-2.

Performance for both membranes shall be assessed for the structure 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 shall be evaluated for the structure as a whole.

10.2.6 Energy Economy and Heat Retention

The emissivity performance of Protect TF200 Thermo has been determined by testing the product in accordance with BS EN 15976. The overall thermal performance of Protect TF200 Thermo has been determined by testing the product in accordance with BS EN ISO 8990. The Product was fixed by stapling to the sheathing substrate at 0.48m centres vertically and 0.60m centres horizontally in a 50mm cavity using horizontal heat flow in accordance with the manufacturer's instructions.

10.2.6.1 Table 7: Thermal & Emissivity Performance (BS EN ISO 8990 & BS EN 15976)

Building Element	Ɛ	m^2K/W
Surface Emissivity Unaged	0.02	≥20mm Cavity Horizontal Heatflow 0.74
Surface Emissivity Aged (28 Days @ 70^0C/90% RH)	0.03	≥20mm Cavity Horizontal Heatflow 0.71
Protect TF200 Thermo Core/Interface with Sheathing Board		0.06
Thermal Resistance (m^2K/W)		
Protect TF200 Thermo printed and fitted to the face of sheathing board at 600mm stud centres and 500mm through strapping. The thermal resistance was measured from the face of the sheathing board to the internal face of the cladding/brickwork.	Un-aged	Aged
	0.80^+	0.77^+

+ Long term functionality of low emissivity surfaces is primarily linked to the ability of the material to resist oxidation (corrosion). If the membrane location in the building structure is not likely to experience high humidity environments in use, then the un-aged results can be used. Otherwise the aged results should be used.

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 Approved” 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. BRE Test Report, No 216437.
2. BPD Quality Plan TF200 Thermo, Issue 064
3. BPD Quality Plan TF200, Issue 007
4. BTTG – High Performance Materials, Test Report 10/235231
5. BTTG – High Performance Materials, Test Report 10/23491
6. National Physical Laboratory Test Reports, PP31/2012050133/1, PP31/2010030627/1, PP31/E09040144, PP3/E09020094/1
7. Emissivity Test Report 17-000076-PR02

14 ANNEX 2: NORMATIVE REFERENCES

1.	BS EN 1107-2	Flexible Sheets for Waterproofing. Determination of Dimensional Stability. Plastic and rubber sheets for roof waterproofing.
2.	BS EN 1849-2	Flexible Sheets for Waterproofing. Determination of thickness and mass per unit area. Plastic and rubber sheets for roof waterproofing
3.	BS EN 12310-2	Flexible Sheets for Waterproofing. Determination of Resistance to tearing (nail shank). Plastic and rubber sheets for roof waterproofing.
4.	BS EN 12311-2	Flexible Sheets for Waterproofing. Determination of Tensile Properties. Plastic and rubber sheets for roof waterproofing.
5.	BS EN 13111-2	Flexible Sheets for Waterproofing. Underlay's for discontinuous roofing and walls. Determination of Resistance to water penetration.
6.	BS EN 13859	Flexible Sheets for Waterproofing. Definitions and Characteristics for Underlay's. Underlay's for Walls
7.	BS EN ISO 6946	Building Components and Building Elements. Thermal Resistance and thermal transmittance. Calculation method.
8.	BS EN ISO 12572	Hygrothermal performance of building materials and products. Determination of water vapour transmission properties.
9.	BS EN ISO 13788	Hygrothermal performance of building components and building elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation. Calculation method.
10.	BS EN 15976	Flexible Sheets for Waterproofing – Determination of Emissivity
11.	BS EN ISO 8990	Thermal Insulation – Determination of Steady State Thermal Transmission Properties – Calibrated and Guarded Hotbox.