Q-Mark Registration Schedule

Vapour Control Membrane

Protect VC Foil Ultra

Protect Membranes
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Sale
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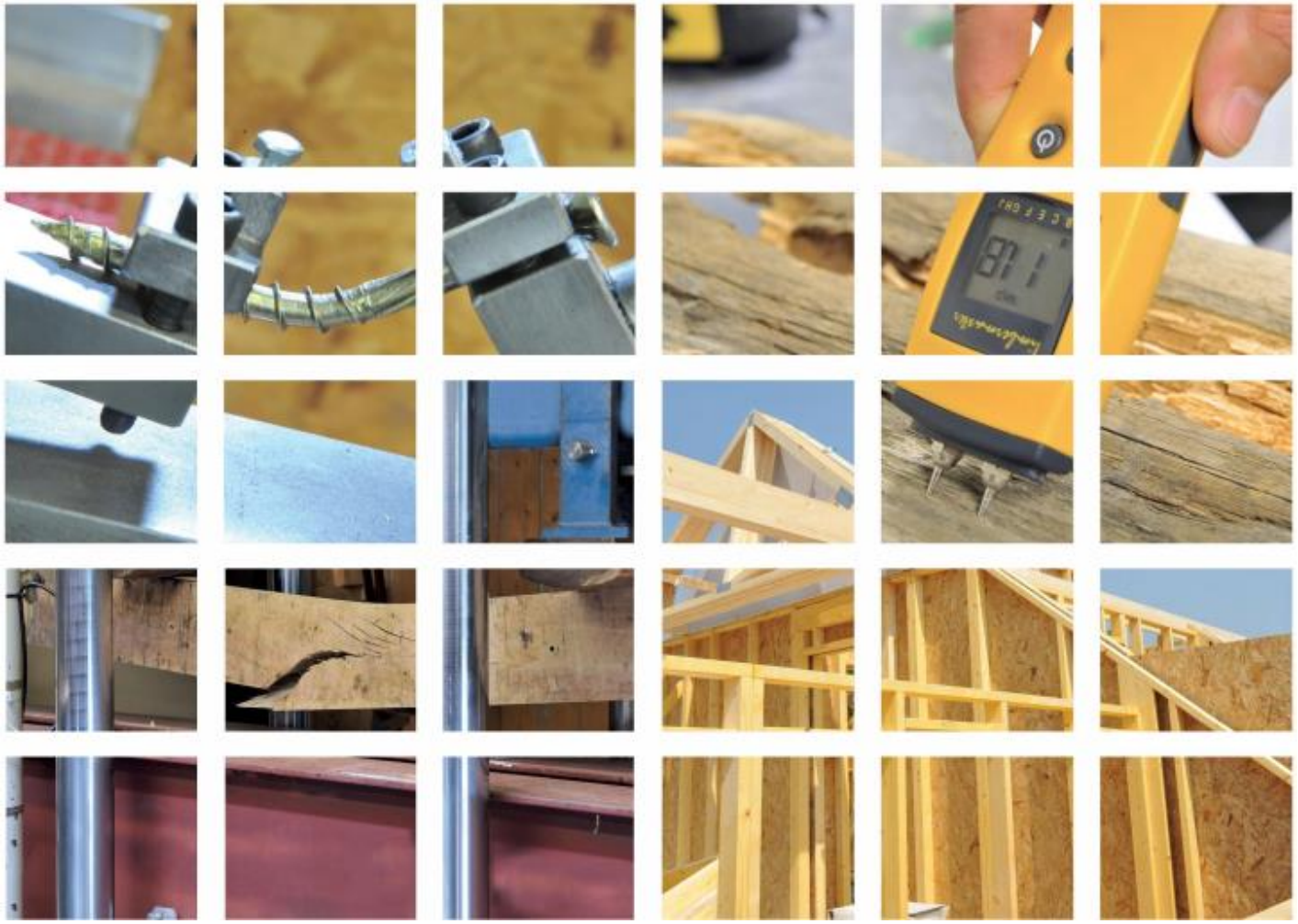

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Q-Mark Registration Schedule

Holder of Q-Mark		Protect Membranes
Product Name		Protect VC Foil Ultra
Type and Use of Product		Vapour Control Layer for use in Wall, Ceiling/Roof & Floor Constructions
Validity:	**From**	02/06/2022
	To	01/06/2025
Date of This Issue		02/06/2022
Issue Number		6
This Issue Replaces		Revision 02/06/2019
Relates to Certificate Number		CPS-004
Manufacturing Address/s		2 Brooklands Road Sale Cheshire M33 3SS
This Schedule Contains		18 Pages, including 2 Annexes

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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, ISO 17065, ISO 17021 and confirms compliance with EN 13984, 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 design 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 Construction 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

Protect VC Foil Ultra VCL is a flexible triple ply sheet material consisting of a black nonwoven core layer faced with pressure bonded aluminium foil. The product has been assessed as being a Type ‘A’ Vapour Control Layer in accordance with BS EN 13984.

4.1.1 Table 1: Nominal Characteristics

Property	Protect VC Foil Ultra
Thickness (mm)	0.48
Mass/unit area (g/m^2)	150
Roll length (m)	50
Roll width (m)	1.35*; 1.5*; 3.0

** 1.35m and 1.5m wide material is also supplied with integral sealing tapes on top and bottom edges.*

4.2 Intended Use

Under the scope of this certification, Protect VC Foil Ultra has been approved for use in Wall, Ceiling/Roof and Floor constructions (masonry, timber or light gauge steel) in dwelling houses and buildings other than dwelling houses as a Vapour Control Layer which can enhance the thermal performance when used with the reflective aluminium foil surface facing an adjacent unventilated airspace.

5 BUILDING REGULATIONS

Protect VC Foil Ultra 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 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 are 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 have 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 Identification

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. Installation instructions shall also be supplied with each roll/consignment.

9.3 Storage and Handling

- Rolls shall be stored upright on a firm, level and dry base and protected from damage. Additional weather protection shall be provided by use of black polyethylene sheeting or a similar opaque material.
- Protect VC Foil Ultra can be readily cut or trimmed with a sharp knife. Adequate care shall be taken (especially when being used in floors) to prevent damage before, during or subsequent to installation.
- Any damage after installation shall be repaired using additional material or Protect Reflective reinforced tape.

9.4 Installation

9.4.1 General

- The installation and fixing shall be in accordance with the supplier's instructions and the requirements of this certificate, as the performance of the product is dependent on correct installation.
- All wood treatments, i.e. wood preservatives, damp proofing shall be allowed to dry out before installation of the membrane/s.
- The product shall not be exposed to direct contact with heat producing appliances, hot pipes or electric heating cables.
- The reflective foil surface should always face into an air cavity (See Figures 1, 2 & 3)

9.4.2 Walls, Ceilings and Roofs (Refer to Figures 1 & 2)

- The product shall be laid out to the required length, i.e., vertical height of walls or ceiling width), and shall be fixed to the construction commencing from either the top or bottom and working away using either nails or staples to timber studs or battens. For metal frame construction, self-tapping screws with washers shall be used.
- Joints in Protect VC Foil Ultra shall coincide and be supported by battens, metal furring's, studs or noggins and be lapped by at least 50mm and sealed with Protect Reflective reinforced tape. Alternatively, 1.5m wide material can be supplied with integral sealing tapes on top and bottom edges of the product.
- Protect VC Foil Ultra shall be installed on the warm side of the insulation, covering all the internal area, e.g. joists, rafters, rails, studs, window reveals, lintels and sills.
- To achieve the maximum low emissivity benefit of the reflective surface, a minimum 20mm unventilated airspace is required adjacent to the reflective face of the Protect VC Foil for walls. 13mm is required for ceilings and 50mm for floors.
- Protect VC Foil Ultra shall be neatly fitted around door, window frames and services. All junctions and gaps shall be sealed with Protect Reflective reinforced tape.

Figure 1: Timber Frame Wall Construction

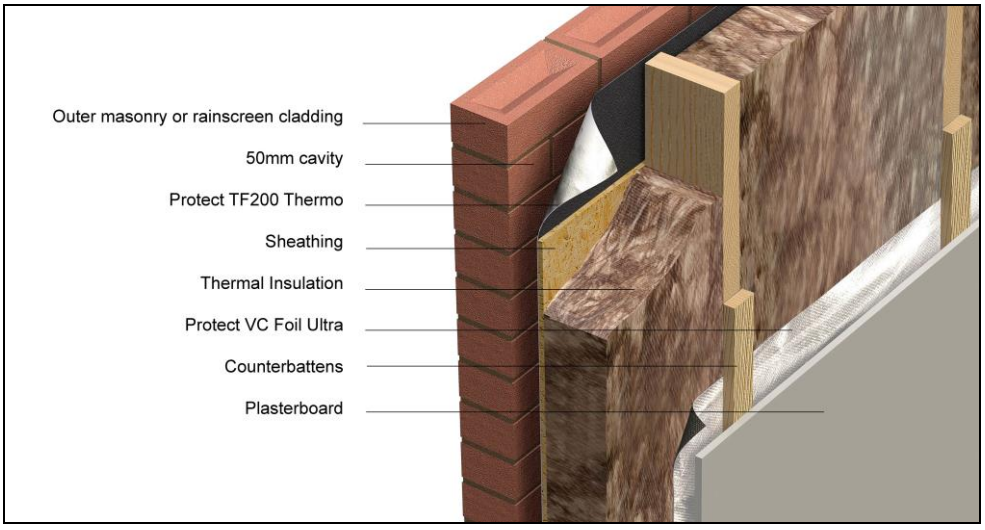
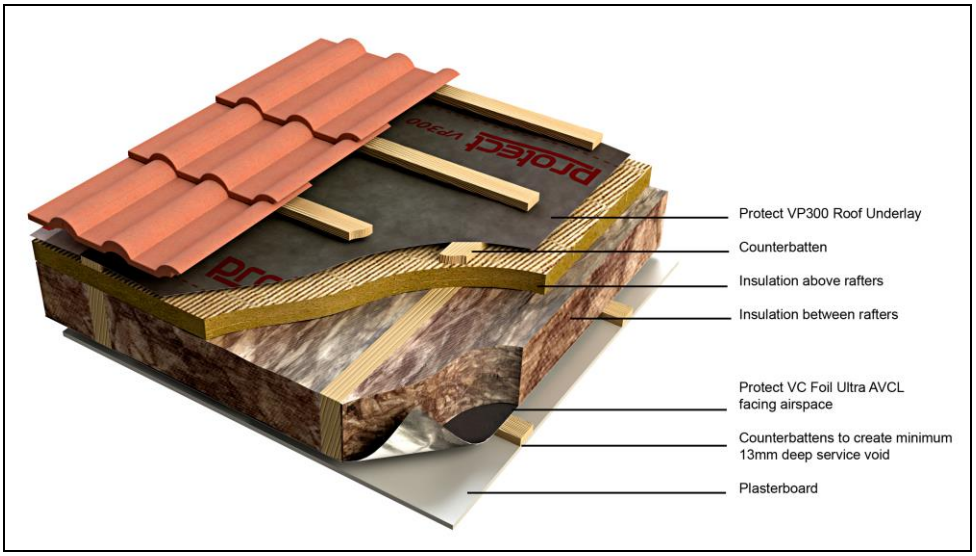


Figure 2: Timber Frame Roof Construction



9.4.3 Floors – General

- Joints shall coincide with joists. Joints shall be lapped by 100mm and left unsealed so that a vapour control layer is not produced.
- Floor boarding shall be fitted conventionally using appropriate fasteners at recommended spacing's.
- No further maintenance of Protect VC Foil Ultra is necessary provided that it remains in a clean condition and is installed strictly in accordance with the manufacturer's instructions and the requirements of this certificate.

9.4.4 Solid Floors

- The product shall be laid over the total floor area with its reflective surface facing the airspace.
- Timber battens (of appropriate thickness to provide the required thermal performance) shall be installed and fixed through the Protect VC Foil Ultra into the concrete floor at centres to suit the particular floor type.

9.4.5 Suspended Floors (Refer to Figure 3)

- Protect VC Foil Ultra shall be fixed over the floor joists and/or battens allowing an airspace between the product and the insulation. Battening may not be required if insulation does not fill the void.
- The reflective surface shall always face the unventilated airspace.

Figure 3: Suspended Timber Floor Construction

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)
- Watertightness (Resistance to Water Penetration)
- Water Vapour Transmission before and after ageing

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 VC Foil Ultra	
	Before Ageing	After Ageing
Machine	210	210
Cross	185	205

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

Direction	Protect VC Foil Ultra
	Before Ageing
Machine	239
Cross	243

10.2.1.3 Table 4: Resistance to Water Penetration to BS EN 1928 Method A (2kPA)

	Protect VC Foil Ultra
	Before Ageing
Class	Pass

10.2.1.4 Table 6: Water Vapour Transmission (Sd & MNs/g) (BS EN 1931)

	Protect VC Foil Ultra	
	Before Ageing	After Ageing
Sd	989	829
MNs/g	4946	4145

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 VC Foil Ultra 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 of Protect VC Foil Ultra shall be assessed for the structure as a whole.

10.2.3 Hygiene, Health and Environment

10.2.3.1 Risk of Condensation

When installed in accordance with BS 5250, Protect VC Foil Ultra will help prevent surface or interstitial condensation by reducing the amount of moisture penetrating into the wall or roof/ceiling. However, for each application, condensation risk calculations as defined in BS 5250 shall be carried out to ensure that condensation will not occur to a harmful extent.

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 VC Foil Ultra has been determined by testing the product in accordance with BS EN 15976. The overall thermal performance of Protect VC Foil Ultra has been determined by testing in accordance with BS EN ISO 8990 with a 50mm air cavity in front of the product. This testing has been carried out both with horizontal and vertical heat flow.

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

Building Element	ε	(m^2K/W)	
Surface Emissivity Un-aged	0.02	≥20mm Cavity Horizontal Heatflow 0.74	≥13mm Cavity Vertical Heatflow 0.49
Surface Emissivity Aged (28 days@70°C/90%RH)	0.03	≥20mm Cavity Horizontal Heatflow 0.71	≥13mm Cavity Vertical Heatflow 0.48
Protect VC Foil Ultra Core/Interface with Sheathing Board		0.07	0.04

Thermal Resistance (m^2K/W)		
	Horizontal Heatflow	Vertical Heatflow
Protect VC Foil Ultra printed and fitted on the warm side of insulation facing a 50mm air cavity	Un-aged 0.81*+ Aged 0.78*+	Un-aged 0.53*+ Aged 0.52*+

* It is important to allow for the thermal bridge in either the Cavit-E clip or internal counterbatten which is dependent on width and vertical spacing.

+ 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

Protect VC Foil Ultra will provide and remain an effective vapour control layer in a wall, ceiling/roof or floor construction/s during their service lives provided that it is installed in accordance with the manufacturer's instructions and the provisions of this certificate.

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. BTTG High Performance Materials: Test Report 10/23523 & 10/23491
2. National Physical Laboratory Test Reports PP31/2012050133/1, PP31/2010030627/1, PP31/E09040144, PP3/E09020094/1
3. Emissivity Test Reports 17-000076-PR02
4. BPD Quality Plan, Issue 008

14 ANNEX 2: NORMATIVE REFERENCES

1.	BS EN 5250	Code of Practice for the control of Condensation in Buildings.
2.	BS EN 1109	Flexible Sheets for Waterproofing. - Bitumen sheets for roof waterproofing - Determination of flexibility at low temperature
3.	BS EN 1849-2	Flexible Sheets for Waterproofing. - Determination of Length, Width, Straightness and Flatness – Part 2: Plastic and rubber sheets for roof waterproofing
4.	BS EN 1928	Flexible Sheets for Waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing – determination of water-tightness
5.	BS EN 1931	Flexible Sheets for Waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing – determination of water vapour transmission properties
6.	BS EN ISO 6946	Building Components and Building Elements. Thermal Resistance and thermal transmittance. Calculation method.
7.	BS EN 12310-1	Flexible sheets for waterproofing. Determination of resistance to tearing. Part 1: Bitumen sheets for waterproofing.
8.	BS EN 12311-1	Flexible sheets for waterproofing. Determination of tensile properties. Part 1: Bitumen sheets for roof waterproofing.
9.	BS EN 13984	Flexible sheets for waterproofing – Plastic and rubber vapour control layers – Definitions and Characteristics.
10.	BS EN 15976	Flexible sheets for waterproofing – Determination of emissivity