Knauf Insulation Ltd
Stafford Road
St Helens
Merseyside WA10 3LZ

Tel: 01744 766 666
e-mail: technical.uk@knaufinsulation.com
website: www.knaufinsulation.co.uk

Agrément Certificate
19/5609
Product Sheet 1 Issue 3

KNAUF INSULATION

ROCKSILK RAINSCREEN SLAB FOR USE IN RAINSCREEN CLADDING SYSTEMS

This Agrément Certificate Product Sheet(1) relates to Rocksilk(2) RainScreen Slab for use in Rainscreen Cladding Systems, a mineral wool insulation slab, for use as insulation on new and existing timber- or steel-frame walls, reinforced concrete, masonry walls and cross laminated timber. The product is used in domestic and non-domestic buildings in conjunction with weathertight ventilated cladding systems.

(1) Hereinafter referred to as 'Certificate'.
(2) Rocksilk is a registered trademark.

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 product described herein. This product 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 Third issue: 22 April 2024
Originally certified on 10 January 2019

Hardy Giesler
Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

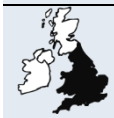
British Board of Agrément
1st Floor, Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG
tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

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 Rocksilk RainScreen Slab for use in Rainscreen Cladding Systems, if installed, used, and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations.



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**B3(4)**	**Internal fire spread (structure)**
Comment:		The product can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	**B4(1)**	**External fire spread (structure)**
Comment:		The product is unrestricted by this Requirement. See section 2 of this Certificate.
Requirement:	**C2(a)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 9 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The product can contribute to satisfying this Requirement; however, compensating fabric measures may be required. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
Comment:		The product is unrestricted by this Regulation. See section 2 of this Certificate.
Regulation:	**25B**	**Nearly zero-energy requirements for new buildings**
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy consumption rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings (applicable to Wales only)**
Regulation:	**26C**	**Target primary energy rates for new buildings (applicable to England only)**
Regulation:	**26C**	**Energy efficiency rating (applicable to Wales only)**
Comment:		The product can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Fitness and durability of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.

Regulation:	**8(3)**	**Fitness and durability of materials and workmanship**
Comment:		The product is unrestricted by this Regulation. See section 2 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	2.4	Cavities The product can contribute to satisfying this Standard, with reference to clauses 2.4.2(1)(2), 2.4.4(1) and 2.4.6(2). See section 2 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is unrestricted by this Standard, with reference to clauses 2.6.5(1) and 2.6.6(2). See section 2 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The product is unrestricted by this Standard, with reference to clause 2.7.1(1)(2). See section 2 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.4.1(1)(2) and 3.4.5(1)(2). See section 3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.10.1(1)(2) and 3.10.3(1)(2). See section 9 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1(1)(2), 3.15.4(1)(2) and 3.15.5(1)(2). See section 3 of this Certificate.
Standard:	6.1(b)(c)	Energy demand
Comment:		The product can contribute to satisfying this Standard, with reference to clauses, or parts of, 6.1.1(1), 6.1.2(2), 6.1.3(1), 6.1.4(1), 6.1.6(1)(2) and 6.1.8(2); however, compensating fabric/services measures may be required. See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying this Standard, with reference to clauses, or parts of, 6.2.1(1)(2), 6.2.3(1), 6.2.4(1)(2), 6.2.5(2), 6.2.6(1)(2), 6.2.7(1), 6.2.8(2), 6.2.9(1)(2), 6.2.10(1), 6.2.11(1)(2), 6.2.12(2) and 6.2.13(1)(2); however, compensating fabric measures may be required. See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting at least a bronze level of sustainability as defined in this Standard. In addition, the product can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4(1), 7.1.6(1)(2), 7.1.7(1), 7.1.9(2) and 7.1.10(2). See section 6 of this Certificate.
Regulation:	**12**	**Building standards – conversion**
Comment:		All comments given for the product 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)(ii)**	**Fitness of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.

Regulation:	**23(2)**	**Fitness of materials and workmanship**
Comment:		The product is unrestricted by this Regulation. See section 2 of this Certificate.
Regulation:	**28(a)**	**Resistance to moisture and weather**
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The product can contribute to satisfying this Regulation. See section 9 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread – structure**
Comment:		The product can contribute to satisfying this Regulation. See section 2 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The product is unrestricted by this Regulation. See section 2 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Regulation:	**43(1)(2)**	**Renovation of thermal elements**
Regulation:	**43(b)**	**Nearly zero-energy requirements for new buildings**
Comment:		The product can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Rocksilk RainScreen Slab for use in Rainscreen Cladding Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.1 *External masonry walls*, 6.2 *External timber framed walls,* 6.9 *Curtain walling and cladding* and 6.10 *Light steel framed walls and floors*. Current NHBC guidance precludes the use of façade systems not utilising a drained cavity.

Fulfilment of Requirements

The BBA has judged Rocksilk RainScreen Slab for use in Rainscreen Cladding Systems to be satisfactory for use as described in this Certificate. The product has been assessed as insulation on new and existing timber- or steel- frame walls, reinforced concrete, masonry walls and cross laminated timber. The product is used in domestic and non-domestic buildings in conjunction with weathertight ventilated cladding systems.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Rocksilk RainScreen Slab for use in Rainscreen Cladding Systems comprises slabs of rigid rock mineral wool (MW) treated with a water-repellent additive.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)	1200
Width (mm)	600
Thickness (mm)(1)(2)	50, 75, 100, 120, 150, 180, 200, 210 and 250
Edge profile	Square

(1) Other slab thicknesses within the above range are available on request.
(2) Higher thicknesses can be achieved by double layering.

Ancillary Items

The Certificate holder recommends the following ancillary items for use with the product, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- rainscreen cladding panel and subframe
- additional insulation for use between timber/steel frame studs
- insulation fasteners/fixings
- cladding brackets
- sheathing and lining board
- breather membranes
- air and vapour control layer (AVCL).

Product assessment – key factors

The product 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

Not applicable.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The product was tested for reaction to fire and the classification is given in Table 2.

Table 2 Reaction to fire classification(1)

Product assessed	Assessment method	Requirement	Result
Rocksilk RainScreen Slab	BS EN 13501-1 : 2007	Value achieved	A1

(1) Exova Warringtonfire. Report No 355031, copies are available from the Certificate holder on request.

2.1.2 On the basis of data assessed, the product will be unrestricted with respect to height and proximity to a relevant boundary by the documents supporting the national Building Regulations.

2.1.3 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction.

2.2 Fire resistance

Where the product is incorporated in a wall construction where fire resistance is required by the documents supporting the national Building Regulations, the fire resistance of the wall construction should be confirmed by a suitably experienced and competent individual.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Effectiveness against rising damp

The product was tested for short-term water absorption by partial immersion and the result is given in Table 3.

Table 3 Short term water absorption by partial immersion

Product assessed	Assessment method	Requirement	Result
Rocksilk RainScreen Slab	BS EN 1609 : 2013	≤ 1 $kg \cdot m^{-2}$	Pass

3.2 Water vapour permeability

3.2.1 For the purpose of assessing the risk of interstitial condensation, the water vapour resistivity may be taken as stated in Table 4.

Table 4 Water vapour resistivity

Product assessed	Assessment method	Requirement	Result
Rocksilk RainScreen Slab	BS EN ISO 10456 : 2007	Declared value	5 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$

3.2.2 An AVCL must be used in all constructions where the condensation risk analysis shows this is necessary.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Data were assessed for the following characteristics.

6.1 Thermal conductivity

The product was tested for thermal conductivity and the result is given in Table 5.

Table 5 Thermal conductivity

Product assessed	Assessment method	Requirement	Result
Rocksilk RainScreen Slab	BS EN 13162 : 2012	Declared value (λ_D)	0.034 $W \cdot m^{-1} \cdot K^{-1}$

6.2 Thermal performance

6.2.1 The U value of a completed wall construction will depend on the insulation thickness, number and type of fixings, the rainscreen support system, and the insulating value of the substrate and its internal finish. Example U values are given in Tables 6 to 10.

Table 6 Example U values – timber frame rainscreen system[1][2]

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Nearest available insulation thickness installed against the sheathing board – no insulation in the 140 mm timber-frame (mm)[3]	Nearest available insulation thickness installed against the sheathing board – fully filled with insulation in the 140 mm timber-frame (mm)[4]
0.13	— [6]	— [6]
0.15	— [6]	500[5]
0.17	450[5]	350[5]
0.18	380[5]	280[5]
0.21	275[5]	180
0.26	200	100
0.28	180	75
0.30	150	50
0.35	120	50

(1) Construction, external to internal: 10 mm rainscreen cladding, open fully ventilated 50 mm clear cavity, Rocksilk RainScreen Slab insulation, vapour permeable membrane, 9 mm timber OSB (oriented strand board) sheathing board (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$), 140 mm timber-frame ($\lambda$ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$, 15% fraction), AVCL, and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).
(2) A fixing correction factor (ΔU_f) of 0.1 $W \cdot m^{-1} \cdot K^{-1}$ has been applied, to allow for the thermal bridging of the rainscreen brackets together with a single stainless steel retaining fixing per insulation board.
(3) Air cavity (R = 0.18 $m^2 \cdot K \cdot W^{-1}$) with a 15% timber-frame fraction (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$).
(4) Insulation (λ = 0.035 $W \cdot m^{-1} \cdot K^{-1}$), with a 15% timber-frame fraction (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$).
(5) Achieved by double layering up to the thicknesses specified in Table 1.
(6) See section 6.2.3.

Table 7 Example U values — steel frame rainscreen system[1][2]

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Nearest available insulation thickness installed against the sheathing board – no insulation in the 90 mm steel-frame (mm)[3]	Nearest available insulation thickness installed against the sheathing board – fully filled with insulation in the 90 mm steel-frame (mm)[4]
0.13	— [6]	— [6]
0.15	— [6]	— [6]
0.17	450[5]	390[5]
0.18	390[5]	350[5]
0.21	280[5]	250
0.26	200	150
0.28	180	120
0.30	150	120
0.35	120	75

(1) Construction, external to internal: 10 mm rainscreen cladding, open fully ventilated 50 mm clear cavity, Rocksilk RainScreen Slab insulation, vapour permeable membrane, 9 mm timber OSB (oriented strand board) sheathing board (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$), 90 mm light steel-frame system (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$, 0.2% fraction), AVCL and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).
(2) A fixing correction factor (ΔU_f) of 0.1 $W \cdot m^{-1} \cdot K^{-1}$ has been applied, to allow for the thermal bridging of the rainscreen brackets together with a single stainless steel retaining fixing per insulation board.
(3) Air cavity (R = 0.18 $m^2 \cdot K \cdot W^{-1}$), with a 0.2% steel frame fraction (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$).
(4) Insulation (λ = 0.038 $W \cdot m^{-1} \cdot K^{-1}$), with a 0.2 % steel frame fraction (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$).
(5) Achieved by double layering up to the thicknesses specified in Table 1.
(6) See section 6.2.3.

Table 8 Example U values — solid reinforced concrete rainscreen system[1][2]

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Nearest available insulation thickness installed against the reinforced concrete panel (mm)
0.13	— [4]
0.15	— [4]
0.17	450[3]
0.18	390[3]
0.21	280[3]
0.26	200
0.28	180
0.30	150
0.35	120

(1) Construction, external to internal: 10 mm rainscreen cladding, open fully ventilated 50 mm clear cavity, Rocksilk RainScreen Slab insulation, 150 mm reinforced concrete (1% steel, λ = 2.3 $W \cdot m^{-1} \cdot K^{-1}$), 15 mm air cavity (R = 0.17 $m^2 \cdot K \cdot W^{-1}$, with a 20 % adhesive bridge, λ = 0.43 $W \cdot m^{-1} \cdot K^{-1}$) and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(2) A fixing correction factor (ΔU_f) of 0.1 $W \cdot m^{-1} \cdot K^{-1}$ has been applied, to allow for the thermal bridging of the rainscreen brackets together with a single stainless steel retaining fixing per insulation board.

(3) Achieved by double layering up to the thicknesses specified in Table 1.

(4) See section 6.2.3.

Table 9 Example U values — masonry rainscreen system[1][2]

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Nearest available insulation thickness (mm)
0.13	— [4]
0.15	— [4]
0.17	450[3]
0.18	390[3]
0.21	280[3]
0.26	200
0.28	180
0.30	150
0.35	120

(1) Construction, external to internal: 10 mm rainscreen cladding, open fully ventilated 50 mm clear cavity, Rocksilk RainScreen Slab insulation, 140 mm dense concrete block (λ = 1.13 $W \cdot m^{-1} \cdot K^{-1}$), 15 mm air cavity (R = 0.17 $m^2 \cdot K \cdot W^{-1}$, with a 20 % adhesive bridge, λ = 0.43 $W \cdot m^{-1} \cdot K^{-1}$) and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(2) A fixing correction factor (ΔU_f) of 0.1 $W \cdot m^{-1} \cdot K^{-1}$ has been applied, to allow for the thermal bridging of the rainscreen brackets together with a single stainless steel retaining fixing per insulation board.

(3) Achieved by double layering up to the thicknesses specified in Table 1.

(4) See section 6.2.3.

Table 10 Example U values — cross laminated timber rainscreen system[1][2]

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Nearest available insulation thickness installed against the CLT panel (mm)
0.13	—[4]
0.15	—[4]
0.17	450[3]
0.18	350[3]
0.21	255[3]
0.26	180
0.28	150
0.30	150
0.35	100

(1) Construction, external to internal: 10 mm rainscreen cladding, open fully ventilated 50 mm clear cavity, Rocksilk RainScreen Slab insulation, vapour permeable membrane, 100 mm cross laminated timber (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$), AVCL, 25 mm air cavity (R = 0.18 $m^2 \cdot K \cdot W^{-1}$, with a 11.8 % timber batten fraction, λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$) and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(2) A fixing correction factor (ΔU_f) of 0.1 $W \cdot m^{-1} \cdot K^{-1}$ has been applied, to allow for the thermal bridging of the rainscreen brackets together with a single stainless steel retaining fixing per insulation board.

(3) Achieved by double layering up to the thicknesses specified in Table 1.

(4) See section 6.2.3.

6.2.2 On the basis of data assessed, the product can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

6.2.3 For improved energy or carbon savings, designers must consider appropriate fabric/services measures.

7 Sustainable use of natural resources

Not applicable.

8 Durability

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

8.2 The product was tested for dimensional stability and the result is given in Table 11.

Table 11 Dimensional stability

Product assessed	Assessment method	Requirement	Result
Rocksilk RainScreen Slab	BS EN 1604 : 2013 (70°C and 90 % RH for 48 hours)	Length, width and reduction in thickness ≤ 1 % change	Pass

8.3 Service life

Under normal service conditions, the product will have a life at least equivalent to the structure in which it is incorporated, provided it is designed, installed and maintained 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, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 The wall and sub-frame must be designed and constructed in accordance with the relevant recommendations of:

- BS 5250 : 2021
- BS 8000-3 : 2020
- BS EN 351-1 : 2023
- BS EN 845-1 : 2013
- BS EN 1991-1-4 : 2005 and its UK National Annex
- BS EN 1992-1-1 : 2004 and its UK National Annex
- BS EN 1992-1-2 : 2004 and its UK National Annex
- BS EN 1993-1-1 : 2005 and its UK National Annex
- BS EN 1993-1-2 : 2005 and its UK National Annex
- BS EN 1993-1-3 : 2006 and its UK National Annex
- BS EN 1995-1-1 : 2004 and its UK National Annex
- BS EN 1996-1-1 : 2005 and its UK National Annex
- BS EN 1996-1-2 : 2005 and its UK National Annex
- BS EN 1996-2 : 2006 and its UK National Annex
- BS EN 1996-3 : 2006 and its UK National Annex.
- BS EN 16351 : 2021
- BS ISO 16696-1 : 2019.

9.1.3 The wall and sub-frame to which the product is fixed, or which it is installed between, must be structurally sound and constructed in accordance with section 9.1.4. However, when designing the wall for strength, stability and racking, no contribution from the insulation must be assumed.

9.1.4 Care must also be taken in the overall design and construction of elements incorporating the product to ensure appropriate:

- sheathing or bracing for frame elements. The product must not be relied on to provide any structural contribution, eg racking strength
- fire resistance, for both elements and junctions
- continuity of insulation to minimise thermal bridging
- resistance to the ingress of precipitation and moisture from the ground.

9.1.5 Wind loads must be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. The higher-pressure coefficients applicable to corners of buildings must be used.

9.1.6 Although the product will not be directly exposed to wind, each installation must be designed to withstand, without damage or permanent deformation, the pressures imposed by wind forces. The product will experience substrate movement which must be considered in the structural design of the construction.

9.1.7 The adequacy of fixing to the structural frame or substrate for specific installations is outside the scope of this Certificate and must be verified by a suitably experienced and competent individual. Particular care is required around window and door openings to ensure that the structure is capable of sustaining additional weight owing to reveal/frame details.

9.1.8 The designer must select a construction appropriate to the local wind-driven rain index to BS EN 1996-2 : 2006 and its UK National Annex, paying due regard to the design detailing, workmanship, and materials to be used. It is essential that such walls are designed and constructed to incorporate the normal precautions against moisture ingress.

9.1.9 The air gap between the face of the insulation and the back of the rainscreen panels must be of sufficient width to allow any water passing the joints to run down the back of the panels and be discharged externally, without wetting the insulation or the backing wall. The minimum width for air gaps required by the NHBC is:

- 50 mm, for panels with open joints
- 38 mm, for panels with baffled or labyrinth (rebated) joints.

9.1.10 Care must be taken to ensure that the types of façades and wall finishes, and the design and detailing around openings, are appropriate for the anticipated exposure conditions and, if necessary, resist the movement of the frame.

9.1.11 Certain rainscreen systems, such as those with open joints, may require the addition of a breather membrane incorporated into the system. The requirement for a membrane is determined by the system designer and is outside the scope of this Certificate.

9.1.12 The product must be kept dry before the cladding is applied.

9.1.13 The construction must be made weathertight as soon as practically possible to ensure maximum protection of the product.

9.1.14 Calculations of the thermal transmittance (U value) must be carried out in accordance with BS EN ISO 6946 : 2017, BRE Report BR 443 : 2019, BRE Digest 465 : 2002 and BS EN ISO 10211 : 2017.

9.1.15 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations.

9.1.16 To resist the passage of moisture from the ground, adequate damp-proof courses (DPCs) and membranes must be provided in accordance with conventional good practice.

9.1.17 Cavity barriers must be provided as required by the documents supporting the national Building Regulations.

9.1.18 Weather resistance is provided by an external cladding system (outside the scope of this Certificate).

Interstitial condensation

9.1.19 Walls will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2021.

9.1.20 If the product is to be used in the external wall of rooms expected to have high humidity, care must be taken to provide adequate permanent ventilation to avoid possible problems from the formation of interstitial condensation.

Surface condensation

9.1.21 In England and Wales, walls will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.7 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in section 9.1.15 of this Certificate.

9.1.22 For buildings in Scotland, wall constructions will be acceptable when the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.15 of this Certificate.

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.

9.2.3 For timber-frame constructions, installation must not be carried out until the moisture content of the frame is less than 20%.

9.2.4 It is important to ensure a tight fit between slabs. Trimming must be accurate, to achieve close-butted joints and continuity of insulation.

9.2.5 The product may be applied with either face in contact with the substrate. Slabs must be in continuous and direct contact with the substrate.

9.2.6 Slabs must be close butted at all vertical and horizontal joints. The horizontal joints of the insulation must be staggered, in accordance with good practice.

9.2.7 Fixings must have a minimum head diameter of 70 mm. A typical fixing pattern has three fixings per square metre, with one metal fixing incorporating a metal head at the centre of every full or part slab (see section 9.1.7 of this Certificate).

9.2.8 Extra fixings are required around openings and at corners.

9.3 Workmanship

Practicability of installation was assessed, on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the product must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

As the product is confined between the wall and the cladding and has suitable durability provided the integrity of the cladding is maintained throughout the life of the system, maintenance is not required.

10 Manufacture

10.1 The production processes for the product 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.

† 10.1.6 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 Slabs are delivered to site compression-wrapped in polythene. Each pack carries a label bearing the Certificate holder's name, product description and the BBA logo incorporating the number of this Certificate.

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

11.2.1 The product must be stored clear of the ground, on a clean, level surface, and preferably under cover to protect them from prolonged exposure to moisture or mechanical damage.

11.2.2 Dust masks, gloves and long-sleeved clothing must be worn when cutting and handling the slabs.

11.2.3 Damaged, contaminated, or wet slabs must not be used.

ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the product 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.

CE marking

The Certificate holder has taken the responsibility of CE marking the product, in accordance with harmonised European Standard EN 13162 : 2012.

Management Systems Certification for production

The management system of Knauf Insulation Ltd has been assessed and registered as meeting the requirements of ISO 9001 : 2015, ISO 14001 : 2015, ISO 45001 : 2018 and ISO 50001 : 2018 by TÜV Nord (Certificates 44100190742, 44104190742, 44126190742 and 44764190742 respectively).

Additional information on installation

General

A.1 The product can be cut using a fine-serrated saw or sharp knife, but care must be taken to prevent damage, particularly to edges.

A.2 Each proprietary rainscreen cladding system utilises its own mechanisms for attaching cladding panels to the wall structure. Guidance for the site work should be sought from the system manufacturers but such advice is outside the scope of this Certificate.

Procedure

A.3 The lower edge of the first run of slabs may be positioned below DPC level to provide some edge insulation for the floor.

A.4 The slab must be cut and tightly fitted around wall brackets where these occur. Slabs must be cut slightly (maximum 5 mm) oversize and may be compression-fitted into place.

A.5 For a typical installation, a breathable membrane is placed between the sheathing board and the products. An AVCL, which must be a minimum thickness of 0.125 mm (500 gauge) polyethylene, is placed between the plasterboard and the frame. Designers must, however, choose a suitable construction on a case-by-case basis for a particular installation. Example constructions are given in Figures 1 to 5.

Figure 1 Timber-frame substrate

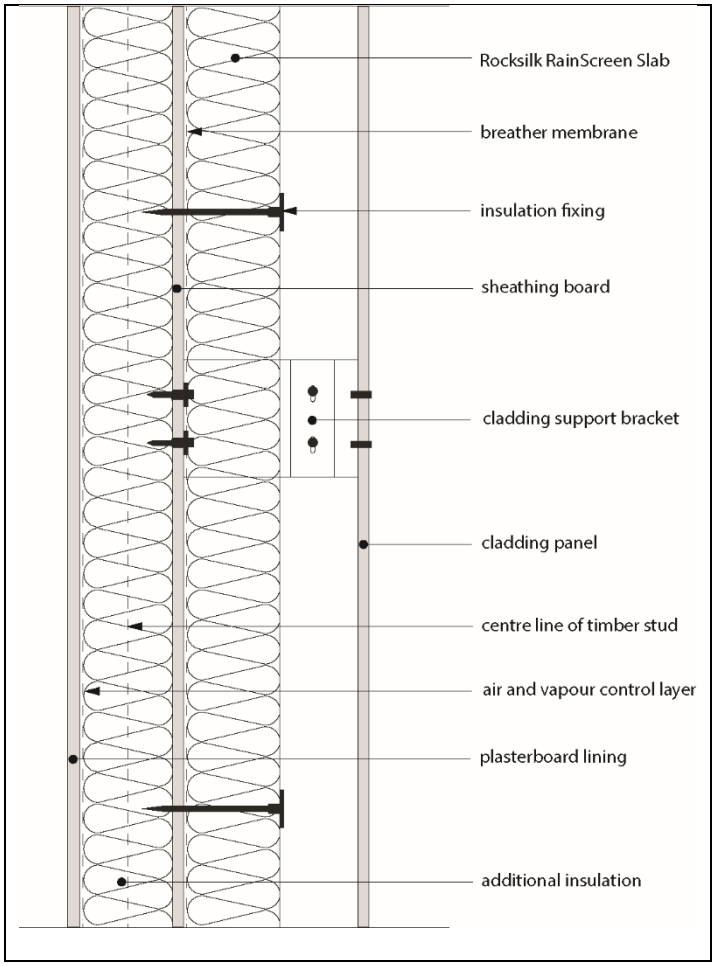


Figure 2 Lightweight steel frame substrate

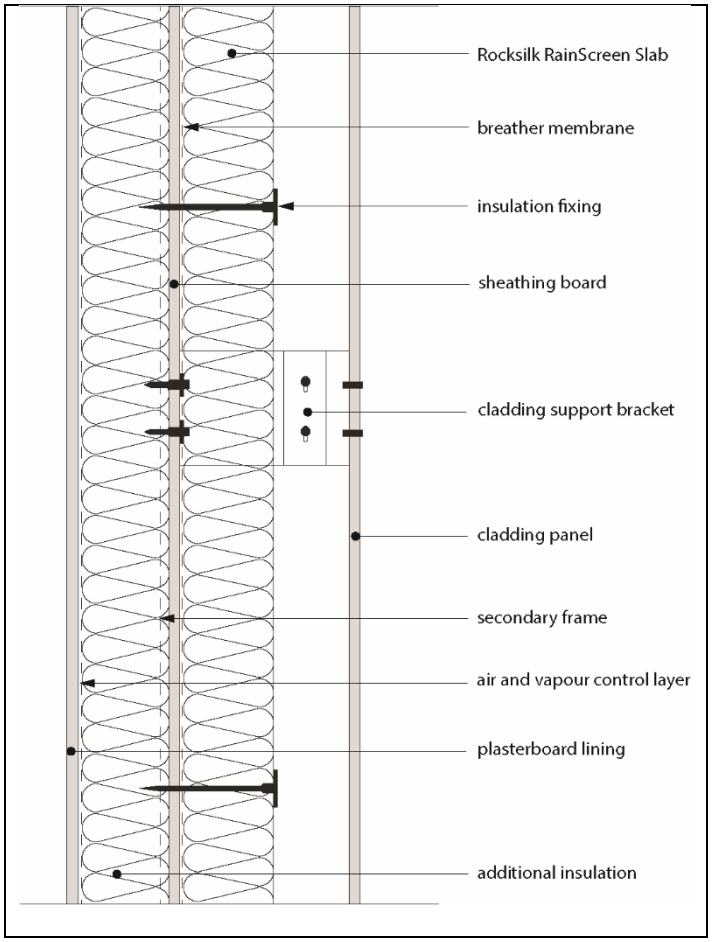


Figure 3 Masonry substrate

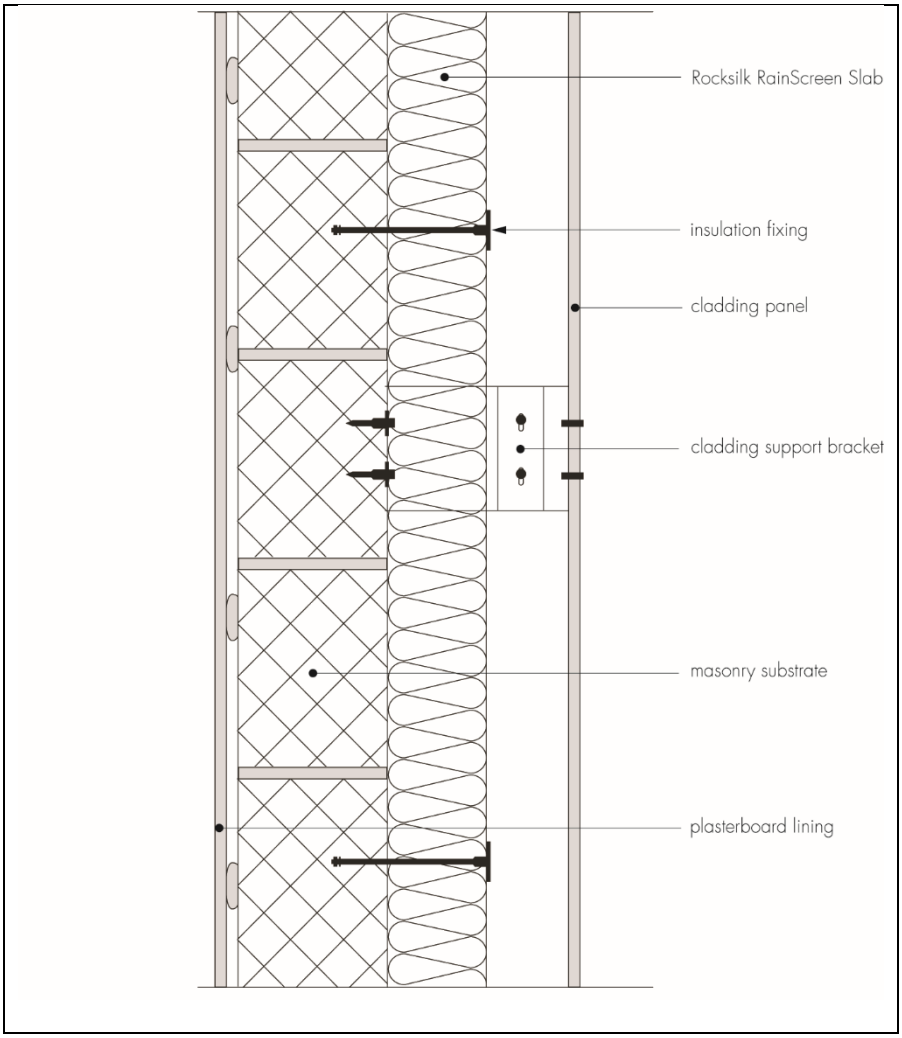


Figure 4 Reinforced concrete substrate

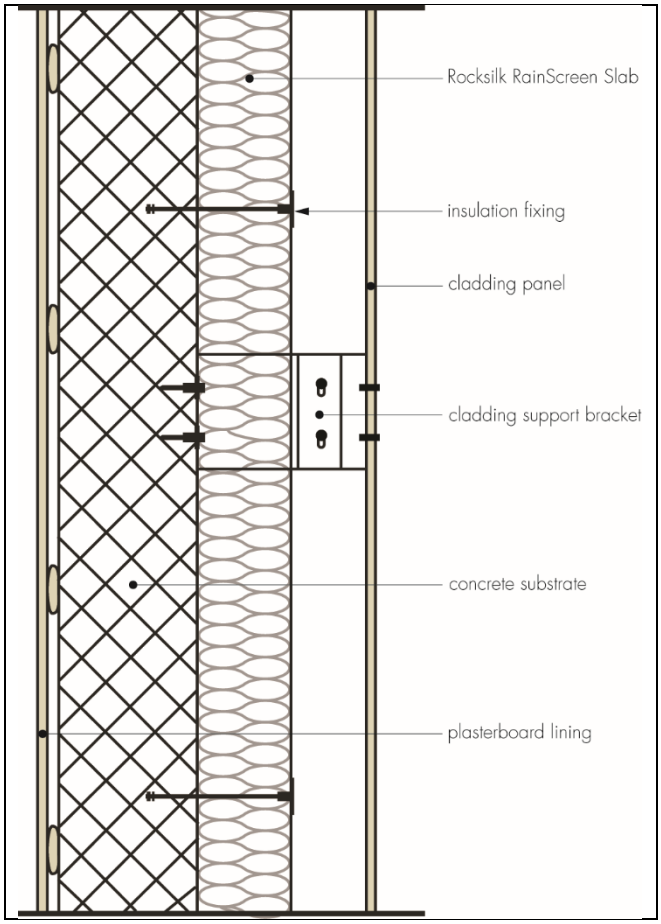
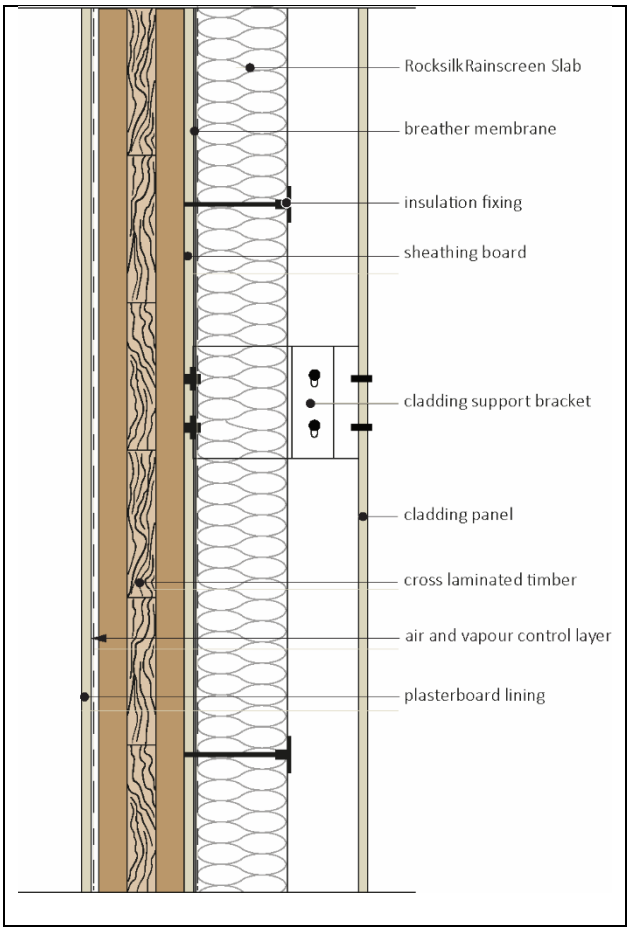


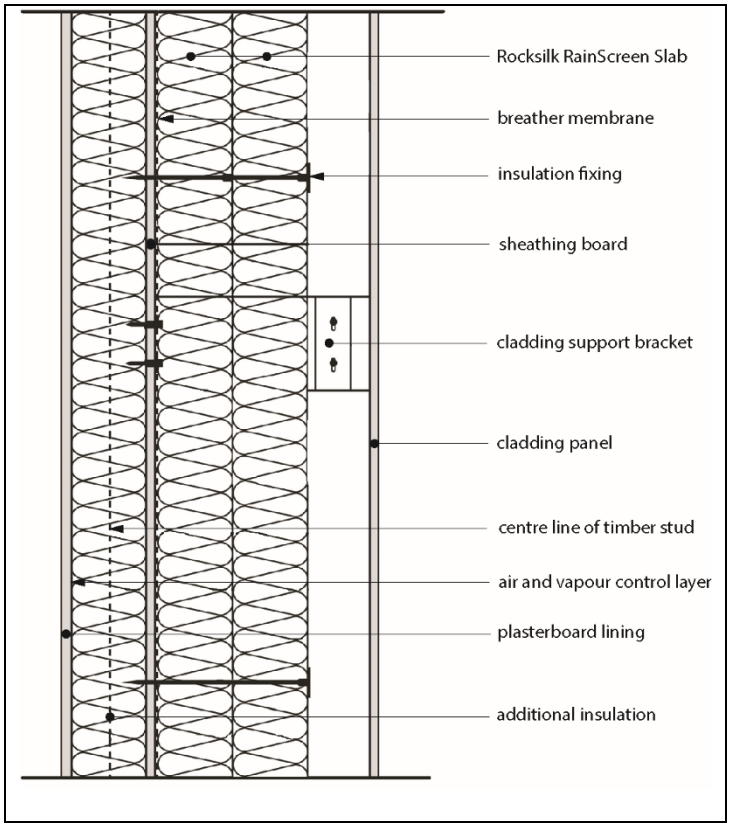
Figure 5 Cross laminated timber substrate



Double layering

A.6 For steel-frame systems or timber-frames, the first row of slabs must be installed in portrait orientation. These must be fixed through the centre of the slabs into the sheathing board and a stainless steel washer used. The second layer may either be fixed in portrait (staggered by 300 mm) or landscape orientation, and again fixed in position through the centre of the slab to the stud utilising a stainless steel washer. Additional fixings utilising either stainless steel or plastic washers may be installed at the slab joints into the studs. An example construction is given in Figure 6.

Figure 6 Double layer timber frame



A.7 For a masonry substrate, either of the above methods may be used or both layers may be installed in a horizontal orientation (staggered by 600 mm), ensuring that at least one fixing with a stainless steel washer is installed into the centre of each slab back to the masonry substrate, and making sure this fixing does not interfere with the final fixing pattern of the product.

A.8 The Certificate holder's guidance should be sought on detailed installation methods for specific projects; however, such advice is outside the scope of this Certificate.

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ISO 50001 : 2018 *Energy management systems — Requirements with guidance for use*

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
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

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:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- 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.