


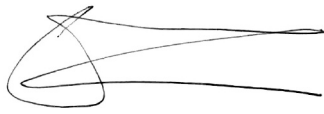


Number BAW 13-010/01/C Replaces: BAW 09-341, 342 and 343	 	Category Timber frame and masonry external cavity walls
Date 2013.01.15	<p align="center">BDA Agrément® BAW 13-010/01/C</p> <p align="center">Document linked with Kiwa Certificate KGaC 2006 GB, issued by Kiwa Ltd., Cheltenham, UK</p>	Phase Assessment
Project number 12-G-0158		Subject Multi-foil reflective thermal insulation
Product Producer Description Scope (use) Summary of Certificate Major points of assessment Statement	<p>SuperQuilt 19</p> <p>Yorkshire Building Services (Whitwell) Ltd. The Crags Industrial Park Morven Street Creswell Derbyshire S80 4AJ UNITED KINGDOM</p> <p>T. : +44 (0) 1909 721662 F. : +44 (0) 1909 721442 I. : www.ybsinsulation.com E. : technical@ybsinsulation.com</p> <p>Multi-layered wall insulation material made up of nineteen layers of metallic foil, flexible wadding and closed cell foam. The layers are spot wise connected by 40 mm long double T plastic clips in a regular pattern, avoiding thermal bridging and creating flat and parallel surfaces (Product Type 1 according BS EN 16012¹²). The first and nineteenth layer consist of aluminium foil with polyethylene backing and reinforcing scrim. The core of the product consists of four layers of polyester fibre wadding and six double layers of closed cell foam separated by seven metallized film layers.</p> <p>Thermal insulation for use on the inside of timber frame, dry lining and masonry external cavity walls, as well as external wall applications of dwellings and buildings with similar temperature and humidity conditions, designed and constructed in accordance with the relevant clauses of BS 5268² and BS 5628³.</p> <p>This Certificate covers the following:</p> <ul style="list-style-type: none"> • Conditions of use • Frame of reference, including relevant codes of practice and test reports • Independently verified product characteristics • Factory Production Control • Annual verification procedure • Points of attention for the specifier and specific details • Installation procedure • Compliance with Building Regulations and NHBC Standards <p>Thermal performance aspects (sections 1.2, 8.2 & 8.3) The basic property of SuperQuilt 19 concerns the thermal performance. BDA Test Institute has assessed the thermal performance of the product according BS EN ISO 6946 and BR443. The product can contribute substantially in meeting the U-value requirements for timber frame, dry lining and masonry external cavity walls, as well as external wall applications.</p> <p>Condensation and water penetration risk (section 8.4) The performance of SuperQuilt 19 with regard to interstitial condensation, surface condensation and water penetration has been considered.</p> <p>Behaviour in relation to fire (section 8.5) An insulated timber frame, dry lining, masonry external cavity wall or external wall insulation system using SuperQuilt 19 can be designed to meet the UK requirements.</p> <p>Durability (section 8.6) SuperQuilt 19 is stable, rot-proof and durable and will remain effective as an insulant for the life of the building in which it is installed.</p> <p>It is the opinion of the Kiwa BDA Expert Centre Building Envelope (ECBE) that SuperQuilt 19 is fit for its intended use, provided it is specified, installed and used in accordance with this Certificate.</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="327 1691 619 1883">  Professor Nico Hendriks, MSc ECBE Chairman </div> <div data-bbox="1093 1668 1492 1883">  Authorization: Chris van der Meijden, BSc BDA Advies Manager </div> </div> <p align="center">To check the validity of this document please consult www.bda.nl</p>	
Version 01	Kiwa BDA Expert Centre Building Envelope (ECBE) Department of BDA Advies BDA Group Ltd (BDA Groep B.V.) Avelingen West 24 P.O. Box 389 NL - 4200 AJ Gorinchem T: +31(0)183 669690 F: +31(0)183 630630 Copyright© 2013 BDA	Page 1 of 8 pages

<p>1 Conditions of use</p>	<p>1 Application The assessment and certification of SuperQuilt 19 relate to the use of the product in dwellings and buildings with similar temperature and humidity conditions with either correctly installed masonry and/or timber frame and/or discontinuous weather resistant cladding on external cavity or solid walls, which have been designed and constructed in accordance with the relevant clauses of BS 5268² and BS 5628³. SuperQuilt 19 shall not be exposed to organic solvents or plasticisers.</p> <p>2 Assessment BDA Test Institute*) has assessed the thermal performance of the product according BS –EN 16012 (BS EN 12667: 2001). The hemispherical emissivity has been assessed according BS EN 16012, Annex D and the characteristic properties according BS EN 823, BS EN 1848-2, BS EN 1602, 1604 and 1608, BS EN 12310-1 and BS EN ISO 12572. *) CPD Notified Laboratory Nr. NB 1640; Testing Accreditation RvA L 447 (acknowledged by UKAS)</p> <p>3 Installation It is recommended that the quality of installation and workmanship is controlled by an independent competent inspector. This inspector can be either a qualified employee of the specifier or a qualified employee of a consulting engineer. The product shall be installed strictly in accordance with the instructions of the Certificate holder and the requirements of this Certificate.</p> <p>4 Geographical scope The validity of this document is limited to England, Wales, Scotland and Northern Ireland, with due regard to section 11. Regulations.</p>
<p>2 Frame of reference</p>	<p>1 BDA Guideline – BDA Agrément[®], 15th June 2012 2 BS 5268-2:2002 Structural Use of Timber. Code of Practice for Permissible Stress Design, Materials and Workmanship 3 BS 5628 Part 3:2001 Code of practice for the use of masonry: materials and components, design and workmanship 4 BS 5250:2011 Code of practice for control of condensation in buildings 5 BS EN ISO 6946: 2007 Building components and building elements -Thermal resistance and thermal transmittance - Calculation method 6 BR443: Conventions for U-value calculations, 2006 edition, BRE Scotland 7 BDA Report 0210-L-11/1rev SuperQuilt 19: Determination of product characteristics (initial type testing), 2012.06.21 8 BDA Report 0210-L-11/2 SuperQuilt 19: Determination of thermal resistance (initial type testing), 2012.01.26 9 Fraunhofer Test Report P17-084e/2008: Approval Testing of Thermal Insulation Composite Mat „SuperQuilt 19 layers“, 27. Mai 2008 10 BDA-Kiwa report: Technical Documentation, containing information to demonstrate the conformity of the products to the applicable requirements of BDA Agrément[®]+ Kiwa Certificate BAW 12-010/01/C 11 BBA Information Bulletin No. 3: Reflective foil Insulation – Conventions for U-value calculations, March 2010 12 BS EN 16012: 2012 Thermal insulation for buildings – Reflective insulation products – Determination of the declared thermal performance 13 NHBC Standards, Chapter 2.3 Timber preservation (natural solid timber), Chapter 6.1 External masonry walls and Chapter 6.2 External Timber Frame Walls 14 Kiwa Guideline K22005, 15th June 2012 15 Kiwa Certificate KGaC 2006 GB, 2012.07.25, Kiwa Ltd., Cheltenham, UK 16 BDA Report 12-G-0158 SuperQuilt 19 Wall Insulation: calculation of thermal resistance, 2012.11.01 17 BS 5268-5: 1989 Structural use of timber – Code of practice for the preservative treatment of structural timber 18 BS 8212: 1995 Code of practice for dry lining and partitioning using gypsum plasterboard 19 BS EN 13914-1: 2005 Design, preparation and application of external rendering and internal plastering. External rendering</p> <p>Remark: in the text of this document reference is made to these sources by adding the relevant reference number in superscript</p>
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<p style="text-align: right;">Page 2 of 8 pages</p>	

<p>3 Independently verified product characteristics</p>	<ul style="list-style-type: none"> • nominal length : 10.00, 6.667 (m) • nominal width : 1500 (mm) • nominal thickness : 40 (mm) • nominal mass : 0.80 (kg.m⁻²) • thermal performance core⁸ : 1.52 (m².K.W⁻¹) • thermal resistance¹⁶ <ul style="list-style-type: none"> - SuperQuilt 19 with adjacent non-ventilated minimum 20 mm cavity, horizontal heat flow : 2.26 (m².K.W⁻¹) - SuperQuilt 19 with 2 adjacent non-ventilated minimum 20 mm cavities, horizontal heat flow : 3.00 (m².K.W⁻¹) - SuperQuilt 19 with adjacent non-ventilated minimum 13 mm cavity, horizontal heat flow : 2.01 (m².K.W⁻¹) - SuperQuilt 19 with 2 adjacent non-ventilated minimum 13 mm cavities, horizontal heat flow : 2.50 (m².K.W⁻¹) • emission coefficient of outer surfaces^{7,16} : 0.02 (-) • dimensional stability (length)⁹ : 1.5 (%) • dimensional stability (width)⁹ : 2.3 (%) • tensile strength parallel to faces⁹ : 142 (kPa) • tearing resistance (nail shank)⁶ : 408 (N) • water vapour diffusion factor μ (with seam)⁸ : 1700 (-) • water vapour diffusion factor μ (without seam)⁸ : 75000 (-) • reaction to fire classification⁸ : Euroclass E (BS EN 13501-1) 	
<p>4 Ancillary items (outside scope of this Certificate)</p>	<ul style="list-style-type: none"> • YBS Insulation foil-backed tape with acrylic adhesive, width 75 mm • 14 mm staples or nails • spider clips • vapour control layer • breather membrane • pre-treated counter battens and softwood battens • additional insulation where required 	
<p>5 Factory Production Control (FPC)</p>	<p>Kiwa N.V., Approval Body, has determined that Yorkshire Building Services (Whitwell) Ltd. (YBS), with respect to the product SuperQuilt 19 fulfills all provisions concerning the specifications de-scribed in BDA Agrément[®] nr. BAW 13-010/01/C. The Factory Production Control is in line with the Kiwa Guideline K22005¹⁴ and BDA Agrément[®] nr. BAW 13-010/01/C. The Factory Production Control system of YBS is in line with the Technical Documentation from the manufacturer¹⁰. Kiwa Ltd. has performed the initial inspection of the factory and of the Factory Production Control and performs the continuous surveillance of the Factory Production Control¹⁵.</p>	
<p>6 Quality control</p>	<p>SuperQuilt 19 is produced under a Quality Management System, which is deemed to satisfy the requirements concerning the FPC. The quality system enables the Certificate holder to demonstrate that the product fulfils the requirements of this Certificate. This means that the following aspects are covered:</p> <ul style="list-style-type: none"> • the quality objectives, quality planning, quality manual and control of documents must fully take on board the objective of delivering a product that conforms to the specifications in this Certificate; • the manufacturer must identify and document the essential requirements that are relevant for the product and the harmonised standards to be used or other technical solutions that will ensure fulfilment of the specifications in this Certificate; • the identified standards or other technical solutions must be used as design input, and as verification that design output as given in a continuous technical consulting service ensures that the specifications in this Certificate will be met; • the measures taken by the Certificate holder to control production must ensure that the products conform to the identified safety requirements; • the Certificate holder in its measurement and control of the production process and finished products must identify and use methods which are identified in standards or other appropriate; • methods to ensure that the specifications in this Certificate are met; and • quality records, such as inspection reports and test data, calibration data, qualification reports of the personnel concerned, must be suitable to ensure the fulfilment of the applicable specifications in this Certificate. 	
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Figure 1 – Typical masonry cavity wall application of SuperQuilt 19

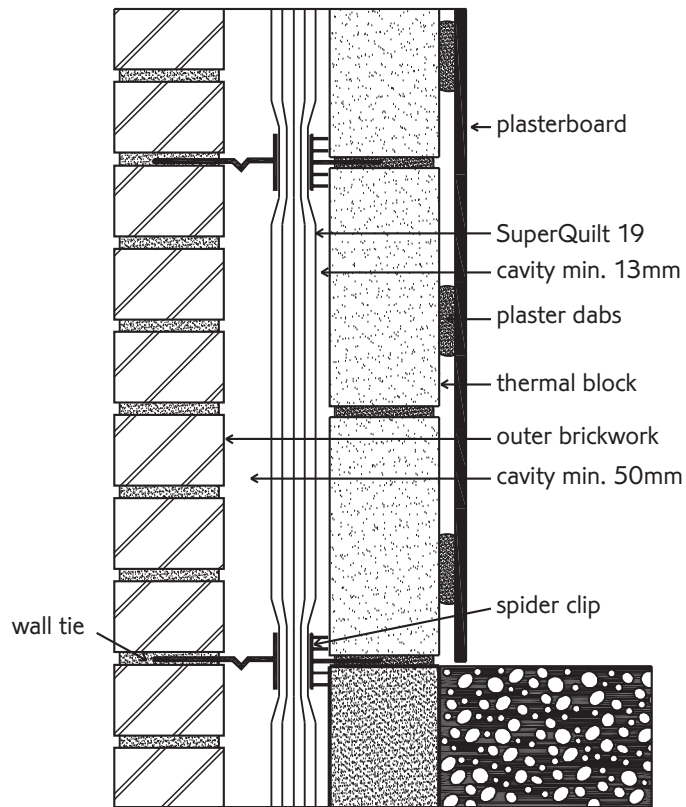
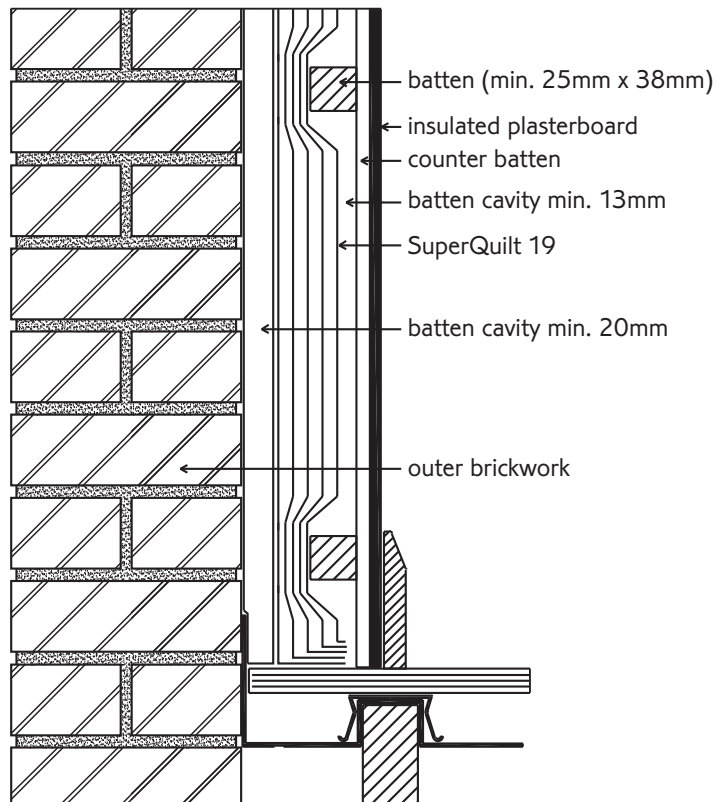


Figure 2 – Typical masonry cavity wall application, with dry lining and SuperQuilt 19



9 Specific details
(continued)

Figure 3 – Typical timber frame application of SuperQuilt 19

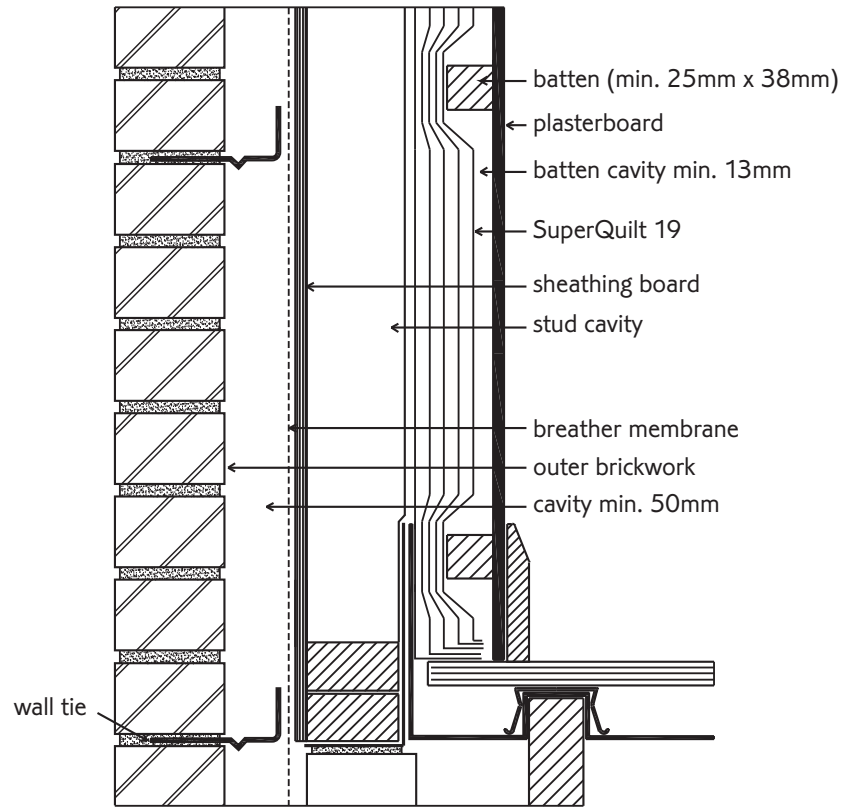
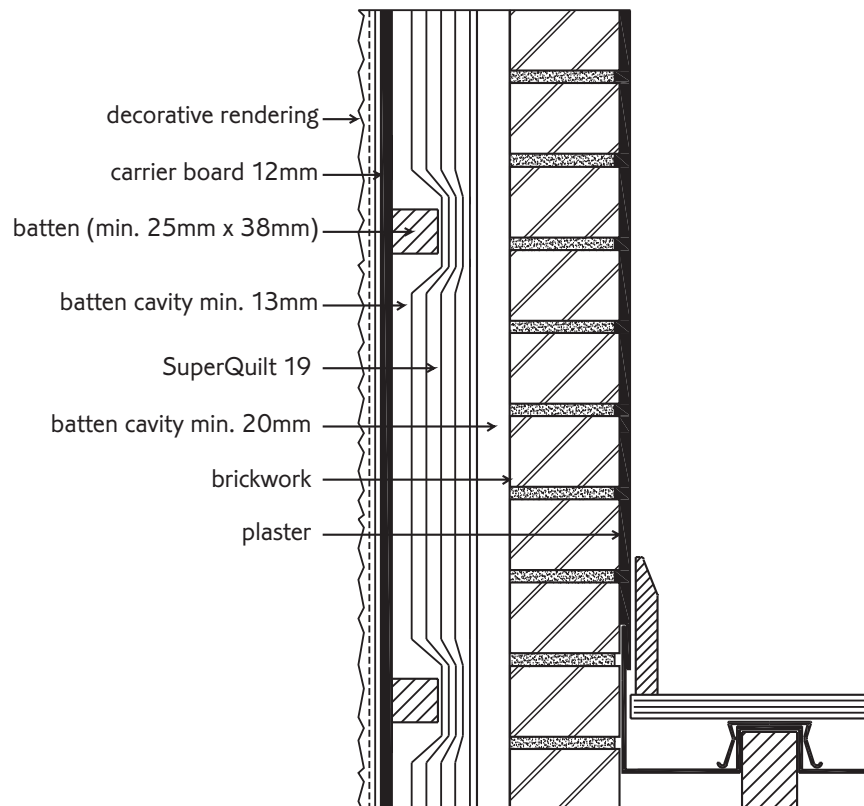


Figure 4 – Typical external wall insulation application with SuperQuilt 19



Remark: As part of the required technical consulting service (see paragraph 10.4) the Certificate holder can provide for special (cad) details, for example on openings, cavity trays, base of wall and corners.

<p>10 Installation procedure</p>	<p>1 General</p> <ul style="list-style-type: none"> - installation of SuperQuilt 19 and additional products should be in accordance with the Certificate holder's instructions and current good building practice; - during installation care must be taken to avoid damaging of the product; should damage occur, holes in the product should be repaired with suitable tape, as provided by the Certificate holder; - the product should be attached to the studs and battens by using staples or nails of at least 14 mm length; - the width of overlap joints must be at least 50 mm; the joints must be taped over the full length with suitable tape, as provided by the Certificate holder; - when the product is cut to fit around openings or connections, gaps must be minimised; any exposed cut edges should be sealed with suitable tape, as provided by the Certificate holder. <p>2 Delivery and site handling</p> <ul style="list-style-type: none"> - the product is delivered to site in rolls packed in a protective bag sealed with a plastic tie; fitting instructions are placed in the bag; - the rolls should be stored in clean, dry conditions, not exposed to sunlight; - the product must be protected from being dropped or crushed by objects; care must be exercised when storing large quantities on site; - the product must not be exposed to open flame or other ignition sources and must be stored away from flammable material such as paint and solvents; - to ensure maximum performance of the product when installed, on site precautions must be taken to protect it from mud and dirt. <p>3 Wall insulation</p> <p>Cavity wall (figure 1, section 9)</p> <ul style="list-style-type: none"> - bricks or blocks shall be installed in accordance with BS 5628³; recommendations of the brick/block manufacturer should be followed; - the spider clips shall be fitted on to the wall tie against the inner leaf, creating the minimum cavity width between the product and the blockwork; - the product shall be cut equal to the width of the wall plus 100 mm; - the initial run of the product is positioned over the wall ties, ensuring that it is kept taut but with sufficient drop to below floor insulation; - the product can be cut with a sharp blade to fit onto wall ties; the top edge of the material shall be a minimum of 75 mm over the top row of the wall ties giving a weathered lap joint. - when a full run is in position, the retaining clip shall be fixed to the wall tie to keep the product central in the cavity; - the outer leaf shall be built up to the topmost line of the wall ties (or two courses below) and the second run of the product installed ensuring a minimum lap of 75 mm; - vertical joints in the product shall always be on a line of wall ties, ensuring a 100 mm lap (i.e. 50 mm on either side of the wall tie) and sealed using foil-backed tape as delivered by the Certificate holder; - at internal and external corners a recommended air space of 25 mm shall be maintained. <p>Dry lining (figure 2, section 9)</p> <ul style="list-style-type: none"> - vertical counter battens (minimum 25 mm by 38 mm) shall be fixed to the wall at 400 mm centres; - battens shall always be placed at the top and bottom of the wall and around the perimeter of doors and windows; - the product shall be applied directly from the roll either vertically or horizontally depending on the wall height, pulled tight and stapled onto the battens at minimum 300 mm centres; - the product shall be overlapped at each joint by approximately 50 mm and stapled onto the battens, the joints shall be sealed using foil-backed tape as delivered by the Certificate holder; - counter battens shall be fixed to the wall battens through the product at 400 mm centres; - the plasterboard is fixed over the product and onto the battens. <p>Timber frame (figure 3, section 9)</p> <ul style="list-style-type: none"> - the product shall be applied directly from the roll either vertically or horizontally depending on the wall height, pulled tight and stapled onto the timber studs at minimum 300 mm centres; - the product shall be overlapped at each joint by approximately 50 mm and stapled onto the studs, the joints shall be sealed using foil-backed tape as delivered by the Certificate holder; - perpendicular counter battens (recommended 25 mm by 38 mm) are fixed to the studs; battens shall always be placed at the top and bottom of the wall and around the perimeter of doors and windows; - the plasterboard is fixed over the product and onto the battens. <p>Remark: the void within the stud zone may be filled with additional insulation.</p> <p>External render insulation figure 4, section 9)</p> <ul style="list-style-type: none"> - all timber exposed to the outer cavity, except naturally durable species, shall be treated in accordance with NHBC Standards, Chapter 2.3 'Timber preservation (natural solid timber)¹³; - the product shall be applied directly from the roll either vertically or horizontally depending on the wall height, pulled tight and stapled onto the timber battens at minimum 300 mm centres; - the product shall be overlapped at each joint by approximately 50 mm and stapled onto the battens, the joints shall be sealed using foil-backed tape as delivered by the Certificate holder; - perpendicular counter battens (recommended 25 mm by 38 mm) are fixed to the vertical battens; battens shall always be placed at the top and bottom of the wall and around the perimeter of doors and windows; - the carrier board is fixed over the product and onto the battens; - the external rendered finishing shall comply with BS EN 13914-1¹⁹. 	
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<p>10 Installation procedure (continued)</p> <p>11 Regulations</p>	<p>4 Maintenance and repair</p> <ul style="list-style-type: none"> - once installed, the product does not require any maintenance, provided that it remains installed strictly in accordance with the requirements of this Certificate and of the Certificate holder; - the Certificate holder must continue to provide a technical consulting service, such as but not limited to special (cad) details. <p>1 Requirements: The Building Regulations (England and Wales) (as amended)</p> <ul style="list-style-type: none"> - B3(4) Internal fire spread (structure) – combustible materials are permitted by the regulation. SuperQuilt 19 has a Class 1 surface spread of flame rating; - C4 Resistance to weather and ground moisture – SuperQuilt 19 can adequately resist the passage of moisture, provided the wall is constructed in accordance with BS 5268-2², BS 5268-5¹⁷, BS 5628-3³, BS 8212¹⁸ and Section 10 of this Certificate; - L1 Conservation of fuel and power – masonry and/or timber frame or discontinuous weather resistant cladding external cavity walls constructed using SuperQuilt 19 can be designed and constructed to provide a U-value of no greater than 0.30 W.m⁻²K⁻¹; The product, when used in masonry and/or timber frame or discontinuous weather resistant cladding external cavity walls, can contribute to a building meeting the Target Emission Rate; - Regulation 7 Materials and workmanship – SuperQuilt 19 is manufactured from suitably safe and durable materials for their application and can be installed to give a satisfactory performance. <p>2 Requirements: The Building (Scotland) Regulations (as amended)</p> <p>2.1 Regulations 8 (1) Durability of materials and workmanship</p> <ul style="list-style-type: none"> - SuperQuilt 19 is manufactured from acceptable materials and are considered to be adequately resistant to deterioration and wear under normal service conditions, provided they are installed in accordance with the requirements of this Certificate. <p>2.2 Regulation 9 Building Standards Construction</p> <p>Section 2 Fire</p> <ul style="list-style-type: none"> - 2.4 cavity barriers - combustible materials are permitted in the cavity but require any opening to be sealed; - 2.5 Heat-producing, solid fuel burning or oil- or gas-fired installations - a wall, incorporating SuperQuilt 19 can be designed and constructed to comply with these Standards, provided that they are isolated from the flue of a gas-fired, or solid fuel, or oil-fired heat-producing appliance by a separation. The insulation must be adequately separated from a fire place opening, recess, hearth or flue pipe, or from any heat-producing appliance. <p>Section 3 Environment</p> <ul style="list-style-type: none"> - 3.10 Precipitation – SuperQuilt 19 can adequately resist the passage of moisture provided the wall is constructed in accordance with BS 5268-2², BS 5268-5¹⁷, BS 5628-3³, BS 8212¹⁸ and Section 10 of this Certificate; - 3.15 Condensation – a wall formed using SuperQuilt 19 in accordance with the requirements of Section 10 of this Certificate and of BS 5250⁴, can be designed and constructed to comply with these Standards. <p>Section 6 Energy</p> <ul style="list-style-type: none"> - 6.1(b) Where a proposed wall U-value is not better than (or is greater than in Scotland) the relevant 'notional' value, additional energy saving measures will be required in the building envelope and/or services to achieve the required overall carbon dioxide emission rate reduction of about 20% in dwellings (18% to 25% in Scotland) and 23% to 28% in buildings other than dwellings; - 6.2.1. Conservation of fuel and power: the building fabric - walls can be designed and constructed with SuperQuilt 19 to provide a U-value of no greater than 0.27 W.m⁻²K⁻¹. <p>3 Requirements: The Building Regulations (Northern Ireland) (as amended)</p> <ul style="list-style-type: none"> - B2 Fitness of materials and workmanship – SuperQuilt 19 is manufactured from materials which are considered to be suitably safe and acceptable for use as insulation for timber frame and masonry walls; - C5 Resistance to moisture and weather – where SuperQuilt 19 is installed within timber frame and masonry walls, these walls can be designed and constructed so as to prevent the passage of moisture or water vapour through it. Advice is given in section 10 of this Certificate; - C7 Condensation - a wall incorporating SuperQuilt 19 can be designed and constructed to prevent any harmful effect from moisture in the form of interstitial condensation; - F2 Conservation of fuel and power – Timber frame and masonry walls, incorporating SuperQuilt 19, can be designed and constructed to provide a U-value of no greater than 0.30 W.m⁻².K⁻¹; - F3(2) The product can contribute to a building satisfying its Target Emission Rate. 	
<p>12 NHBC Standards</p>	<p>NHBC accepts the use of SuperQuilt 19, provided it is specified, installed and used in accordance with this Certificate, in relation to the NHBC Standards, Chapter 2.3 Timber preservation (natural solid timber), Chapter 6.1 External masonry walls and Chapter 6.2 External Timber Frame Walls¹³.</p>	
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