



# Certificate No: EWS320



This certificate is valid for Building Regulations & associated technical guidance in force on the date of registration and for the regulations in the countries indicated

## Guardian Building Products – Guardian Roof

### Description of Product

Guardian Roof is a proprietary solid roof system to replace an existing translucent roof of a domestic conservatory or porch. This roof system achieves the u-values specified in Table 2 of Approved Document L1B. This registration applies to the roof only.

This Registered Detail Certificate is designed to fast-track, not remove, the requirement to obtain Building Regulation Approval through LABC. This can only be demonstrated through a Completion Certificate issued following satisfactory inspections made as part of a valid Building Regulation application by Local Authority Building Control teams.



### Key Factors Assessed

- Mechanical Resistance & Stability
- Safety in case of Fire
- Health, Hygiene and Environmental
- Safety in Use
- Energy Economy and heat retention
- Durability serviceability and identification

### Validity

This certificate was first issued on 8<sup>th</sup> August 2012 and is valid until 1<sup>st</sup> September 2018.  
Issue Dated 5<sup>th</sup> October 2017

## Scope of Registration

Approved Document A: The existing structure will need to be assessed to ensure its adequacy for taking any additional loads and may include exploratory investigation of the existing construction.

Approved Document L1B states that the amount of glazing allowed to an extension is 25% of the floor area. In order for this limitation not to apply, there should be:

1. Effective thermal separation must be maintained between the dwelling and former conservatory or porch.
2. Any existing independent temperature and on/off controls to any heating system installed within the former conservatory or porch may be maintained.

Refer to Technical Guidance Note MG0010411 Application of Part L to Conservatories attached to existing dwellings

<http://www.labc.uk.com/Media/Default/library/Technical%20Guides/MG0010411%20Application%20of%20Part%20L%20to%20Conservatories%20attached%20to%20existing%20dwellings.pdf> and LABC guidance on solid roofs to conservatories and porches attached to dwellings [http://www.labc.co.uk/sites/default/files/Solid-roof-conservatories-guide-labc\\_0.pdf](http://www.labc.co.uk/sites/default/files/Solid-roof-conservatories-guide-labc_0.pdf)

The roof specification designed to achieve 0.18 W/m<sup>2</sup>K comprises; Metrotile or Decratile lightweight roofing and breathable membrane fixed directly to 12mm exterior grade plywood fixed to the top of rafter profile with screw fixings @ 150c/s. The aluminium rafter profile is designed according to span and pitch. Profile centres will not exceed 600mm with a 25 x 50 timber batten fixed to the bottom the profile. 40mm Kingspan K7 foil faced phenolic insulation fitted between the rafters immediately on top of the battens. This leaves a 54mm ventilated cavity space under the plywood and between the rafters. 25mm Kingspan K8 tissue faced phenolic insulation fitted tightly between the battens. 60mm Kingspan K18 tissue faced phenolic insulation with a bonded gypsum board face fixed to the underside of the battens with stainless steel drywall screws and plaster scrim finish.

For Scotland purposes:

This Registered Detail covers only the "replacement roof element" which comprises:

- a series of aluminium ring beams, ring beam angles, box gutters, victorian / Edwardian ridge, lean-to ridge, victorian hip, georgian hip, rafter/gable and cleat and screw fixings, (depending upon the replacement roof configuration)
- a roof make up of 60mm insulated plasterboard; 40mm insulation board; 25mm insulation board; open jointed 150 x12mm exterior plywood sarking boards; vapour permeable underlay; 25x50mm treated softwood timber battens laid at 400mm centres from eaves to ridge (rather than parallel with the eaves) to take Metroshingle roof tiles; ridge tile; foam tape and
- roof void ventilation via eaves and ridge ventilators providing an air flow between the topmost insulation layer and the underside of the metal roof materials through open jointed timber sarking in accordance with drawings GWR-003 Rev C and GWR-Rev C both dated 17 October 2013.

Site specific elements not included in those elements specified here under Section 7 and as shown and specified in the supporting drawings, specifications and supporting literature are out with the scope of this Registered Detail.

The Registered Detail does not cover the installation of rooflights within the new roof structure although it is recognised that such installations can be accommodated within prescribed roof zones identified by the structural engineer's guide. The specification and installation details will be the subject of the site specific building warrant application.

## **Energy - Design guidance and parameters – Thermal divide retained – Stand-alone building**

Site specific information:

Confirmation shall be provided of the date of erection of the “existing conservatory or stand-alone building” which is the subject of the conversion or alteration.

NOTE: This information is needed to allow compliance with Mandatory Standard 6.2 to be determined when cognisance is taken of Clauses 6.2.6, 6.2.7, 6.2.9, 6.2.11, 6.2.12 and 6.2.13.

This Registered Detail has been assessed and accepted with a U-value of 0.18 W/m<sup>2</sup>K which satisfies Guidance Clause 6.2.9, Table, Column (b) for insulation which is installed at rafter level. In meeting this criterion, compliance with Guidance Clauses 6.2.6, 6.2.7, 6.2.11, 6.2.12 and 6.2.13 will be achieved.

This Registered Detail takes cognisance of the guidance for compliance with Energy use as defined by

- Clause 6.2.0 Conversions

Where the building as converted shall meet the requirements of this standard in so far as is reasonably practicable.

- Clause 6.2.9 U-values

Where the insulation envelope of a dwelling or a building of dwellings is extended, the new building fabric should be designed in accordance with one of two levels of elemental U-values for walls, floors, roof, windows, doors and rooflights, as shown in the table to Clause 6.2.9

- Clause 6.2.11 Infill of large openings

The infill of an existing opening of greater area (than approximately 4 m<sup>2</sup>) in the building fabric should have a U-value which achieves those in Column (b) of the table to clause 6.2.9

- Clause 6.2.11 Reconstruction of Elements

Where the build-up of an element forming part of the insulation envelope is to be altered or dismantled and rebuilt, the opportunity should be taken to improve the level of thermal insulation. Column (b) of the table to clause 6.2.9 gives benchmark U-values and in many cases these can be achieved without technical risk, within the constraints of the existing construction.

- Clause 6.2.13 Stand-alone Buildings

For heated stand-alone buildings of less than 50m<sup>2</sup>, the fabric values identified in columns (b) and (c) of the table to clause 6.2.9 and clause 6.2.10 should be followed. U-value recommendations should be met, though it should be noted that the area of glazing is not limited. This allows, for example, a dwelling to be extended to create a highly-glazed standalone building such as a sunroom, with glazing in excess of the limits identified in clause 6.2.9.

## **Energy - Design guidance and parameters – thermal divide removed – extension to dwelling**

- Clause 6.2.9 U-values

Where the insulation envelope of a dwelling or a building of dwellings is extended, the new building fabric should be designed in accordance with one of two levels of elemental U-values for walls, floors, roof, windows, doors and rooflights, as shown in the table to Clause 6.2.9.

Where both external wall and roof elements already meet or, as part of the works, will be upgraded to meet or improve upon U-values of 0.7 or 0.25 respectively, the U-values in column (b) can be applied to the extension.

Where a building has external wall or roof element with a U-value poorer than 0.7 or 0.25 respectively, then the more demanding U-values in column (a) apply to the extension. Alternatively, column (b) U-values may be applied where improvements to the existing building are shown to deliver a reduction in heat loss greater than or equal to the difference between the calculated overall heat loss performance of a notional extension built to column (a) U-values and one built to column (b) U-values (see compensatory approach below).

In situations where the U-values of the existing dwelling means the extension is to be built to column (a) U-values, the compensatory approach can be extended to give applicants greater flexibility, by allowing the extension to be built to column (b) U-values providing that the further reduction in heat loss is achieved through fabric improvements to the existing dwelling.

### **Testing and Accreditation**

The replacement roof shall be manufactured and installed strictly in accordance with the manufacturer's instructions, in accordance with the registered detail holder's instructions and fully in accordance with the accredited certification and supporting test reports.

This Registered Detail is issued in the knowledge that the materials specified shall contribute to compliance with Mandatory Standards 1.1, 2.5, 2.8, 3.10, 3.15 and 6.2 of the Building (Scotland) Regulations 2004 when read with the accompanying Registered details and associated test reports – see Sections E, F and G below.

## Conditions of Certificate

Installation is undertaken by a Team Guardian Accredited Installer.

The Registered Detail relates to the reroofing of existing conservatory or porch roofs that satisfy the requirements of Schedule 2, Class 7 to the Building Regulations 2010 (as amended); i.e. It must be at ground level; it must not exceed 30 m<sup>2</sup> in floor area; the thermal separation between the building and the conservatory or porch must be maintained; and the building's heating system must not be extended into the conservatory or porch. If the thermal separation is removed then a separate Building Regulation Application needs to be submitted and the amount of glazing to the former conservatory or porch should be reduced to less than 25% of the floor area and the glazing should achieve a U-value 1.6W/m<sup>2</sup>..K (alternatively heat loss calculations may be used).

For Scotland purposes:

The specifications and materials referred to have been assessed and approved in accordance with the Building (Scotland) Regulations 2004 and in accordance with the supporting guidance in the Domestic Technical Handbooks which came into force with effect from 1 October 2015.

Where reference is made on a plan or specification document to any Code of Practice, British or European Standard or manufacturer's instruction it shall be construed as a reference to such publication in the form in which it is in force at the date of this registered detail.

The layout plan details and the materials specified shall not be changed without first gaining approval so to do from Local Authority Building Standards Scotland [LABSS]. Failure to do so will invalidate the registered detail.

The registered detail shall be valid until invalidated by formal notice by LABSS.

This registered detail should not be regarded as a formal approval under the building warrant process prescribed by the Building (Scotland) Act 2003 enacted from 1 May 2005.

This Registered Detail shall contribute to compliance with relevant Mandatory Standards specified under the Building (Scotland) Regulations 2004 as amended when read with the Limitations of Use Section to this Registered Detail.

### **Site Specific Assessment**

McColl Associates, 1 Meadowbank Place EDINBURGH EH8 7AW provide supporting calculations for the Edwardian and Victorian roof configurations, together with lean-to, gable and hip roof configurations all as referenced here under Section F. These confirm that a structural appraisal has been carried out for the discrete composite roof which is the subject of this Registered Detail and which will complement any subsequent site specific structural appraisal/certification.

Confirmation of a holistic approach to structural adequacy of the entire completed building shall be provided by a registered engineer to the verifier within whose area the site specific building is to be built should the verifier so request.

Further site specific information WILL BE made available when a building warrant is sought and should take cognisance of Procedural Guidance on Certification dated April 2010 Version 2 including information to be submitted with a Building Warrant Application should a verifier request such information.

Climatic conditions: The design may be built in areas where the climatic conditions are equal to or less than those detailed below:

<p><b>Wind:</b> (as defined in BS 6399-2)</p>	<p>Standard effective wind speed, <math>V_e =</math>            For maximum effective height =            Has funnelling been considered?</p>	<p>24.50 m/s            5m            No</p>
<p><b>Snow:</b> (as defined in BS 6399-3)</p>	<p>Site snow load, <math>S_o =</math>            Influenced by adjacent buildings?</p>	<p>1.2 Kn/m<sup>2</sup>            No</p>
<p><b>Resistance to moisture/durability of exposed elements:</b></p>	<p>Max exposure (to wind driven rain) grading, as defined in BRE Report – Thermal Insulation: Avoiding Risks, Second Edition, 1994, to be exposure zone:             Exposure to sea spray (i.e. coastal region) or de-icing salts?             Other air contaminants or biological factors – please specify any enhanced resistance if applicable (refer to BS7543 for guidance)</p>	<p>Zone 3                     No – Site Specific</p>
<p><b>Design Life:</b> (per BS 7543 – Durability of buildings and building elements, products and components)</p>	<p>Category of building design life =             Design life of primary building envelope</p>	<p>50 years             20 years</p>

LABC and LABSS consider that, the Guardian Roof, will meet the functional requirements of the Building Regulations (listed below) if the criteria detailed in this certificate are met;



## The Building Regulations 2010 (as amended) England & Wales

Regulation 7	Materials and workmanship
Note:	The products are acceptable.
AD A	Structure
Note:	Subject to limitations detailed below in Conditions section.
AD B	Fire Safety
Note:	The products can contribute to meeting this Requirement.
AD C	Site preparation and resistance to contaminants and moisture
Note:	The products can contribute to meeting this Requirement.
AD L1B	Conservation of fuel and power
Note:	The thermal insulation performance of this system should be considered in the context of the contribution made to the overall performance of the roof structure.



## The Building Regulations 2010 (as amended) England

None presently



## The Building Regulations 2010 (as amended) Wales

None presently



## The Building (Scotland) Regulations 2004 (as amended)

Technical Handbooks Domestic and Non-Domestic

Regulation 8	Durability, workmanship and fitness of materials
0.8.5:	Ways of establishing the fitness of materials
Regulation 9	Building Standards applicable to construction
Note:	Construction shall be carried out so that the work complies with the applicable requirements of schedule 5.

Mandatory

Standard 1.1 Structure

Note: The system is acceptable, subject to a structural assessment in relation to the existing building and the provision of structural certification of the holistic building comprising the conservatory and new roof.

Mandatory

Standard 2.5 Internal linings

Note: The system is acceptable provided it is constructed in accordance with the manufacturers details.

Mandatory

Standard 2.8 Spread from neighbouring buildings

Note: The system is acceptable provided it is constructed in accordance with the manufacturers details.

Mandatory

Standard 3.10 Precipitation

Note: The system is acceptable provided it is constructed in accordance with the manufacturers details and by an accredited contractor.

Mandatory

Standard 3.15 Condensation

Note: The system is acceptable provided it is constructed in accordance with the manufacturers details and by an accredited contractor.

Mandatory

Standard 6.2 Building insulation envelope

Note: The system will achieve the required U-value provided it is constructed in accordance with the manufacturers details and by an accredited contractor.



## Non-Regulatory Information



### LABC Warranty

The use of the Guardian Roof has not been assessed to meet the requirements of the LABC Warranty Technical Manual. If you would like to discuss a specific use please make an enquiry to [technical.services@labcwarranty.co.uk](mailto:technical.services@labcwarranty.co.uk)

## Supporting Documentation

2010-374 sheets 1-63 (Guardian Edwardian Roof spans calculations)

2010-374 sheets 1-7 (Guardian rafter spans calculations)

2010-374 sheets 1-11 (Guardian ridge Spans calculations)

2010-374 sheets 1-32 (Guardian Victorian Roof spans calculations)

CCR0003-1 Thermal analysis of Guardian Roof

Guardian Warm Roof Drawing GWR 04 Rev B "Rafter, Verge, Gable & Hip" dated 11/11/14

Guardian Warm Roof Drawing GWR 03 Rev B "Ringbeam, Lean to Ridge & Ridge" dated 11/11/14

Hydro Drawing RB 4000 "Ringbeam fabrication" dated 23/10/13

Hydro Drawing RB 6500 "Ringbeam fabrication" dated 23/10/13

Specification Information supplied by Merthorne Design Engineering Dated 19/10/13 "Thermal Analysis of Guardian Roof – Hybrid Option 3a 60 PIR with 150 x12mm exterior plywood sarking board & counter battens"

BRE Client Report PR1083 Issue 3 Wufi Analysis

For Scotland purposes:

Registered Detail STAS13049RD0301 Updated 2016 - Version 4 - Final and Issued Document 020516"

Certification Documents for Scotland Registered Detail

Statement of Structural Adequacy Dated August 2013 received on 16 September 2013 Job Reference 1130380 from McColl Associates 1 Meadowbank Place EDINBURGH EH8 7AW

Edwardian dated 23/27 August 2013

Victorian dated 23/28 August 2013

plus Lean-to, hip and gable roof designs

Climatic Conditions/Design life information

Agrément Certificate 07/4470 Metrotile Roofing System

Agrément Certificate 05/4292 Eurotop N35 roof tile underlay

Agrément Certificate 95/3126 Kingspan Thermapitch TP10

SER Ltd ACD Certificate or equivalent is to be provided on Site Specific Building Warrant Submission

## Contact Information

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