



## Stormking Plastics Ltd

Sandy Way  
 Amington Industrial Estate  
 Tamworth  
 Staffordshire B77 4ED  
 Tel: 01827 311100 Fax: 01827 311200  
 e-mail: sales@stormking.co.uk  
 website: www.stormking.co.uk

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**Agrément  
 Certificate  
 No 06/4360**

Designated by Government  
 to issue  
 European Technical  
 Approvals

## STORMKING PREFABRICATED DORMERS

Lucarne  
 Mansardenfenster


# Product



- THIS CERTIFICATE RELATES TO STORMKING PREFABRICATED DORMERS.
- The prefabricated units are for use on the roofs of domestic buildings with pitches ranging from 25° to 85°.
- It is essential that the dormers are installed in accordance with the Certificate holder's instructions and the requirements of this Certificate.

## Regulations

### The Building Regulations 2000 (as amended) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the requirements of the Building Regulations to which dormer units can contribute in achieving compliance. In the opinion of the BBA, Stormking Prefabricated Dormers, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement: A1	Loading
Comment:	The products will have sufficient strength and stiffness to sustain the design loads. See sections 9.1 to 9.4 of this Certificate.
Requirement: B4(2)	External fire spread
Comment:	The products have been assessed as having an AC designation in accordance with BS 476-3 : 2004. See sections 11.1 and 11.2 of this Certificate.
Requirement: C2(b)	Resistance to moisture
Comment:	The products will not adversely affect the host roof's ability to resist the passage of moisture. See section 10 of this Certificate.
Requirement: C2(c)	Resistance to moisture
Comment:	The products can meet this Requirement. See sections 13.1 and 13.2 and 14.1 to 14.3 of this Certificate.
Requirement: L1(a)(i)	Conservation of fuel and power
Comment:	The products can be used in buildings that satisfy this Requirement. See sections 12.2 to 12.4 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The products are acceptable. See section 16.1 of this Certificate.

Readers are advised to check the validity of this Certificate by either referring to the BBA's website ([www.bbacerts.co.uk](http://www.bbacerts.co.uk)) or contacting the BBA direct (Telephone Hotline 01923 665400).

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## 2 The Building (Scotland) Regulations 2004



In the opinion of the BBA, Stormking Prefabricated Dormers, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Mandatory Standards as listed below.

Regulation:	8	Fitness and durability of materials and workmanship
Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The products can contribute to a construction satisfying this Regulation. See section 16.1 and the <i>Installation</i> part of this Certificate.
Regulation:	9	<b>Building standards — construction</b>
Standard:	1.1(a)(b)	Structure
Comment:		The products will have sufficient strength and stiffness to sustain the design loads, with reference to clause 1.1.1 <sup>(1)</sup> of this Standard. See sections 9.1 to 9.4 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		The products have been assessed as having an AC designation, in accordance with BS 476-3 : 2004, with reference to clause 2.8.1 <sup>(1)</sup> of this Standard. See sections 11.1 and 11.2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products will not adversely affect the host roof's ability to resist the passage of moisture, with reference to clause 3.10.4 <sup>(1)</sup> of this Standard. See section 10 of this Certificate.
Standard:	3.15	Condensation
Comment:		The products can meet this Standard, with reference to clauses 3.15.1 <sup>(1)</sup> to 3.15.4 <sup>(1)</sup> . See sections 13.1, 13.2, 14.1 and 14.2 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The products can satisfy this Standard, with reference to clauses 6.2.2 <sup>(1)</sup> and 6.2.3 <sup>(1)</sup> of this Standard. See sections 12.5 and 12.6 of this Certificate.

(1) Technical Handbook (Domestic).

## 3 The Building Regulations (Northern Ireland) 2000



In the opinion of the BBA, Stormking Prefabricated Dormers, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable. See section 16.1 of this Certificate.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		The products will not adversely affect the host roof's ability to resist the passage of moisture. See section 10 of this Certificate.
Regulation:	C5	Condensation
Comment:		The products will contribute to minimising the risk of interstitial condensation. See sections 13.2, 14.1 and 14.2 of this Certificate.
Regulation:	D1	Stability
Comment:		The products will have sufficient strength and stiffness to sustain the design loads. See sections 9.1 to 9.4 of this Certificate.
Regulation:	E5(a)(b)	External fire spread
Comment:		The products have been assessed as having an AC designation, in accordance with BS 476-3 : 2004. See sections 11.1 and 11.2 of this Certificate.
Regulation:	F2	Building fabric
Comment:		The products can be used in the Target U-value Method. See sections 12.7 and 12.8 of this Certificate.

## 4 Construction (Design and Management) Regulations 1994 (as amended) Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See sections: 6 *Delivery and site handling* (6.1 and 6.3) and 7 *Design Data — General* (7.2).

### 5 Description

5.1 Stormking Prefabricated Dormers are manufactured from a preformed GRP outer shell, fully bonded onto structural timber framing. The walls are spray filled internally with 70 mm thick polyurethane insulation. In the flat roof dormer, the roof is spray filled with 120 mm thickness of polyurethane insulation. In the conventional pitched roof dormer, a minimum 200 mm thickness of rock wool (or similar BBA approved insulation) is laid over the ceiling plasterboard. The inner lining consists of vapour check plasterboard, fixed to the timber framing.

5.2 The products covered by this Certificate are available in two styles (see Figure 1). These are:

- flat roof — lead effect GRP
- pitched roof — with conventional tiles.

5.3 The products are manufactured in a range of standard sizes. Non-standard sizes can be fabricated to order.

5.4 The flat roof incorporates a slight fall towards the outer edge to allow rainwater run-off. The pitched roofs can have a fall of between 30° and 70°.

5.5 Quality control includes:

- visual inspection of raw materials prior to use
- checks on key dimensions during trimming
- visual inspection of the units against their respective master patterns
- visual inspection of product finishes prior to wrapping.

### 6 Delivery and site handling

6.1 Recommendations for site handling and installation are provided with each delivery.

6.2 The dormers are delivered to site stretch wrapped in polythene sheeting. Each unit bears a label with the BBA identification mark incorporating the number of this Certificate.

6.3 Smaller units may be manhandled while larger units will require crange using suitable battens or bearers.

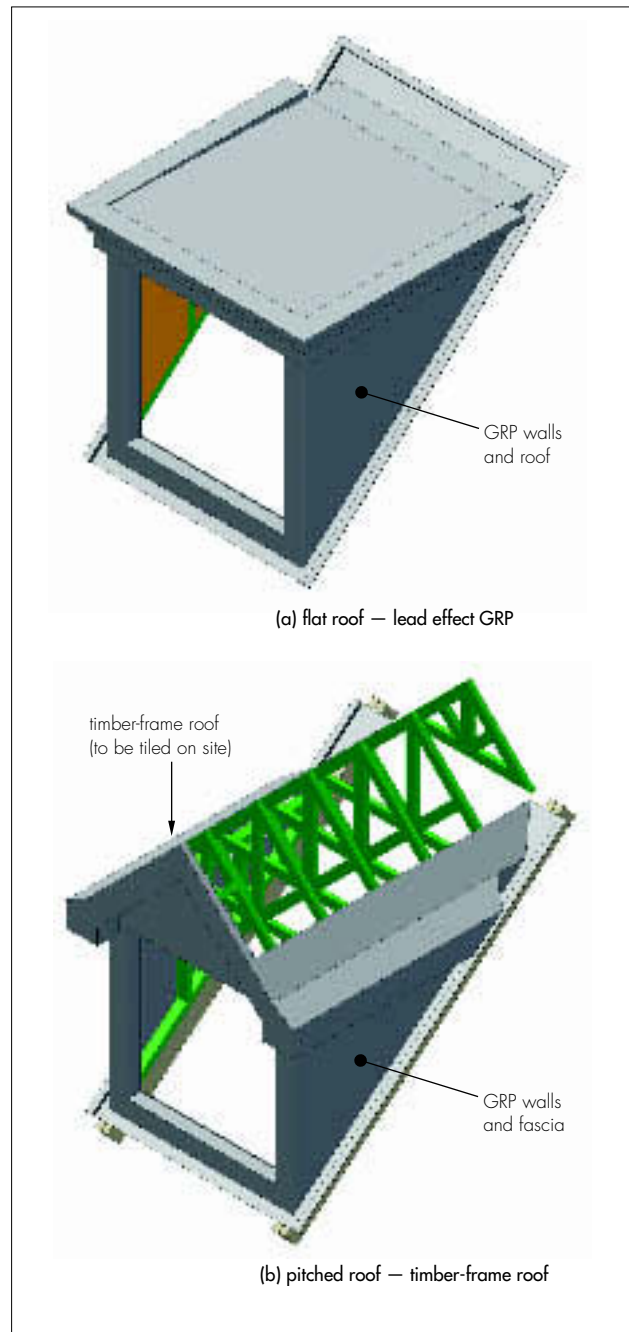
6.4 If the units are to be stored on site, they should be laid with their fixing edge on a flat, level surface. If stored externally, they should remain covered and raised off the ground.

### 7 General

7.1 Stormking Prefabricated Dormers are suitable for use on new and existing buildings.

7.2 The roof to which the dormer is to be fixed should be structurally sound and constructed in accordance with the requirements of the relevant national Building Regulations and national Standards.

Figure 1 Style details



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7.3 The host roof should be checked for the additional loads, including wind loads, from the dormer. The fixings should be similarly checked.

7.4 All design checks should be carried out by a suitably qualified engineer to the relevant national Codes and Standards.

## 8 Practicability of installation

The products are easy to install using the methods and procedures described in this Certificate and in accordance with the Certificate holder's installation guide.

## 9 Structural performance



9.1 The products can accept the loads associated with roofs where no access is provided, other than that necessary for cleaning and repair, as defined in BS 6399-1 : 1996.

9.2 The host roof structure, and any modifications necessary to accommodate the additional dormer loads, should be checked by a suitably qualified engineer in accordance with the relevant national Building Regulations.

9.3 In addition to the requirements specifically referred to in this Certificate, the dormer support, must be designed and constructed to comply with the technical specifications given in national Standards and Building Regulations thus:

BS 5268-2 : 2002 or  
BS 5268-3 : 1998

### England and Wales

Approved Document A1/2, Section 2B1

### Scotland

*Small Buildings Guide*

### Northern Ireland

Technical Booklet D.

9.4 When designing the dormer support system and associated details, due consideration should be given to the possibility of ponding in vulnerable areas.

## 10 Weathertightness



When installed in accordance with the Certificate holder's instructions, the dormers will provide a weatherproof construction.

## 11 Behaviour in relation to fire



11.1 The Stormking Prefabricated Dormer with fire-retardant specification GRP flat roof as part of a main roof, when tested for

external fire exposure in accordance with BS 476-3 : 2004, achieved Category AC as defined in the Standard.

11.2 The classification given in section 11.1 may be used to determine the product's suitability in accordance with the Building Regulations thus:

### England and Wales

Approved Document B

### Scotland

Mandatory Standard 2.8, clause 2.8.1<sup>(1)</sup>

(1) Technical Handbook (Domestic).

### Northern Ireland

Technical Booklet E.

## 12 Thermal properties

12.1 The thermal transmittance (U values) of the dormer, calculated according to BS EN ISO 6946 : 1997, are 0.58 Wm<sup>-2</sup>K<sup>-1</sup> for the walls, 0.32 Wm<sup>-2</sup>K<sup>-1</sup> for the flat roof and 0.25 Wm<sup>-2</sup>K<sup>-1</sup> for the pitched roof with 200 mm thick Superglass insulation.



12.2 The products satisfy the limiting U values specified in Table 2, Approved Document L1A.

12.3 Junctions and opening heads maintain insulation continuity. The default psi values from Table 3 of BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings in the external elements of buildings* and Table K1 of *The Government's Standard Assessment Procedure for Energy Rating of Dwellings* (SAP 2005), may therefore be used in Target Emission Rate calculations to SAP 2005.

12.4 Further guidance on minimising heat loss by conduction and by air infiltration can be found in *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings*, TSO 2002.



12.5 The products can be used in the Elemental Target U value and Carbon index methods specified in Mandatory Standard 6.2, clauses 6.2.2<sup>(1)</sup> and 6.2.3<sup>(1)</sup>.

12.6 Junctions and opening maintain insulation continuity and comply with the relevant guidance in BRE report (BR 262 : 2002) *Thermal insulation : avoiding risks* and Annex 6.D<sup>(1)</sup>.

(1) Technical Handbook (Domestic).



12.7 The products in Northern Ireland can be used in the Elemental Target U value method specified in Technical Booklet F.

12.8 Opening details maintain adequate insulation continuity in accordance with Diagram 1.4 of Technical Booklet F.

## 13 Condensation

### Surface condensation



13.1 The risk of surface condensation in the roof and external walls of the dormer, including the junctions and opening, will be minimal.

### Interstitial condensation

13.2 The product, incorporating vapour check plasterboard, will adequately limit the risk of interstitial condensation. For the conventional pitched roof, a BBA approved low vapour resistance tile underlay can be used without provision for cross ventilation.

## 14 Air leakage



14.1 Care must be taken to seal paths through which heat can be lost by unwanted air infiltration. Particular care is required at junctions, openings and service penetrations.

14.2 Junctions and opening head details maintain adequate air barrier continuity.



14.3 Completed buildings in England and Wales are subject to pre-completion testing for airtightness in accordance with the requirements of section 20B of Approved Document L1A and L2A.

## 15 Maintenance

15.1 Maintenance will not be required, but when necessary, stains or marks can be removed with a damp cloth and household detergent, or, in the case of obstinate stains, mild abrasive cleaner. Where paint, varnish or similar materials are to be removed, the advice of the Certificate holder should be sought.

15.2 If repair to damaged GRP shell is required, the Certificate holder's instructions should be followed. The BBA makes no representation in regard to any advice given.

## 16 Durability



16.1 The evidence from material subjected to natural exposure for a period in excess of 10 years and from accelerated durability tests indicates that there will not be significant change in physical properties of the material due to ageing. A life in excess of 30 years can, therefore, be expected.

16.2 After natural weathering, slight initial dulling of the surface and slight change in colour shade may occur, particularly on the dark coloured material. However, this process is not likely to be progressive.

16.3 Any sealant joint weatherproofing may have to be renewed during the life of the GRP shell but the use of a high-performance silicone or polysulphide sealant can extend the period before replacement is required.

## Installation

### 17 General

17.1 Installation of Stormking Prefabricated Dormers must be carried out in accordance with the Certificate holder's installation guide.

17.2 The host roof should be checked for the additional loads, including wind loads from the dormer, and any new trimmer members and fixings must be designed to the relevant Codes and Standards by a suitably qualified engineer.

17.3 Reference should be made to the construction details shown in Figure 2 when reading the procedural details set out in section 18.

### 18 Procedure

18.1 A timber sole plate with an upstand projecting 100 mm above the top of the supporting rafters is first formed.

18.2 An 18 mm thickness external grade plywood on battens is fixed to the rafters to support the lead flashing and felt.

18.3 Lead soaker flashing with 300 mm felt underlay is applied to the upstand.

18.4 The dormer is fixed into position using screws of predetermined size and length.

18.5 Sarking/underlay is applied to the host roof and secured using a timber tilting fillet

18.6 For the pitched roof dormer, the roof is tiled up to the dormer sides and a lead flashing is dressed over the tiles ensuring a continuous fall at all times.

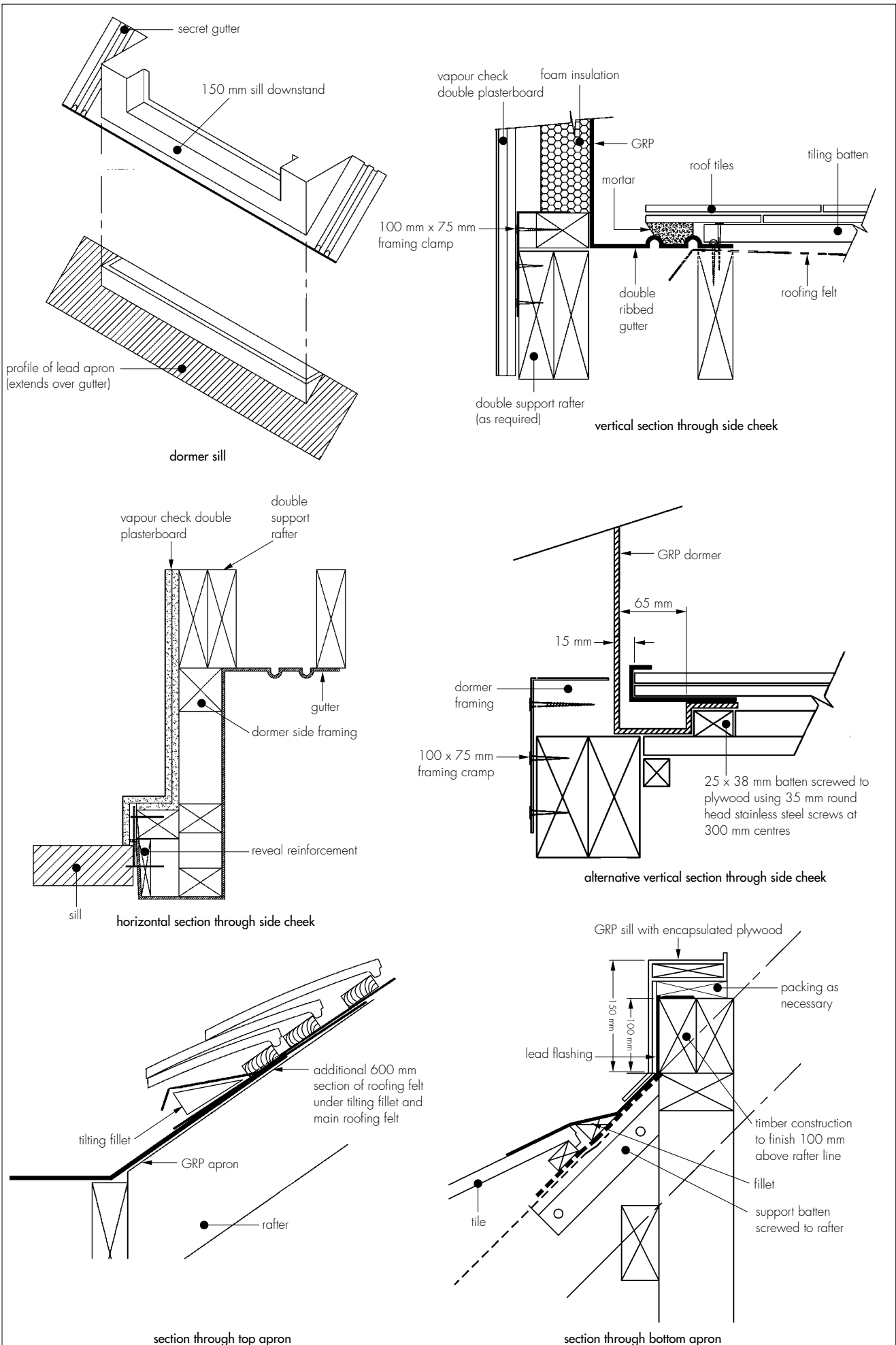
18.7 Tiling of the 'frame only' roof should be carried out to BS 5534 : 2003.

18.8 An internal lining of plasterboard is applied to the dormer frame as required.

18.9 The window is fixed to the dormer timber frame and sealed as normal.

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Figure 2 Typical construction details



## Technical Investigations

The following is a summary of the technical investigations carried out on Stormking Prefabricated Dormers.

### 19 Tests

Tests were undertaken to determine:

- hard and soft body impact performance
- the effect of thermal cycling/thermal shock
- external fire exposure classification.

### 20 Investigations

20.1 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained relating to the quality and composition of the materials.

20.2 An assessment was made of:

- practicability of installation
- structural strength and stability
- weathertightness.
- thermal transmittance
- maintenance requirements
- durability.

## Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*

BS 5268-2 : 2002 *Structural use of timber — Code of practice for permissible stress design, materials and workmanship*

BS 5268-3 : 1998 *Structural use of timber — Code of practice for trussed rafter roofs*

BS 5534 : 2003 *Code of practice for slating and tiling (including shingles)*

BS 6399-1 : 1996 *Loading for buildings — Code of practice for dead and imposed loads*

BS 6399-2 : 1997 *Loading for buildings — Code of practice for wind loads*

BS 6399-3 : 1988 *Loading for buildings — Code of practice for imposed roof loads*

### 21 Conditions

21.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

21.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

21.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

21.4 In granting this Certificate, the BBA is not responsible for:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product or system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

21.5 Any information relating to the manufacture, supply, installation, use and maintenance of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.



In the opinion of the British Board of Agrément, Stormking Prefabricated Dormers are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 06/4360 is accordingly awarded to Stormking Plastics Ltd.

On behalf of the British Board of Agrément

Date of issue: 16th August 2006

Chief Executive