



## A Steadman and Son Ltd

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**Agrément  
Certificate  
No 99/3641**

Designated by Government  
to issue  
European Technical  
Approvals

## AS 2000 ROOFING SYSTEM

Système d'étanchéité léger pour toitures  
Dachabdichtungen

## Product




• THIS CERTIFICATE RELATES TO THE AS 2000 ROOFING SYSTEM, A LIGHTWEIGHT METAL ROOFING SHEET MADE FROM EITHER GALVANIZED STEEL OR STEEL COATED WITH ALUMINIUM-ZINC ALLOYS, FINISHED WITH A POLYESTER COATING AND PRE-FORMED TO SIMULATE THE APPEARANCE OF NATURAL SLATE. FLASHINGS AND FITTINGS ARE AVAILABLE IN THE SAME FINISH.

• The tiles are installed with a sarking felt or underlay, on timber or steel trusses at a minimum pitch of 10°. The trusses must be properly secured to the structure.

## Regulations

### 1 The Building Regulations 1991 (as amended) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of roof tiling and profiled sheets with the Building Regulations. In the opinion of the BBA, the AS 2000 Roofing System, if used in accordance with the provisions of this Certificate, will meet the relevant requirements.

Requirement:	Regulation 7	Materials and workmanship
Comment:		The system is acceptable. See section 14.1 of this Certificate.
Requirement:	B3(4)	Internal fire spread (structure)
Comment:		The roof space should be subdivided in accordance with this Requirement.
Requirement:	B4(2)	External fire spread
Comment:		The system meets this Requirement. See section 12 of this Certificate.
Requirement:	C4	Resistance to weather and ground moisture
Comment:		The system meets this Requirement. See section 9 of this Certificate.

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## 2 The Building Standards (Scotland) Regulations 1990 (as amended)



In the opinion of the BBA, the AS 2000 Roofing System, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and Technical Standards as listed below.

Regulation:	10	Fitness of materials
Standard:	B2.1	Selection and use of materials and components
Comment:		The system is acceptable. See section 14.1 of this Certificate.
Regulation:	12	Structural fire precautions
Standard:	D3.5	Junctions between separating or compartment walls and floors
Comment:		The system can satisfy this Standard. See section 12 of this Certificate.
Standard:	D4.1	Concealed spaces (cavities)
Comment:		The roof space should be subdivided in accordance with this Standard.
Standard:	D6.7	Roofs and rooflights
Comment:		The product is unrestricted by this Standard. See section 12 of this Certificate.
Regulation:	17	Preparation of sites and resistance to moisture
Standard:	G3.1	Resistance to precipitation
Comment:		The system meets this Standard. See section 9 of this Certificate.

## 3 The Building Regulations (Northern Ireland) 1994 (as amended)



In the opinion of the BBA, the AS 2000 Roofing System, 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 system is acceptable. See section 14.1 of this Certificate.
Regulation:	C5	Resistance to ground moisture and weather
Comment:		The system meets the requirements of this Regulation. See section 9 of this Certificate.
Regulation:	E6	Internal fire spread — Structure
Comment:		The roof space should be subdivided in accordance with this Regulation.
Regulation:	E8	External fire spread
Comment:		The system meets the requirements of this Regulation. See section 12 of this Certificate.

## 4 Construction (Design and Management) Regulations 1994

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

See sections: *7 Delivery and site handling, 11 Resistance to damage and 13 Maintenance.*

## Technical Specification

### 5 Description

5.1 The AS 2000 Roofing System panels are manufactured from either galvanized steel Z275 to BS EN 10142 : 1991 or hot-dip aluminium-zinc alloy coated steel AZ150 to BS EN 10215 : 1995 coated with a primer and polyester top coat. The product has a steel thickness of 0.7 mm and a total organic coating thickness of 27 µm.

5.2 The product is supplied with a matt grey finish in panels 300 mm wide and at a standard length of 5.5 m, although lengths up to 10 m are available on request.

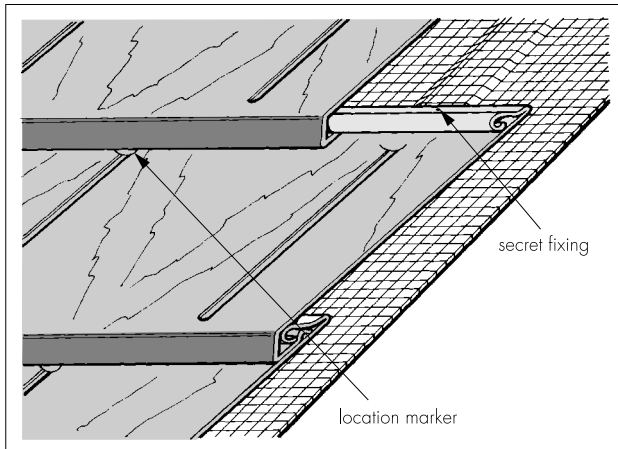
5.3 The following accessories are available:

- Starter clip
- Barge flashing
- Apron flashing
- Eaves gutter
- Spring Ridge Clip
- Hip flashing
- Joining plate
- Fixing screws
- Butyl strip sealant (3 mm x 50 mm)
- Touch-up paint to repair scratched coating.

5.4 The system is designed to be fixed directly to the rafters and does not require the installation of battens. The panels are installed starting from the eaves and progressing to the ridge, each panel

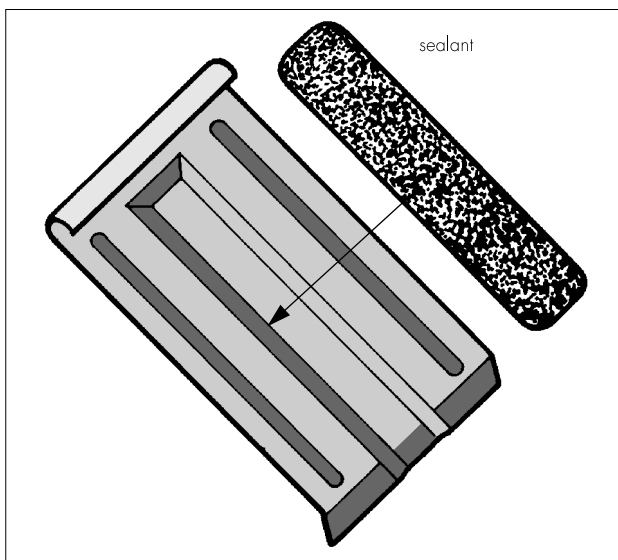
locking into the previous one via profiled details at the top and bottom of each panel (see Figure 1).

Figure 1 Panel fixing detail



5.5 Where the length of the roof exceeds the maximum length of the roof panels, jointing plates are used to connect two panels. These consist of a backing plate, made from the same material as the panel, and a butyl strip sealant (see Figure 2). The jointing plates are self-supporting and should not be positioned over a rafter, where they would interfere with the normal fixing screws.

Figure 2 Joining plate and sealant



## 6 Manufacture

6.1 The steel is either galvanized Z275 to BS EN 10142 : 1991 or hot-dip aluminium-zinc alloy coated AZ150 to BS EN 10215 : 1995 with a primer and polyester top coat in slate blue (colour 18 B 29) at a 5% gloss level.

6.2 The coated steel coil is slit into widths, roll formed to the appropriate profile, indented to produce a natural looking slate finish and cut to length. The lengths of product are laid into galvanized boxes with a layer of polyethylene foam packaging sheet in between each sheet.

6.3 The various flashings are roll-formed to the appropriate profile and cut to length.

## 7 Delivery and site handling

7.1 The panels are delivered to site in containers of up to 10 panels. A container of 10, 5.5 m long panels gives a total weight of 121 kg.

7.2 On delivery the containers should be stored in single stacks only, on a firm dry base away from the possibility of damage.

7.3 When manually handling the individual panels, care must be taken to keep the edges of the panels straight and free from deformations, as these will make the interlock between panels more difficult to achieve during installation.

## Design Data

### 8 General

8.1 The AS 2000 Roofing System is suitable for use, in conjunction with a suitable underlay material, as a weatherproof and decorative covering on a timber or steel structure with a minimum pitch of 10°.

8.2 The system can be fitted to roof structures with a maximum rafter span of 1.0 m. Due to the method of fixing the panels, battens are not required.

8.3 To prevent electro-chemical corrosion, direct contact with lead or copper or their alloys should be avoided, and lead or copper roofs should not drain onto the installation.

### 9 Weathertightness



The system, with a proper underlay, has a satisfactory resistance to the passage of rain and snow.

### 10 Strength and stability

10.1 The system has good resistance to the effects of wind suction likely to be met in service.

10.2 The system weighs considerably less than conventional roofing materials, and should be securely attached to the structure to prevent wind uplift under adverse conditions.

### 11 Resistance to damage

11.1 The system will not be deformed by normal maintenance traffic.

11.2 For maintenance work, roof ladders or crawling boards should be used, but care is still required to prevent damage to the surface. It is recommended that soft-soled shoes are worn.

11.3 Small scratched and damaged areas may be re-coated using the touch-up paint supplied by the manufacturer.

## 12 Properties in relation to fire



When tested to BS 476 : Part 3 : 1958, without an underlay, the system achieved an EXT.S.AA rating.

## 13 Maintenance

13.1 Maintenance painting should be considered at intervals referred to in section 14.2, or earlier, if a high aesthetic standard is required. The Certificate holder can recommend a suitable overcoating system.

13.2 Edge corrosion of roofing sheets can take place, but this can be minimised if the edges are painted using the touch-up paint supplied by the Certificate holder.

## 14 Durability



14.1 The polyester and metal treatment will protect the steel substrate against corrosion and will give the product an ultimate life in excess of 20 years in normal, industrial and rural environments.

14.2 It will retain good appearance for at least 15 years in non-corrosive environments, and at least 10 years in marine or severe industrial environments. Colour changes, in general, will be slight.

## Installation

### 15 General

15.1 The standard of installation should comply with the requirements of BS 8000 : Part 6 : 1990.

15.2 The roof construction must be adequate to resist the loadings detailed in BS 6399 : Part 1 : 1996 and BS 6399 : Part 2 : 1997. The roof construction should be in accordance with the relevant requirements of BS 5534 : Part 1 : 1996.

15.3 The roof space must be adequately ventilated in accordance with BS 5250 : 1989.

15.4 The underlay must be to BS 747 : 1977(1986), Type 1F or 5U, or covered by an Agrément Certificate and installed in accordance with that Certificate.

15.5 Where the rafters/trusses are spaced at greater than 600 mm centres, polypropylene or nylon tape is nailed across the rafters to support the underlay.

15.6 Rafters are securely tied to the building structure with, for example, galvanized steel straps complying with BS 5628 : Part 3 : 1985.

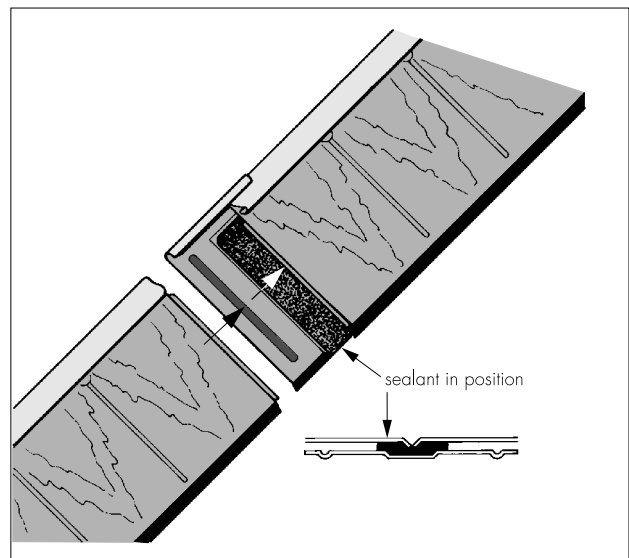
## 16 Procedure

16.1 Following the installation of the roofing felt, the Starter Clip lengths are fixed to the rafters at the eaves. The first length of roof panel is then locked into the Starter Clip and fixed to each rafter using fixing screws supplied by the manufacturer. Subsequent lengths of roof panel are staggered to simulate the normal coursing of slates, interlocked into the existing panels using a rubber-faced hammer and wooden spreader bar, and screwed into the rafters.

16.2 The roof should be designed to avoid or minimise the number of joining plates necessary, to ensure that the positions of joining plates on successive courses are staggered, and to ensure that all joins are made between the ends of sheets as manufactured, rather than with ends cut on site.

16.3 Joins in panels are made before the panel is fixed to the rafters. A strip of 3 mm by 50 mm butyl sealant, running from top to bottom, is stuck centrally to the fixing plate. The release paper is removed and the joining plate is slid onto the first panel so that the edge of the panel reaches half-way across the joining plate (see Figure 3). The end of the second panel is slid onto the joining plate to make a butt joint with the first panel and both panels are pressed firmly down to make good contact with the butyl sealant. The panels can now be fixed to the existing panels in the usual way. It is not necessary to make joins at truss/rafters, as the joining plates do not require fixing to the roof.

Figure 3 Installation of joining plate



16.4 The roof is completed with Steadmans Spring Ridge Clip and the detailing is carried out using various profiles and flashings available from the manufacturer (see Figure 4). These items can be cut on site using a power circular saw, jigsaw, hacksaw or electric nibbler.

Figure 4 Typical application



16.5 Cut edges, scratches and scuffs should be treated using touch-up paint supplied by the manufacturer.

## Technical Investigations

The following is a summary of the technical investigations carried out on the AS 2000 Roofing System.

### 17 Tests

Tests were carried out to determine:

- resistance to wind-driven rain
- resistance to high-speed wind uplift
- resistance to artificial weathering
- integrity of joints.

### 18 Other investigations

18.1 The manufacturing process was examined and details were obtained of the method of manufacture and the quality controls conducted on the incoming materials and finished products.

18.2 An assessment was made of independent investigations to BS 476 : Part 3 : 1958.

18.3 A visit was made to a site in progress to assess the practicability of installation.

18.4 Visits were made to a number of existing sites where the product is in service.

18.5 An assessment was made of existing data relating to polyester coil-coated steel.

## Bibliography

BS 476 *Fire tests on building materials and structures*  
Part 3 : 1958 *External fire exposure roof test*

BS 747 : 1994 *Specification for roofing felts*

BS 5250 : 1989(1995) *Code of practice for control of condensation in buildings*

BS 5534 *Code of practice for slating and tiling (including shingles)*  
Part 1 : 1997 *Design*

BS 5628 *Code of practice for use of masonry*  
Part 3 : 1985 *Materials and components, design and workmanship*

BS 6399 *Loading for buildings*  
Part 1 : 1996 *Code of practice for dead and imposed loads*  
Part 2 : 1997 *Code of practice for wind loads*

BS 8000 *Workmanship on building sites*  
Part 6 : 1990(1997) *Code of practice for slating and tiling of roofs and claddings*

BS EN 10142 : 1991 *Specification for continuously hot-dip zinc coated low carbon steel sheet and strip for cold forming: technical delivery conditions*

BS EN 10215 : 1995 *Continuously hot-dip zinc-aluminium (ZA) coated steel strip and sheet. Technical delivery conditions*



## Conditions of Certification

### 19 Conditions

19.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (d) is copyright of the BBA.

19.2 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, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

19.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

(b) continue to be checked by the BBA or its agents; and

(c) are reviewed by the BBA as and when it considers appropriate.

19.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of any patent or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

19.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do 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 recommendations 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 installation and use of this product.



In the opinion of the British Board of Agrément, the AS 2000 Roofing System is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 99/3641 is accordingly awarded to A Steadman and Son Ltd.

On behalf of the British Board of Agrément

Date of issue: 20th September 1999

Chief Executive