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Agrément Certificate

08/4571

Product Sheet 1

KALZIP

FALZINC AND ALUPLUSZINC

This Agrément Certificate Product Sheet⁽¹⁾ relates to Falzinc and AluPlusZinc, zinc-coated aluminium coils, for external use in roofing and cladding applications.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Weathertightness — the products have adequate resistance to the passage of moisture into the building (see section 6).

Resistance to wind uplift — the profiled products can adequately resist the effects of wind (see section 7).

Properties in relation to fire — the products are non-combustible and will not contribute to fire or its spread (see section 8).

Location — the products are suitable for use in locations where there is little possibility of impact or abrasion damage (see section 9).

Workability — the products can be worked by conventional techniques and are capable of accommodating a 2T bend without damage (see section 10).

Durability — under normal conditions, the profiled products will perform effectively as a roofing and cladding with a service life of at least 40 years (see section 13).



The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Claire Curtis-Thomas

Date of Third issue: 21 May 2018

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

Originally certificated on 26 August 2008

The BBA is a UKAS accredited certification body – Number 113.

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*

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Regulations

In the opinion of the BBA, Falzinc and AluPlusZinc, 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 presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



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

Requirement:	A1	Loading
Comment:		The products can contribute to satisfying this Requirement. See section 7 of this Certificate.
Requirement:	B4(1)(2)	External fire spread
Comment:		The products are unrestricted under this Requirements. See section 8 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products can contribute to satisfying this Requirement. See section 6 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See section 13 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The products can contribute to a construction satisfying this Regulation. See sections 12 and 13 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The products can contribute to satisfying this Standard. See section 7 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Standard:	2.8	Spread from neighbouring buildings
Comment:		The products can contribute to satisfying these Standards, with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ , 2.6.6 ⁽²⁾ , 2.7.1 ⁽¹⁾⁽²⁾ and 2.8.1 ⁽¹⁾⁽²⁾ . See section 8 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products can contribute to satisfying this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ , 3.10.5 ⁽¹⁾⁽²⁾ , 3.10.7 ⁽¹⁾⁽²⁾ and 3.10.8 ⁽¹⁾⁽²⁾ . See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The products can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards applicable to conversions
Comment:		Comments in relation to the products 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(a)(i)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The products are acceptable. See section 13 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to ground moisture and weather
Comment:		The products can contribute to satisfying this Regulation. See section 6 of this Certificate.
Regulation:	30	Stability
Comment:		The products can contribute to satisfying this Regulation. See section 7 of this Certificate.
Regulation:	36(a)(b)	External fire spread
Comment:		The products are unrestricted under these Regulations. See section 8 of this 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.

See section: 3 *Delivery and site handling* (3.6) of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, Falzinc and AluPlusZinc, 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 6.9 *Curtain walling and cladding* and 7.2 *Pitched roofs*.

CE marking

The Certificate holder has taken the responsibility of CE marking Falzinc in accordance with harmonised European Standard BS EN 14782 : 2006. AluPlusZinc is used in the manufacture of Kalzip standing seam sheets with CE marking to BS EN 14782 : 2006. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Falzinc and AluPlusZinc are zinc-coated aluminium coil electroplated on both sides with a 3 µm layer of zinc, and phosphate treated. The products are available in a range of widths and thicknesses, depending on the alloy and temper chosen. Typically, Falzinc is available in standard widths of up to 600 and 670 mm, in thicknesses of 1.0 and 0.7 mm respectively. AluPlusZinc is available in thicknesses of 1.0 and 1.2 mm and in widths to suit the manufacture of Kalzip standing seam sheets.

1.2 The products are capable of roll forming (see section 10) and have the characteristics of:

- AluPlusZinc — supplied in a range of high-strength alloys and tempers for use in the manufacture of self-supporting roofing and cladding sheets (such as the Kalzip standing seam system — see BBA Certificate 98/3481) and to fabricate flashings and trims
- Falzinc — has a greater formability and is primarily used for fully supported roofing and cladding applications (see Table 1).

Table 1 Mechanical properties⁽¹⁾

Product	Alloy	Temper	Min R_{p0.2} N·mm⁻²	Min R_m N·mm⁻²
Falzinc	EN AW 3105	H111	95	150
AluPlusZinc	EN AW 3004 EN AW 3005	H32/H34/H36	185 or 145 ⁽²⁾	220 or 190–240 ⁽²⁾

(1) As supplied prior to processing, to BS EN 573-3 : 2013.

(2) To special order, where increased formability is required, eg for the fabrication of flashings and trims.

1.3 The coils are supplied with a peel-off protective coating of either polyethylene or paper.

2 Manufacture

2.1 The aluminium alloy coils are manufactured by a continuous process during which it is pre-treated, zinc electroplated and phosphate treated.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out 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.

2.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by TÜV (Certificate 44 100 080922).

3 Delivery and site handling

3.1 Falzinc is delivered as coils to specialist companies for roll forming into standing seam sheets or forming into panels, flashing and trims.

3.2 AluPlusZinc is generally supplied in coil widths to suit the manufacture of Kalzip standing seam sheets.

3.3 The profiled sheets are normally delivered to site on trailers and unloaded by crane. The site must have adequate access and a suitable surface for this traffic.

3.4 During transport, the edges and corners of the sheets must be protected against damage and the sheets restrained to prevent abrasion.

3.5 It is essential that the sheets are transported and stored in dry, well-ventilated and dust-free conditions, with separating layers between each sheet. The sheets must be handled with care to prevent damage to the surface finish.

3.6 On site, sheets should be stored on a firm, dry base, on dry timber bearers at a maximum spacing of 900 mm, away from the possibility of damage and covered to prevent ingress of water. They should be stored as close as possible to the building on which they are to be installed and handled in accordance with the *Manual Handling Operations Regulations 1992*.

3.7 When required for installation, the sheets must be lifted from the stack rather than dragged across it.

3.8 Any unprotected surfaces must be handled using clean cotton or linen gloves. In such situations, the use of bare hands should be avoided as this may lead to permanent staining of the product.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Falzinc and AluPlusZinc.

Design Considerations

4 Use

4.1 Falzinc and AluPlusZinc are satisfactory for roll-forming and for external use as roofing and cladding materials, including standing seam products.

4.2 The zinc coating adheres well to the aluminium substrate, and the products can be worked by conventional techniques without detriment. However, the surface finish is easily damaged and care must be taken with all aspects of handling (see sections 3, 8 and 10).

5 Practicability of installation

The products should be installed by operatives experienced with these types of products.

6 Weathertightness



The profiled products, when incorporated into a roofing or cladding system designed and installed in accordance with conventional good practice and section 14 of this Certificate, will adequately resist the passage of moisture.

7 Resistance to wind uplift



The profiled products, when incorporated into a cladding or roofing system designed and installed in accordance with conventional good practice and section 14 of this Certificate, can adequately resist wind loads likely to be encountered in the UK.

8 Properties in relation to fire



The products are non-combustible, will not contribute to fire or its spread, and are unrestricted under the national Building Regulations.

9 Location

9.1 The aluminium substrate is suitable for use as roofing or cladding but the zinc coating has a low resistance to damage by scratching, chipping or abrasion. Its use as cladding should be restricted to areas where there is little possibility of mechanical damage, eg at low levels in areas with restricted access, or at higher levels in public areas. These are as described in categories C to F of Table 2.

Table 2 Access categories

Category	Description	Examples	
C	Accessible primarily to those with some incentive to exercise care. Some chance of accident occurring and of misuse	Walls adjacent to private open gardens. Back walls of balconies	Zone of wall up to 1.5 m above pedestrian or floor level
D	Only accessible, but not near a common route, to those with high incentive to exercise care. Small chance of accident occurring or of misuse	Walls adjacent to small fenced decorative gardens with no through paths	
E	Above zone of normal impacts from people but liable to impacts from thrown or kicked objects	1.5 m to 6 m above pedestrian or floor level in public areas	
F	Above zone of normal impacts from people and not liable to impacts from thrown or kicked objects	Wall surfaces at higher positions than those defined in E above	

9.2 Under the types of impact likely to be experienced in normal service, the products will deform in the same way as the uncoated aluminium sheet without adhesive failure of the coating.

9.3 Walking on the products surface can cause damage to the surface finish and should be avoided. During construction, use should be made of load spreading devices, such as clean timber scaffolding boards. Consideration should be given to the installation of permanent walkways on the finished roof in trafficked areas such as access points.

10 Workability

10.1 The products may be worked by conventional metalworking techniques including brake-pressing, roll-forming, bending, drilling and punching, but care must be taken to ensure that the protective film is present and undamaged prior to forming. The Certificate holder can advise on a suitable combination of alloy and temper for a given application. It is essential that the correct tools, in good condition, are used and that any swarf is removed.

10.2 The coating on Falzinc and AluPlusZinc can accommodate a 2T and 2.5T bend through 180° without damage respectively.

11 Compatibility

11.1 The products are compatible with most materials likely to be encountered in service. However, the aluminium substrate will be corroded by contact with, or water run-off from, copper, its alloys, or lead in any environment.

11.2 Timber treated with fire retardants or waterborne wood preservatives, mortar or other alkali-bearing materials are also corrosive to the substrate. An intermediate barrier of plastic, bitumen felt or bitumen paint must be used to prevent direct contact with these materials.

11.3 Fixing devices must be of, or compatible with, aluminium.

12 Maintenance



12.1 Regular maintenance inspections should be carried out to ensure that rainwater goods are present and in good order, that flashings are secure, and that fixings are present and secure.

12.2 In industrial and coastal areas, it may be necessary to clean the installation periodically to remove corrosive deposits. This can be carried out by hosing with water using a neutral detergent. It may be necessary to clean soffits and the area sheltered by overhanging eaves in any environment.

13 Durability



13.1 The aluminium substrate is durable and will perform satisfactorily in all normal atmospheric conditions (including coastal and industrial, but excluding the immediate vicinity of, and downwind from, sources of abnormal corrosive contaminants, such as chemical works, cement works and copper foundries).

13.2 The profiled products will perform effectively as a cladding or roofing material with a service life of at least 40 years. A shorter service life will be given if particular local conditions are chemically corrosive (see section 13.1).

13.3 The products have a dark blue/grey initial appearance similar to that of conventional zinc sheet but the thin zinc surface layer will weather and change appearance with exposure, as the zinc forms a mixture of adherent conversion products. This layer will be eroded, the rate of which will depend on the environment of the site, the roof pitch and the climatic conditions experienced. Under normal circumstances, the surface layer can be expected to be retained for at least 10 years, but in time, as it is lost, the appearance will gradually change to one slightly darker than that of weathered aluminium.

13.4 Welding of the products should be avoided wherever possible as it will damage the zinc surface layer. In such cases, it will be necessary to remove the zinc layer from around the area to be welded and subsequently to overcoat with either an organic coating or a zinc-rich paint. The Certificate holder can advise on suitable products for this purpose, but it should be noted that differential weathering will make it likely that sections so treated will take on a different appearance from the surrounding roof area.

14 Reuse and recyclability

The products comprise aluminium, which can be recycled.

Installation

15 Procedure

15.1 The installation of Falzinc and AluPlusZinc should be designed and carried out in accordance with the Certificate holder's instructions and:

- the relevant parts of BS 5427-1 : 1996
- the relevant parts of BS 5250 : 2011
- the National Federation of Roofing Contractors *Profiled Sheet Metal Roofing and Cladding — A Guide to Good Practice*
- the Metal Cladding and Roofing Manufacturers Association (MCRMA) Technical Paper No 3 *Secret Fix Roofing Design Guide*, Technical Paper No 5 *Metal Wall Cladding Detailing Guide*, Technical Paper No 6 *Profiled Metal Roof Design Guide*, Technical Paper No 11 *Flashings for Metal Roof and Wall Cladding* and Technical Paper No 12 *Fasteners for Metal Roof and Wall Cladding : Design, Detailing and Installation Guide*.

15.2 On completion of the installation, the protective film should be removed, taking care not to damage the finish (see section 8).

17 Tests

Tests were carried out and the results assessed to determine:

- resistance to artificial weathering
- resistance to neutral salt spray
- resistance to acetic acid salt spray
- resistance to sulphur dioxide
- effect of water immersion
- adhesion to substrate
- resistance to abrasion
- resistance to scratching
- resistance to chipping
- resistance to impact
- resistance to marking and staining
- ease of forming.

18 Investigations

18.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

18.2 A visit was made to an existing site where the products had been in service for seven years.

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

18.4 A survey of known users of the products was carried out to establish its performance in service.

Bibliography

BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*

BS 5427-1 : 1996 *Code of practice for the use of profiled sheet for roof and wall cladding on buildings — Design*

BS EN 573-3 :2013 *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Chemical composition and form of products*

BS EN 14782 : 2006 *Self-supporting metal sheet for roofing, external cladding and internal lining — Product specification and requirements*

BS EN ISO 9001 : 2008 *Quality management systems – Requirements*

19 Conditions

19.1 This Certificate:

- relates only to the product/system 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 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.

19.2 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.

19.3 This Certificate will remain valid for an unlimited period provided that the product/system 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.

19.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

19.5 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/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

19.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal 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, 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.