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Agrément Certificate  
**91/2717**  
Product Sheet 4

**TATA STEEL COLORCOAT PRE-FINISHED STEEL COIL AND SHEET**

**COLORCOAT PVDF**

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Colorcoat PVDF, pre-finished steel coil and sheet, for use in its profiled form as external roofing and cladding or internal lining.

(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 profiled product has adequate resistance to the passage of moisture (see section 6).

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

**Properties in relation to fire** — the product is unrestricted under the national Building Regulations (see section 8).

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

**Workability** — the product can be worked by conventional techniques and is capable of withstanding a 1T bend without damage (see section 10).

**Durability** — under normal conditions, the product will perform effectively with a life expectancy in excess of 20 years. It will have an anticipated decorative life of at least 10 years in heavily polluted areas and 15 years in other areas (see section 12).

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément




Date of Second issue: 5 November 2014

Originally certificated on 15 March 1993

Certificate amended on 11 July 2017 to update section 1 and Bibliography.

Simon Wroe  
Head of Approvals — Materials

Claire Curtis-Thomas  
Chief Executive

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](http://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.

# Regulations

In the opinion of the BBA, Colourcoat PVDF, 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)

<b>Requirement:</b> A1	<b>Loading</b>
<b>Comment:</b>	The product can contribute to satisfying this Requirement. See section 7 of this Certificate.
<b>Requirement:</b> B2(1)	<b>Internal fire spread (linings)</b>
<b>Comment:</b>	The product is unrestricted under this Requirement. See sections 8.2 and 8.3 of this Certificate.
<b>Requirement:</b> B3(2)(4)	<b>Internal fire spread (structure)</b>
<b>Comment:</b>	The product is unrestricted under this Requirement. See sections 8.1 to 8.3 of this Certificate.
<b>Requirement:</b> B4(1)(2)	<b>External fire spread</b>
<b>Comment:</b>	The product is unrestricted under this Requirement. See sections 8.1 and 8.2 of this Certificate.
<b>Requirement:</b> C2(b)	<b>Resistance to moisture</b>
<b>Comment:</b>	The product can contribute to satisfying this Requirement. See section 6 of this Certificate.
<b>Regulation:</b> 7	<b>Materials and workmanship</b>
<b>Comment:</b>	The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.



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

<b>Regulation:</b> 8(1)(2)	<b>Durability, workmanship and fitness of materials</b>
<b>Comment:</b>	The use of the product can contribute to a construction satisfying this Regulation. See sections 11 and 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b> 9	<b>Building standards applicable to construction</b>
<b>Standard:</b> 1.1(a)(b)	<b>Structure</b>
<b>Comment:</b>	The product can contribute to a construction satisfying this Standard. See section 7 of this Certificate.
<b>Standard:</b> 2.1	<b>Compartmentation</b>
<b>Comment:</b>	The product can contribute to satisfying this Standard, with reference to clause 2.1.15 <sup>(2)</sup> . See section 8.1 of this Certificate.
<b>Standard:</b> 2.2	<b>Separation</b>
<b>Comment:</b>	The product can contribute to satisfying this Standard, with reference to clauses 2.2.7 <sup>(2)</sup> and 2.2.10 <sup>(1)</sup> . See section 8.1 of this Certificate.
<b>Standard:</b> 2.4	<b>Cavities</b>
<b>Comment:</b>	The product can contribute to satisfying this Standard, with reference to clauses 2.4.2 <sup>(1)(2)</sup> , 2.4.3 <sup>(2)</sup> , 2.4.7 <sup>(1)</sup> and 2.4.9 <sup>(2)</sup> . See sections 8.2 and 8.3 of this Certificate.
<b>Standard:</b> 2.5	<b>Internal linings</b>
<b>Comment:</b>	The product can contribute to satisfying this Standard, with reference to clause 2.5.1 <sup>(1)(2)</sup> . See sections 8.2 and 8.3 of this Certificate.
<b>Standard:</b> 2.6	<b>Spread to neighbouring buildings</b>
<b>Comment:</b>	The product is classified as 'non-combustible' and, therefore, is unrestricted under this Standard, with reference to clauses 2.6.4 <sup>(1)(2)</sup> , 2.6.5 <sup>(1)</sup> and 2.6.6 <sup>(2)</sup> . See section 8.4 of this Certificate.
<b>Standard:</b> 2.7	<b>Spread on external walls</b>
<b>Comment:</b>	The product is classified as 'non-combustible' and, therefore, is unrestricted under this Standard, with reference to clause 2.7.1 <sup>(1)(2)</sup> . See section 8.4 of this Certificate.
<b>Standard:</b> 2.8	<b>Spread from neighbouring buildings</b>
<b>Comment:</b>	The product can contribute to satisfying this Standard, with reference to clause 2.8.1 <sup>(1)(2)</sup> . See section 8.1 of this Certificate.
<b>Standard:</b> 3.10	<b>Precipitation</b>
<b>Comment:</b>	The product can contribute to satisfying this Standard, with reference to clauses 3.10.1 <sup>(1)(2)</sup> , 3.10.5 <sup>(1)(2)</sup> and 3.10.7 <sup>(1)(2)</sup> . See section 6 of this Certificate.
<b>Standard:</b> 7.1(a)	<b>Statement of sustainability</b>
<b>Comment:</b>	The product 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.
<b>Regulation:</b> 12	<b>Building standards applicable to conversions</b>
<b>Comment:</b>	All comments given for this product under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2012

<b>Regulation:</b> 23(a)(i)(iii)	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>	The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.

Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product can contribute to satisfying this Regulation. See section 6 of this Certificate.
Regulation :	D1	Stability
Comment:		The product can contribute to satisfying this Requirement. See section 7 of this Certificate.
Regulation:	34(a)(b)	Internal fire spread – Linings
Comment:		The product is unrestricted under this Regulation. See sections 8.2 and 8.3 of this Certificate.
Regulation:	35(2)(3)(4)	Internal fire spread – Structure
Comment:		The product is unrestricted under this Regulation. See sections 8.1 to 8.3 of this Certificate.
Regulation:	36(a)(b)	External fire spread
Comment:		The product is unrestricted under this Regulation. See sections 8.1 and 8.2 of this Certificate.

## Construction (Design and Management) Regulations 2007

## Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.4) of this Certificate.

## Additional Information

### NHBC Standards 2014

In the opinion of the BBA, the use of Colorcoat PVDF, provided it is installed, used and maintained in accordance with this Certificate, is capable of satisfying the requirements of *NHBC Standards Chapters 6.3 Internal walls, 6.9 Curtain walling and cladding, 7.1 Flat roofs and balconies and 7.2 Pitched roofs.*

## Technical Specification

### 1 Description

1.1 Colorcoat<sup>(1)</sup> PVDF consists of Z275 galvanized steel, manufactured to BS EN 10346 : 2015, coated on the face side with a primer and a polyvinylidene fluoride/acrylic (70-80/30-20) coating to a total coating thickness of 27 µm. The pretreatment and primer are free of chromates, including hexavalent chrome.

1.2 The product is available in a range of standard colours (see Table 1).

(1) Colorcoat is a registered trademark of Tata Steel UK Limited.

Table 1 Colour range

Colour	Nearest RAL/BS <sup>(1)</sup> reference	Colour	Nearest RAL/BS <sup>(1)</sup> reference
Alaska Grey	RAL 7000	Metallic Silver	RAL 9006
Anthracite Grey	RAL 7016	Morocco	RAL1002
Bahama Blue	RAL 5015	Mountain Blue	RAL 5014
Black	RAL 9005	Oyster	RAL 7035
Glen	RAL 6021	Pinewood Green	BS 14 C 39
Grey Aluminium	RAL 9007	Slate Grey	RAL 7012
Java	RAL 8024	Tundra	RAL 3009
Kalahari	RAL 1011	Vermilion	BS 04 E 55
Light Ivory	RAL 1015	White	RAL 9010

(1) BS 4904 : 1978.

1.3 The reverse side is coated with a 10 µm polyester system, a 22 µm exterior grade polyester finish, or the same finish as the face side.

1.4 Coils are available in widths of up to 1.65 m and thicknesses of between 0.4 mm and 1.6 mm.

### 2 Manufacture

2.1 In a coil-coating process, steel coil is degreased, chemically pre-treated and coated on the face and reverse sides.

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 Tata Steel Colors Construction has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by Lloyd's Register Quality Assurance Limited (Certificate LRQA 4004204/A).

### 3 Delivery and site handling

3.1 The product is not usually delivered to site in coil form, but is formed into profiled sheets and flashings by specialist forming companies.

3.2 The profiled sheet is usually delivered to site on trailers and unloaded by crane. The site must have adequate access and a suitable surface for this traffic.

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

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

3.5 When required for installation the sheets should be lifted from the stack rather than dragged across it.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Colorcoat PVDF.

### Design Considerations

#### 4 Use

4.1 Colorcoat PVDF, after roll-forming or brake-pressing, is suitable for external use as roofing and cladding, or for internal use as a lining.

4.2 The product may also be used as plain sheet for such purposes as small infill panels (provided these are sufficiently robust and properly secured).

#### 5 Practicability of installation

The product is designed to be installed by operatives experienced with this type of product.

#### 6 Weathertightness



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

#### 7 Resistance to wind uplift

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

#### 8 Properties in relation to fire



8.1 A sample of the product, when tested to BS 476-3 : 1958, had an EXT.S.AA rating.

8.2 When tested to BS 476-6 : 1989, a grey sample of the product had an index of performance (I) of 1.2, and a sub-index ( $i_1$ ) of 0.6. When tested to BS 476-7 : 1997, a similar sample achieved a Class 1 result. The product, therefore, has a Class 0/'low risk' surface as defined in the various national Building Regulations.

8.3 The reverse side specifications are also Class 0/'low risk' surfaces.



8.4 Colorcoat PVDF, when tested in accordance to the configuration requirements of BS EN 14782 : 2006 Annex C, is classified in accordance with BS EN 13501-1 : 2002 as A1.

#### 9 Location

The product is suitable for use in areas where there is little possibility of impact or abrasion 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 in 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.
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 path.
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 but not liable to impacts from thrown or kicked objects.	Wall surfaces at higher positions than those defined in E above.


Zone of wall up to 1.5 m above pedestrian or floor level.

## 10 Workability

10.1 The product may be worked by conventional techniques including brake-pressing, roll-forming, bending, drilling and punching. It is essential that the correct tools, in good condition, are used to prevent any damage to the coating, and that any swarf is removed.

10.2 The coating can withstand a 1T bend through 180° without damage at 16°C and above.


## 11 Maintenance

 11.1 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.

11.2 Maintenance painting should be considered at the intervals defined in section 12.4, or earlier if a high aesthetic standard is required. The Certificate holder can recommend a suitable paint and maintenance system.

11.3 In some areas (eg coastal and industrial areas, and where cladding is sheltered directly beneath a soffit), it may be necessary to clean the installation periodically, both to restore its appearance and to remove potentially corrosive deposits. This can be done by hosing with water, using a neutral detergent.

## 12 Durability

 12.1 The product is resistant to all normal atmospheric corrosive conditions (including coastal and industrial) and will withstand considerable distortion of the metal without losing adhesion between the coating and the substrate.

12.2 Particular care should be taken during design to minimise the exposure of cut edges of the installed sheets. This could include the use of weltd seams, secret-fix systems, continuous ridge to eaves installation, (ie without horizontal lap joints), or installation of a curved roof.

12.3 Colorcoat PVDF coating and metal treatment will protect the steel substrate against corrosion for a period in excess of 20 years in normal industrial, urban and rural environments.

12.4 The performance of the coating will depend on its environment, location, aspect face and use (ie roofing or cladding). The product will retain a good appearance for at least 15 years in non-corrosive environments and at least 10 years in coastal or severe industrial environments.

12.5 If the building has an exposed eaves detail, and is in an aggressive environment, or if there are corrosive conditions inside it, the reverse side should have the same specification as the face side, or should be overpainted.

## 13 Reuse and recyclability

The product contains steel, which can be recycled.

# Installation

## 14 Procedure

14.1 The installation should be designed and carried out in accordance with European Convention for the Construction of Steelwork (ECCS) European Recommendations for Steel Construction:

- Publication No 40 *The Design of Profiled Sheet*
- Publication No 41 *Good Practice in Steel Cladding and Roofing*

and with the relevant parts of:

- BS 5250 : 2011
- BS 5427-1 : 1996
- *National Federation of Roofing Contractors Profiled sheet metal roofing and cladding — A guide to good practice*
- MCRMA<sup>(1)</sup> *Technical Paper No 5 — Metal Wall Cladding Detailing Guide*
- MCRMA<sup>(1)</sup> *Technical Paper No 6 — Profiled Metal Roofing Design Guide*
- MCRMA<sup>(1)</sup> *Technical Paper No 11 — Flashings for metal roof and wall cladding*
- MCRMA<sup>(1)</sup> *Technical Paper No 12 — Fasteners for metal roof and wall cladding : Design, detailing and installation guide.*

(1) The Metal Cladding and Roofing Manufacturers Association.

14.2 Fixings should be selected in accordance with ECCS Publication No 35 *Mechanical Fasteners for Use in Steel Sheeting and Sections* and should be corrosion-resistant (ie sherardized or galvanized steel, aluminium or stainless steel). Primary fixings should have a durable plastic or rubber washer to prevent water ingress. Electroplated carbon steel fixings must have an effective plastic capping; mild steel or copper fixings are unsuitable.

## Technical Investigations

### 15 Tests

Tests were carried out, and the results evaluated, to determine:

- resistance to artificial weathering
- resistance to salt spray
- resistance to sulfur dioxide
- resistance to impact
- resistance to abrasion
- resistance to scratching
- ease of forming.

### 16 Investigations

16.1 Independent test data were examined relating to:

- fire roof exposure rating
- fire propagation
- surface spread of flame.

16.2 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.

## Bibliography

- BS 476-3 : 1958 *Fire tests on building materials and structures — External fire exposure roof test*
- BS 476-6 : 1968 *Fire tests on building materials and structures — Method of test for fire propagation for products*
- BS 476-7 : 1971 *Fire tests on building materials and structures — Surface spread of flame tests for materials*
- BS 4904 : 1978 *Specification for external cladding colours for building purposes*
- BS 5250 : 2011 *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 claddings on buildings — Design*
- BS EN 10346 : 2015 *Continuously hot-dip coated steel flat products for cold forming — Technical delivery conditions*
- BS EN 13501-1 : 2002 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
- BS EN 14782 : 2006 *Self-supporting metal sheet for roofing, external cladding and internal lining — Product specification and requirements*

## 17 Conditions

17.1 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 or 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.