

Tata Steel UK Limited

Shotton Works
Deeside
Clwyd CH5 2NH

Tel: 01244 892434

e-mail: Colorcoat.connection@tatasteeleurope.com

website: www.colorcoat-online.com



Agrément Certificate

91/2717

Product Sheet 3

TATA STEEL COLORCOAT PRE-FINISHED STEEL COIL AND SHEET

COLORCOAT LG

This Agrément Certificate Product Sheet⁽¹⁾ relates to Colorcoat LG, a 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 has a reaction to fire classification of C-s2, d0 to BS EN 13501-1 : 2018 and its use on walls is restricted. In roofs, the product, used in isolation, has a B_{ROOF}(t4) classification to BS EN 13501-5 : 2016 and is unrestricted in terms of proximity to a boundary. However, restrictions may apply to completed roof assemblies, depending on the other materials/components used and the overall construction (see section 8).

Location — the product is suitable for use in external 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 OT bend without damage (see section 10).

Durability — under normal conditions, the product will perform effectively with a life expectancy in excess of 25 years. Its anticipated decorative life will vary depending on the area of use (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 Third issue: 26 February 2021

Originally certificated on 26 August 2008

Hardy Giesler
Chief Executive Officer

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 MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

British Board of Agrément

Bucknalls Lane
Watford
Herts WD25 9BA

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tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

Regulations

In the opinion of the BBA, Colorcoat LG, 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 product can contribute to satisfying this Requirement. See section 7 of this Certificate.
Requirement:	B2(1)	Internal fire spread (linings)
Comment:		The product is restricted by this Requirement. See sections 8.1, 8.2 and 8.12 of this Certificate.
Requirement:	B3(2)	Internal fire spread (structure)
Comment:		The product may be restricted by this Requirement. See section 8.4 of this Certificate.
Requirement:	B3(4)	Internal fire spread (structure)
Comment:		The product is restricted by this Requirement. See section 8.3 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The product is restricted by this Requirement. See sections 8.1, 8.2 and 8.9 of this Certificate.
Requirement:	B4(2)	External fire spread
Comment:		The product may be restricted by this Requirement. See sections 8.6 to 8.8 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See section 6 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The product is restricted by this Regulation. See sections 8.1, 8.2 and 8.9 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		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.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The product can contribute to a construction satisfying this Standard. See section 7 of this Certificate.
Standard:	2.1	Compartmentation
Standard:	2.2	Separation
Comment:		The products may be restricted by these Standards, with reference to clauses 2.1.15 ⁽²⁾ , 2.2.7 ⁽²⁾ and 2.2.10 ⁽¹⁾ . See section 8.4 of this Certificate.

Standard:	2.3	Structural protection
Comment:		The product is restricted by these Standards, with reference to clauses 2.1.12 ⁽²⁾ , 2.2.4 ⁽²⁾ , 2.2.5 ⁽²⁾ , 2.2.6 ⁽¹⁾ , 2.2.7 ⁽¹⁾ , 2.2.8 ⁽¹⁾ and 2.3.2 ⁽¹⁾⁽²⁾ . See sections 8.2 and 8.13 of this Certificate.
Standard:	2.4	Cavities
Comment:		The product is restricted by this Standard, with reference to clause 2.4.2 ⁽¹⁾⁽²⁾ . See section 8.3 of this Certificate.
Standard:	2.5	Internal linings
Comment:		The product is restricted by this Standard, with reference to clause 2.5.1 ⁽¹⁾⁽²⁾ . See sections 8.1, 8.2 and 8.13 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is restricted by this Standard, with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See sections 8.1, 8.2, 8.10 and 8.11 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The product is restricted by this Standard, with reference to clause 2.7.1 ⁽¹⁾⁽²⁾ . See sections 8.1, 8.2, 8.10 and 8.11 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		The product may be restricted by this Standard, with reference to clause 2.8.1 ⁽¹⁾⁽²⁾ . See sections 8.6 and 8.7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ , 3.10.5 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 6 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The product can contribute to satisfying 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:		All comments given for this product by Regulation 9 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)(iii)	Fitness of materials and workmanship
Comment:		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:	30	Stability
Comment:		The product can contribute to satisfying this Regulation. See section 7 of this Certificate.
Regulation:	34(a)(b)	Internal fire spread — Linings
Comment:		The product is restricted by this Regulation. See sections 8.1, 8.2 and 8.12 of this Certificate.
Regulation:	35(2)	Internal fire spread — Structure
		The product may be restricted by this Regulation. See section 8.4 of this Certificate.

Regulation:	35(4)	Internal fire spread — Structure
Comment:		The product is restricted by this Regulation. See section 8.3 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The product is restricted by this Regulation. See sections 8.1, 8.2 and 8.12 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		The product may be restricted by this Regulation. See sections 8.6 to 8.8 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 (3.4)* of this Certificate.

Technical Specification

1 Description

1.1 Colorcoat⁽¹⁾ LG consists of Z275 galvanized steel, manufactured to BS EN 10346 : 2015, coated on the face side with a primer and a plastisol coating to a total coating thickness of 200 µm. The pre-treatment and primer are free of chromates, including hexavalent chrome.

1.2 The product features an embossed finish and 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	Compass durability code ⁽¹⁾	Nearest BS ⁽²⁾ or RAL finish
Albatross	CD1	18B17
Anthracite	CD2	RAL 7016
Black	CD1	00E53
Goosewing Grey	CD1	10A05
Hamlet	CD1	RAL 9002
Heritage Green	CD2	RAL 6002
Honesty	CD1	10C31
Juniper Green	CD2	12B29
Meadowland	CD1	12B17
Merlin Grey	CD1	18B25
Moorland Green	CD1	12B21
Mushroom	CD1	10B19
Ocean Blue	CD2	18C39
Olive Green	CD1	12B27
Raven	CD2	18B29
Sargasso	CD2	RAL 5003
Terracotta	CD2	04C39
Vandyke Brown	CD2	08B29
Wedgwood Blue	CD1	18C37
White	CD1	00E55

(1) See Table 3

(2) BS 4904 : 1978.

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

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

2 Manufacture

2.1 In a coil-coating process, Z275 galvanized 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 the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Lloyd's Register Quality Assurance Limited (Certificate 10052850).

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 LG.

Design Considerations

4 Use

4.1 Colorcoat LG, 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 a 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 of this Certificate, will adequately resist the passage of moisture.

7 Resistance to wind uplift



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

8 Properties in relation to fire



8.1 The product has a reaction to fire classification⁽¹⁾ of C-s2, d0 to BS EN 13501-1 : 2018. This relates to the full thickness and colour range referred to in section 1 of this Certificate, mounted with or without an air gap, on to any A2 or better substrate at least 12 mm thick and with a density $\geq 870 \text{ kg}\cdot\text{m}^{-3}$.

(1) WarringtonFire report WF 431268, dated July 2020. Copies available from the Certificate holder.

8.2 This classification may not be achieved by other constructions, or in combination with other materials such as insulation, and the performance of such constructions should be confirmed in accordance with the requirements of the documents supporting the national Building Regulations.

8.3 The Certificate holder has not declared a reaction to fire classification for the reverse side of the product (facing into a cavity). Cavity barriers should be provided in accordance with the requirements of the documents supporting the national Building Regulations taking this into account.

8.4 Where the products are to be carried over compartment walls, designers must ensure that the roof/wall junction detail provides sufficient resistance to fire penetrating into the neighbouring compartment.

8.5 Designers should refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall construction (for example, thermal insulation).

External roofing



8.6 The product has a B_{ROOF}(t4) classification to BS EN 13501-5 : 2016 and BS EN 14782 : 2006⁽¹⁾. This applies to all roof pitches and the full thickness and colour range referred to in section 1 of this Certificate. See also section 8.7 of this Certificate.

(1) Report reference WFRGENT 19942C dated 22 April 2020.

8.7 This may not be achieved by other constructions and can also be affected by other components of the roof, eg insulation materials, substrates/decking and membranes. These constructions should therefore be evaluated by reference to the requirements of the documents supporting the relevant national Building Regulations and any consequent restrictions imposed by those documents, on a case-by-case basis. In the absence of a classification, these constructions should not be used within 20 metres of a boundary (24 metres in Scotland).



8.8 In Wales and Northern Ireland, designers may also refer to the relevant documents supporting the national Building Regulations for certain roof specifications that can achieve a notional B_{ROOF}(t4) designation without testing and are consequently unrestricted.

External wall cladding



8.9 In England, Wales and Northern Ireland, the product may be used on buildings with no storey 18 m or more above the ground and 1 metre or more from a boundary. With minor exceptions, the product should be included in the calculations of unprotected area. See also sections 8.1 and 8.2 of this Certificate.



8.10 In Scotland, the product may be used on buildings more than 1 m from a boundary. With minor exceptions, the product should be included in calculations of unprotected area.

8.11 In Scotland, the product should not be used on any building with a storey more than 11 m above the ground, or on any entertainment or assembly building with a total storey area more than 500 m², or on any hospital or residential care building with a total storey area more than 200 m².

Internal linings



8.12 In England, Wales and Northern Ireland, the product should not be used in circulation spaces but is otherwise unrestricted, subject to the conditions in section 8.1 of this Certificate. See also section 8.2 of this Certificate.



8.13 In Scotland, designers should refer to the requirements in the Scottish Technical Handbooks in respect of room occupancy and size. See also sections 8.1 and 8.2 of this Certificate.

9 Location

9.1 The extent of impact damage which the product may sustain in service will depend on its location, the design of the cladding and the nature of the supporting structure. The product is considered suitable for use in areas where there is little possibility of impact or abrasion damage, ie at low levels in areas with restricted access, or at higher levels in public areas. The product is therefore suitable for use in categories C to F, as described 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 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.

9.2 The impact resistance of the product is determined by the thickness and impact resistance of the steel on which it is based. Adhesion failure of the coating will not normally occur, although hairline cracks may occur in areas of high stress.

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 OT 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 welded seams, secret-fix systems, continuous ridge to eaves installation (ie without horizontal lap joints) or installation of a curved roof.

12.3 The coating and metal treatment will protect the steel substrate against corrosion for a period in excess of 25 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 (defined as no more than 5% of the paint surface to be affected by flaking) for the intervals shown in Table 3.

Table 3 Repainting intervals (years)

Compass durability bands ⁽¹⁾	Inland		Coastal ⁽²⁾	
	Walls	Roofs	Walls	Roofs
CD1	25	25	20	20
CD2	20	15	15	10

(1) See Table 1.

(2) For buildings within 2 km of any coast.

13 Reuse and recyclability

The product contains steel, which can be recycled.

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⁽¹⁾ *Technical Paper No 5 — Metal Wall Cladding Detailing Guide*
- MCRMA⁽¹⁾ *Technical Paper No 6 — Profiled Metal Roofing Design Guide*
- MCRMA⁽¹⁾ *Technical Paper No 11 — Flashings for metal roof and wall cladding*
- MCRMA⁽¹⁾ *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 Sheet 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 salt spray
- adhesion to substrate
- ease of forming.

16 Investigations

16.1 Existing data were examined relating to:

- abrasion resistance
- impact resistance
- scratch resistance
- effect of artificial weathering
- resistance to sulfur dioxide.

16.2 Independent test data were examined relating to:

- surface spread of flame
- fire propagation.

16.3 Opinion was sought from a UKAS-accredited fire authority concerning the effect of colour on the fire properties of the product.

16.4 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 4904 : 1978 *Specification for external cladding colours for building purposes*

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 claddings on buildings — Design*

BS EN 10346 : 2015 *Continuously hot-dip coated steel flat products for cold forming — Technical delivery conditions*

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

BS EN 13501-1 : 2018 *Fire classification of construction products and building elements. Classification using data from reaction to fire tests*

BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

BS EN ISO 9001 : 2015 *Quality management systems — 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

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.