



Royston Lead Ltd

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**Agrément
Certificate
No 91/2662**
Second issue*

Designated by Government
to issue
European Technical
Approvals

ROYSTON LEAD'S CAST LEAD SHEET

Feuille de recouvrement en plomb
Abdeckstreifen

Product



- THIS CERTIFICATE RELATES TO ROYSTON LEAD'S CAST LEAD SHEET.

- Cast lead sheet is used for roofing, cladding and flashing applications.

- The installation must be designed, and the product installed, using traditional practices for lead sheet.

Regulations

1 The Building Regulations 2000 (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 roofing and cladding with the Building Regulations. In the opinion of the BBA, Royston Lead's Cast Lead Sheet, if used in accordance with the provisions of this Certificate, will meet the relevant requirements.

Requirement: B4(1)(2)

External fire spread

Comment:

Cast Lead Sheet can meet this Requirement. See sections 8.1 and 8.2 of this Certificate.

Requirement: C4

Resistance to weather and ground moisture

Comment:

Cast Lead Sheet can meet this Requirement. See section 7 of this Certificate.

Requirement: Regulation 7

Materials and workmanship

Comment:

Cast Lead Sheet is an acceptable material.

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



In the opinion of the BBA, Royston Lead's Cast Lead Sheet, if used in accordance with the provisions of this Certificate will satisfy the various Regulations and related Technical Standards as listed below.

Regulation: 10

Fitness of materials and workmanship

Standard: B2.1

Selection and use of materials, fittings, and components, and workmanship

Comment:

The product can contribute to a construction meeting this Standard. See the *Installation* part of this Certificate.

Electronic Copy

Standard:	B2.2	Selection and use of materials, fittings, and components, and workmanship
Comment:		Cast Lead Sheet is an acceptable material.
Regulation:	12	Structural fire precautions
Standard:	D9.1	Fire spread from an adjoining building
Comment:		Cast Lead Sheet can meet this Standard.
Standard:	D10.1	Fire spread on an external wall
Comment:		Cast Lead Sheet can meet this Standard.
Regulation:	17	Resistance to moisture
Standard:	G3.1	Resistance to precipitation — Resistance to precipitation
Comment:		Cast Lead Sheet can meet this Standard. See section 7 of this Certificate.

3 The Building Regulations (Northern Ireland) 2000



In the opinion of the BBA, Royston Lead's Cast Lead Sheet, if used in accordance with the provisions of this Certificate will satisfy the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		Cast Lead Sheet is an acceptable material.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		Cast Lead Sheet can meet this Regulation. See section 7 of this Certificate.
Regulation:	E5	External fire spread
Comment:		Cast Lead Sheet can meet this Regulation. See sections 8.1 and 8.2 of this Certificate.

4 Construction (Design and Management) Regulations 1994 (as amended)

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

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

See sections: 6 Delivery and site handling (6.4) of this Certificate.

Technical Specification

5 Description

5.1 Royston Lead's Cast Lead Sheet is manufactured by a continuous casting process using a purpose-made and computer-controlled casting machine.

5.2 The sheet is available in standard 3 m and 6 m lengths. Standard production widths range from 0.15 m to 1.5 m. Other lengths and widths are available on request.

5.3 The code designations for nominal thickness and mass are given in Table 1.

Table 1 Code designations for nominal thickness and mass⁽¹⁾

Code		Nominal thickness (mm)	Mass of a 300 mm x 300 mm square (kg)
Number	Colour		
3	green	1.32	1.35
4	blue	1.80	1.84
5	red	2.24	2.29
6	black	2.65	2.70
7	white	3.15	3.22
8	orange	3.55	3.62

(1) Due to the nature of lead, tolerances for the sheet are determined on a weight basis. This is defined as $\pm 5\%$ of the specified mass.

5.4 All material supplied for the casting of sheet is in the form of pig lead, purchased against a specific chemical composition and accompanied by certificates of analysis.

5.5 Quality control checks are carried out on each cast roll for:

- visual inspection of a cast sample
- weight per unit area
- weight distribution across the sheet
- weight of individual slit rolls.

5.6 Chemical composition checks of the final product are periodically made by analysing samples using a direct reading spectrograph.

6 Delivery and site handling

6.1 The product is delivered in rolls bound onto pallets.

6.2 Each pallet carries the BBA identification mark incorporating the number of this Certificate.

6.3 The rolls should be stored flat on a clean, dry surface, clear of the ground, under cover and secure.

6.4 The conventional precautions for handling lead defined in the HSE Approved Code of Practice *Control of lead at work* should be observed.

Design Data

7 General

Royston Lead's Cast Lead Sheet, installed in accordance with BS 6915 : 2001, is satisfactory as a roofing or wall cladding. The sheet is satisfactory for use as a flashing when installed in accordance with principles laid down in the relevant parts of BS 5534 : 2003.

8 Properties in relation to fire



8.1 Royston Lead's Cast Lead Sheet, when used on an appropriate sub-structure, has been given a notional designation of AA to BS 476-3 : 1958 as defined in the national Building Regulations:

England and Wales

Approved Document B, Appendix A, Table A5

Northern Ireland

Technical Booklet E, Table 4.6.

8.2 Cast Lead Sheet is non-combustible, as defined in the national Building Regulations:

England and Wales

Approved Document B, Appendix A, Table A6

Northern Ireland

Technical Booklet E, Clause 6.4(c).

9 Maintenance

9.1 Damaged areas can be repaired using traditional techniques.

9.2 The product may be used to repair existing lead flashings and can be used to repair zinc flashings without introducing a risk of corrosion.

10 Durability

10.1 Lead is a corrosion-resistant metal which, on weathering, forms a strongly adhering, insoluble, protective patina under normal atmospheric conditions. It is therefore possible to fix lead in contact with other metals without increasing the rate of corrosion of either by galvanic effects. In marine conditions contact between aluminium and lead should be avoided.

10.2 Royston Lead's Cast Lead Sheet can be fixed in contact with preservative-treated timbers (providing any CCA treatment is allowed adequate time for fixation), including those treated with fire retardants. When used in contact with acid-bearing timbers, such as western red cedar, oak or sweet chestnut, it should be protected by a coat of bitumen paint.

10.3 Lead is susceptible to corrosive attack by cement, concrete and mortar when in consistently damp situations. In such circumstances the lead sheet should be protected by coating with bitumen paint.

Installation

11 Procedure

11.1 The product is installed by plumbers or specialist roofing contractors using traditional tools and techniques for lead sheet in accordance with BS 6915 : 2001 or relevant parts of BS 5534 : 2003.

11.2 Lead flashings and joints between flashing should be made to ensure that free thermal movement and weathertightness are maintained. The installation of lead sheet in a particular situation should be determined by reference to BS 6915 : 2001.

11.3 Where joints are appropriate, adjacent lengths of lead may be joined by welting, soldering,

leadburning or other details. Solder should conform to BS EN 29453 : 1994.

11.4 Joints across the fall of pitched roofs or vertical cladding may be formed by laps giving a cover of 75 mm measured vertically or up to 220 mm along the slope, depending on the pitch of the roof.

11.5 Underlays are necessary to isolate the lead from the substrate and may be of inodorous felt. Waterproof building paper to BS 1521 : 1972, Class A, may be used when the surface is smooth.

Technical Investigations

The following is a summary of the technical investigations carried out on Royston Lead's Cast Lead Sheet.

12 Tests

Tests were conducted on samples to determine:

- weight/unit area
- tensile strength
- effect of dropping chisel
- effect of cold bend.

13 Investigations

13.1 The manufacturing process was examined, including methods adopted for quality control.

13.2 An assessment was made of an investigation into continuously cast lead sheet: *Microstructures of mechanical properties of milled and continuously cast lead sheet.*

Additional Information

The management systems of the Certificate holder have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2000 by NQA Certificate No 10276/1.

Bibliography

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

BS 1521 : 1972 *Specification for waterproof building papers*

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

BS 6915 : 2001 *Design and construction of fully supported lead sheet roof and wall coverings — Code of practice*

BS EN 29453 : 1994 *Soft solder alloys — Chemical compositions and forms*

BS EN ISO 9001 : 2000 *Quality management systems — Requirements*

Conditions of Certification

14 Conditions

14.1 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) is valid only within the UK;
- (d) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (e) is copyright of the BBA;
- (f) is subject to English law.

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

14.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabrication including all related and relevant processes 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 as and when deemed appropriate by the BBA under arrangements that it will determine; and

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

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

- (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 or standard of individual installations of the product or any maintenance thereto, including methods and workmanship.

14.5 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, Royston Lead's Cast Lead Sheet is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. This Certificate No 91/2662 is accordingly awarded to Royston Lead Ltd.

On behalf of the British Board of Agrément

Date of Second issue: 26th March 2004

Chief Executive

**Original Certificate issued 4th July 1991. This amended version includes reference to revised national Building Regulations and Standards, addition of CDM Regulations, Additional Information section and new Conditions of Certification.*