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Agrément Certificate

18/5490

Product Sheet 2

YALE ESPAGNOLETTE LOCKING SYSTEMS

YALE SHOOTBOLTS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Yale Shootbolts, for use as a locking system for PVC-U, timber or aluminium windows to allow secure closure of window sashes with the aid of an espagnolette handle.

(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

Resistance to wear and fatigue — the products have sufficient resistance to wear under normal use to provide a service life consistent with that of a window (see section 5).

Durability — the products have been tested and classified to BS EN 1670 : 2007 and have adequate resistance to corrosion in the conditions envisaged throughout the expected life of windows (see section 7).



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

Date First issue: 8 March 2018

John Albon – Head of Approvals
Construction Products

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
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.

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Regulations

In the opinion of the BBA, the use of Yale Shootbolts is not subject to the national Building Regulations.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2016

In the opinion of the BBA, this Certificate does not include any content which relates to the obligations of the client, designer (including Principal Designer) and contractor (including Principal Contractor) under these Regulations.

Additional Information

NHBC Standards 2018

In the opinion of the BBA the Yale Shootbolts, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 6.7 *Doors, windows and glazing*.

Technical Specification

1 Description

1.1 Yale Shootbolt croppable and extendable shootbolt locking mechanisms (standard and expandable gear boxes) are available in a range of sizes (see Tables 1 and 2), with four locking cams (7.7 mm and 9 mm), two shootbolts (one either end) and two to six fixing holes according to length.

1.2 A 7 mm square spindle drive is located in the lockcase that drives the cams into their locking position. This spindle drive is operated by an espagnolette handle⁽¹⁾.

(1) Outside the scope of this Certificate.

1.3 The metallic components of the shootbolts (see Figure 1) are made from mild steel, grade CS4 for the cover plate and drive rod, steel for the mushroom cams and a zinc alloy die-casting, grade ZP0410 to BS EN 12844 : 1998 for the gearbox. All components are zinc plated and passivated.

Figure 1 Typical espagnolette bolt

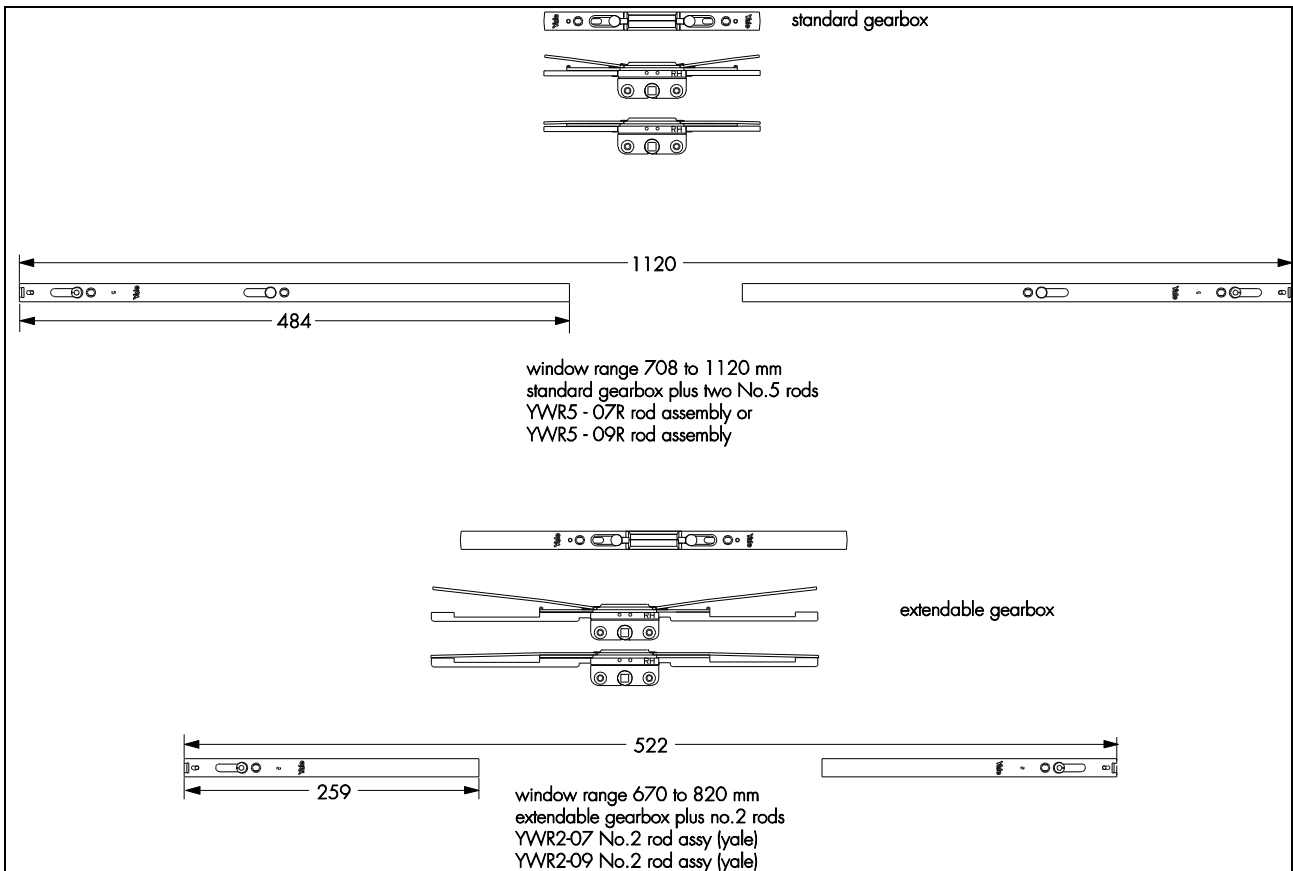


Table 1 Yale Shootbolts range: Shootbolt Gearbox and Shootbolts (Croppable)

Part no.	Description	No. of cams	Sash size range (mm)
YWL1022-19 ⁽¹⁾	Yale Croppable Shootbolt Gearbox 22 mm B/S	0	N/A
YWL1020-19 ⁽¹⁾	Yale Croppable Shootbolt Gearbox 20 mm B/S	0	N/A
YWL1722-19 ⁽¹⁾	Yale Croppable Shootbolt Gearbox 22 mm B/S	2	N/A
YWL1720-19 ⁽¹⁾	Yale Croppable Shootbolt Gearbox 20 mm B/S	2	N/A
YWR0-19 ⁽²⁾	Yale Croppable Shootbolt Extension Rod 0	0	326-474
YWR3-07-19 ⁽²⁾	Yale Croppable Shootbolt Extension Rod 3	1	368-820
YWR5-07-19 ⁽²⁾	Yale Croppable Shootbolt Extension Rod 5	2	708-1120
YWR7-07-19 ⁽²⁾	Yale Croppable Shootbolt Extension Rod 7	2	968-1420
YWK-237-19 ⁽³⁾	Yale Mushroom keep	N/A	N/A
YWK-437-19 ⁽³⁾	Yale Combined Shootbolt Keep LH	N/A	N/A
YWK-637-19 ⁽³⁾	Yale Combined Shootbolt Keep RH	N/A	N/A

(1) By way of example, the part code format is as follows:

YWL1cbb-19, where:

c denotes cam height (0 = no cams, 7 = 7.7 mm cam or 9 = 9.0 mm cam)

bb denotes the backset (20 or 22 mm)

(2) By way of example, the part code format is as follows:

YWRx[W]-cc[R]-19, where

x is the rod size from 0 to 7

cc is the cam height (07 for 7.7mm or 09 for 9.0mm)

W, if present, means there is a washer present

R, if present, means a rivet is present instead of an inner cam

(3) By way of example, keeps are window system dependent.

Table 1 Yale Shootbolts range: Shootbolt Gearbox and Shootbolts (Extendable)

Part no.	Description	No. of mushrooms	Sash size range (mm)
YWL2022-19 ⁽¹⁾	Yale Extendable Shootbolt Gearbox 22 mm B/S	0	N/A
YWL2020-19 ⁽¹⁾	Yale Extendable Shootbolt Gearbox 20 mm B/S	0	N/A
YWL2722-19 ⁽¹⁾	Yale Extendable Shootbolt Gearbox 22 mm B/S	2	N/A
YWL2720-19 ⁽¹⁾	Yale Extendable Shootbolt Gearbox 20 mm B/S	2	N/A
YWR0-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 0	0	476-624
YWR1-07-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 1	1	522-670
YWR2-07-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 2	1	670-820
YWR3-07-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 3	1	820-970
YWR4-07R-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 4	1	970-1120
YWR5-07R-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 5	1	1120-1270
YWR6-07R-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 6	1	1270-1420
YWR7-07R-19 ⁽²⁾	Yale Extendable Shootbolt Extension Rod 7	1	1420-1570
YWK-237-19 ⁽³⁾	Yale Mushroom keep	N/A	N/A
YWK-437-19 ⁽³⁾	Yale Combined Shootbolt Keep LH	N/A	N/A
YWK-637-19 ⁽³⁾	Yale Combined Shootbolt Keep RH	N/A	N/A

(1) By way of example, the part code format is as follows:

YWL2cbb-19, where:

c denotes cam height (0 = no cams, 7 = 7.7 mm cam or 9 = 9.0 mm cam)

bb denotes the backset (20 or 22 mm).

(2) By way of example, the part code format is as follows:

YWRx[W]-cc[R]-19, where

x is the rod size from 0 to 7

cc is the cam height (07 for 7.7mm or 09 for 9.0mm)

W, if present, means there is a washer present

R, if present, means a rivet is present instead of an inner cam

(3) By way of example, keeps are window system dependent.

2 Manufacture

2.1 The face plates and moving bars are punched, formed, cropped and electro-plated. These are then held together by spin riveting turned cams and rivets. The lock case is produced from pressure cast zinc and is assembled with the forged pinion gears and cast square drive gear, with the two cases being riveted together.

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 systems of the manufacturer have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008.

3 Delivery and site handling

3.1 The products are packed in cardboard boxes, containing:

- Shootbolt standard gearboxes, 40 per box
- Shootbolt extendable gearboxes, 20 per box
- Shootbolt rods:
 - Sizes 0-5, 40 per box
 - Sizes 6-7, 20 per box

Boxes are labelled with the BBA logo incorporating the number of this Certificate.

3.2 Boxes should be stored under cover in a clean area and suitably supported to avoid distortion or damage.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Yale Shootbolts.

Design Considerations

4 Use

4.1 Yale Shootbolts and associated keeps are suitable for use in top-hung and side-hung windows made from PVC-U, timber or aluminium, within the limits shown in Tables 1 and 2. Windows must have an outer frame/sash design suitable for correct fixing of the shootbolts and keeps using appropriate screws⁽¹⁾ through the profiles or reinforcement. The Certificate holder can advise on the suitability of window profiles.

(1) Outside the scope of this Certificate.

4.2 The products are available in 20 mm and 22 mm lockcase backsets to suit the design of the window system.

4.3 The eccentrically adjustable cams, which are either 7.7 mm or 9 mm according to customer requirements, can be adjusted by ± 0.7 mm for weatherseal compression.

4.4 A range of die-cast zinc mushroom and shootbolt keeps is available from the Certificate holder to suit a range of profiles.

5 Resistance to wear and fatigue

5.1 The shootbolts were tested for cyclic operation in accordance with BS EN 1191 : 2012 and achieved Class 3 — Heavy Duty when classified to BS EN 12400 : 2002 (see Table 3).

Table 3 Endurance results

Description	Comments
Extendable Shootbolt comprising extendable gearbox (YWL2722), four mushroom cams and two shootbolts (YWR6-07R)	Normal operation after 20,000 cycles
(1) The shootbolt was cropped to the minimum recommended engagement (25 mm).	

5.2 The shootbolts were tested for minimum closing device resistance in accordance with BS EN 13126-4 : 2008, clause 5.4 and passed the requirements of that Standard.

6 Maintenance

6.1 The products should be cleaned every 12 months to minimise wear and to ensure smooth operation.

6.2 If damage occurs, the products can be replaced by removing the fixing screws and replacing the espagnolette.

7 Durability

7.1 The products were tested for resistance to salt spray as defined in BS EN 1670 : 2007 and achieved Grade 4 — Very high corrosion resistance.

7.2 The products are constructed from durable materials and, when installed in accordance with this Certificate, will last the expected life of the window, provided the window is not installed in an area subject to particularly corrosive conditions (such as a coastal location or near a source of industrial pollutants). In such cases, shootbolts may have to be replaced within the life of the window.

7.3 The products may need to be replaced within the life of a window if they become damaged.

8 Reuse and recyclability

The products comprise zinc-plated mild steel and zinc alloy, which can be recycled.

Installation

9 General

9.1 Installation of Yale Shootbolts must be carried out in accordance with the Certificate holder's instructions, using suitable corrosion-resistant screws⁽¹⁾.

(1) Outside the scope of this Certificate.

9.2 The correct size of products should be chosen to suit the height/width of window.

10 Procedure

The sash profile is routed, the gearbox is positioned in the sash and the rods are inserted and screwed to the window sash. The associated keeps are screwed to the outer frame or transom/mullion.

Technical Investigations

11 Tests

Tests were carried out to determine:

- cyclic operation in accordance with BS EN 1191 : 2012
- minimum closing device resistance in accordance with BS EN 13126-4 : 2008, clause 5.4
- resistance to salt spray in accordance with BS EN 1670 : 2007.

12 Investigations

12.1 An assessment was made of the durability of the components used in the manufacture of the products.

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

Bibliography

BS EN 1191 : 2012 *Windows and doors — Resistance to repeated opening and closing — Test method*

BS EN 1670 : 2007 *Building hardware — Corrosion resistance — Requirements and test methods*

BS EN 12400 : 2002 *Windows and pedestrian doors — Mechanical durability — Requirements and classification*

BS EN 12844 : 1998 *Zinc and zinc alloys — Castings — Specifications*

BS EN 13126-4 : 2008 *Building hardware — Requirements and test methods for windows and doors height windows — Espagnolettes*

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

13 Conditions

13.1 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.

13.2 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.

13.3 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.

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

13.5 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.

13.6 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.