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Agrément Certificate

17/5404

Product Sheet 1

YALE FRICTION HINGES

SECURISTYLE DEFENDER STANDARD AND RESTRICTED FRICTION STAYS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Securistyle Defender Standard and Restricted Friction Stays, for use as friction hinges for PVC-U, timber or aluminium windows, to allow opening of top-hung and side-hung sashes.

(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).

Resistance to mechanical loading — windows fitted with the products have adequate resistance to mechanical loading and achieved the classifications shown in section 6 of this Certificate.

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 the windows (see section 8).



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 of First issue: 3 March 2017

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, Securistyle Defender Standard and Restricted Friction Stays, 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 Regulation in the region or regions of the UK depicted):



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

Requirement:	K5.3	Safe opening and closing of windows etc (applicable to England only)
Comment:		In buildings other than dwellings, the products satisfy this Requirement in relation to preventing falls through open windows with a limiting stop. See section 4.2 of this Certificate.
Requirement:	N3	Safe access for cleaning windows etc (applicable to Wales only)
Comment:		In buildings other than dwellings, the products satisfy this Requirement in relation to preventing falls through open windows with a limiting stop. See section 4.2 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See section 8.2 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 satisfy this Regulation. See sections 7.1 and 8.2 and the <i>Installation</i> part of this Certificate.



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23	Fitness of materials and workmanship
Comment:		The products are acceptable. See section 8.2 and the <i>Installation</i> part of this Certificate.
Regulation:	98	Safe opening and closing of windows, skylights and ventilators
Comment:		The products can contribute to satisfying this Regulation in relation to preventing falls through open windows with a limiting stop. See section 4.2 of this Certificate.

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 2017

NHBC accepts the use of Securistyle Defender Standard and Restricted Friction Stays, provided they are installed, used and maintained in accordance with this Certificate in relation to *NHBC Standards*, Chapter 6.7 *Doors, windows and glazing*.

Technical Specification

1 Description

The metallic components of Securistyle Defender Friction Stays (see Figures 1, 2 and 3) are made from stainless steel, numbers 1.4016 (ferritic) or 1.4301 (austenitic) to BS EN 10088-2 : 2014 and are available as standard or restricted versions. The built-in restrictor restricts the opening of the window to a maximum distance of 100 mm (profile dependent). By pushing the release lever, the window can be fully opened. Sizes and maximum opening angles are given in Tables 1 and 2.

Table 1 Securistyle Defender Standard Friction Stays — range

Manufacturer's code	Friction stay size (inches)	Maximum opening angle ⁽¹⁾⁽²⁾ (°)	Maximum sash weight (kg)	Maximum sash height (mm)	Maximum sash width (mm)
<i>Top-hung</i>					
EDT6	6	50	10	300	—
ED8	8	65	12	350	—
EDT10	10	80	16	400	—
EDT12	12	80	20	550	—
EDT16	16	80	21	780	—
EDT20	20	50	26	1100	—
EDT24	24	37.5	35	1300	—
EDTH24	24	32	37	1500	—
<i>Side-hung</i>					
EDS8	8	65	18	—	400
EDS12	12	60	22	—	600
EDS16	16	60	24	—	700

(1) Manufacturer's own data.

(2) The resulting opening will vary, depending on profile and sash size. Tolerance: $\pm 2.5^\circ$.

Table 2 Securistyle Defender Restricted Friction Stays — range

Manufacturer's code	Friction stay size (inches)	Maximum opening angle ⁽¹⁾⁽²⁾ (°)	Maximum sash weight (kg)	Maximum sash height (mm)	Maximum sash width (mm)
<i>Top-hung</i>					
EDTR12	12	65	20	550	—
EDTR16	16	59	21	780	—
EDTR20	20	50	26	1100	—
EDTR24	24	37.5	35	1300	—
<i>Side-hung</i>					
EDSR12	12	58	22	—	600
EDSR16	16	58	24	—	700

(1) Manufacturer's own data.

(2) The resulting opening will vary, depending on profile and sash size. Tolerance: $\pm 2.5^\circ$.

Figure 1 Typical Securistyle Defender Standard Friction Stays (dimensions in mm)

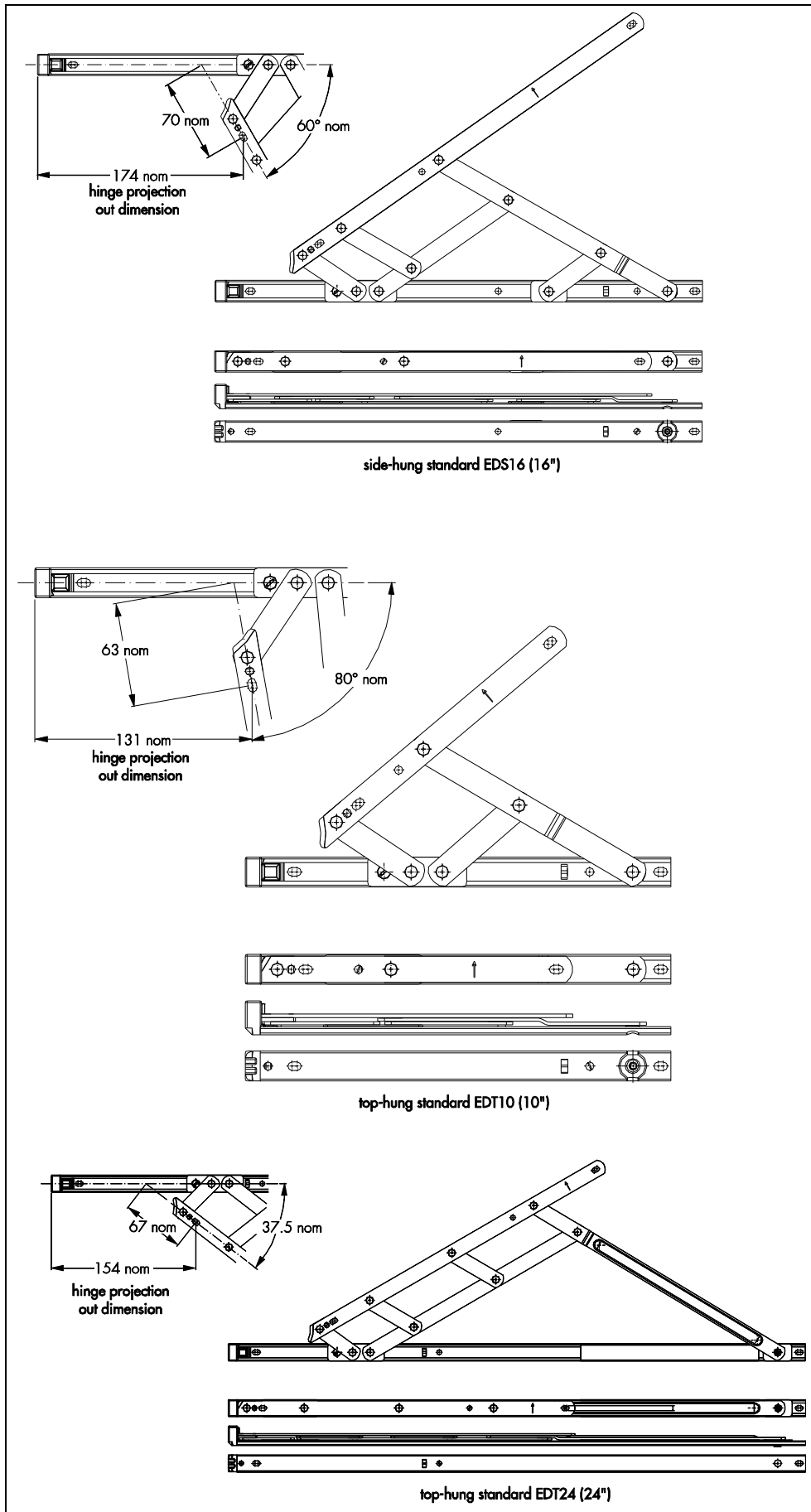


Figure 2 Typical Securistyle Defender Restricted Friction Stays (dimensions in mm)

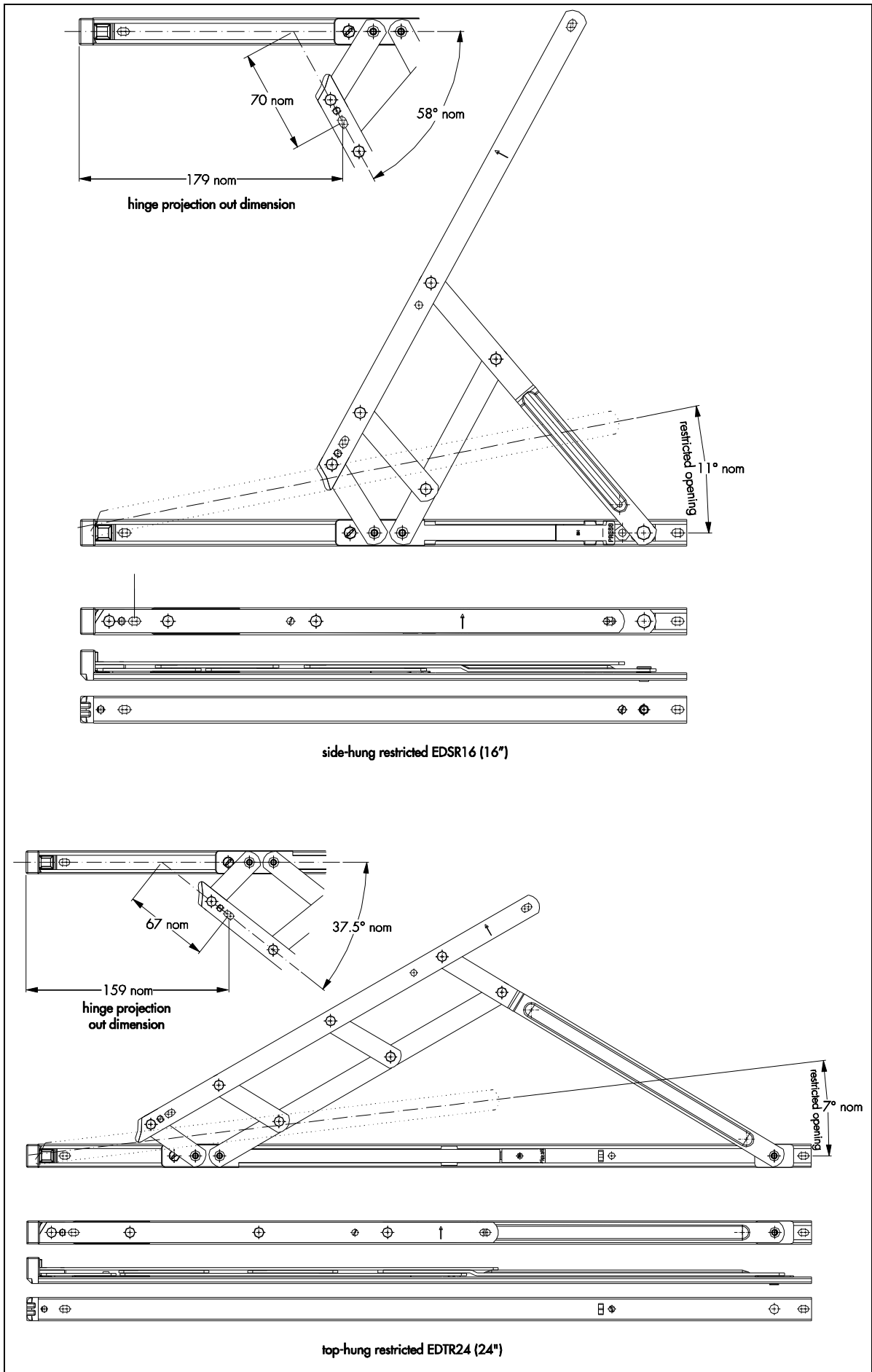
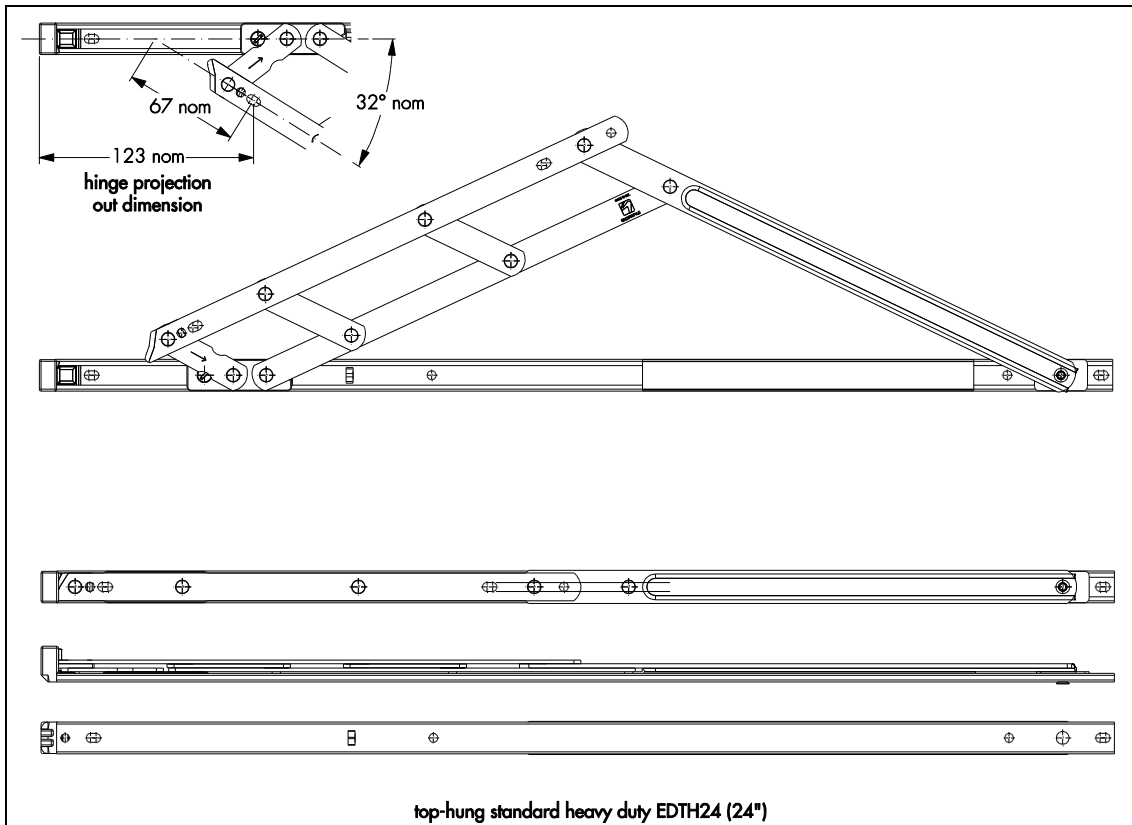


Figure 3 Typical Securistyle Defender Top-hung Heavy Duty Friction Stays (dimensions in mm)



2 Manufacture

2.1 The arms of the products, made from ferritic or austenitic stainless steel, are fastened to the main slider using cold forged austenitic stainless steel rivets which are assembled by an impact riveting process. The main and secondary sliders are made from acetal with an adjustable zinc die-cast cam. A nylon end cap is staked onto the hinge. For the restricted variant, an additional zinc die-cast lever is attached to the main slider by a moulded leaf spring and interacts with cut-outs in the track.

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 being 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, each containing 25 pairs of stays, 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 Securistyle Defender Standard and Restricted Friction Stays.

Design Considerations

4 Use

4.1 Securistyle Defender Standard and Restricted Friction Stays are suitable for use in top-hung and side-hung windows made from PVC-U, timber or aluminium, within the limits shown in Table 1. Windows must have an outer frame/sash design suitable for correct fixing of the stays using appropriate screws⁽¹⁾ through the profiles or reinforcement. The Certificate holder can advise on the suitability of window profiles. It is the responsibility of the specifier to ensure that the finished window meets any required safety specifications.

(1) Outside the scope of this Certificate.



4.2 The products are fitted with a restrictor device to restrict the opening to 100 mm, as recommended for child safety in BS 8213-1 : 2004.

4.3 The products are available in 13 mm and 17 mm stack heights to suit the design of the window system.

5 Resistance to wear and fatigue

Securistyle Defender Standard and Restricted Friction Stays were tested for cyclic operation in accordance with ES2-02 *Specification for testing — Endurance of friction stays fitted to side-hung windows*, Issue 3, dated 1 August 2001 and ES2-03 *Specification for testing — Endurance of friction stays fitted to top-hung and reversible windows*, Issue 3, dated 1 August 2001 (see Table 3).

Table 3 Endurance results

Manufacturer's code	Friction stay size (inches)	Weight of sash tested (kg)	Comments
<i>Top-hung</i>			
EDT24	24	35	Normal operation after 30,000 cycles
EDTH24	24	37	Normal operation after 30,000 cycles
<i>Side-hung</i>			
EDS12	12	16	Normal operation after 28,000 cycles
EDS16	16	24	Normal operation after 30,000 cycles

6 Resistance to mechanical loading

6.1 Selected samples from the range were tested on suitable windows in accordance with BS 6375-2 : 1987 and BS 6375-2 : 2009 (see Table 4).

Table 4 Mechanical loading characteristics

Test method and year of Standard	Top-hung friction stays ⁽¹⁾ size 24 inches	Top-hung heavy duty friction stays ⁽¹⁾ size 24 inches	Side-hung friction stays ⁽¹⁾ size 16 inches
Ease of fastener operation (BS 6375-2 : 1987)	Pass ⁽²⁾	Pass ⁽³⁾	Pass ⁽⁴⁾
Ease of movement of sash (BS 6375-2 : 1987)	Pass ⁽²⁾	Pass ⁽³⁾	Pass ⁽⁴⁾
Release of jammed sash (BS 6375-2 : 1987)	Pass ⁽²⁾	Pass ⁽³⁾	Pass ⁽⁴⁾
Release of jammed hinge (BS 6375-2 : 1987)	Class B ⁽²⁾⁽⁵⁾	Class B ⁽³⁾⁽⁵⁾	Class B ⁽⁴⁾⁽⁵⁾
Strength of restricted opening and location devices and maximum opening stops (BS 6375-2 : 1987)	Pass ⁽²⁾	Pass ⁽³⁾	Pass ⁽⁴⁾
Resistance to accidental loading (BS 6375-2 : 1987)	—	—	Pass ⁽⁴⁾
Load bearing capacity of safety devices (BS 6375-2 : 2009)	Pass ⁽⁶⁾	—	Pass ⁽⁷⁾

(1) Restricted versions of the friction stays were used.

(2) Weight of sash tested 35 kg, sash height 1400 mm.

(3) Weight of sash tested 37 kg, sash height 1500 mm.

(4) Weight of sash tested 25 kg, sash width 800 mm.

(5) Suitable for light-duty by those with a high incentive to exercise care (eg private house owners) and where there is a small chance of accident or misuse.

(6) Aluminium window tested, sash dimensions 1288 mm wide by 1288 mm high.

(7) Aluminium window tested, sash dimensions 666 mm wide by 1346 mm high.

6.2 If classification of mechanical strength of a particular window is required, the window itself should be tested in accordance with BS 6375-2 : 2009.

7 Maintenance



7.1 The products can be cleaned using a soft sponge and soapy water. Solvent-based, corrosive or abrasive cleaners must not be used. They should be lubricated at the time of installation, using light machine oil, and then cleaned and lubricated once per year to minimise wear and to ensure smooth operation. Care should be taken to avoid applying lubricant to the sliders as this will impair their braking action.

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

8 Durability

8.1 The products were tested for resistance to salt spray as defined in BS EN 1670 : 2007 and achieved the grades shown in Table 5.

Table 5 Resistance to corrosion

Friction stay	Classification to BS EN 1670 : 2007	Service conditions
Defender Standard Friction Stay (stainless steel number 1.4301 to BS EN 10088-2 : 2014)	Grade 5 ⁽¹⁾	Service outdoors in exceptionally severe conditions where long-term protection of the product is required
Defender Standard Friction Stay (stainless steel number 1.4016 to BS EN 10088-2 : 2014)	Grade 4 ⁽²⁾	Service outdoors in very severe conditions
Defender Restricted Friction Stay (stainless steel number 1.4301 to BS EN 10088-2 : 2014)	Grade 4 ⁽²⁾	Service outdoors in very severe conditions
Defender Restricted Friction Stay (stainless steel number 1.4016 to BS EN 10088-2 : 2014)	Grade 4 ⁽²⁾	Service outdoors in very severe conditions

(1) Grade 5: exceptionally high corrosion resistance.

(2) Grade 4: very high corrosion resistance.



8.2 The products are constructed from durable materials and, when installed in accordance with this Certificate, will last the expected life of the window where windows are installed in areas not subject to particularly corrosive conditions (such as coastal locations or near sources of industrial pollutants). In such cases, friction stays made from stainless steel number 1.4301 (austenitic) should be used.

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

9 Reuse and recyclability

The products comprise ferritic and austenitic stainless steels, which can be recycled.

Installation

10 General

10.1 Installation of the products 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.

10.2 The correct size of products should be chosen to suit the sash weight and height/width.

10.3 Drilling jigs⁽¹⁾ are available from the Certificate holder.

(1) Outside the scope of this Certificate.

11 Procedure

The products are screwed first to the window sash and then to the outer frame.

Technical Investigations

12 Tests

Tests were carried out to determine:

- cyclic operation, generally in accordance with ES2-02 *Specification for testing — Endurance of friction stays fitted to side-hung windows*, Issue 3, dated 1 August 2001 and ES2-03 *Specification for testing — Endurance of friction stays fitted to top-hung and reversible windows*, Issue 3, dated 1 August 2001
- mechanical loading, in accordance with BS 6375-2 : 1987
- resistance to salt spray, in accordance with BS EN 1670 : 2007.

13 Investigations

13.1 An assessment was made of:

- the durability of the products
- mechanical loading
- test reports of windows incorporating the friction stays, tested in accordance with PAS 24 : 2012, Annex C
- weathertightness.

13.2 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 6375-2 : 1987 *Performance of windows — Specification for operation and strength characteristics*

BS 6375-2 : 2009 *Performance of windows and doors — Classification for operation and strength characteristics and guidance on selection and specification*

BS 8213-1 : 2004 *Windows, doors and rooflights — Design for safety in use and during cleaning of windows, including door-height windows and roof windows — Code of practice*

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

BS EN 10088-2 : 2014 *Stainless steels — Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

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

PAS 24 : 2012 *Enhanced security performance requirements for doorsets and windows in the UK — External doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk*

14 Conditions

14.1 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.

14.2 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.

14.3 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.

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

14.5 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.

14.6 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.