

TEST REPORT



Title: TSS (Trade Security Supplies) Ltd
Window Restrictors –
Evaluation to EN 13126-5:2011 +
A1:2014

Report Number: WTE-20-032

On behalf of: TSS (Trade Security Supplies)
Limited

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Date: 21 December 2020

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Introduction

It was requested that White Technology and Engineering Ltd carry out an evaluation of the TSS Window Restrictors to EN 13126-5:2011 + A1:2014 to a grading level of:

1	2	3	4	5	6	7	8	9
category of use	durability	mass	fire resistance	safety in use	corrosion resistance	security	application	test sizes
-	5	015	0	3/2	3	-	5/6	A

NOTE The specified sizes are test sizes only. It does not relate to the maximum sizes to which a window may be fabricated.

The results are presented below:

Samples

6 samples of the TSS White Window Restrictor were supplied.
2 samples of the TSS Black Window Restrictor were supplied.
2 samples of the TSS Brown Window Restrictor were supplied.

The samples were delivered on 30 November 2020.

Testing was carried out on laboratory supplied windows as described below.
The test windows were sash size grade A (600mm x 1200mm) side hung with a sash mass grade 015.

NOTE The specified sizes are test sizes only. It does not relate to the maximum sizes to which a window may be fabricated.

Two restrictors were fitted to the test specimen, these were adjacent to the top and bottom of the free edge of the sash.

Photographs of the restrictor are shown in Appendix A.

Results

EN 13126-5 has the following requirements from EN 13126-1

Clause		Requirement			Grade
5.1		Dangerous substances	Materials in products should not release any dangerous substances in excess of the maximum levels specified in the European material standards and any national regulations.	TSS supplied a declaration confirming their compliance	Pass
6.4.3		Test specimen for hardware on PVC-U profile windows and door height windows	Hardware for PVC-U windows shall be installed in PVC-U test-windows.		Pass
9		Marking	The product and/or its literature, packaging etc., shall be marked with the following:		
			a) manufacturer's name or trademark, or other means of positive identification	Company name on literature	Pass
			b) product model identification.	Product name on literature	Pass
			c) number of this European Standard.	Standard Number on literature	Pass
			d) year and calendar-week of production.	Date on literature	Pass
			The classification of Clause 4 shall be quoted.	Classification on literature	Pass

Note: draft literature was supplied as the product had not yet been tested.

EN 13126-5 has the following requirements

Clause		Requirement			Grade
5.1		General	For restrictors that are a separate item of hardware the manufacturers' installation documentation shall make clear the application range (minimum and maximum dimensions) of the restrictor.	On literature	Pass
			Where a restricted initial opening dimension is specified the installation position on the window shall include the locating dimensions to ensure that the intended grade is achieved.	On literature	Pass
			Where the functionality of the restrictor is determined by the installation position on the window, the locating dimensions shall ensure the hardware functions correctly.	On literature	Pass
			Locating dimensions shall ensure the hardware functions correctly.	On literature	Pass

Note: draft literature was supplied as the product had not yet been tested.

5.2	7.2	Initial opening test			
5.2.2	7.2.2	Safety initial opening test (max. 100 mm)	Upon completion of the initial opening test in accordance with 7.2.2:	Box 5 Grade 2/- Box 8 Grade 5/4	
			Gauge A shall not pass through the opening between the sash and frame without any force applied		Pass
			The restrictor shall continue to function normally		Pass
5.2.3	7.2.3	Child safety initial opening test (max. 89 mm)	Upon completion of the initial opening test in accordance with 7.2.3:	Box 5 Grade 3/- Box 8 Grade 5/6	
			Gauge B shall not pass through the opening between the sash and the frame		Pass
			During the test; — the restrictor shall continue to function normally.		Pass
			During the test; — the restrictor shall conform with one of the following three criteria: a) the restrictor cannot be released to enable further opening; or b) the restrictor is able to be secured against further opening with the use of a specifically designed removal device or tool; or c) the restrictor is able to be secured against further opening with the use of a release mechanism which conforms to the requirements of ISO 8317 when tested in accordance with ISO 8317.	The restrictor requires a key to release.	Pass

5.3	7.3	Durability test			
5.3.2	7.3.2	Restrictor operation cycle test Durability	Upon completion of the restrictor operation cycle test in accordance with 7.3.2, the restrictor shall continue to function normally.	Box 2 Grade 5 - 25,000 operations	Pass
5.3.3	7.3.3	Restrictor engage and release cycle test Durability	Upon completion of the restrictor engage and release cycle test in accordance with 7.3.3, the restrictor shall continue to function normally.	Box 2 Grade 5 - 3750 cycles	Pass
5.2	7.2	Initial opening test			
5.2.2	7.2.2	Safety initial opening test (max. 100 mm)	Upon completion of the initial opening test in accordance with 7.2.2:		
			Gauge A shall not pass through the opening between the sash and frame without any force applied		Pass
			The restrictor shall continue to function normally		Pass
5.2.3	7.2.3	Child safety initial opening test (max. 89 mm)	Upon completion of the initial opening test in accordance with 7.2.3:		
			Gauge B shall not pass through the opening between the sash and the frame		Pass
			During the test; — the restrictor shall continue to function normally.		Pass

			<p>During the test; — the restrictor shall conform with one of the following three criteria: a) the restrictor cannot be released to enable further opening; or b) the restrictor is able to be secured against further opening with the use of a specifically designed removal device or tool; or c) the restrictor is able to be secured against further opening with the use of a release mechanism which conforms to the requirements of ISO 8317 when tested in accordance with ISO 8317.</p>	The restrictor requires a key to release.	Pass

	7.4	Mechanical Strength Test			
5.4.2	7.4.1	Hold open strength	Upon completion of the hold open strength test in accordance with 7.4.1		
			The restrictor shall remain engaged	No hold open	N/A
			The restrictor shall continue to function normally.	No hold open	N/A
5.4.3	7.4.2	Restrictor strength	Upon completion of the strength test in accordance with 7.4.2:	Box 5 Grade 2/- Box 8 Grade 5/4 350 N was applied.	
			The restrictor shall remain engaged		Pass
			The restrictor shall continue to function normally.		Pass
5.4.4	7.4.3	Child safety restrictor strength test	Upon completion of the strength test in accordance with 7.4.3:	Box 5 Grade 3/- Box 8 Grade 5/6 500N was applied	
			The restrictor shall remain engaged;		Pass
			The restrictor shall continue to function normally		Pass
5.5	7.5	Static load test	The test specified in 7.5 shall be used to ensure the restrictor can withstand a force to disengage Upon completion of the static load test in accordance with 7.5:	Cable locks are excluded from this test.	
			The restrictor shall remain engaged.		N/A
			The restrictor shall continue to function normally.		N/A

5.6	7.6	Percussion test	The test specified in 7.6 shall be used to ensure that any accessible part of a restrictor protruding beyond the face of the sash is able to withstand a mass colliding with the protruding part. Upon completion of the percussion test in accordance with 7.6.	Box 5 Grade 3/- Box 8 Grade 5/6 3 blows applied each to: i. The frame body ii. The sash body. iii. The cable.	Pass
			The restrictor shall remain fixed to the window.		Pass
			The restrictor shall remain engaged.		Pass
5.7	7.7	Impact test	The test specified in 7.7 shall be used to ensure the restrictor is able to withstand a mass colliding with the active sash.	Box 5 Grade [*] /2 Drop height 300mm	
			The restrictor shall remain engaged.		Pass
			The restrictor shall continue to function normally.		Pass
5.8	7.8	Cutting test	The test specified in 7.8 shall be used to ensure a cord style restrictor is able to withstand being cut. Upon completion of the cutting test in accordance with 7.8, the restrictor shall continue to function normally.	Box 5 Grade 3/- Box 8 Grade 5/6	Pass

	7.9	Corrosion	<p>The corrosion test shall be carried out in accordance with EN 1670.</p> <p>One sample each of white, black and brown was tested.</p> <p>EN 13126 does not give any pass/fail criteria for corrosion.</p> <p>The restrictor continued to function normally. There was no significant corrosion on the restrictor.</p>	Box 6 Grade 3	Pass

Summary

The following results were obtained for the TSS Window Restrictors when submitted for evaluation to EN 13126-5:2011 + A1:2014.

EN 13126-1 Requirements

Clause		Requirement	Category	Grade
5.1		Dangerous substances		Pass
6.4.3		Test specimen for hardware on PVC-U profile windows and door height windows		Pass
9		Marking		Pass

EN 13126-5 Requirements

Clause		Requirement	Category	Grade
5.1		General		Pass
5.2	7.2	Initial opening test		
5.2.2	7.2.2	Safety initial opening test (max. 100 mm)		Pass
5.2.3	7.2.3	Child safety initial opening test (max. 89 mm)		Pass
5.3	7.3	Durability test	Box 1	Grade 5
5.2	7.2	Initial opening test		
5.2.2	7.2.2	Safety initial opening test (max. 100 mm)		Pass
5.2.3	7.2.3	Child safety initial opening test (max. 89 mm)		Pass
	7.4	Mechanical Strength Test		
5.4.2	7.4.1	Hold open strength		N/A
5.4.3	7.4.2	Restrictor strength		Pass
5.4.4	7.4.3	Child safety restrictor strength test		Pass
5.5	7.5	Static load test		N/A
5.6	7.6	Percussion test		Pass
5.7	7.7	Impact test	Box 5	Grade -/2
5.8	7.8	Cutting test		Pass
	7.9	Corrosion	Box 6	Grade 3

N/A: Test not applicable for grade submitted.

N/T: Test not carried out due to design of restrictor

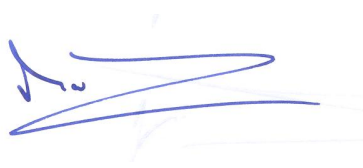
Overall EN 13126-5 Classification attained.

1	2	3	4	5	6	7	8	9
category of use	durability	mass	fire resistance	safety in use	corrosion resistance	security	application	test sizes
-	5	015	0	3/2	3	-	5/6	A

NOTE The specified sizes are test sizes only. It does not relate to the maximum sizes to which a window may be fabricated.

No inferences can be made regarding performance against other requirements of this standard

Report authorised by:



Dr Martin White
Director

Date: 21 December 2020

REPORT ENDS

Appendix A – Photographs

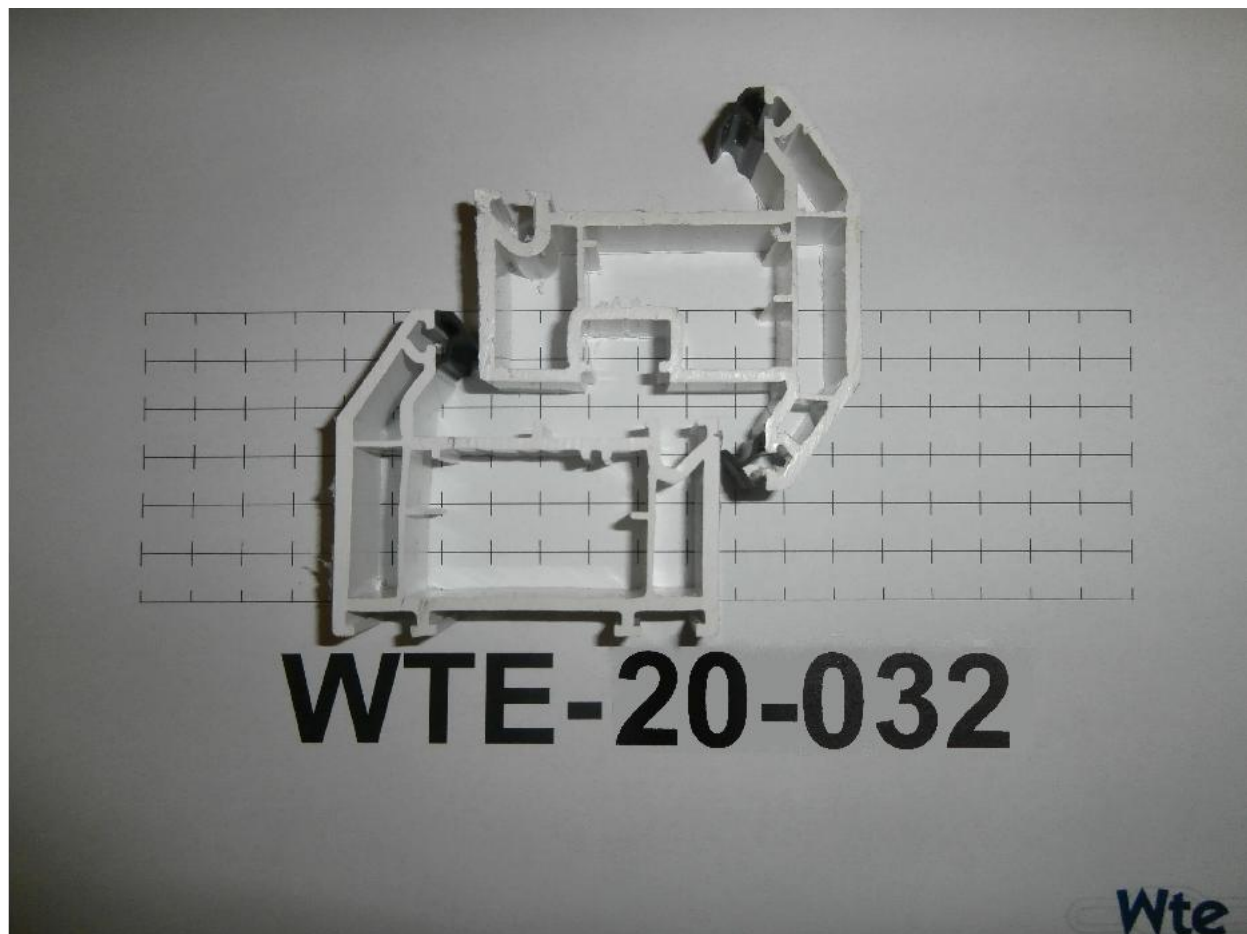


TSS Window Restrictor

Appendix B - Profile Details

a) profile cross-section;	As shown
b) profile reinforcement;	None - thermal inserts only
c) wall thickness;	Face wall - 3mm nominal
d) chamber quantity;	3
e) glazing centre position in relation to the pivot point;	N/A
f) hardware fixing screw sizes;	4 No. x 4.3 x 45 screws
g) any special features.	None

The test windows were manufactured from Eurocell profile.



Profile Cross- Section