

# Schüco product performance certificate

## Aluminium sliding systems

### Schüco ASS 70.HI

In accordance with EN 14351-1 : 2006-03

MB1007804\_EN-01  
Valid until 31.12.2014



**SCHÜCO**

# Schüco

## product performance certificate

### Aluminium sliding systems

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















#### Basic principles

EN 14351-1 (2006-03)  
Windows and external doors  
The Schüco performance certificate shows the performance characteristics of the systems named with their product families as per the specifications of the product standard.  
The national building regulations and contractual arrangements apply to the use of the performance characteristics.

#### Notes on publication

The license conditions and conditions of use of Schüco International KG shall apply.

System	<b>Schüco ASS 70.HI</b>
Special features	- / -
Product families	<b>1. Type 1A / 1B 2. Type 2A / 2A/1 / 2B / 2C / 3E / 3E/1 3. Type 1D / 2D / 2D/1 / 3F</b>
Frame material	<b>Aluminium/PVC-U composite</b>

<b>Properties</b>	Resistance to wind load	Resistance to snow and permanent load	Fire characteristics	Watertightness	Dangerous substances	Impact resistance	Load-bearing capacity of safety devices
							
<b>Class / value</b>	Up to B5 / C5	Not applicable	Not applicable	Up to E 750	****) npd		Not applicable
<b>Properties</b>	Height and width	Ability to release	Acoustic performance	Thermal transmittance	Solar energy transmittance	Air permeability	Operating forces
							
<b>Class / value</b>	Not applicable	Not applicable	*) *)		CE marking	4 1	
<b>Properties</b>	Mechanical strength	Ventilation	Bullet resistance	Explosion resistance	Resistance to repeated opening and closing	Behaviour between different climates	Burglar resistance
							
<b>Class / value</b>	2	Not applicable	Not applicable	Not applicable	4 npd		WK2

\*) Project-specific certification – if necessary

\*\*\*) Only applies to windows with integrated ventilation devices

\*\*\*) Only external doors

\*\*\*\*) Certification in accordance with country of destination

Bielefeld, 9 January 2010

ppa. i.V.
























T. Lauritzen  
Head of Enterprise Coordination



U. Brühl  
Head of Development and Product Management for  
Opening Units and Automation

# 1 Performance matrix in accordance with product standard EN 14351-1

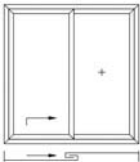
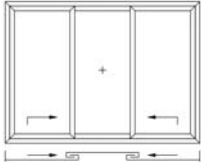
Extract from product standard EN 14351-1		Product family 1	Product family 2	Product family 3	
		Schüco ASS 70.HI	Type 1A / 1B	Type 2A / 2A/1 / 2B / 2C Type 3E / 3E/1	Type 1D / 2D / 2D/1 Type 3F
4.2		Resistance to wind load	npd	B5 / C5 B3 / C2	B3 / C3
4.3		Resistance to snow and permanent load	Not applicable		
4.4		Fire characteristics	Not applicable		
4.5		Watertightness	npd	E 750 7A	7A
4.6		Dangerous substances	The manufacturer must prepare and supply suitable information about the components in accordance with the legal requirements of the intended country of destination.		
4.7		Impact resistance	npd npd npd		
4.8		Load-bearing capacity of safety devices	Not applicable		
4.9		Height and width (only external doors)	Not applicable		
4.10		Ability to release (only external doors)	Not applicable		
4.11		Acoustic performance	The Rw values must be calculated based on standard dimensions or for specific projects.		
4.12		Thermal transmittance $U_w$ (W/(m <sup>2</sup> K))	The Rw values must be calculated based on standard dimensions or for specific projects.		
4.13		Solar energy transmittance	The solar energy transmittance g and the level of light transmittance $\tau$ must be verified by means of CE marking for the glazing.		
4.14		Air permeability	npd	4 4	4
4.16		Operating forces	1 1 1		
4.17		Mechanical strength	2 2 2		
4.18		Ventilation	Not applicable		
4.19		Bullet resistance	Not applicable		
4.20		Explosion resistance	Not applicable		
4.21		Resistance to repeated opening and closing	4 4 4		
4.22		Behaviour between different climates	npd npd npd		
4.23		Burglar resistance	WK2 WK2		WK2

Comment 1 npd: no performance determined
















## 2 System features and performance characteristics of the product families







### 2.1 Product family 1

#### 2.1.1 Description of system features for product family 1

<b>System</b>	<b>Schüco ASS 70.HI</b>
<b>Options</b>	<b>Lift-and-slide unit</b>
	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Type 1A</p>  </div> <div style="text-align: center;"> <p>Type 1B</p>  </div> </div>
<b>Frame material</b>	Aluminium/PVC-U composite
<b>Profile depth</b>	70 mm leaf frame, 184 mm outer frame
<b>Frame assembly</b>	Mitre cut with nailed and bonded corner cleats.
<b>Rebate design</b>	Single rebate
Rebate gasket, inside	Gaskets 244 829 and 244 830 at top with bonded moulded corner pieces, black EPDM, supplier: Schüco International KG
Rebate gasket, outside	
Rebate drainage	
	Fixed field area: ø15 mm in the PVC-U cover profile, slots of 8 x 34 mm, slots at the bottom 8 mm at the glazing rebate depth in the outer frame Area of the inner leaf: slots of 8 x 34 mm in the PVC-U cover profile, ø 12 mm with drainage tubes in the outer frame
<b>Gasket centre point</b>	PVC-U coupling profile with gasket 244 669, black EPDM Top: spring-loaded microcellular seal Bottom: EPDM seal Supplier: Schüco International KG
<b>Glazing</b>	Multi-pane insulating glass, glass thicknesses from 24 mm to 52 mm
Glazing gasket, outside	Glazing gasket 224 769, black EPDM, supplier: Schüco International KG; continuous, joined and bonded in centre at top
Glazing gasket, inside	Glazing gasket, EPDM, supplier: Schüco International KG, continuous, joined and bonded in centre at top
	<b>i</b> Glazing gaskets with different thicknesses can be used depending on the glazing thickness and given the same material properties and geometries
Vapour pressure equalisation	Bottom slots 8 mm at glazing rebate depth, outside drill holes Ø 8 mm, one Ø 8 mm drill hole, side and top
<b>Fittings</b>	Lift-and-slide fittings, supplier: Schüco International KG

## 2.1.2 Overview of performance characteristics for product family 1


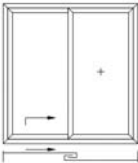
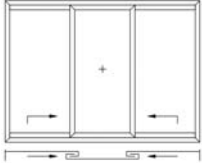
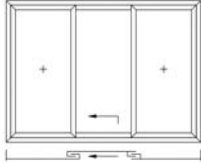
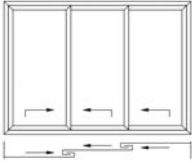
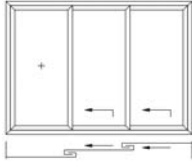
Lift-and-slide unit type 1A / 1B						
Extract from product standard EN 14351-1		Type, design	Certificate	Value / class	Area of use	
4.2		<b>Resistance to wind load</b>			npd	
4.3		<b>Resistance to snow and permanent load</b>	Not applicable			
4.4		<b>Fire characteristics</b>	Not applicable			
4.5		<b>Watertightness</b>			npd	
4.6		<b>Dangerous substances</b>	The manufacturer must prepare and supply suitable information about the components in accordance with the legal requirements of the intended country of destination.			
4.7		<b>Impact resistance</b>			npd	
4.8		<b>Load-bearing capacity of safety devices</b>	Not applicable			
4.9		<b>Height and width (only external doors)</b>	Not applicable			
4.10		<b>Ability to release (only external doors)</b>	Not applicable			
4.11		<b>Acoustic performance</b>	ASS 70.HI Type 2 A/1	Test report 161 29498 dated 06.09.05 from ift Rosenheim	RW (C;Ctr) = 37 dB (-2;-5)dB RW (C;Ctr) = 43 dB (-2;-6)dB RW (C;Ctr) = 44 dB (0-3)dB	
4.12		<b>Thermal transmittance <math>U_w</math> (W/(m<sup>2</sup>K))</b>	ASS 70.HI	EN 14351-1	Table value in accordance with EN 14351-1	
4.13		<b>Solar energy transmittance</b>	The solar energy transmittance g and the level of light transmittance $\tau$ must be verified by means of CE marking for the glazing.			
4.14		<b>Air permeability</b>			npd	
4.16		<b>Operating forces</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	1	
			ASS 70.HI Type 2A/1	Test report 101 29497/1 dated 01.08.05 from ift Rosenheim	1	
			ASS 70.HI Type 2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	1	
4.17		<b>Mechanical strength</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	2	

			ASS 70.HI Type2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	2	
4.18		<b>Ventilation</b>	Not applicable			
4.19		<b>Bullet resistance</b>	Not applicable			
4.20		<b>Explosion resistance</b>	Not applicable			
4.21		<b>Resistance to repeated opening and closing</b>	ASS 70.HI Type 2A  ASS 70.HI Type 2D/1	Test report 101 29497 dated 08.05.06 from ift Rosenheim  Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	4  4	
4.22		<b>Behaviour between different climates</b>			npd	
4.23		<b>Burglar resistance</b>			npd	

Comment 1 npd: no performance determined

## 2.2 Product family 2

### 2.2.1 Description of system features for product family 2

<b>System</b>	<b>Schüco ASS 70.HI</b>
<b>Options</b>	<b>Lift-and-slide unit</b>
	<div style="display: flex; justify-content: space-around; text-align: center;"> <div>Type 2A </div> <div>Type 2A/1 </div> <div>Type 2B </div> <div>Type 2C </div> </div> <div style="display: flex; justify-content: space-around; text-align: center; margin-top: 10px;"> <div>Type 3E </div> <div>Type 3E/1 </div> </div>
<b>Frame material</b>	Aluminium/PVC-U composite
<b>Profile depth</b>	70 mm leaf frame, 160 mm double track outer frame, 250 mm triple track outer frame
<b>Frame assembly</b>	Mitre cut with nailed and bonded corner cleats.
<b>Rebate design</b>	Single rebate
Rebate gasket, inside	Gaskets 244 829 and 244 830 at top with bonded moulded corner pieces, black EPDM, supplier: Schüco International KG
Rebate gasket, outside	
Rebate drainage	
<b>Gasket centre point</b>	PVC-U coupling profile with gasket 244 669, black EPDM Top: spring-loaded microcellular seal Bottom: EPDM seal Supplier: Schüco International KG
<b>Glazing</b>	Multi-pane insulating glass, glass thicknesses from 24 mm to 52 mm
Glazing gasket, outside	Glazing gasket 224 769, black EPDM, supplier: Schüco International KG; continuous, joined and bonded in centre at top
Glazing gasket, inside	Glazing gasket, EPDM, supplier: Schüco International KG, continuous, joined and bonded in centre at top



Glazing gaskets with different thicknesses can be used depending on the glazing thickness and given the same material properties and geometries

Vapour pressure  
equalisation













**Fittings**










Bottom slots 8 mm at glazing rebate depth, outside drill holes  
Ø 8 mm, one Ø 8 mm drill hole, side and top

Lift-and-slide fittings, supplier: Schüco International KG



## 2.2.2 Overview of performance characteristics for product family 2

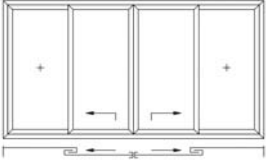
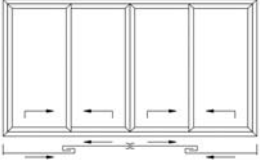
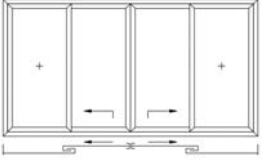
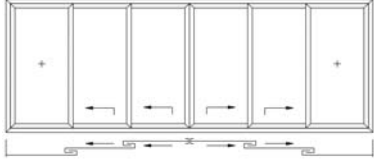
Lift-and-slide unit type 2A / 2A/1 / 2B / 2C / 3E / 3E/1						
Extract from product standard EN 14351-1		Type, design	Certificate	Value / class	Area of use	
4.2		<b>Resistance to wind load</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	B5 / C5	
			ASS 70.HI Type 2A/1	Test report 101 29497/1 dated 01.08.05 from ift Rosenheim	B3 / C2	
4.3		<b>Resistance to snow and permanent load</b>	Not applicable			
4.4		<b>Fire characteristics</b>	Not applicable			
4.5		<b>Watertightness</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	E 750	
			ASS 70.HI Type 2A/1	Test report 101 29497/1 dated 01.08.05 from ift Rosenheim	7A	
4.6		<b>Dangerous substances</b>	The manufacturer must prepare and supply suitable information about the components in accordance with the legal requirements of the intended country of destination.			
4.7		<b>Impact resistance</b>			npd	
4.8		<b>Load-bearing capacity of safety devices</b>	Not applicable			
4.9		<b>Height and width (only external doors)</b>	Not applicable			
4.10		<b>Ability to release (only external doors)</b>	Not applicable			
4.11		<b>Acoustic performance</b>	ASS 70.HI Type 2 A/1	Test report 161 29498 dated 06.09.05 from ift Rosenheim	RW (C;Ctr) = 37 dB (-2;-5)dB RW (C;Ctr) = 43 dB (-2;-6)dB RW (C;Ctr) = 44 dB (0-3)dB	
4.12		<b>Thermal transmittance <math>U_w</math> (W/(m<sup>2</sup>K))</b>	ASS 70.HI	EN 14351-1	Table value in accordance with EN 14351-1	
4.13		<b>Solar energy transmittance</b>	The solar energy transmittance $g$ and the level of light transmittance $\tau$ must be verified by means of CE marking for the glazing.			

4.14		<b>Air permeability</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	4	
			ASS 70.HI Type 2A/1	Test report 101 29497/1 dated 01.08.05 from ift Rosenheim	4	
4.16		<b>Operating forces</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	1	
			ASS 70.HI Type 2A/1	Test report 101 29497/1 dated 01.08.05 from ift Rosenheim	1	
4.17		<b>Mechanical strength</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	2	
4.18		<b>Ventilation</b>	Not applicable			
4.19		<b>Bullet resistance</b>	Not applicable			
4.20		<b>Explosion resistance</b>	Not applicable			
4.21		<b>Resistance to repeated opening and closing</b>	ASS 70.HI Type 2A	Test report 101 29497 dated 08.05.06 from ift Rosenheim	4	
4.22		<b>Behaviour between different climates</b>			npd	
4.23		<b>Burglar resistance</b>	ASS 70.HI Without typ 2C	Certificate 212 237531/1 dated 30.05.06 from ift Rosenheim	WK2	

Comment 1 npd: no performance determined

## 2.3 Product family 3

### 2.3.1 Description of system features for product family 3

<b>System</b>	<b>Schüco ASS 70.HI</b>
<b>Options</b>	<b>Lift-and-slide unit</b>
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Type 1D</p>  </div> <div style="text-align: center;"> <p>Type 2D</p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p>Type 2D/1</p>  </div> <div style="text-align: center;"> <p>Type 3F</p>  </div> </div>
<b>Frame material</b>	Aluminium/PVC-U composite
<b>Profile depth</b>	70 mm leaf frame, 184 mm single track outer frame, 160 mm double track outer frame, 250 mm triple track outer frame
<b>Frame assembly</b>	Mitre cut with nailed and bonded corner cleats.
<b>Rebate design</b>	Single rebate
Rebate gasket, inside	Gaskets 244 829 and 244 830 at top with bonded moulded corner pieces, black EPDM, supplier: Schüco International KG
Rebate gasket, outside	
Rebate drainage	Area of the inner/centre leaf: ø 15 mm in the PVC-U cover profiles, slots of 8 x 34 mm in the outer frame Area of the outer leaf: ø15 mm in the PVC-U cover profile, ø12 mm with drainage tubes in the outer frame
<b>Gasket centre point</b>	PVC-U coupling profile with gasket 244 669, black EPDM Top: spring-loaded microcellular seal Bottom: EPDM seal Supplier: Schüco International KG
<b>Meeting stile design</b>	Coupling profile/spacer profile 148 680 / 333 720, Rebate make-up piece (top and bottom) 242 044
<b>Glazing</b>	Multi-pane insulating glass, glass thicknesses from 24 mm to 52 mm
Glazing gasket, outside	Glazing gasket 224 769, black EPDM, supplier: Schüco International KG; continuous, joined and bonded in centre at top
Glazing gasket, inside	Glazing gasket, EPDM, supplier: Schüco International KG, continuous, joined and bonded in centre at top

Vapour pressure  
equalisation

**Fittings**
























Glazing gaskets with different thicknesses can be used depending on the glazing thickness and given the same material properties and geometries

Bottom slots 8 mm at glazing rebate depth, outside drill holes  
Ø 8 mm, one Ø 8 mm drill hole, side and top

Lift-and-slide fittings, supplier: Schüco International KG






















## 2.3.2 Overview of performance characteristics for product family 3

Lift-and-slide unit type 1D / 2D / 2D/1 / 3F						
Extract from product standard EN 14351-1		Type, design	Certificate	Value / class	Area of use	
4.2		<b>Resistance to wind load</b>	ASS 70.HI Type 2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	B3 / C3	
4.3		<b>Resistance to snow and permanent load</b>	Not applicable			
4.4		<b>Fire characteristics</b>	Not applicable			
4.5		<b>Watertightness</b>	ASS 70.HI Type 2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	7A	
4.6		<b>Dangerous substances</b>	The manufacturer must prepare and supply suitable information about the components in accordance with the legal requirements of the intended country of destination.			
4.7		<b>Impact resistance</b>			npd	
4.8		<b>Load-bearing capacity of safety devices</b>	Not applicable			
4.9		<b>Height and width (only external doors)</b>	Not applicable			
4.10		<b>Ability to release (only external doors)</b>	Not applicable			
4.11		<b>Acoustic performance</b>	ASS 70.HI Type 2 A/1	Test report 161 29498 dated 06.09.05 from ift Rosenheim	RW (C;Ctr) = 37 dB (-2;-5)dB RW (C;Ctr) = 43 dB (-2;-6)dB RW (C;Ctr) = 44 dB (0-3)dB	
4.12		<b>Thermal transmittance <math>U_w</math> (W/(m<sup>2</sup>K))</b>	ASS 70.HI	EN 14351-1	Table value in accordance with EN 14351-1	
4.13		<b>Solar energy transmittance</b>	The solar energy transmittance g and the level of light transmittance $\tau$ must be verified by means of CE marking for the glazing.			
4.14		<b>Air permeability</b>	ASS 70.HI Type 2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	4	
4.16		<b>Operating forces</b>	ASS 70.HI Type 2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	1	
4.17		<b>Mechanical strength</b>	ASS 70.HI Type 2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	2	
4.18		<b>Ventilation</b>	Not applicable			

4.19		<b>Bullet resistance</b>	Not applicable			
4.20		<b>Explosion resistance</b>	Not applicable			
4.21		<b>Resistance to repeated opening and closing</b>	ASS 70.HI Type 2D/1	Test report 101 29497/2 dated 29.01.08 from ift Rosenheim	4	
4.22		<b>Behaviour between different climates</b>			npd	
4.23		<b>Burglar resistance</b>	ASS 70.HI	Certificate 212 237531/1 dated 30.05.06 from ift Rosenheim	WK2	

Comment 1 npd: no performance determined

## Appendix 1

	Properties in accordance with EN 14351-1	Test standard	Classification standard
	Resistance to wind load	EN 12211	EN 12210
	Resistance to snow and permanent load	National regulations	
	Fire characteristics	EN 13501-1	EN 13501-1
	Watertightness	EN 1027	EN 12208
	Dangerous substances	National regulations	
	Impact resistance	EN 13049	
	Load-bearing capacity of safety devices	prEN 14609:2003 EN 948	
	Height and width (only external doors)	prEN 12519:2003	
	Ability to release (only external doors)	EN 179, EN 1125, prEN 13633, prEN 13637	
	Acoustic performance	EN ISO 140-3	EN ISO 717-1
	Thermal transmittance $U_w$ (W/(m <sup>2</sup> K))	EN 10077-1, prEN ISO 10077-2	
	Solar energy transmittance	EN 410, prEN 13363-1, prEN 13363-2	
	Air permeability	EN 1026	EN 12207
	Operating forces (only with manually operated windows)	EN 12046-1	EN 13115
	Mechanical strength	EN 14608, EN 14609, 12046-1	EN 13115
	Ventilation	EN 13141-1:2004	
	Bullet resistance	EN 1523	EN 1522
	Explosion resistance	EN 13124	EN 13123
	Resistance to repeated opening and closing	EN 1191	EN 12400
	Behaviour between different climates	ENV 13420	
	Burglar resistance	EN 1628, EN 1629, EN 1630	ENV 1627

## Appendix 2

Information regarding the listed test/certificate documentation

The original test reports / certificates serve as verification. You can refer to them on the Internet at:

[www.schueco.com/web/de/partner/services/download/pruefzeugnisse](http://www.schueco.com/web/de/partner/services/download/pruefzeugnisse)

Test report no. Test institute	Date	Valid	Type of test	Normative basis
101 29497 ift Rosenheim	08.05.2006 Until	updated	Resistance to wind load, watertightness, air permeability, mechanical loading and resistance to repeated opening and closing	prEN 14351-1
101 29497/1 ift Rosenheim	01.08.2005 Until	updated	Resistance to wind load, watertightness, air permeability, mechanical loading and resistance to repeated opening and closing	prEN 14351-1
101 29497/2 ift Rosenheim	29.01.2008 Until	updated	Resistance to wind load, watertightness, air permeability, mechanical loading and resistance to repeated opening and closing	prEN 14351-1
161 29498 ift Rosenheim	06.09.2005	Until updated	Airborne sound insulation	DIN EN 20140-3
212 23753/1 ift Rosenheim	30.05.2006	Until updated	Burglar resistance	DIN V ENV 1627 DIN V ENV 1628 DIN V ENV 1629 DIN V ENV 1630



