

ift-System Passport Windows

as per EN 14351-1



Nr. 15-001036-PR01
(SP-A01-UZ02-en-03)

Valid until May 2021

Client **Miroplast LLC**
1, Sobinova Str.
49083 Dnepropetrovsk
Ukraine

System **WDS 7 series**

Product families 1. Single turn, tilt, tilt and turn window and casement doors, fixed lights
2. Double-sashed tilt and turn windows with openable centerpiece

Frame material **PVC-U**

Characteristics	Resistance to wind load	Resistance to snow and permanent load	Reaction to fire ⁽¹⁾	Water-tightness	Dangerous substances ⁽²⁾	Impact resistance	Load-bearing capacity of safety devices
Class / Value	up to C3 / B3	not applicable	not applicable	up to 8A	Country specific	up to 3	not applicable
Characteristics	Height and width ⁽³⁾	Ability to realies	Acoustic performance	Thermal transmittance	Radiation properties	Air permeability	Operating forces
Class / Value	not applicable	not applicable	Standard procedure	Standard procedure	CE mark glazing	up to 4	1
Characteristics	Mechanical strength	Ventilation	Bullet resistance	Explosion resistance	Resistance to repeated opening and closing	Behaviour between different climates	Burglar resistance
Class / Value	4	npd	npd	npd	2	npd	npd

- 1) only for roof windows
2) evidence acc. to intended country of destination
3) clear opening dimensions as specified by the manufacturer

ift Rosenheim
29.10.2018

Christian Kehrer,
Dipl.-Ing. (FH)
Head
Certification & Surveillance
Body

i. A. Robert Kolacny, Dipl.-Ing. (FH)
Deputy Head of Testing Department
Building Components

i. A. Gerhard Fellermeier,
Dipl.-Ing. (FH)
Operating Product Officer
Certification & Surveillance
Body

Basis

EN 14351-1:2006+A2:2016
Windows and external pedestrian doorsets

ift Certification Scheme for windows and external pedestrian doorsets (QM320)
Certification and surveillance contract no. Nr. 181S 8019747
Replaced ift system passport 15-001036-PR01 (SP-A01-UZ02-en-03) dated 27.11.2017.

Instructions for use

The ift system passport provides evidence of the general performance of the designated product families as set out by the product standard. The values/classes indicated refer to the specific object described in the specific evidence of performance and the scope defined by the ift system passport.

Application of the performance characteristics is subject to the national technical regulations and the respective contractual provisions.

This system passport forms the basis for preparing the manufacturer typ test report summary and for issuing the ift Certificate of Conformity, which documents the conformity of the finished products and the factory quality/production control by regular third-party audits of the manufacturers conducted by the ift Rosenheim

Notes on publication


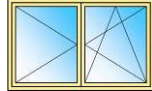




















The "Conditions and Guidance on the Use of ift Test Documents" applies.

Contents

The system passport contains a total of 22 pages:

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1 Summary of performance characteristics as per EN 14351-1

No.	Properties in accordance with EN 14351-1	Product family 1	Product family 2
			
		tilt and turn window	Double-sashed tilt and turn windows with openable centerpiece
4.2	 Resistance to wind load ⁽¹⁾	up to C3 / B3	up to C3 / B3
4.3	 Resistance to snow and permanent load (only roof windows)	Not applicable	Not applicable
4.4.1	 Reaction to fire	Not applicable	Not applicable
4.4.2	 External fire performance	Not applicable	Not applicable
4.5	 Watertightness	up to 8A	bis 4A
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	up to 3	
4.8	 Load-bearing capacity of safety devices	Not applicable	Not applicable
4.11	 Acoustic performance ⁽²⁾	$R_w(C; C_{tr}) = 41 (-2; -5) \text{ dB}$	Standard procedure
4.12	 Thermal transmittance	Standard procedure	Standard procedure
4.13	 Radiation properties	The manufacturer must prepare and supply suitable information about the components in accordance with the legal requirements of the intended country of destination.	
4.14	 Air permeability	up to 4	4
4.16	 Operating forces	1	
4.17	 Mechanical strength	4	
4.18	 Ventilation	npd	npd
4.19	 Bullet resistance	npd	npd
4.20	 Explosion resistance	npd	npd
4.21	 Resistance to repeated opening and closing	2	
4.22	 Behaviour between different climates	npd	npd
4.23	 Burglar resistance	npd	npd

Note: The listed performance characteristics represent the product characteristics of the specimens tested. The possibility of combining performance characteristics must be verified in each individual case.

Superscripts see Section 5

2 Overview of significant features/performance characteristics of the individual product families

2.1 Product families:

This brief description lists the significant system features of product families. Details are given in the equivalent test reports.

variants

- Single tilt and turn casement windows
- fixed lights
- Double-sashed tilt and turn windows with openable centerpiece
- combinations thereof

System designation WDS 7 series
Material PVC-U
Type of opening Single tilt and turn windows and casement doors with fixed light

Opening directions inwards opening

Frame member further details are given in drawings

Designation / Type / Item No. 059

dimensions 70 mm x 66 mm

Type of joint mitred and welded

Reinforcement

Designation / Type / Item No. R002 / R030 / R019 / R025

Material steel – galvanised steel,

fixing screw Ø 3,9 x 19, distance ≤ 250 mm

L reinforcement = L profile – 94 mm

Sash member

Designation / Type / Item No. 060

Type of joint mitred and welded

Weight in kg 44

Reinforcement

Designation / Type / Item No. R002 / R030

Material steel – galvanised steel

fixing screw Ø 3,9 x 19, distance ≤ 250 mm

L reinforcement = L profile – 124 mm

Mullion further details are given in drawings

Designation / Type / Item No. 058

Type of joint mechanical T-joint with T-connector No. D000053

Reinforcement

Designation / Type / Item No. R024 / R032

Material	steel – galvanised steel
casement overlap	
Designation / Type / Item No.	054
Type of joint	screwed, sealed with elastic sealant
Reinforcement	
Designation / Type / Item No.	R000048
Material	steel – galvanised steel
Rebate design	
Rebate drainage	slot (inside and outside) 5 mm x 25 mm (offset 50mm) with cover caps, max. distance from another 600mm
pressure equalization	above 2 slots 5mm x 25 mm outward 2 holes Ø 6 mm
Rebate seal external	
Designation / Type / Item No.	G101001
Material	Sealing materials - TPV
Corner design	with frame mitre-welded
Rebate seal internal	
Designation / Type / Item No.	G301001
Material	Sealing materials - TPV
Corner design	with sash mitred-welded
glazing	
Thickness	IGU up to 40mm
Incorporation of infill panels	
Vapour pressure equalisation	Details see System description Sash: at bottom and top ea. 2 slots 5 mm x 25 mm Fixed light: at bottom outwards 1 slot 5 mm x 25 mm with cover caps, at top outwards 2 drillings Ø = 6 mm
Glazing gasket external	
Designation / Type / Item No.	G101001
Material	Sealing materials - TPV
Corner design	Sash: with sash mitre-welded Fixed light: with frame mitre-welded, in T-joint area butt-jointed and bonded
Glazing gasket internal	
Designation / Type / Item No.	see glazing bead
Material	Sealing materials – TPV, co-extruded
Corner design	to glazing bead mitre-jointed



Glazing bead

Designation / Type / Item No.	031, 040, 044
Type of joint	mitred
Fixing method	clamped

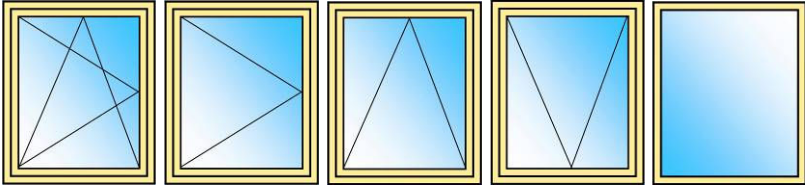




Tilt and turn hardware Typ 1

typ / Manufacturer	aktivPilot / Aug. Winkhaus GmbH & Co. KG
Locking distance, max. in mm	750 mm

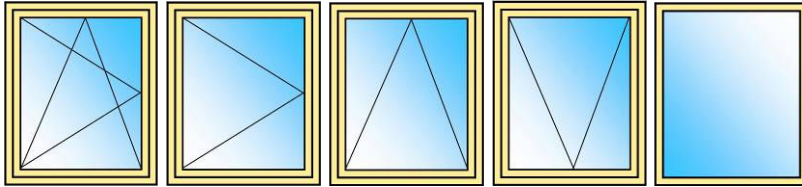
Tilt and turn hardware 2




typ / Manufacturer	AXOR K3 / AXOR INDUSTRY
Locking distance, max. in mm	770 mm

2.1.1 Overview of performance characteristics of product family 1

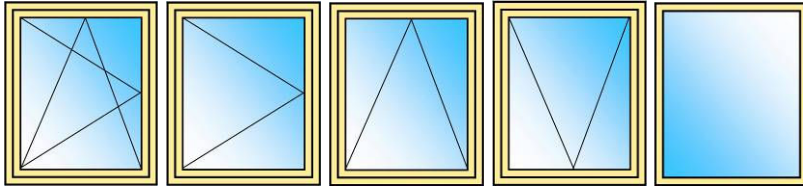
Type of opening:		Turn, tilt, tilt and turn window and casement doors, fixed lights			
					
Clause of product standard 14351-1		Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application
4.2	Resistance to wind load ⁽¹⁾ 	Single tilt and turn casement door with fixed sidelight Vent dimensions: 820 mm x 2,094 mm Overall dimensions: 1,321 mm x 2,170 mm hardware Winkhaus aktivPilot, max. 750 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	C2 / B3	Extrapolation for -100% of frame width and frame height of test specimen Only for roof windows
		Single tilt and turn window with fixed sub-light Vent dimensions: 1,424 mm x 1,140 mm Overall dimensions 1,500 mm x 1,790 mm hardware AXOR K3, max. 710 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	C3 / B3	
		Single tilt and turn window Vent dimensions: 1,154 mm x 1,404 mm Overall dimensions 1,230 mm x 1,480 mm hardware AXOR K3, max. 675 mm	Classification Report 17-002130-PR01 dated 10.08.2017 ift Rosenheim	C3 / B3	
		Single tilt and turn casement door Vent dimensions: 924 mm x 2,324 mm Overall dimensions: 1,000 mm x 2,400 mm hardware AXOR K3, max. 720 mm	Classification Report 17-002130-PR02 dated 24.08.2017 ift Rosenheim	C3 / B3	
4.3	Resistance to snow and permanent loads 	-	-	Not applicable	Only for roof windows
4.4.1	Reaction to fire 	-	-	Not applicable	Only for roof windows
4.4.2	External fire performance 	-	-	Not applicable	Only for roof windows





Type of opening: Turn, tilt, tilt and turn window and casement doors, fixed lights



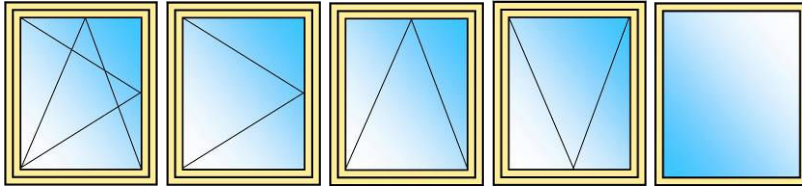
Clause of product standard 14351-1	Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application	
4.5	Watertightness 	Single tilt and turn casement door with fixed sidelight Vent dimensions: 820 mm x 2,094 mm Overall dimensions: 1,321 mm x 2,170 mm hardware Winkhaus aktivPilot, max. 750 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	4A	Extrapolation for -100% to +50% of overall area of test specimen
		Single tilt and turn window with fixed sub-light Vent dimensions: 1,424 mm x 1,140 mm Overall dimensions: 1,500 mm x 1,790 mm hardware AXOR K3, max. 710 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	7A	
		Single tilt and turn window Vent dimensions: 1,154 mm x 1,404 mm Overall dimensions: 1,230 mm x 1,480 mm hardware AXOR K3, max. 675 mm	Classification Report 17-002130-PR01 dated 10.08.2017 ift Rosenheim	8A	
		Single tilt and turn casement door Vent dimensions: 924 mm x 2,324 mm Overall dimensions: 1,000 mm x 2,400 mm hardware AXOR K3, max. 720 mm	Classification Report 17-002130-PR02 dated 24.08.2017 ift Rosenheim	5A	
4.6	Dangerous substances 	Manufacturer is obliged to prepare and supply specific information on the content in conformity with the legal requirements in the intended country of destination.			
4.7	Impact resistance 	Single side hung window Vent dimensions: 924 mm x 924 mm Overall dimensions: 1,000 mm x 1,000 mm hardware aktivPilot, max. 540 mm	Expert statement 15-000994-PR03 dated 27.04.2015 ift Rosenheim	2	> overall area of test specimen (infill panel)
		Single side hung window Vent dimensions: 924 mm x 924 mm Overall dimensions: 1,000 mm x 1,000 mm hardware AXOR K3, max. 640 mm	Expert statement 15-000994-PR03 dated 27.04.2015 ift Rosenheim	3	



Type of opening: Turn, tilt, tilt and turn window and casement doors, fixed lights



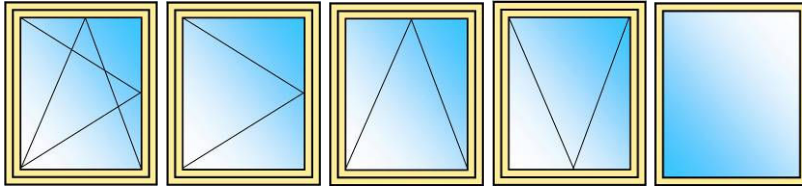
Clause of product standard 14351-1		Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application
4.8	Load-bearing capacity of safety devices 	-	-	Not applicable	Only for windows with additional safety device
4.11	Sound reduction ⁽²⁾ 	Single tilt and turn window Vent dimensions: 1,154 mm x 1,404 mm Overall dimensions 1,230 mm x 1,480 mm	Test Report 17-002130-PR06 dated 25.08.2017 ift Rosenheim	$R_{w(C; C_{tr})} = 41 (-2; -5) \text{ dB}$	Dimensional extrapolation for other window sizes as per Clause B.4 table B 3 of Annex B, EN 14351-1
4.12	Thermal transmittance 	Frame 7 series 059 with reinforcement (27x31x1,5mm) $U_f = 1,3 \text{ W/m}^2\text{K}$	Test Report 15-000384-PR01 dated 30.03.2015 ift Rosenheim	Project-specific certification	As per table E 1, EN 14351-1
		WDS 7 Series casement 030 – frame 059 $U_f = 1,4 \text{ W/m}^2\text{K}$		Project-specific certification	
		WDS 7 Series casement 078 – frame 059 $U_f = 1,3 \text{ W/m}^2\text{K}$	Test Report 17-002130-PR05 dated 04.09.2017 ift Rosenheim	Project-specific certification	
		WDS 7 Series casement 060 – cas. overlap 054 $U_f = 1,3 \text{ W/m}^2\text{K}$		Project-specific certification	
4.13	Solar energy transmittance 	All	See CE marking of the glazing	Evidence for purpose-designed systems	-







Type of opening: Turn, tilt, tilt and turn window and casement doors, fixed lights

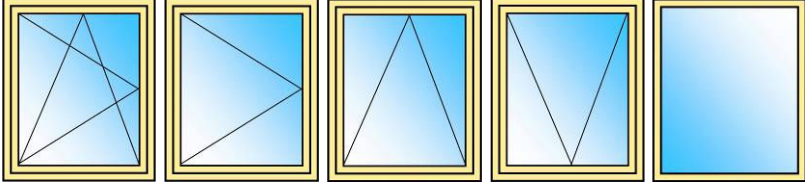



Clause of product standard 14351-1	Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application	
4.14	Air permeability 	Single tilt and turn casement door with fixed sidelight Vent dimensions: 820 mm x 2,094 mm Overall dimensions: 1,321 mm x 2,170 mm hardware Winkhaus aktivPilot, max. 750 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	3	Extrapolation for -100% to +50% of overall area of test specimen
		Single tilt and turn window with fixed sub-light Vent dimensions: 1,424 mm x 1,140 mm Overall dimensions 1,500 mm x 1,790 mm hardware AXOR K3, max. 710 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	4	
		Single tilt and turn window Vent dimensions: 1,154 mm x 1,404 mm Overall dimensions 1,230 mm x 1,480 mm hardware AXOR K3, max. 675 mm	Classification Report 17-002130-PR01 dated 10.08.2017 ift Rosenheim	4	
		Single tilt and turn casement door Vent dimensions: 924 mm x 2,324 mm Overall dimensions: 1,000 mm x 2,400 mm hardware AXOR K3, max. 720 mm	Classification Report 17-002130-PR02 dated 24.08.2017 ift Rosenheim	4	
4.16	Operating forces 	Single tilt and turn casement door with fixed sidelight Vent dimensions: 820 mm x 2,094 mm External dimensions: 1,321 mm x 2,170 mm hardware Winkhaus aktivPilot, max. 750 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	1	Transfer to -100% of the total area of the test specimen
		Single tilt and turn window Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm hardware Winkhaus aktivPilot, max. 670 mm Casement -weight 100 kg	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	1	
		Single tilt and turn window Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm hardware AXOR K3, max. 770 mm Casement -weight 100 kg	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	1	

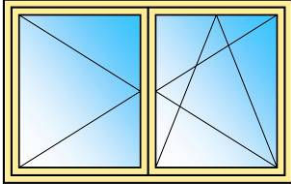





Type of opening: Turn, tilt, tilt and turn window and casement doors, fixed lights

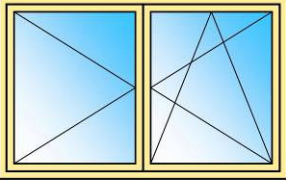









Clause of product standard 14351-1		Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application
4.17	Mechanical strength 	Single tilt and turn casement door with fixed sidelight Vent dimensions: 820 mm x 2,094 mm Overall dimensions: 1,321 mm x 2,170 mm hardware Winkhaus aktivPilot, max. 750 mm	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	1	Extrapolation for -100 of the test specimen overall area
4.18	Ventilation 	-	-	npd	Same construction and size of ventilation device
4.19	Bullet resistance 	-	-	npd	Until relevant standards and/or guidelines are in place, undetermined conditions shall be agreed on by the manufacturer and the testing laboratory.
4.20	Blast resistance 	-	-	npd	Until relevant standards and/or guidelines are in place, undetermined conditions shall be agreed on by the manufacturer and the testing laboratory.
4.21	Mechanical durability test 	Single tilt and turn window Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm hardware Winkhaus aktivPilot, max. 670 mm Casement -weight 100 kg	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	2	Extrapolation for -100% test specimen overall area
		Single tilt and turn window Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm hardware AXOR K3, max. 770 mm Casement-weight 100 kg	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	2	
4.22	Behaviour with climate variations 	-	-	npd	-

Type of opening:		Turn, tilt, tilt and turn window and casement doors, fixed lights			
					
Clause of product standard 14351-1	Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application	
4.23 Burglar resistance 	-	-	npd	-	

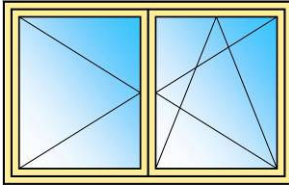
2.1.2 Übersicht der Leistungseigenschaften der Produktfamilie 2

Öffnungsarten:		Dreh, Drehkipp mit offenbarem Mittelstück			
					
Clause of product standard 14351-1	Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application	
4.2	Resistance to wind load ⁽¹⁾ 	Double-sashed tilt and turn Window with openable centerpiece Vent dimensions: 858 mm x 1,524 mm Overall dimensions: 1,800 mm x 1,600 mm hardware AXOR K3, max. 660 mm	Classification Report 17-002130-PR03 dated 10.08.2017 ift Rosenheim	C3 / B3	Extrapolation for -100% of frame width and frame height of test specimen Only for roof windows
	Double-sashed tilt and turn casement door with openable centerpiece Vent dimensions: 758 mm x 2,324 mm Overall dimensions: 1,600 mm x 2,400 mm hardware AXOR K3, max.720 mm	Classification Report 17-002130-PR04 dated 01.09.2017 ift Rosenheim	C1 / B2		
4.3	Resistance to snow and permanent loads 	-	-	Not applicable	Only for roof windows
4.4.1	Reaction to fire 	-	-	Not applicable	Only for roof windows
4.4.2	External fire performance 	-	-	Not applicable	Only for roof windows
4.5	Watertightness 	Double-sashed tilt and turn Window with openable centerpiece Vent dimensions: 858 mm x 1,524 mm Overall dimensions: 1,800 mm x 1,600 mm hardware AXOR K3, max. 660 mm	Classification Report 17-002130-PR03 dated 10.08.2017 ift Rosenheim	3A	Extrapolation for -100% to +50% of overall area of test specimen
		Double-sashed tilt and turn casement door with openable centerpiece Vent dimensions: 758 mm x 2,324 mm Overall dimensions: 1,600 mm x 2,400 mm hardware AXOR K3, max.720 mm	Classification Report 17-002130-PR04 dated 01.09.2017 ift Rosenheim	4A	

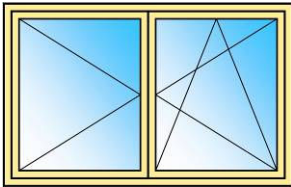




Clause of product standard 14351-1		Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application
Öffnungsarten: Dreh, Drehkippl mit öffenbarem Mittelstück 					
4.6	Dangerous substances 	Manufacturer is obliged to prepare and supply specific information on the content in conformity with the legal requirements in the intended country of destination.			
4.7	Impact resistance 	See product family 1 Single side hung window Vent dimensions: 924 mm x 924 mm Overall dimensions: 1,000 mm x 1,000 mm hardware aktivPilot, max. 540 mm	Expert statement 15-000994-PR03 dated 27.04.2015 ift Rosenheim	2	> overall area of test specimen (infill panel)
		See product family 1 Single side hung window Vent dimensions: 924 mm x 924 mm Overall dimensions: 1,000 mm x 1,000 mm hardware AXOR K3, max. 640 mm	Expert statement 15-000994-PR03 dated 27.04.2015 ift Rosenheim	3	
4.8	Load-bearing capacity of safety devices 	-	-	Not applicable	Only for windows with additional safety device
4.11	Sound reduction ⁽²⁾ 	-	The evidence is used according to Table B.1 and B.2 of Annex B, EN 14351-1: 2006+A2:2016. Please note: comparison with 4.14, Air permeability \geq class 3 required	Evidence for purpose-designed systems	Dimensional extrapolation for other window sizes as per Clause B.4 table B 3 of Annex B, EN 14351-1

Öffnungsarten:		Dreh, Drehkipp mit offenbarem Mittelstück			
Clause of product standard 14351-1		Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application
4.12	Thermal transmittance 	Frame 7 series 059 with reinforcement (27x31x1,5mm) Uf = 1,3 mm	Test Report 15-000384-PR01 dated 30.03.2015 ift Rosenheim	Project-specific certification	As per table E 1, EN 14351-1
		WDS 7 Series casement 030 – frame 059 Uf = 1,4 W/m²K	Test Report 17-002130-PR05 dated 04.09.2017 ift Rosenheim	Project-specific certification	
		WDS 7 Series casement 078 – frame 059 Uf = 1,3 W/m²K		Project-specific certification	
		WDS 7 Series casement 060 – cas. overlap 054 Uf = 1,3 W/m²K		Project-specific certification	
4.13	Solar energy transmittance 	All	See CE marking of the glazing	Evidence for purpose-designed systems	-
4.14	Air permeability 	Double-sashed tilt and turn Window with openable centerpiece Vent dimensions: 858 mm x 1,524 mm Overall dimensions: 1,800 mm x 1,600 mm hardware AXOR K3, max. 660 mm	Classification Report 17-002130-PR03 dated 10.08.2017 ift Rosenheim	4	Extrapolation for -100% to +50% of overall area of test specimen
		Double-sashed tilt and turn casement door with openable centerpiece Vent dimensions: 758 mm x 2,324 mm Overall dimensions: 1,600 mm x 2,400 mm hardware AXOR K3, max.720 mm	Classification Report 17-002130-PR04 dated 01.09.2017 ift Rosenheim	4	

Öffnungsarten: Dreh, Drehkipp mit offenbarem Mittelstück



Clause of product standard 14351-1	Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application
4.16	<p>See product family 1</p> <p>Single tilt and turn casement door with fixed sidelight</p> <p>Vent dimensions: 820 mm x 2,094 mm External dimensions: 1,321 mm x 2,170 mm</p> <p>hardware Winkhaus aktivPilot, max. 750 mm</p>	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	1	Transfer to -100% of the total area of the test specimen
	<p>See product family 1</p> <p>Single tilt and turn window</p> <p>Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm</p> <p>hardware Winkhaus aktivPilot, max. 670 mm Casement -weight 100 kg</p>	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	1	
	<p>See product family 1</p> <p>Single tilt and turn window</p> <p>Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm</p> <p>hardware AXOR K3, max. 770 mm Casement -weight 100 kg</p>	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	1	
4.17	<p>See product family 1</p> <p>Single tilt and turn casement door with fixed sidelight</p> <p>Vent dimensions: 820 mm x 2,094 mm Overall dimensions: 1,321 mm x 2,170 mm</p> <p>hardware Winkhaus aktivPilot, max. 750 mm</p>	Expert statement 15-000994-PR01 dated 27.04.2015 ift Rosenheim	1	Extrapolation for -100 of the test specimen overall area
4.18	<p>Ventilation</p> <p>-</p>	-	npd	Same construction and size of ventilation device
4.19	<p>Bullet resistance</p> <p>-</p>	-	npd	Until relevant standards and/or guidelines are in place, undetermined conditions shall be agreed on by the manufacturer and the testing laboratory.

Clause of product standard 14351-1		Variant/ Type / Design	Evidence of Performance	Value / Class	Scope/Field of application
Öffnungsarten: Dreh, Drehkipf mit offenbarem Mittelstück 					
4.20	Blast resistance 	-	-	npd	Until relevant standards and/or guidelines are in place, undetermined conditions shall be agreed on by the manufacturer and the testing laboratory.
4.21	Mechanical durability test 	See product family 1 Single tilt and turn window Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm hardware Winkhaus aktivPilot, max. 670 mm Casement -weight 100 kg	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	2	Extrapolation for -100% test specimen overall area
		See product family 1 Single tilt and turn window Vent dimensions: 1,124 mm x 1,424 mm Overall dimensions: 1,200 mm x 1,500 mm hardware AXOR K3, max. 770 mm Casement-weight 100 kg	Expert statement 15-000994-PR02 dated 27.04.2015 ift Rosenheim	2	
4.22	Behaviour with climate variations 	-	-	npd	-
4.23	Burglar resistance 	-	-	npd	-

3 Performance characteristics as per product standard

3.1 General

Subject to the intended use as well as the national requirements for windows and external pedestrian doorsets, initial type testing will be required to the characteristics listed in the product standard EN 14351-1, Clause 4, which, as defined by the requirements and specifications of the product standard may be carried out for the respective performance characteristic on the basis of testing, calculation, tabulated values or evaluation.

The following comprises the relevant evidence for all performance characteristics of the product standard Clause 4 for the respective product family. Superscripts are explained in Section 5.

3.2 Resistance to wind load (see EN 14351-1, Clause 4.2)

The windows are tested in accordance with EN 12211. Code letter C refers to maximum permitted frontal deflection of less than $l/300$, code letter B refers to maximum permitted frontal deflection of less than $l/200$ as per Table 2 in EN 12210. The number after the code letters refers to the nominal wind load of the class achieved as per Table 1 of EN 12210. The deflection of fixed frame components (e.g. mullions and transoms) shall be demonstrated by calculation or by test (reference method).

The results shall be expressed in accordance with EN 12210. The air permeability tests and classification referred to in EN 12210 shall be in accordance with 4.14 as per EN 14351-1.

3.3 Resistance to snow and permanent load (see EN 14351-1, Clause 4.3)

The manufacturer shall provide sufficient information on the infill to enable determination of the load-bearing capacity of the infill, e.g. details of thickness and type of glass.

3.4 Fire characteristics

3.4.1 Reaction to fire (see EN 14351-1, Clause 4.4.1)

The (materials used in) roof windows shall be tested and classified in accordance with EN 13501-1 and Annex H for the selection, preparation, mounting and fixing and field of direct application of the roof windows.

3.4.2 External fire performance (see EN 14351-1, Clause 4.4.2)

Roof windows shall be tested and classified in accordance with EN 13501-5.

3.5 Watertightness (see EN 14351-1, Clause 4.5)

The watertightness test was carried out in accordance with EN 1027. The results shall be expressed in accordance with EN 12208.

3.6 Dangerous substances (see EN 14351-1, Clause 4.6)

In so far as the state of the art permits, the manufacturer shall establish those materials in the product which are liable to emission or migration during normal intended use and for which emission or migration into the environment is potentially dangerous to hygiene, health or the environment. The manufacturer shall establish and make the appropriate declaration of content according to the legal requirements in the intended country of destination.

3.7 Impact resistance (see EN 14351-1, Clause 4.7)

Windows and external pedestrian doorsets fitted with glass or other fragmental material shall be tested and the results shall be expressed in accordance with EN 13049. Where relevant, the test shall be carried out from both sides.

3.8 Load-bearing capacity of safety devices (see EN 14351-1, Clause 4.8)

Safety devices (e.g. retaining and reversing catches, restrictors, and fixing devices for cleaning procedures), if provided and engaged in accordance with the manufacturer's published instructions, shall be able to hold the leaf, casement or sash in place for 60 s when 350 N are applied to the leaf, casement or sash in the most unfavourable way (i.e. position, direction).

3.9 Height and width of doorsets and casement doors (see EN 14351-1, Clause 4.9)

The clear opening height and width of external pedestrian doorsets and casement doors (see EN 12519, 3.1) shall be expressed in mm.

3.10 Ability to release (see EN 14351-1, Clause 4.10)

Emergency exit devices and panic devices installed on external pedestrian doorsets in escape routes shall comply with EN 179, EN 1125, prEN 13633 or prEN 13637.

Doorsets intended for escape routes shall be identified as such with the appropriate class according to Table 2.

3.11 Acoustic performance (see EN 14351-1, Clause 4.11)

The sound reduction index shall be determined in accordance with EN ISO 140-3 (reference method) or for specific window types in accordance with Annex B. The test results shall be evaluated in accordance with EN ISO 717-1.

3.12 Thermal transmittance (see EN 14351-1, Clause 4.12)

The thermal transmittance for windows and external pedestrian doorsets shall be determined by using:

- EN ISO 10077-1:2006, Table F.1 Thermal transmittances for vertical windows with fraction of the frame area 30 % of the whole window area and common types of glazing spacer bars or EN ISO 10077-1:2006, Table F.3, Thermal transmittance of vertical windows with fraction of frame area 30% of the whole window area, glazing spacer bars with improved thermal performance and, for windows with bars, Annex J

or by calculation using

- EN ISO 10077-1 oder
- EN ISO 10077-1 und EN ISO 10077-2

or by hot box method using:

- EN ISO 12567-1 oder
- EN ISO 12567-2

Calculation previously performed in accordance with EN ISO 10077-1:2000 and tabulated values in accordance with EN ISO 10077-1:2000, Table F.1, may be taken into account with an addition of $0.1 \text{ W}/(\text{m}^2 \cdot \text{K})$.

EN ISO 12567-1 shall be used as reference method for windows and external pedestrian doorsets, EN ISO 12567-2 as reference method for roof windows.

The collective symbols for thermal transmittance are U_w for windows and U_D for doorsets, the symbol U_{st} used in EN ISO 12567-1 is equivalent to U_w or U_D and the symbol U_m used in EN ISO 12567-2 is equivalent to U_w .

3.13 Radiation properties (see EN 14351-1, Clause 4.13)

The determination of the total solar energy transmittance (g-value) and light transmittance of translucent glazing shall be carried out in accordance with EN 410, or if relevant, with EN 13363-1 or EN 13363-2 (reference method).

3.14 Air permeability (see EN 14351-1, Clause 4.14)

Two air permeability tests shall be carried out in accordance with EN 1026, one with positive test pressures and one with negative test pressures.

The tests for air permeability of screens shall be carried out on the screen or on its individual parts including joints between the individual parts. In the latter case the air permeability of the screen shall be calculated as the sum of the air permeability of the individual parts and the joints.

The test result, defined as the numerical average of the two air permeability values (m^3/h) at each pressure step shall be expressed in accordance with EN 12207:1999, 4.6.

Classification of products with described product characteristics can be carried out in accordance with Annex I.

3.15 Durability (see EN 14351-1, Clause 4.15)

The manufacturer shall provide information about maintenance and the replaceable parts.

3.16 Operating forces (see EN 14351-1, Clause 4.16)

Manually operated windows shall be tested in accordance with EN 12046-1. The results shall be expressed in accordance with EN 13115. Manually operated external pedestrian doorsets shall be tested in accordance with EN 12046-2. The results shall be expressed in accordance with EN 12217.

3.17 Mechanical strength (see EN 14351-1, Clause 4.17)

Windows shall be tested in accordance with EN 14608 and EN 14609. Prior to and after those tests manually operated windows shall be tested in accordance with EN 12046-1. The results shall be expressed in accordance with EN 13115.

External pedestrian doorsets shall be tested in accordance with EN 947, EN 948, EN 949 and EN 950. The results shall be expressed in accordance with EN 1192.

3.18 Ventilation (see EN 14351-1, Clause 4.18)

Air transfer devices integrated in a window or an external pedestrian doorset shall be tested and evaluated in accordance with EN 13141-1, 4.1. Joints and openings not subject to testing shall be taped over.

3.19 Bullet resistance (see EN 14351-1, Clause 4.19)

After testing in accordance with EN 1523 the bullet resistant characteristics of windows and external pedestrian doorsets shall be expressed in accordance with EN 1522.

3.20 Explosion resistance (see EN 14351-1, Clause 4.20)

3.20.1 Shock tube

After testing in accordance with EN 13124-1 the explosion resistance characteristics of windows and external pedestrian doorsets shall be expressed in accordance with EN 13123-1.

3.20.2 Range test

After testing in accordance with EN 13124-2 the explosion resistance characteristics of windows and external pedestrian doorsets shall be expressed in accordance with EN 13123-2.

3.21 Resistance to repeated opening and closing (see EN 14351-1, Clause 4.21)

A repeated opening and closing test shall be carried out in accordance with EN 1191. The results shall be expressed in accordance with EN 12400.

3.22 Behaviour between different climates (see EN 14351-1, Clause 4.22)

A climate test on windows with frames manufactured from a combination of materials shall be carried out in accordance with ENV 13420.

A climate test on external pedestrian doorsets shall be carried out in accordance with EN 1121. The results shall be expressed in accordance with EN 12219.



3.23 Burglar resistance (see EN 14351-1, Clause 4.23)

After testing in accordance with ENV 1628, ENV 1629 and ENV 1630 the results shall be expressed in accordance with ENV 1627.

3.24 Special requirements (see EN 14351-1, Clause 4.24)

3.24.1 Unframed glass doorsets (see EN 14351-1, Clause 4.24.1)

Glass in unframed glass doorsets shall comply with EN 1863-2, EN 12150-2, EN ISO 12543-2, EN 14179-2 or EN 14321-2.

3.24.2 Power operated windows (see EN 14351-1, Clause 4.24.2.1 and 4.24.2.2)

4 General details of the ift-system passport

4.1 Performance characteristics as per product standard

All listed performance characteristics were tested and evaluated to the test and classification standards contained in the product standard EN 14351-1. They are based on the evidence of performance presented by the client. For more detailed information refer to the respective individual evidence of performance/test reports referring to the performance characteristics listed in Section 2, respectively.

4.2 Basis of the ift-system passport

- Existing certification contract concluded between **ift** and client (system supplier),
- Continuous audit/surveillance of client (system supplier),
- Introduced and maintained factory production control (FPC) system as set out by the standards.

ift Rosenheim shall be notified immediately of any system changes.

5 Special instructions for use

The special instructions for use listed in the following are rules for the implementation of the different performance characteristics specified by the standard. They are based on the normative provisions and the experience of the **ift** Rosenheim.

As set out by the product standard the manufacturer is responsible for ensuring conformity to the declared characteristics. The durability of the window system was not tested. This shall be ensured through the use of suitable materials and surfaces/finishes according to the state of art over the agreed lifetime of the product in order to retain the performance characteristics.

The overview/summaries given in this system passport are based on the evidence provided. No legal claim can be derived from this.

This system passport serves as the basis for issuing the **ift** Certificate of Conformity, which documents conformity of the end products and of factory quality/production control by regular third party control of the manufacturer by the **ift** Rosenheim.

The identified characteristics (classifications) are applicable to windows, casement doors and composed elements for installation in vertical structural openings and to roof windows for installation in inclined roofs, covered by the scope of application of EN 14351-1. Application is subject to the relevant national rules and regulations.

As set out by the Regulation (EC) No. 842/2006 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases, insulating glass units filled with Argon / SF₆ are not allowed to be placed on the market as of 04-07.2007 or 04.07.2008, respectively.

The rules for the interchangeability of tilt and turn hardware are defined in the **ift** Certification Scheme for hardware (QM 328, QM 345, QM 346, QM 347, QM 348).

Superscripts

- (1) The structural properties of thermal break profiles shall be taken into account. Mullion and transom profile sections shall be dimensioned adequately on the basis of structural engineering.
- (2) **Acoustic performance (tabulated values):** Tables B.1 and B.2 can be used for single windows. No explicit reference is made as regards the application to double windows of overlapping design (without fixed meeting stile). The testing experience has, however, shown that for a warranty which covers one and/or two sealing planes continuous around the perimeter for a range up to $R_w = 38$ dB, this table can also be applied to windows of overlapping design.
The product standard does not cover the application of test results obtained from measurements of single windows, to windows of overlapping design.

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