

## HUECK product pass for windows according to EN 14 351 - 1 2014-W-07

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### Basic information

EN 14 351 - 1 (2010 - 08)  
 Windows and pedestrian doors

### Test reports

ift 12-001576-PR06  
 ift 12-001576-PR07  
 ift 12-001576-PR08  
 ift 12-001576-PR09  
 ift 12-001576-PR10  
 ift 12-001576-PR11  
 ift 12-001576-PR12  
 ift 12-001576-PR13  
 ift 13-002782-PR01 to PR05  
 ift 14-000016-PR03  
 ift 14-000016-PR04  
 ift 14-000016-PR11  
 ift 14-000639-PR01 PB Z20  
 ift 14-000639-PR01 PB Z25  
 ift 14-002395-PR02

EHL 2012-12-19-01

PIV 45-14/14  
 PIV 45-19/13  
 PIV 45-20/13  
 PIV 45-21/14  
 PIV 45-22/14  
 PIV 45-29/15  
 PIV 45-76/15  
 PIV 45-77/15  
 PIV 45-102/14

VT 13-0288-01

The Hueck product pass describes the general properties of the given product family according to the specifications given in the product standard.

The classifications apply to the described specimen shown in the tables and are valid for the defined application range.

For the applicability of classifications local building laws and contractual agreements apply.

### Content

The Hueck system pass comprises a total of 9 pages:

1. Summary of performance characteristics in according with EN 14 351 - 1
2. General conditions
3. Short description of the product family
4. Overview of the benefits of each product family

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*System* **HUECK Lambda WS 090**

*Product family* 1. Turn, tilt and turn, tilt window and window doors  
 2. Fixed glazing  
 3. Double casement window

*Frame material* Aluminum plastic compound

### Properties / classes (according to EN 143351 - 1, annex ZA.1)

Resistance to wind load	Resistance to snow and loads	Safety in case of fire	Water tightness	Dangerous substances	Impact resistance	Load bearing capacity of safety devices
C5 / B5	npd	npd	up to E1200	see chapter 4	npd	passed

Height and width	Automatic opening device	Acoustic performance	Thermal performance	Radiation properties	Air permeability	Operating forces
2)	2)	up to $R_w (C; C_{tr})$ 49 (-1; -4) dB	1)	1)	4	1

### Further properties / tests

Mechanical strength	Ventilation	Bullet resistance	Explosion resistance	Mechanical durability	Behaviour between different climates	Burglar resistance
4	npd	npd	npd	npd	2)	up to RC 3

1) project certificate - if required

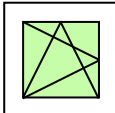
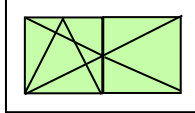
2) non mandated property for windows

Lüdenscheid, 01. December 2015

i.V. 

Günther Weiß

## 1. Summary of performance characteristics in according with EN 14351-1

No.	Performance characteristics according to EN 14 351 - 1	Product family 1 / 2	Product family 3
			
		Turn, tilt and turn, tilt window and window door and fixed glazing	Double casement window
4.2	Resistance to wind load	C5 / B5	C4 / B4
4.3	Resistance to snow and permanent load	not applicable	
4.4	Safety in case of fire	npd	npd
4.5	Water tightness	E 750 – E 1200	9A – E 900
4.6	Dangerous substances	The manufacturer has to declare substances which when used as prescribed cause danger to hygiene, health or the environment by emission or migration in accordance with the local requirements.	
4.7	Impact resistance	npd	npd
4.8	Load-bearing capacity of safety devices	passed	npd
4.9	Height and width	not applicable	
4.10	Automatic opening device	not applicable	
4.11	Acoustic performance	$R_w (C; C_{tr})$ up to 49 (-1; -4) dB	npd
4.12	Thermal performance	Uw values for standard size 1.23 m x 1.48 m or 1,48 m x 2.18 m or project related have to be declared $U_r = 0,70 - 1,2 \text{ W/m}^2\text{K}$	
4.13	Radiation properties	The total solar energy transmittance g and light transmittance are $\tau$ object based evidence by the CE marking of the glazing	
4.14	Air permeability	4	4
4.16	Operating forces	1	npd
4.17	Mechanical strength	4	npd
4.18	Ventilation	npd	npd
4.19	Bullet resistance	npd	npd
4.20	Explosion resistance	npd	npd
4.21	Mechanical durability	npd	npd
4.22	Behaviour between different climates	not applicable	
4.23	Burglar resistance	up to RC 3	up to RC 2 / RC 2 N

## 2. General information for Hueck product pass

The performance characteristics listed were tested and classified in accordance with the product standard EN 14351-1 test and classification standards by approved testing laboratories.

The product pass is based on test reports mentioned in section 4. The detailed description of the various test specimens is found in the test reports.

The portability rules are taken from Annex E of the product standard EN 14351-1.

## 3. Product family

### 3.1 Short description of the systems

This short description summarizes the main features of the system series HUECK Lambda WS 090.

<b>Frame material</b>	Aluminium plastic compound profiles
Profile depth	Frame            90 mm Sash             100 mm
<b>Frame connection</b>	profiles mitred and moulded or nailed or glued by means of corner brackets alternatively butt jointed with T-connectors, nailed and glued
<b>Gaskets</b>	
Centre gasket	Sealing profile Z 921 000 with vulcanized corner pieces Z 921 014 glued, EPDM black, supplier Hueck
Inside rebate gasket	Sealing profile Z 914 266 EPDM black, supplier Hueck, revolving, jointed at top and glued
Drainage	Fixed frames and transom profiles: slots 8 mm x 30 mm with caps Z 921 100, Z 906 510 or Z 903 541 alternatively 2 - 3 shifted drills $\varnothing$ 8 mm alternatively 3 drills $\varnothing$ 10 mm with Z 921 101 (Monodrain)  Quantity depending on width of the window
Pressure equalization	revolving slot of 1 mm between the window frame and sash

<b>Glazing</b>	insulating glass or panels with a thickness of element of 23 – 72 mm (sash) resp. 24 – 63 mm (fixed frame or transom)
Outer glazing gasket	Sealing profile Z 921 001, EPDM black, supplier Hueck, revolving, jointed at top and glued
Inner glazing gasket	Sealing profile Z 914 262, EPDM black, supplier Hueck, revolving, jointed at top and glued or depending on thickness of the glazing seal profiles with the same strength of other similar material properties and geometries
Vapour pressure equalisation	sash: 2 or 3 (depending on width of the window) slots 5 mm x 30 mm at the bottom, at the top of the side profiles drill $\varnothing$ 5 mm each alternatively 2 slots 8 mm x 30 mm with Z 921 100, Z 906 510 or Z 903 541 alternatively 2 shifted drills $\varnothing$ 8 mm alternatively 2 drills $\varnothing$ 10 mm with Z 921 101 (Monodrain)
Fittings	visible tilt and turn Z 981 020, supplier Hueck concealed tilt and turn Z 981 003, supplier Hueck (fittings with other rotation and stay-arm hinge length are possible)

**The name of the window series *Lambda duo 90* has been changed to *HUECK Lambda WS 090*. As there are no changes in construction test reports for *Lambda duo 90* are still valid for *HUECK Lambda WS 090*.**



#### 4. Overview of performance characteristics

Section of Product standard EN 14351-1		Variety / Type / Execution	Proof	Value / Class	Application area
4.2	Resistance to wind load	Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR06 18.12.2012	C5 / B5	Transfer to -100% of the frame width and frame height of the specimen  The deflection of mullions and transoms can also be calculated
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR07 18.12.2012	C5 / B5	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR08 18.12.2012	C5 / B5	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR09 18.12.2012	C5 / B5	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR10 18.12.2012	C5 / B5	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR11 18.12.2012	C5 / B5	
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR13 18.12.2012	C5 / B5	
		Tilt and turn window	ift 12-001576-PR12 16.01.2013	C5 / B5	
		Double casement window Sash: 1550 mm x 1400 mm Fixed frame: 3117 mm x 1448 mm	ift 14-000016-PR03 10.03.2014	C4 / B4	
Double casement window Sash: 1550 mm x 1400 mm Fixed frame: 3117 mm x 1448 mm	ift 14-000016-PR04 17.03.2014	C4 / B4			
4.3	Resistance to snow and constant load			npd	Only applies to skylight windows
4.4	Safety in case of fire			npd	Only applies to skylight windows
4.5	Water tightness	Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm (Sash: 2 slots 8 mm x 30 mm with Z 921 100 Fixed: 3 slots 8 mm x 30 mm with Z 921 100)	ift 12-001576-PR06 18.12.2012	E 1050	Transfer of -100% to +50% of the total area of the specimen
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm (Sash: 2 shifted drills ø 8 mm, Fixed: 3 shifted drills ø 8 mm)	ift 12-001576-PR07 18.12.2012	E 1200	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm (Sash: 2 slots 8 mm x 30 mm with Z 921 100 Fixed: 2 slots 8 mm x 30 mm with Z 921 100)	ift 12-001576-PR08 18.12.2012	E 750	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm (Sash: 2 slots 8 mm x 30 mm with Z 903 541, Fixed: 2 shifted drills ø 8 mm)	ift 12-001576-PR09 18.12.2012	E 1050	

Section of Product standard EN 14351-1		Variety / Type / Execution	Proof	Value / Class	Application area
4.9	Water tightness (cont.)	Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm (Sash: 2 slots 8 mm x 30 mm with Z 906 510 Fixed: 2 slots 8 mm x 30 mm with Z 906 510)	ift 12-001576-PR10 18.12.2012	E 1500	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm (Transom: 3 drills ø 10 mm with Z 921 101 - Monodrain)	ift 12-001576-PR11 18.12.2012	E 900	
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm (sash: 2 drills ø 10 mm mit Z 921 101 - Monodrain, fixed: 3 drills ø 10 mm mit Z 921 101 - Monodrain)	ift 12-001576-PR13 18.12.2012	E 1050	
		Tilt and turn window	ift 12-001576-PR12 16.01.2013	E 900	
		Double casement window Sash: 1550 mm x 1400 mm Fixed frame: 3117 mm x 1448 mm	ift 14-000016-PR03 10.03.2014	E 900	
		Double casement window Sash: 1550 mm x 1400 mm Fixed frame: 3117 mm x 1448 mm	ift 14-000016-PR04 17.03.2014	9A	
4.6	Dangerous substances	The manufacturer has to declare substances which when used as prescribed cause danger for hygiene, health or environmental by emission or migration in accordance with the local requirements.			
4.7	Impact Resistance			npd	
4.8	Load-bearing capacity of safety devices	Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR06 18.12.2012	passed	Transfer to smaller or the same box widths or heights of the specimen
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR07 18.12.2012	passed	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR08 18.12.2012	passed	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR09 18.12.2012	passed	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR10 18.12.2012	passed	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR11 18.12.2012	passed	
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR13 18.12.2012	passed	
4.9	Width and height			npd	Only for external doors
4.10	Ability to release			npd	Only for exterior doors in escape and rescue routes

Section of Product standard EN 14351-1		Variety / Type / Execution	Proof	Value / Class	Application area
4.11	Acoustic performance	<p>Tilt and turn window 17 laminated acoustic / 16 / 13 laminated acoustic</p> <p>with additional external gasket</p> <p>Expert statement Insulating glass with different sound reduction</p> <p>Tilt and turn window</p>	<p>ift 14-000639-PR01 PB Z22</p> <p>ift 14-000639-PR01 PB Z25</p> <p>ift-14-002395-PR02 GAS 2</p> <p>ift 14-002395-PR02 GAS 2 01.09.2014</p>	<p>R<sub>w</sub> (C;C<sub>tr</sub>) 47 (-2;-5) 49 (-1;-4)</p> <p>up to 49 (-1; -4) dB</p> <p>R<sub>w</sub> (C;C<sub>tr</sub>) 40 (-4;-9) up to 49 (-1;-4)</p>	Transmission window size to other formats in accordance with EN 14351-1, annex B, table B.3
4.12	Thermal performance	<p>U<sub>f</sub> = 0,70 W/m<sup>2</sup>K bis 1,2 W/m<sup>2</sup>K</p> <p>840 000</p> <p>840 005</p> <p>840 001 – 840 200</p> <p>840 003 – 840 201</p> <p>840 005 – 840 203</p>	<p>EHL 2012-12-19-01</p> <p>ift 13-002782-PR01</p> <p>ift 13-002782-PR02</p> <p>ift 13-002782-PR03</p> <p>ift 13-002782-PR04</p> <p>ift 13-002782-PR05</p>	<p>project certificate</p> <p>1.2</p> <p>0.85</p> <p>1.2</p> <p>1.1</p> <p>0.91 W/m<sup>2</sup>K</p>	<p>UW-value in accordance with EN ISO 10077-1, table F.1 can be applied to all element sizes</p> <p>Calculation according to EN ISO 10077-1 for the reference size 1.23 m x 1.48 m elements can be up 2.3 m<sup>2</sup> and for the reference size 1.48 m x 2.18 m be transferred to elements of 2.3 m<sup>2</sup>. If U<sub>g</sub> &lt; 1.9 W/m<sup>2</sup>K, the calculation for the reference size can be applied to all element sizes 1.23 m x 1.48 m</p>
4.13	Radiation properties	See CE marking of glazing		project certificate	Applicable to all sizes
4.14	Air permeability	<p>Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm</p> <p>Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm</p> <p>Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm</p> <p>Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm</p> <p>Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm</p> <p>Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm</p> <p>Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm</p>	<p>ift 12-001576-PR06 18.12.2012</p> <p>ift 12-001576-PR07 18.12.2012</p> <p>ift 12-001576-PR08 18.12.2012</p> <p>ift 12-001576-PR09 18.12.2012</p> <p>ift 12-001576-PR10 18.12.2012</p> <p>ift 12-001576-PR11 18.12.2012</p> <p>ift 12-001576-PR13 18.12.2012</p>	<p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p>	Transfer to -100% to +50% of the total area of the specimen

Section of Product standard EN 14351-1		Variety / Type / Execution	Proof	Value / Class	Application area
4.15	Air permeability (cont.)	Tilt and turn window	ift 12-001576-PR12 16.01.2013	4	Übertragung auf -100% bis + 50% der Gesamtfläche des Probekörpers
		French window Sash: 1550 mm x 1400 mm Fixed frame: 3117 mm x 1448 mm	ift 14-000016-PR03 10.03.2014	4	
		French window Sash: 1550 mm x 1400 mm Fixed frame: 3117 mm x 1448 mm	ift 14-000016-PR04 17.03.2014	4	
4.16	Operating forces	Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR06 18.12.2012	1	Transfer to -100% of the total area of the specimen
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR07 18.12.2012	1	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR08 18.12.2012	1	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR09 18.12.2012	1	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR10 18.12.2012	1	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR11 18.12.2012	1	
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR13 18.12.2012	1	
4.17	Mechanical strength	Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR06 18.12.2012	4	Transfer to -100% of the total area of the specimen
		Tilt and turn window with side light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR07 18.12.2012	4	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR08 18.12.2012	4	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR09 18.12.2012	4	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR10 18.12.2012	4	
		Tilt and turn window with bottom light Sash: 1550 mm x 1400 mm Fixed frame: 1598 mm x 2499 mm	ift 12-001576-PR11 18.12.2012	4	
		Tilt and turn window with bottom light Sash: 900 mm x 2300 mm Fixed frame: 3316 mm x 2348 mm	ift 12-001576-PR13 18.12.2012	4	
		Tilt and turn window	ift 12-001576-PR12 16.01.2013	4	
4.18	Ventilation			npd	Only applies to windows with integrated vent

Section of Product standard EN 14351-1		Variety / Type / Execution	Proof	Value / Class	Application area
4.19	Bullet resistance			npd	
4.20	Explosion resistance			npd	
4.21	Mechanical durability			npd	
4.22	Behaviour between different climates			npd	
4.23	Burglar resistance	<p>Tilt and turn window with side light            sash 1: 1600 mm x 2100 mm            sash 2: 1300 mm x 1200 mm            Fixed frame: 680 mm x 2100 mm</p> <p>Tilt and turn window with side light</p> <p>Tilt and turn window with side light            sash 1: 1600 mm x 2100 mm            sash 2: 1300 mm x 1200 mm            fixed frame: 680 mm x 2100 mm</p> <p>Tilt and turn window with side light</p> <p>French window            sash 1: 758 mm x 1200 mm            sash 2: 778 mm x 1200 mm</p> <p>Tilt and turn window with side light            sash 1: 1600 mm x 2100 mm            sash 2: 1300 mm x 1200 mm</p> <p>-----            Tilt &amp; turn windows</p>	<p>PIV 45-19/13 05.03.2013</p> <p>PIV 45-21/14 28. 02 2014</p> <p>PIV 45-20/13 05.03.2013</p> <p>PIV 45-22/14 28. Februar 2014</p> <p>PIV 45-102/14 06.10.2014</p> <p>PIV 45-14/14 27.05.2014</p> <p>PIV 45-29/15 28.10.2015</p> <p>PIV 45-76/15 28.10.2015</p> <p>PIV 45-77/15 28.10.2015</p>	<p>RC 1</p> <p>RC 1</p> <p>RC 2 RC 2 N</p> <p>RC 2</p> <p>RC 2 RC 2 N</p> <p>RC 3</p> <p>RC 1 N</p> <p>RC 2 N RC 2</p> <p>RC 3</p>	<p>Transferrable to:            +/- 25% of area            Distance locking points            from corner: +5% / -20%            Distance between locking            points: +5% / -30%</p> <p>-----            Single and double sash            window            with / without fixed frame            sash area 0.65 - 4.0 m<sup>2</sup>            Hueck GEN 4.0 and Roto Al            Designo / Al 540 hardware</p>

## 5. Overview of performance characteristics according to further standards / guidelines

Reference	Variety / Type / Execution	Proof	Value / class	Application area
Prevention against falling out (TRAV)		VT 13-0288 - 01 02.12.2013		Glass sizes 577 mm x 627 mm up to 1842 mm x 3420 mm