



ift System Passport

PVC profile systems for windows and casement doors

as per RAL-GZ 716 – Part 1

N° 22-001276-PR01
(SP-A01-UZ06-en-01)

REHAU Industries SE & Co. KG
Verwaltung Erlangen
Ytterbium 4
91058 Erlangen
Germany



System	Plastic window system SYNEGO® AD & MD		
System boundaries	as per system description (see section 3)		
Typing	1.1 single leaf, double leaf with mullion, Fixed glazing	2.1 Parallel tilting sliding doors	
	1.2 double leaf with loose mullion		
Frame material	uPVC according to RAL-GZ 716:2019-04, Technical Annex: 2020-07 Clause A, Category 1, 4		

Product standard EN 14351-1	Specification RAL-GZ 716	Operating forces	Air permeability	Resistance to wind load	Watertightness	Behaviour between different climates
	Performance characteristics					
	Performance characteristics					
Additional characteristics	Performance characteristics	Acoustic insulation	Ventilation	Burglar resistance		
		✓	npd	npd		

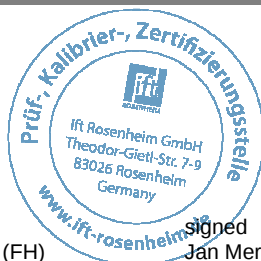
The requirements are fulfilled.

ift Rosenheim

22.03.2022

Translation dated 07.04.2022

signed
Torsten Voigt, M.Eng., Dipl.-Ing. (FH)
Project Engineer
Certification & Surveillance Body



signed
Jan Merettig, B.Eng.
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This document is valid without a signature. The original document n° 22-001276-PR01 (SP-A01-UZ06-de-01) dated 22.03.2022 remains legally binding.

RAL-GZ 716 – Technical Annex	Plastic window profiles	Sealing profiles	Foils for lamination	Adhesives for lamination	Lamination method
	Section A	Section B-C	Section D	Section E	Section F
	✓	✓	✓	✓	✓
	Connector	Reinforcement			
	Section G	Section H			
	✓	✓			

The requirements are fulfilled.



signed
Management GKFP e.V.
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Basis

EN 14351-1:2006+A2:2016
RAL-GZ 716:2019-04
Surveillance contract
N° 187 9038117 dated 28.01.2022

Instructions for use

This system passport is considered to be an adequate technical documentation in accordance with the Construction Products Regulation Article 36 (1c) to demonstrate compliance with the essential characteristics including the levels and classes set out in the harmonised product standard EN 14351-1 for windows and external pedestrian doorsets and can be used by the manufacturer as the basis for preparing a Declaration of Performance (in accordance with Article 6 of the CPR).

The tested designs are detailed in the respective test reports / expert statements.

Notes on publication

The ift-Guidance Sheet "Conditions and Guidance for the Use of ift Test Documents" applies.

Validity

The RAL system passport forms the basis for obtaining the quality mark for "Kunststoff-Fensterprofilssysteme (plastic window profile systems) as per RAL-GZ 716. It demonstrates compliance with all requirements of RAL-GZ 716.

The RAL system passport confirms regular third-party control/audits of the system supplier conducted by the ift Rosenheim.

The validity of this RAL System Passport is linked to the ift Certification and Surveillance Contract n° 187 9038117.

Contents

The RAL system passport comprises 15 pages:

1. Summary of the performance characteristics of the mandatory test specimens
2. Summary of the performance characteristics of the non-mandatory test specimens
3. Additional test specimens and performance characteristics
4. System description
5. General notes on RAL system passport
6. Special instructions for use

1 Performance characteristics of System SYNEGO®

1.1 Overview of evidences for RAL-GZ 716 Part 1: Conventional glazing

Table: Basic system - Performance characteristics after test sequence for operating forces, air permeability, resistance to wind load, watertightness, mechanical resistance - test sequence see Clause 4.2

Test specimen		PK 1	PK 2	PK 3	PK 3a	PK 5	PK 5a	PK 7a	PK 10
Illustration									
Dimensions		1,576x2,466	2,064x2,476	2,064x2,476	1,664x2,593	1,176x2,593	2,064x2,448	1,176x2,476	3,308x2,476
Operating forces		1	1	1	1	1	1	1	1
Air permeability		4	4	4	4	4	4	4	4
Resistance to wind load		C4/B5	C2/B2	C2/B2	C1/B2	C5/B5	C2/B2	C5/B5	C4/B4
Watertightness		9A	9A	9A	7A	9A	7A	9A	8A
Mechanical resistance		4	4	4	4	4	4	4	4
Load-bearing capacity of safety devices		fulfilled	--	npd	npd	npd	npd	npd	npd
FE-13/1 Climate and alternating climatic load		--	--	--	--	--	--	--	--
FE-13/1 Impermeability of corner connection		--	--	--	--	--	--	--	--

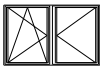
Table: Basic system - Performance characteristics after test sequence for operating forces, mechanical durability, operating forces, reveal and rebate hindrance, impact resistance - test sequence Clause 4.2

Test specimen		PK 4	PK 7	PK 8	PK 9	PK 10
Illustration					Mullion T-connector	
Dimensions		1,076x1,076	1,176x2,476	1,476x1,476	1,200x1,200	3,308x2,476
Operating forces		--	1	1	--	1
Mechanical durability		--	2	2	--	2
Impact resistance		2	--	--	--	--
Reveal and rebate hindrance test		--	fulfilled	fulfilled	--	--
T-connector FE-06/2		--	--	--	fulfilled	--

2 Overview of evidences

2.1 List of evidences for RAL-GZ 716 Part 1: Conventional glazing

Table: Evidences - Basic system

Test specimen	Test Report	Date	Brief description
PK 1 	14-001756-PR01 (PB-A01-0203-de-03)	08.01.2015	Single tilt and turn window with fixed sublight
	14-001756-PR27 (GAS-A01-020310-de-03)	17.07.2015	
PK 2 	14-001756-PR02 (PB-A01-0203-de-01)	07.01.2015	Double side-hung / tilt and turn French window with opening meeting stile
	14-001756-PR27 (GAS-A01-020310-de-01)	17.07.2015	
PK 3 	14-001756-PR32 (PB-A01-0203-de-03)	04.02.2015	Double side-hung / tilt and turn window with opening meeting stile
PK 3a 	17-001156-PR11 (NW-A01-0203-de-03)	03.05.2018	Double side-hung / tilt and turn window with opening meeting stile, with threshold
PK 4 	14-001756-PR03 (PB-A01-03-de-04)	08.01.2015	Single tilt and turn window
	14-001756-PR28 (GAS-A01-03-de-01)	17.07.2015	
PK 5 	14-001756-PR04 (PB02-A01-0203-de-01)	19.02.2019	Single tilt and turn French window with threshold
	14-001756-PR27 (GAS PB-A01-0203-de-04)	05.07.2017	
	16-004141-PR01 (GAS-A01-0203-de-02)	19.12.2016	
	17-003716-PR01 (PB-A01-0203-de-02)	26.02.2018	
PK 5a 	14-001756-PR05 (PB-A01-0203-de-01)	16.12.2014	Double leaf side-hung / tilt and turn French window with opening meeting stile and threshold
	16-004141-PR01 (GAS-A01-0203-de-02)	19.12.2016	
PK 6 	14-001756-PR08 (PB-A01-0203-de-02)	12.12.2014	Single tilt and turn French window without threshold
	14-001756-PR36 (PB-A01-0203-de-01)	07.01.2015	
	15-001082-PR02 (PB-A01-0203-de-01)	20.05.2015	

Test specimen	Test Report	Date	Brief description
PK 7 	14-001756-PR10 (PB-A01-03-de-03)	12.12.2014	Single-leaf tilt and turn French window
	14-001756-PR35 (PB-A01-03-en-02)	09.01.2015	
	14-001756-PR09 (PB-A01-03-en-02)	12.12.2014	
PK 8 	17-003873-PR03 (NW-A01-0203-de-03)	27.11.2018	Single tilt and turn window
	14-001756-PR20 (PB-A01-03-en-02)	12.12.2014	
	14-001756-PR28 (GAS-A01-03-de-01)	17.02.2015	
PK 9.1	14-001756-PR37 (PB-K28-02-de-01)	17.02.2015	Plastic window with 2 bottom-hung leaves and mullion or transom, mechanically connected by T-connector 1358046
PK 9.2	14-001756-PR38 (PB-K28-02-de-02)	19.02.2015	Plastic window with 2 bottom-hung leaves and mullion or transom, mechanically connected by T-connector 1358115
PK 9.3	14-001756-PR39 (PB-K28-02-de-01)	19.02.2015	Plastic window with 2 bottom-hung leaves and mullion or transom, mechanically connected by T-connector 1358042
PK 9.4	16-003754-PR01 (PB-K20-09-de-01)	14.10.2017	T-connector SYNEGO AD, 1358046 according to FE06/2 2017-02
PK 9.5	16-003764-PR02 (PB-K20-09-de-02)	24.10.2017	T-connector SYNEGO AD, 1358115 according to FE06/2 2017-02
PK 9.6	16-003764-PR03 (PB-K20-09-de-03)	05.12.2017	T-connector SYNEGO MD 1358118 according to FE06/2 2017-02
PK 9.7	16-003754-PR04 (PB-K20-09-de-02)	26.10.2017	T-connector SYNEGO MD 1358119 according to FE06/2 2017-02
PK 9.8	16-003754-PR05 (PB-K20-09-de-02)	26.10.2017	T-connector SYNEGO AD, 1358122 according to FE06/2 2017-02
PK 9.9	16-003754-PR12 (GAS-K20-09-de-02)	12.12.2017	T-connector 1325047, 1358116, 1358042, 1358043 and 1358128 according to FE06/2 2017-02
PK 10 	14-001756-PR22 (PB-A01-0203-de-03)	26.01.2015	Tilt&Slide, 2-part, with fixed part
	14-001756-PR14 (PB-A01-03-de-01)	02.02.2015	
	14-001756-PR27 (GAS-A01-020310-de-03)	17.07.2015	

2.2 Quality-assured performance characteristics

Table: Evidences thermal insulation

Test Report	Date	Profile group / Combination	U _f value (with mask)
14-001759-PR02 (PB-K20-06-de-01)	09.03.2015	SYNEGO (AD 1.0) 36 mask, characteristic line WA-02/03	U _f = 1.0 W/(m²K)
14-001759-PR05 (PB-K20-06-de-03)	09.03.2015	SYNEGO (AD 1.1) 36 mask, characteristic line WA-02/03	U _f = 1.1 W/(m²K)
14-001759-PR07 (PB-K20-06-de-02)	09.03.2015	SYNEGO (AD 1.2) 36 mask, characteristic line WA-02/03	U _f = 1.2 W/(m²K)
14-001759-PR10 (PB-K20-06-de-01)	09.03.2015	SYNEGO (MD 1.0) 36 mask, characteristic line WA-02/03	U _f = 1.0 W/(m²K)
14-001759-PR12 (PB-K20-06-de-01)	09.03.2015	SYNEGO (MD 1.1) 36 mask, characteristic line WA-02/03	U _f = 1.1 W/(m²K)
13-001811-PR02 (PB-K20-06-de-01) according to EN 12412	26.11.2013	SYNEGO frame member 1537015 (1306617) sash member 1537045 (1306617)	U _f = 0.94 W/(m²K)

Table: Evidences T-connector FE-06/2, section 3 - Test of watertightness after thermal and mechanical load

Test Report	Date	T-connector	Results
14-001756-PR37 (PB-K28-02-de-01)	17.02.2015	1358046	Requirement fulfilled
14-001756-PR38 (PB-K28-02-de-02)	19.02.2015	1358115	Requirement fulfilled
14-001756-PR39 (PB-K28-02-de-01)	19.02.2015	1358042	Requirement fulfilled

Table: Evidences T-connector FE-06/2, section 4 - Determination of statistic values via T-connections of mullions and transoms to the assessment of safety against falls

Test Report	Date	T-connector	Static resistance
16-003754-PR12 (GAS-K02-09-de-02)	12.12.2017	1358046/1358047	F _{H,WS,Rk} = 3.7 kN (-10°C) F _{H,WS,Rk} = 6.4 kN (+23°C) F _{H,WS,Rk} = 6.4 kN (+60°C)
16-003754-PR12 (GAS-K02-09-de-02)	12.12.2017	1358115/1358116	F _{H,WS,Rk} = 4.1 kN (-10°C) F _{H,WS,Rk} = 5.2 kN (+23°C) F _{H,WS,Rk} = 5.2 kN (+60°C)
16-003754-PR12 (GAS-K02-09-de-02)	12.12.2017	1358042/1358043	F _{H,WS,Rk} = 3.7 kN (-10°C) F _{H,WS,Rk} = 5.9 kN (+23°C) F _{H,WS,Rk} = 5.9 kN (+60°C)
16-003754-PR12 (GAS-K02-09-de-02)	12.12.2017	1358118	F _{H,WS,Rk} = 3.5 kN (-10°C) F _{H,WS,Rk} = 4.1 kN (+23°C) F _{H,WS,Rk} = 4.1 kN (+60°C)
16-003754-PR12 (GAS-K02-09-de-02)	12.12.2017	1358119/1358128	F _{H,WS,Rk} = 4.0 kN (-10°C) F _{H,WS,Rk} = 4.0 kN (+23°C) F _{H,WS,Rk} = 4.0 kN (+60°C)
16-003754-PR12 (GAS-K02-09-de-02)	12.12.2017	1358122	F _{H,WS,Rk} = 5.4 kN (-10°C) F _{H,WS,Rk} = 5.6 kN (+23°C) F _{H,WS,Rk} = 5.0 kN (+60°C)

2.3 Additional performance characteristics

Table: Evidences acoustic insulation

Test Report	Date	Glazing (R_w)	$R_w(C;C_{tr})$ window
14-004164-PR01 (PB-Z01-04-de-02)	18.02.2015	SYNEGO AD (frame member 1537005 / sash member 1537215) (glazing, 10/24/8LSG SI)	45 (-1;-4) dB
14-004164-PR01 (PB-Z02-04-de-02)	18.02.2015	SYNEGO AD (frame member 1537005 / sash member 1537215) (glazing, 10/24/8LSG SI)	43 (0;-2) dB
14-004164-PR01 (PB-Z03-04-de-02)	18.02.2015	SYNEGO AD (frame member 1537005 / sash member 1537215) (glazing, 4/12/4/12/4)	33 (-2;-5) dB
14-004164-PR01 (PB-Z04-04-de-02)	18.02.2015	SYNEGO MD (frame member 1537105 / sash member 1537215) (glazing, 4/12/4/12/4)	33 (-2;-6) dB
14-004164-PR01 (PB-Z05-04-de-02)	18.02.2015	SYNEGO MD (frame member 1537105 / sash member 1537215) (glazing, 10/24/8LSG SI)	44 (-1;-3) dB
14-004164-PR01 (PB-Z09-04-de-02)	18.02.2015	SYNEGO MD (frame member 1537105 / sash member 1537215) (16LSG SI/15/8LSG SI)	46 (-2;-5) dB

Table: Evidences for TBDK

Test Report	Date	Brief description	Abridged version
14-001756-PR29 (GAS-A01-03-de-01)	13.02.2015	SYNEGO MD	Permissible casement weights Tilt mechanism pivot 100 kg Corner pivot 100 kg

Table: Characteristic load capacity as per TRAV according to DIBt-Guideline TRAV, DIN EN 18008-4

Test Report	Date	Brief description	Abridged version
14-001756-PR24 (PB-K20-09-de-01)	26.01.2015	Casement Z 59 Requirement fulfilled	Characteristic load bearing capacity 10.9 kN/m
14-001756-PR25 (PB-K20-09-de-01)	29.01.2015	Mullion 98 MD Requirement fulfilled	Characteristic load bearing capacity 13.9 kN/m
14-001756-PR26 (PB-K20-09-de-01)	16.01.2015	Frame 72 AD Requirement fulfilled	Characteristic load bearing capacity 12.4 kN/m
14-001756-PR30 (GAS-K20-09-de-01)	14.04.2015	according to type list Requirement fulfilled	

For the profiles suitable according to TRAV, see the test reports listed.

3 System description

The RAL system passport as per RAL-GZ 716 is based on the system description given in Section 2.4. The system description fulfils the requirements of RAL-GZ 716 with respect to the specified minimum contents. The components of the system description listed below were checked for conformity with the tests conducted for verification of applicability RAL-GZ 716.

Table: List of system description

Document	Date	Description
Technical Information SYNEGO	29.09.2020	Profile sectional view
Technical Information SYNEGO	27.02.2019	Details
Technical Information SYNEGO	02.09.2019	Size limits
Technical Information SYNEGO	20.03.2019	Confection measurements
Technical Information SYNEGO	01.10.2019	Production drawings
Technical Information SYNEGO	18.10.2019	Processing instructions
Technical Information SYNEGO	24.09.2020	static
Technical Information SYNEGO	10.04.2019	assembly rules, glazing instructions
Technical Information SYNEGO	07.11.2019	Installation guidelines
Technical Information SYNEGO	03.04.2019	Overview Test reports
Technical Information SYNEGO	March 2013	Material data sheet RAU-PVC 1100-1999
Technical Information SYNEGO	September 2010	Material data sheet RAU-PREN 707
Technical Information SYNEGO	March 2013	Material data sheet RAU-PREN 601
Technical Information SYNEGO	December 2016	Material data sheet RAU-PVC 1406/1476
Technical Information RAUCERO SYNEGO	14.04.2021	Technical Information

Type	Item No.	Frame material	approved reinforcements
Frame profile BLR 72	BLR 72 AD 1537605	uPVC white	1244506
	BLR 72 AD 1567605	laminated	1244516
	BLR 72 MD 1537625	uPVC white	1244526
	BLR 72 MD 1567625	laminated	1244536
	BLR 72/40 MD 1537195	uPVC white	1306619
	BLR 72/40 MD 1567195	laminated	1357540
Frame profile BLR 103	BLR 103 MD 1537645	uPVC white	1357550
	BLR 103 MD 1567645	laminated	
Frame profile BLR 82	BLR 82 AD 1537615	uPVC white	1357541
	BLR 82 AD 1567615	laminated	1357542
	BLR 82 MD 1537635	uPVC white	1357543
	BLR 82 MD 1567635	laminated	1357559
Frame profile BLR 100	BLR 100 MD 1537185	uPVC white	1357608
	BLR 100 MD 1567185	laminated	
Frame profile BLR 57	BLR 57/60 MD 1537145	uPVC white	1239583
	BLR 57/60 MD 1567145	laminated	
Casement profile Z51	FLG Z51 1537205	uPVC white	1261831
	FLG Z51 1567205	laminated	1261841
Casement profile Z59	FLG Z59 1537525	uPVC white	1351893
	FLG Z59 1567525	laminated	1357590
	FLG Z59 round 1537245	uPVC white	
	FLG Z59 round 1567245	laminated	
Casement profile Z53	FLG Z53 1537285	uPVC white	1244506
	FLG Z53 1567285	laminated	1244516
Casement profile Z86	FLG Z86 1537235	uPVC white	1244526
	FLG Z86 1567235	laminated	1244536
Casement profile T106	FLG T106 1537315	uPVC white	1306617
	FLG T106 1567315	laminated	1313130
Frame profile BLR 72 Puls CPT	BLR 72 MD 1537675	uPVC white	1352512
	BLR 72 MD 1567675	laminated	1352515

Type	Item No.	Frame material	approved reinforcements
Frame profile BLR 72 Puls CPT	BLR 72 AD 1537685	uPVC white	1244506 1244516 1244526
	BLR 72 AD 1567685	laminated	1244536 1357823
Casement profile Z59 Puls CPT	FLG Z59 1537565	uPVC white	1244506 1244516 1244526 1244536
	FLG Z59 1567565	laminated	1352512 1352515 1357610 1313130 1306617
Casement profile Double casement	Double casement Z51 1537475	uPVC white	1351875
	Double casement Z51 1567475	laminated	
	Double casement Z59 1537485	uPVC white	1357554
	Double casement Z59 1567485	laminated	
Transom	Glazing bar 68 1537425	uPVC white	1261801
	Glazing bar 68 1567425	laminated	
T profiles / Transom	Mullion 96 1537405	uPVC white	1357544 1357666
	Mullion 96 1567405	laminated	
	Mullion 124 1537415	uPVC white	1357545 1357546 1357553
	Mullion 124 1567415	laminated	
Dummy mullion profiles	Overlap profile 1537445	uPVC white	1247898
	Overlap profile 1567445	laminated	
Dummy mullion	Dummy mullion 1537455	uPVC white	1357552
	Dummy mullion 1567455	laminated	

No decorative aluminum cover plates available.

3.2 Seals/Gaskets

Table: Approved seals/gaskets as per RAL-GZ 716, Technical Annex Section B, C

Function	Item n°	Material	approved color	Corner design
Frame member seal/gasket external	1232881	EPDM	grey	circumferentially drawn into frame and jointed at top center
	1232871		black	
	1602199 1602219	PVC-P	gray, black	mitred with frame profile and welded, T-profiles butt-joined and glued
	Coextruded gaskets, Section 3.1	PVC-P	gray, black	in profile coextruded gaskets mitred with frame profile and welded, T-profiles butt-joined and glued
Frame centre seal	1357445	PVC-P	gray, black	mitred with frame profile and welded, T-profiles butt-joined and glued
	Coextruded gaskets, Section 3.1	PVC-P	gray, black	in profile coextruded gaskets mitred with frame profile and welded, T-profiles butt-joined and glued
T profile / Transom seal/gasket external	1232881	EPDM	grey	inserted into profile
	1232871		black	
	1602199 1602219	PVC-P	gray, black	inserted into profile
	Coextruded gaskets, Section 3.1	PVC-P	gray, black	in profile coextruded gaskets mitred with frame profile and welded, T-profiles butt-joined and glued
T profile / Transom centre seal	1357445	PVC P	gray, black	inserted into frame profile, mitred and bonded
	Coextruded gaskets Section 3.1	PVC-P	gray, black	in profile coextruded gaskets mitred with frame profile and welded, T-profiles butt-joined and glued
Casement member seal/gasket external	1357441	EPDM	grey	circumferentially drawn into frame and jointed at top center
			black	
	Coextruded gaskets Section 3.1	PVC P	gray, black	in profile coextruded gaskets mitred with frame profile and welded, T-profiles butt-joined and glued
Casement member seal/gasket internal	1211738	EPDM	grey	circumferentially drawn into frame and jointed at top center
	1211728		black	
	1560728	PVC-P	gray, black	Inserted into profile
	Coextruded gaskets Section 3.1	EPDM	grey black	in profile coextruded gaskets mitred with frame profile and welded, T-profiles butt-joined and glued
Glazing gasket internal	Double lip seal Section 3.1	PVC-P	grey, black	mitred with glazing beads jointed (coextruded)
Overlap profile/dummy mullion gaskets	1357443	EPDM	gray, black	inserted into profile
	1602199 1602219	PVC-P	gray, black	
	1232871	EPDM	grey	inserted into profile
	1232881		black	
	1357449	EPDM	gray, black	inserted into profile
	Coextruded gaskets Section 3.1	PVC-P	gray, black	in profile coextruded gaskets mitred with frame profile and welded, T-profiles butt-joined and glued, inserted into profile

Function	Item n°	Material	approved color	Corner design
Faceplate	1211013	EPDM	gray, black	inserted into profile
Seals/Gaskets	1211023			
Spacing profile	1864952	EPDM	gray, black	inserted into profile
	1865530			

3.3 Specifications for reinforcements

Table: Essential characteristics for reinforcement guidelines according to RAL-GZ 716 Technical Annex H

Profile	Material / Colour	Reinforcement from frame size	max. edge cover of reinforcement	Screw connection distance	
				among each other	from corners
Frame profiles	white	2,000*	50	500	50 mm each starting from reinforcement end
	colored	general*	50	250	
Casement profiles	white	1,000 W* 1,300 H*	50	500	50 mm each starting from reinforcement end
	colored	general	50	250	
T profiles	white	general	50	500	50 mm each starting from reinforcement end
	colored	general	50	250	
Dummy mullion profiles	white	see system description	50	500	50 mm each starting from reinforcement end
	colored	1,500*	50	250	

*see technical information REHAU SYNEGO, size limitations

3.4 Glazing with prefabricated glazing gaskets or sealants

according to system description section 3

3.5 Hardware

Table: Approved hardware

Type of opening	Type / Manufacturer	Maximum locking distance	Certificate/ Evidence of performance
Type 1.1 and Type 1.2 (combined side-hung / tilt and turn)	activPilot Aug. Winkhaus GmbH & Co. KG	800 mm	 228-7019950-1-17
	TITAN AF, TITAN iP SIEGENIA-AUBI KG Beschlag- und Lüftungstechnik	800 mm	 228-6246810-1-13
	Roto NX, Roto NT ROTO Frank Fenster- und Türtechnologie GmbH	800 mm	 228-9004105-1-20 228-9004105-5-5
	MULTI-MATIC Mayer & Co. Beschläge GmbH	800 mm	 228-6036771-1-15
	JET, UNI-JET Gretsch-Unitas GmbH Baubeschläge	800 mm	 228-7013145-1-13
Type 2.1 (Tilt&Slide)	GU 966 Gretsch-Unitas GmbH Baubeschläge	800 mm	14-001756-PR22 (PB-A01-0203-de-03)

Note: Conformity with the rules on the interchangeability of hardware set out in the applicable versions of QM 328 and/or RAL 607 / 3 and QM 347 Annex 1 must be ensured.

3.6 Connection of load-bearing components

The verification of the fastening of load-bearing hardware components (corner and stay bearing components) was performed within the scope of the tests carried out. The window manufacturer is responsible for verifying the strength of load-bearing hardware components (corner and stay bearing components) in relation to the system, taking into account his production conditions and the fasteners used. The mechanical strength properties of the guideline TBDK must be observed depending on the sash weight. The mechanical strength properties of the guideline TBDK must be observed depending on the sash weight.

3.7 Connection of plastic window profiles

Table: Approved connecting devices T-connector - RAL-GZ 716 Technical Annex G

Type of connection	Profile references	Connector references	Sealing	Fixing method/fasteners
Mullion mechanical	Mullion 96 AD 1537405 1567405	1358046	according to system documentation	according to system documentation
Mullion mechanical	Mullion 96 AD 1537405 1567405	1358115	according to system documentation	according to system documentation
Mullion mechanical	Mullion 96MD 1537505 1567505	1358042	according to system documentation	according to system documentation

3.8 Thresholds

Table: Approved thresholds

Designation of threshold	Connection to frame / mullion	Fixing method to frame, Fixing method to mullion, sealing
1356663	BLR 72 1358100, 1358101 BLR 82 1358102, 1358103 Mullion 96 1358104 Mullion 124 1358105	according to SYNEGO production drawings
1358663	BLR 72 1358100, 1358101 BLR 82 1358102, 1358103 Mullion 96 1358104 Mullion 124 1358105	according to SYNEGO production drawings
1358663 + 1358221	BLR 72 1358100, 1358101 BLR 82 1358102, 1358103 Mullion 96 1358104 Mullion 124 1358105	according to technical information RAUCERO SYNEGO

4 General notes on RAL system passport

4.1 Specified performance characteristics according to the product standard

All listed performance characteristics were tested and evaluated to the test and classifications standards contained in the product standard EN 14351-1. They are based on the evidence of performance/reports presented by the client. At the request of the client, reduced classes/values were displayed if necessary. For more detailed information refer to the respective individual evidence of performance/test reports referring to the performance characteristics listed in Section 2.

4.2 Test sequence of test specimen

According to RAL-GZ 716:2019-04, the test specimens shown were selected and tested in a representative manner. The results can be extrapolated for the sizes tabled in the system description subject to compliance with the defined specifications, in particular the locking distances, casement weights and reinforcements. Extrapolation possibilities for other unit designs are listed in RAL-GZ 716:2019-04, Annex 2-I. The test specimens shall be composed only of the pre-products specified in the system description.

The test sequence for the test specimens is based on the specifications of RAL-GZ 716, Section 2-4.2.2.

Test sequence for the properties of operating forces, air permeability, resistance to wind load, watertightness, mechanical resistance and load-bearing capacity of safety devices:

1. Test of operating forces,
2. Test of air permeability,
3. Test of resistance to wind load - pressure pulses,
4. Test of resistance to wind load - deflection measurement,
5. Repeat test of air permeability for positive/negative pressure, test of watertightness,
6. Safety test, mechanical resistance - Test of resistance to racking,
7. Mechanical resistance - Test of torsion and twist
8. Test of load-bearing capacity of safety devices

Test sequence for PK 2 according to ift-Guideline FE-13/1.

Resistance to wind load depends on the height and width of the element.

Test sequence for properties of operating forces, mechanical durability, reveal and rebate hindrance test

1. Test of operating forces,
2. Test of mechanical durability (simulation of use)
3. Test of operating forces,
4. Test of reveal and rebate hindrance

Test sequence for properties of T-connector:

1. Serviceability test FE-06/2, section 3 Test of watertightness after thermal and mechanical load
2. Test of static load FE-06/2, section 4 Determination of the statistic values via T-connections of mullions and transoms to the assessment of safety against falls

4.3 Basis of the RAL system passport

- Existing surveillance contract n° 187 9038117 between ift Rosenheim and the client,
- Evidences according to section 2,
- System description section 3
- Continuous surveillance of client (licenser)

Any changes to the system and the system description shall be communicated without delay to the "Gütegemeinschaft Kunststoff-Fensterprofilsysteme e.V." (PVC Window Profile Systems Quality Assurance Association) and the **ift** Rosenheim.

5 Special instructions for use

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

The identified characteristics (classifications) are applicable to windows and screens for installation in vertical wall apertures covered by the scope of application of EN 14351-1. Application is subject to the relevant national rules and regulations. According to the product standard and the Construction Products Regulation, the manufacturer is responsible for ensuring the declared properties.

The compilation contained in this RAL system passport is based on the verifications/reports provided. No legal claim can be derived from this. This RAL system passport forms the basis for obtaining the quality mark for "Kunststoff-Fensterprofilsystem" (PVC window profile system) as per RAL-GZ 716, which documents the conformity of the window systems and of the factory quality/production control by regular third-party audits of the system supplier conducted by **ift** Rosenheim.

As set out by the Regulation (EC) No. 842/2006 of the European Parliament and of the Council of 17.05.2006 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 window hardware are defined in the **ift** Certification Schemes for hardware (QM 328, QM 345, QM 346, QM 347, QM 343). With termination of the surveillance contract 187 9038117 , the validity of this RAL system passport ends.

ift Rosenheim
22.03.2022