HUECK system pass for façades according to EN 13830

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System supplier: HUECK System GmbH & Co. KG
System: **HUECK Trigon FS 050 FP**
Product family: Mullion transom design

Basic principles

EN 18830 (2020 – 11)
Curtain walls

Test reports

Refer to point 5

Contents

Instructions for use

The Hueck system pass shows the general performance of the designated product family in accordance with the requirements of the product standard.

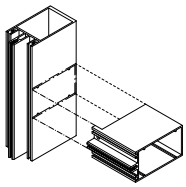
The classes relate to the item described in the individual certificates and to the application range defined in the Hueck system pass. The performance properties in the listed test certificates have overriding validity. Changes and omissions excepted.

The national building regulations as well as the contractual agreements apply to the application of performance characteristics.

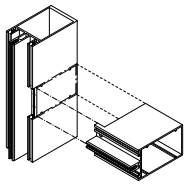
This documentation has been compiled to the best of our knowledge and belief. Nevertheless, errors cannot be completely ruled out.

Stand: June 2024

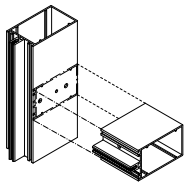
Variants



Variant 1 (PE III with RE I)
Variant 1: Mullion transom [III / I] with overlapping transom connection



Variant 2 (PE III with RE II)
Variant 2: Mullion transom [III / II] with inlet transom connection



Variant 3 (RE II with RE II)
Variant 3: Mullion transom [II / II] for equal profile geometry

Frame material: Aluminium profile with plastic insulators

Properties / Classes (according to EN 13830, CWCT and ASTM)

Resistance to wind load	Resistance to dead load	Shock resistance	Air permeability	Water tightness	Airborne soand insulation	Heat transfer
Design ± 2.4 Safety ± 3.6 kN/m²	1)	I5/E5	AE900	RE1200	R_W up to 45 dB	see section 4.14

Fire resistance	Fire behaviour	Fire propagation	Durability	Water vapour permeability	Equipotential bonding	Earthquake stability
E 30 (o <-> i) EI 30 (o <-> i) EW 30 (o <-< i)	Class E	1)	2)	1)	according to DIN	1)

Thermal shock resistance	Resistance to horizontal load
1)	1)

Additional characteristics / evidence

Clamp connection	Mullion transom connection	Burglar resistance	Bullet resistance	Blast resistance	Suitability for passive houses
see section 6.1	see section 6.2	see section 6.3	see section 6.4	npd	see section 6.6

1) object-related evidence - if required
2) Maintenance instructions according to EN 13830, annex B

2. General information about the HUECK system pass

The listed performance characteristics were tested and classified by approved testing laboratories in accordance with the test and classification standards listed in the product standard EN 13830 (rev. 2003).

The test certificates on which the system pass is based are cited in section 4.
Please refer to the test reports for the detailed description of the samples on which the individual tests are based.

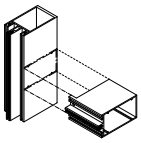
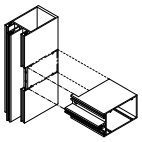
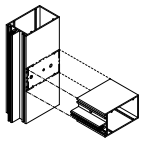
3. Product family

Short description of the HUECK Trigon FS 060 FP façade system	
Variants	**Variant 1** Mullion transom [III/I] with overlapping transom connection **Variant 2** Mullion transom [III/II] with inlet transom connection **Variant 3** Mullion transom [II/II] for equal profile geometry
Frame material Elevation width Profile depth	Aluminium – EN AW-6060 according to EN 755 50 mm 85 - 225 mm
Connection	**Variant 1** Mullion transom [III/I] with overlapping transom connection **Variant 2** Mullion transom [III/II] with inlet transom connection or **Variant 3** Mullion transom [II/II] for equal profile geometry
Sealing	**Variant 1** with Z 923503 transom housing gasket for sealing the mullion notching for the transom overlap **Variant 2** with Z 923504 transom housing gasket **Variant 3** with Z 923507 transom housing gasket
Glazing	Multi-pane insulating glass or panels with an element thickness of 10 - 68 mm
Glass sealing external internal Pressure plate profile ends Insulators Screwing	With pre-fabricated EPDM sealing profiles Horizontal and vertical Z 912616 sealing profile, butt jointed Sealing profiles with various thickness (4 to 20 mm) depending on the glass or panel thickness, continuous horizontally up to the rebate area, vertical, butt jointed and with horizontally arranged sealing profile glued with sealing material **alternatively:** vulcanized frame For two-piece external gasket Z 923500 (3 mm), Z 912616 (4 mm) and Z 923501 (5 mm), ends with sealing pad Plastic spacer profiles with different depths FP insulation layer strip and plastic spacer profiles with insulation layer strips Distance of the pressure plate profile screwing on the mullion or transom profiles: 255 mm

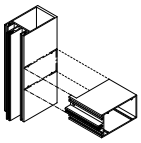
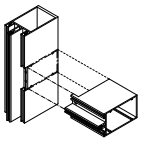
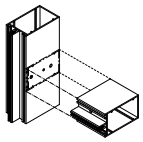
3. Product family

Short description of the HUECK Trigon FS 050 FP façade system	
Vapour pressure equalization / Drainage	Above transom rebate in the mullion rebate - Glass sealing with gasket: Z 912616 Ventilation through the openings in the pressure plate profile into the cavity between pressure plate and cover profile Vapour pressure equalization / drainage at the lower or upper point of the façade and in the cross joints, alternatively field by field aeration through ventilation mouldings

4. Results according to EN 13830, CWCT and ASTM

	Section of the product standard EN 13830		Standard acc. to EN 13830, CWCT and ASTM	Product family		
						
				Mullion transom façade Variant 1 [III / I]	**Mullion transom façade Variant 2** [III / II]	**Mullion transom façade Variant 3** [II / II]
	4.1	Fire behavior	EN	Class E		
	4.2	Fire resistance	EN ASTM CWCT	E 30 (o <-> i) EI 30 (o <-> i) EW 30 (o <-< i)		
	4.3	Fire propagation	EN ASTM CWCT	npd		
	4.4	Water tightness	EN	1200 Pa		
			ASTM	720 Pa		
			CWCT	1200 Pa		
	4.5	Dead load	EN ASTM CWCT	1)		
	4.6	Resistance to wind load	EN	2400 Pa Design / 3600 Pa Safety		
			ASTM	2400 Pa Design / 3600 Pa Safety		
			CWCT	2400 Pa Design / 3600 Pa Safety		
	4.7	Resistance to snow load	EN ASTM CWCT	1)		
	4.8	Shock resistance	EN	I5 / E5		
			ASTM	-		
			CWCT	I5 / E5		
	4.9	Resistance to horizontal live loads at parapet height	EN	1)		
	4.10	Earthquake stability	EN ASTM CWCT	1)		
	4.11	Thermal shock resistance	EN ASTM CWCT	1)		
	4.12	Airborne soand insulation	EN ASTM CWCT	R_w up to 46 dB	R_w up to 46 dB	R_w up to 46 dB
	4.13	Equipotential bonding	EN	according to DIN		

4. Results according to EN 13830, CWCT and ASTM

	Section of the product standard EN 13830		Standard acc. to EN 13830, CWCT and ASTM	Product family		
						
				Mullion transom façade Variant 1 [III / I]	**Mullion transom façade Variant 2** [III / II]	**Mullion transom façade Variant 3** [II / II]
	4.14	Heat transfer	EN ASTM CWCT	FP insulation batten strip ≥ 1,5 FP Insulation layer strip ≥ 1,5	FP insulation batten strip ≥ 1,5 FP Insulation layer strip ≥ 1,5	FP insulation batten strip ≥ 1,4 FP Insulation layer strip ≥ 1,5
	4.15	Air permeability	EN	AE 900		
			ASTM	300 Pa		
			CWCT	AE 900		
	4.16	Building and thermal movements	EN ASTM CWCT	1)		
	4.17	Resistance to dynamic horizontal loads	EN ASTM CWCT	1)		

5. Overview of performance characteristics

	Section of the product standard EN 13830		Variant / Type / Design	Value / Class	Evidence	Application range
	5.1	Sampling	Variant 1 / 2 / 3 eco plus pro			Sequence of tests according to EN 13050 CWCT ASTM
	5.2	Fire behavior		Class E	ift 19-004063-PR01 PB-K88- ift 19-004063-PR02 KB-K88-01 ift 19-004063-PR03 PB-K88-01 ift 19-004063-PR04 KB-K88-01 ift 19-004063-PR05 PB-K88-01 ift 19-004063-PR06 KB-K88-01	
	5.3	Fire resistance	Variant with insulation batten Variant with insulation strips Field grid Width: 356 - 3044 mm Height: 335 - 3022 mm	E 30 (o <-> i) EI 30 (o <-> i) EW 30 (o <-< i)	DMT-DO-61-234 DMT-DO-61-247 DMT-DO-61-268 DMT-DO-61-272 E-6108-DMT-DO	
	5.4	Fire propagation		npd		The property is to be proven based on the object.
	5.5	Water tightness	Variant 1 / 2 / 3: Field grid Width: 800 - 1487 mm Height: 800 - 3200 mm	EN 13050 Static 1200 Pa Dynamic 900 Pa / 300 Pa ---------- CWCT Static 1200 Pa Dynamic 750 Pa ---------- ASTM Static 720 Pa	Wintech R20534 09.12.2019	Transferable to all facades with the same design and the same materials in the area relevant to the seal, provided that the deflection restriction is complied with.
	5.6	Dead load		npd		The property is to be proven based on the object.
	5.7	Resistance to wind load	Variant 1 / 2 / 3: Field grid Width: 800 - 1487 mm Height: 800 - 3200 mm	Permissible 2,4 kN/m^2 Augmented 3,6 kN/m^2	Wintech R20534 09.12.2019	Smaller grid dimensions than the maximum tested field grid in compliance with the deflection limitation according to EN 1990 and EN 1991.
	5.8	Resistance to snow load		npd		The property is to be proven based on the object.
	5.9	Shock resistance	Variant 1 / 2 / 3: Field grid Width: 800 - 1487 mm Height: 800 - 3200 mm	I5 / E5	Wintech R20534 09.12.2019	All façades with the same design (e.g. bolting of pressure profiles, connectors, etc.) and the same materials with smaller or comparable grid dimensions and comparable stiffness in compliance with the deflection limitation according to EN 1990 and EN 1991.

5. Overview of performance characteristics

	Section of the product standard EN 13830		Variant / Type / Design	Value / Class	Evidence	Application range
	5.10	Resistance to horizontal live loads at parapet height		npd		The property is to be proven based on the object.
	5.11	Earthquake resistance		npd		The property is to be proven based on the object.
	5.12	Airborne soand insulation	Test specimen: Width: 1230 mm Height: 1480 mm 8 mm / 20 mm argon / 6 mm Rw = 38 dB 9 mm VSG / 20 mm Ar / 6 mm VSG Rw = 41 dB 13 mm VSG / 20 mm Ar / 9 mm VSG Rw = 48 dB 17 mm VSG / 14 mm Ar / 6 mm / 12 mm Ar / 13 mm VSG Rw = 52 dB	 ≤ 35 dB ≤ 37 dB ≤ 43 dB ≤ 46 dB“	SG-Bauakustik 2029-001-23 06.03.2024	The measurement results are only valid for each tested sample. A transfer to other dimensions, grids or fillings is not regulated. The proof must be provided in relation to the object. More concrete pre-dimensioning values can be found in the planning aid.
	5.13	Flank protrusion		npd		The property is to be proven based on the object.
	5.14	Heat transfer	 FP perineal layer strip FP perineal layer strip	Uf [W/m²K] ≥ 1,4 ≥ 1,5		The specific U_f value for each profile can be taken from the graphics in the certificate. The calculation of the heat transmission coefficient U_{CW} of a curtain wall element shall be performed according to EN 13947.
	5.15	Air permeability	Variant 1 / 2 / 3: Field grid Width: 800 - 1487 mm Height: 800 - 3200 mm	AE 900	Wintech R20534 09.12.2019	Transferable to all façades with equal design and materials in the sealing-relevant area, in compliance with the deflection limit.
	5.16	Radiation properties		npd		The property is to be proven based on the object.
	5.17	Durability		npd		The manufacturer shall make recommendations regarding the maintenance requirements of the finished curtain wall.

6. Overview of further performance characteristics (not included in EN 10830)

	Other performance features		Variant / Type / Design	Value / Class	Evidence	Application range
	6.1	Clamp connection Fall protection according to EN 18008-4			Z-14.4-463 Test certificate/ Assessment: - VT 19-00921-01b - VT 19-00921-02a - VT 19-0987-01a	The characteristic tensile force per screw of ≥ 3 kN at a screw distance of 255 mm allows a direct application of table 2 from EN 18008-4. The indications in the approval must be fully observed. A deviation from the specifications can result in a system failure.
	6.2	Mullion transom connection	Variant 1 / 2 / 3		Z-14.4-878 Test certificate/ Assessment: H-032-22	The indications in the approval must be fully observed. A deviation from the specifications can result in a system failure.
	6.3	Burglar resistance	Trigon FS 050 FP Trigon FS 050 with insert elements WS 075, WS 075 OU,WS 075 IS,DS 075, Duo 90, Duo 90 IS, Lambda 110 Trigon FS 050 with insert elements WS 075, WS 075 OU,WS 075 IS,DS 075, Duo 90, Duo 90 IS, Lambda 110	RC 2 (N) RC 3 RC 2(N) RC 3	PIV 45-31/20.123 PIV 45-32/20.123 PIV 45-87/19 PIV 45-89/19	Transferable to façades with equal or larger dimensions, in compliance with the specifications for the pressure plate profile screwing.
	6.4	Bullet resistance		npd		
	6.5	Blast resistance		npd		
	6.6	Suitability for passive houses				
	6.7	Load capacity	Load capacity facade swords Load capacity sunshade fasteners Load capacity scaffolding anchors Load bearing capacity building connections		H-015-19-07 H-015-19-09 H-015-19-10 H-015-19-13	