ift-Nachweis

Number	24-001107-PR01 (NW-K26-09-en-01)
Owner	E.u.r.o.Tec GmbH Unter dem Hofe 5 58099 Hagen Germany
Product	**Fasteners for window installation**
Designation	**Spacer screw:** Beton-Rahmenschraube **Fixing base:** Betonsturz C35/45, KS-Planstein KS R(P), Schlagmann POROTON®-S8® Objektziegel, Aerated concrete YTONG Planblock PPW 4/0,5 sowie KVH-Holz Fichte
Tested distance "e":	20 mm

Result

Determination of the load-bearing capacity with centric tension, shear load (shear) and with transverse load rectangular to window level at a distance "e" as per ift-Guideline MO-02/1:2015-06, Section 4.1.3.1, 4.1.3.2 and 4.1.3.3

(Detailed results according to ift-Guideline MO-02/1, see page 2 – 6)

ift Rosenheim
08.11.2024

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Basis

ift-Richtlinie MO-02/1:2015-06

Test report: 24-001107-PR01 PB-K26-09-de-01

Representation

Instructions for use

The results obtained can be used as evidence in accordance with the above basis.

Validity

There is no time limit.

When using this document the up-to-dateness of above basis and the conformity of the product have to be observed.

The data and results given relate solely to the tested/described specimen.

This test does not allow any statement to be made on further characteristics of the present structure regarding performance and quality, in particular the effects of weathering and ageing.

Notes on publication

The ift-Guidance Sheet "Conditions and Guidance for the Use of ift Test Documents" applies. The document may only be published in full.

Identity-Check

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1 Summary

1.1 Results – Determination of load capacity of fastening system as per ift-Guideline MO-02/1 Section 4.1.3.1, 4.1.3.2 and 4.1.3.3

Fastening system	Tested load case	Distance „e“	Characteristic load-bearing capacity F_{RK} in kN[1] at deflection δ_F in mm			
			$F_{Rk,1mm}$	$F_{Rk,2mm}$	$F_{Rk,3mm}$	$F_{Rk,c,max}$
Variant 01: Concrete frame screw (Ø7.5 x 132) mm in the fixing base Concrete lintel C35/45	Extract	---	---	---	---	**3,44** [1) 2)]
	Transverse load (Shear off)	---	---	---	---	**2.38** [1) 2)]
	Negative wind pressure	20 mm	0.16	0.38	**0.55**	**0.69** [1) 2)]

1) Characteristic load which ensures with a 75 % probability that 95 % of the values are higher than this (5 % fractiles)

2) A correction factor, determined from the average standardized lithographic strength f_b divided by the actual lithographic strength of the tested samples $f_{c,test}$ was taken into account.

1.1.1 Requirements as per ift-Guideline MO-02/1 Section 5.1 in [kN]

Fastening system	Tested load case	Distance „e“	$F_{Rk,3mm} = F_{Rd,3mm} = F_{empf,3mm}$	$F_{Rk,c,max}$	$F_{Rd,max}$	$F_{empf,max}$	authoritative F_{empf}
Variant 01: Concrete frame screw (Ø7.5 x 132) mm in the fixing base Concrete lintel C35/45	Negative wind pressure	20 mm	0.55	0.69	0.55	**0.40**	**0.40** [3)]

3) Requirement according to ift-Guideline MO-02/1 Section 5.1 $F_{empf,max} \geq F_{empf,\delta}$ not fulfilled

Design load (shear off screw)	$F_{Rd,max} = F_{RK,max} / \gamma_m$	mit $\gamma_m = 1.25$
Recommended load (service load)	$F_{empf,max} = F_{Rd,max} / \gamma_F$	mit $\gamma_F = 1.4$
Condition according to ift-Guideline MO-02/1 Clause 5.1 Equation (7)	$F_{empf,max} \geq F_{empf,\delta}$	

1.2 Results – Determination of load capacity of fastening system as per ift-Guideline MO-02/1 Section 4.1.3.1, 4.1.3.2 and 4.1.3.3

Fastening system	Tested load case	Distance „e“	Characteristic load-bearing capacity F_{Rk} in kN [1] at deflection δ_F in mm			
			$F_{Rk,1mm}$	$F_{Rk,2mm}$	$F_{Rk,3mm}$	$F_{Rk,b,max}$
Variant 02: Concrete frame screw (Ø7.5 x 132) mm in the fixing base Sand-lime brick Plane brick KS R(P)	Extract	---	---	---	---	**4,57** [1) 2)]
	Transverse load (Shear off)	---	---	---	---	**1,83** [1) 2)]
	Negative wind pressure	20 mm	0,23	0,48	**0,67**	**1,06**

1) Characteristic load which ensures with a 75 % probability that 95 % of the values are higher than this (5 % fractiles)

2) A correction factor, determined from the average standardized lithographic strength f_b divided by the actual lithographic strength of the tested samples $f_{b,test}$ was taken into account.

1.2.1 Requirements as per ift-Guideline MO-02/1 Section 5.1 in [kN]

Fastening system	Tested load case	Distance „e“	$F_{Rk,\ 3mm}$ = $F_{Rd,\ 3mm}$ = $F_{empf,\ 3mm}$	$F_{Rk,b,max}$	$F_{Rd,max}$	$F_{empf,max}$	authoritative F_{empf}
Variant 02: Concrete frame screw (Ø7.5 x 132) mm in the fixing base Sand-lime brick Plane brick KS R(P)	Negative wind pressure	20 mm	0,67	1,06	0,85	**0,61**	**0,61**[3)]

3) Requirement according to ift-Guideline MO-02/1 Section 5.1 Fempf, max ≥ Fempf, δ not fulfilled

Design load (shear off screw) $F_{Rd,max} = F_{RK,max} / \gamma_m$ mit $\gamma_m = 1.25$

Recommended load (service load) $F_{empf,max} = F_{Rd,max} / \gamma_F$ mit $\gamma_F = 1.4$

Condition according to ift-Guideline MO-02/1 Clause 5.1 Equation (7) $F_{empf,max} \geq F_{empf,\delta}$

1.3 Results – Determination of load capacity of fastening system as per ift-Guideline MO-02/1 Section 4.1.3.1, 4.1.3.2 and 4.1.3.3

Fastening system	Tested load case	Distance „e“	Characteristic load-bearing capacity F_{Rk} in kN [1] at deflection δ_F in mm			
			$F_{Rk.1mm}$	$F_{Rk.2mm}$	$F_{Rk.3mm}$	$F_{Rk.b.max}$
Variant 03: Concrete frame screw (Ø7.5 x 212) mm in the fixing base Schlagmann POROTON®-S8® object tiles	Extract	---	---	---	---	**0.16** [1) 2)]
	Transverse load (Shear off)	---	---	---	---	**1.22** [1) 2)]
	Negative wind pressure	20 mm	0.14	0.38	**0.58**	**1.03** [1) 2)]

1) Characteristic load which ensures with a 75 % probability that 95 % of the values are higher than this (5 % fractiles)

2) A correction factor. determined from the average standardized lithographic strength f_b divided by the actual lithographic strength of the tested samples $f_{b.test}$ was taken into account.

1.3.1 Requirements as per ift-Guideline MO-02/1 Section 5.1 in [kN]

Fastening system	Tested load case	Distance „e“	$F_{Rk.3mm} = F_{Rd.3mm} = F_{empf.3mm}$	$F_{Rk.b.max}$	$F_{Rd.max}$	$F_{empf.max}$	authoritative F_{empf}
Variant 03: Concrete frame screw (Ø7.5 x 212) mm in the fixing base Schlagmann POROTON®-S8® object tiles	Negative wind pressure	20 mm	0.58	1.03	0.41	**0.29**	**0.29** [3)]

3) Requirement according to ift-Guideline MO-02/1 Section 5.1 $F_{empf.\,max} \geq F_{empf.\,\delta}$ not fulfilled

Design load (fracture brick) $F_{Rd.max} = F_{RK.max} / \gamma_m$ mit $\gamma_m = 2.5$

Recommended load (service load) $F_{empf.max} = F_{Rd.max} / \gamma_F$ mit $\gamma_F = 1.4$

Condition according to ift-Guideline MO-02/1 Clause 5.1 Equation (7) $F_{empf.max} \geq F_{empf.\delta}$

1.4 Results – Determination of load capacity of fastening system as per ift-Guideline MO-02/1 Section 4.1.3.1, 4.1.3.2 and 4.1.3.3

Fastening system	Tested load case	Distance „e“	Characteristic load-bearing capacity F_{Rk} in kN [1] at deflection δ_F in mm			
			$F_{Rk.1mm}$	$F_{Rk.2mm}$	$F_{Rk.3mm}$	$F_{Rk.max}$
Variant 04: Concrete frame screw (Ø7.5 x 182) mm in the fixing base Aerated concrete YTONG Planblock PPW 4/0.5	Extract	---	---	---	---	**0,15** [1) 2)]
	Transverse load (Shear off)	---	---	---	---	**0.91** [1) 2)]
	Negative wind pressure	20 mm	0.12	0.23	**0.36**	**1.43** [1) 2)]

1) Characteristic load which ensures with a 75 % probability that 95 % of the values are higher than this (5 % fractiles)

2) A correction factor. determined from the average standardized lithographic strength f_b divided by the actual lithographic strength of the tested samples $f_{b.test}$ was taken into account.

1.4.1 Requirements as per ift-Guideline MO-02/1 Section 5.1 in [kN]

Fastening system	Tested load case	Distance „e“	$F_{Rk.3mm} = F_{Rd.3mm} = F_{empf.3mm}$	$F_{Rk.c.max}$	$F_{Rd.max}$	$F_{empf.max}$	authoritative F_{empf}
Variant 04: Concrete frame screw (Ø7.5 x 182) mm in the fixing base Aerated concrete YTONG Planblock PPW 4/0.5	Negative wind pressure	20 mm	**0.36**	1.43	0.71	0.51	**0.36**

Design load (fracture of aerated concrete) $F_{Rd.max} = F_{RK.max} / \gamma_m$ mit $\gamma_m = 2.0$

Recommended load (service load) $F_{empf.max} = F_{Rd.max} / \gamma_F$ mit $\gamma_F = 1.4$

Condition according to ift-Guideline MO-02/1 Clause 5.1 Equation (7) $F_{empf.max} \geq F_{empf.\delta}$

1.5 Results – Determination of load capacity of fastening system as per ift-Guideline MO-02/1 Section 4.1.3.1, 4.1.3.2 and 4.1.3.3

Fastening system	Tested load case	Distance „e“	Characteristic load-bearing capacity F_{Rk} in kN [1] at deflection δ_F in mm			
			$F_{Rk.1mm}$	$F_{Rk.2mm}$	$F_{Rk.3mm}$	$F_{Rk.max}$
Variant 05: Concrete frame screw (Ø7.5 x 132) mm in the fixing base Squared timber spruce	Extract	---	---	---	---	**8.55** [1]
	Transverse load (Shear off)	---	---	---	---	**3,19** [1]
	Negative wind pressure	20 mm	0.10	0.31	**0.44**	**1.28** [1]

1) Characteristic load which ensures with a 75 % probability that 95 % of the values are higher than this (5 % fractiles)

1.5.1 Requirements as per ift-Guideline MO-02/1 Section 5.1 in [kN]

Fastening system	Tested load case	Distance „e“	$F_{Rk.\,3mm}$ = $F_{Rd.\,3mm}$ = $F_{empf.\,3mm}$	$F_{Rk.b.max}$	$F_{Rd.max}$	$F_{empf.max}$	authoritative F_{empf}
Variant 05: Concrete frame screw (Ø7.5 x 132) mm in the fixing base Squared timber spruce	Negative wind pressure	20 mm	**0.44**	1.28	1.02	0.73	**0.44**

Design load (shear off screw) $F_{Rd.max} = F_{RK.max} / \gamma_m$ mit $\gamma_m = 1.25$
Recommended load (service load) $F_{empf.max} = F_{Rd.max} / \gamma_F$ mit $\gamma_F = 1.4$
Condition according to ift-Guideline MO-02/1 Clause 5.1 Equation (7) $F_{empf.max} \geq F_{empf.\delta}$