Disclaimer:

SCHÜCO

1. Door Information

Profile system:

Framing profile: **Weight:**

Transom profile: **Weight:**

Mullion profile: **Weight:**

Glass: **Block distance:**

Glass ID	Weight	Makeup

2. Applied Load

Peak velocity pressure(q_p) *kN/m²*

Pressure coefficient (c_p) c_{pe} c_{pi+} c_{pi-}

Horizontal live load (q_H): *kN/m* **Horizontal live load height:** *mm*

Dead load (D):

Density of glass	2500 *kg/m³*
Density of aluminum	2700 *kg/m³*
Density of thermal break	1270 *kg/m³*

(the weight of all other accessories is assumed to be 20% of the weight of thermal break)

Climatic conditions:

Indoor-outdoor temperature difference in summer	*K°*
Indoor-outdoor temperature difference in winter	*K°*

Load factors:

For wind loads	γ_W =
For temperature difference	γ_T =
For horizontal live loads	γ_H =
For dead load	γ_g =

Load combinations:

Load combination 1 (LC1)	γ_W*Wind load + γ_T*Thermal load + 0.7*γ_H*Horizontal live load
Load combination 2 (LC2)	0.6*γ_W*Wind load + 0.6*γ_T*Thermal load + γ_H*Horizontal live load
Load combination 3 (LC3)	γ_g*Dead load

3. Codes and Specifications

[1] DIN EN 1991-1-1, Actions on structures – Part 1-1: General actions – Densities, self-weight, imposed loads for buildings, 2010-12.

[2] DIN EN 1991-1-1, National Annex – Nationally determined parameters, Actions on structures – Part 1-1: General actions – Densities, self-weight, imposed loads for buildings, 2010-12.

[3] DIN EN 1991-1-4, Actions on structures – Part 1-4: General actions – Wind actions, 2010-12.

[4] DIN EN 1991-1-4, National Annex – Actions on structures – Part 1-4: General actions – Wind actions, 2010-12.

[5] DIN EN 1999-1-1, Design of aluminum structures – Part 1-1 General structural rules, 2014-03.

[6]

4. Allowable Deflection

In out-of-plane direction (horizontal), allowable deflection follows

In in-plane direction (vertical), allowable deflection

5. Materials

5.1 Aluminum -

Young's modulus	$E = 70 GPa$
Poisson's ratio	$\upsilon = 0.3$
0.2% apparent limit of elasticity	$\beta_{0.2} =$ N/mm^2

5.2 Thermal break -

Shear strength	-20°C	$R_{USv\_20} =$	N/mm	Elastic constant	-20°C	$C_{-20} =$	N/mm^2
Shear strength	+80°C	$R_{USv\_80} =$	N/mm	Elastic constant	+20°C	$C_{20} =$	N/mm^2
Tensile strength	-20°C	$R_{USt\_20} =$	N/mm	Elastic constant	+80°C	$C_{80} =$	N/mm^2
Tensile strength	+80°C	$R_{USt\_80} =$	N/mm				

Reduction factor for aging and behavior under long period of loading $A_2 = 1.2$