
Disclaimer:

This report and the contents herein are the sole property of Schüco International KG. Ownership, copyright and all similar intellectual rights belong exclusively to Schüco International KG. No technical information belonging to Schüco International KG may be disclosed or used by any third parties, whole or in part, except with written consent from Schüco International KG. Schüco International KG reserves the right to modify the contents and algorithm without prior notice. Use of this program, contents or methodology for purposes other than estimating, drawing preparation and/or manufacturing for Schüco International KG shall be cause for legal recourse by Schüco International KG.

1. Window Information

Profile System:

Framing Profile:

Transom Profile:

Mullion Profile:

Glass:

Glass ID Make up

2. Applied Load

Wind pressure (W): kN/m²

Horizontal live load (q_H): kN **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°

Part security factors: For external loads $\Phi_w =$

For temperature difference $\Phi_T =$

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] **DIN EN 13830**, Curtain wall product standard, 2015-07.

4. Allowable Deflection

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

In in-plane direction (y-direction), allowable deflection is the lower value of $L/$ and 3mm.

5. Materials

5.1 Aluminum -

Young's modulus	$E = 70\text{GPa}$
Poisson's ratio	$\nu = 0.3$
0.2% apparent limit of elasticity	$\beta_{0.2} = \text{MPa}$
Coefficient of thermal expansion	$\alpha = 23\text{e-}06 \text{ 1/K}$

5.2 Thermal break -

Shear strength	-20°C	$R_{USv_20} =$	N/m	Elastic constant	-20°C	$C_{-20} =$	N/mm^2
Shear strength	+80°C	$R_{USv_80} =$	N/m	Elastic constant	+20°C	$C_{20} =$	N/mm^2
Tensile strength	-20°C	$R_{USt_20} =$	N/m	Elastic constant	+80°C	$C_{80} =$	N/mm^2
Tensile strength	+80°C	$R_{USt_80} =$	N/m				
Reduction factor (A_2) for aging and behavior under long period of loading $A_2 = 1.2$							