Disclaimer:

SCHÜCO

1. Window Information

Profile System:

Framing Profile:

Transom Profile:

Mullion Profile:

Glass:

Glass ID	Make up

2. Applied Load

Wind pressure (W):	kN/m^2	
Horizontal live load (L):	--	
Dead load (D):	Density of glass	2500 *kg/m^3*
	Density of aluminum	2700 *kg/m^3*
	Density of thermal break	1270 *kg/m^3*
	(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	$\Phi_T =$
Reduction factor (A_2)	For aging and behavior under long period stressing	$A_2 = 1.2$

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

In in-plane direction (y-direction), allowable deflection is the lower value of L/300 and 3mm.

5. Materials

5.1 Aluminum - AW-6060 T66, standard: EC 9-1-1

Young's modulus	$E = 70\,GPa$
Poisson's ratio	$\upsilon = 0.3$
0.2% apparent limit of elasticity of Al Mg Si 0.5F22	$\beta_{0.2} = 160\ MPa$
Coefficient of thermal expansion	$\alpha = 23e\text{-}06\ 1/K$

5.2 Thermal break - Polythermide (PT)

Shear strength at -20°C	$R_{USv\_20} = 93\ N/m$	Elastic constant at -20°C	$C_{-20} = 132\ N/mm^2$
Shear strength at +80°C	$R_{USv\_80} = 53\ N/m$	Elastic constant at +20°C	$C_{20} = 112\ N/mm^2$
Tensile strength at -20°C	$R_{USt\_20} = 170\ N/m$	Elastic constant at +80°C	$C_{80} = 90\ N/mm^2$
Tensile strength at +80°C	$R_{USt\_80} = 100\ N/m$		