6. Result

6. Result for Structural Member			Article	
Length	*cm*	λ_{-20}	I_y	cm^4
Depth	*cm*	λ_{20}	I_l	cm^4
Weight	*N/m*	λ_{80}	I_s	cm^4
Tributary area	m^2	C_p	I_v	cm^4
Wind load	kN/m^2		v	

External load

Bending Moment (kN·cm) from Wind Load (and Horizontal Live Load) (SLS)

Summer

Winter

Metal Profile Normal Stresses (N/mm²) from Wind Load (and Horizontal Live Load) (SLS)

Summer

Winter

Thermal Isolator Shear Flow (N/mm) from Wind Load (and Horizontal Live Load) SLS)

Summer

Winter

Horizontal Deflection from Wind Load (mm)

Ambient

Vertical Deflection (mm)

Peak moments (SLS)

	Out-of-plane (*kN cm*)								In-plane (*kN cm*)	
	Summer				Winter					
	M_{omax}	M_{umax}	M_{vmax}	M_{temp}	M_{omax}	M_{umax}	M_{vmax}	M_{temp}	M_{omax}	M_{umax}
Wind load				--				--	--	--
Live load				--				--	--	--
Thermal load	--	--	--		--	--	--		--	--
Dead load	--	--	--	--	--	--	--	--		

Peak stresses

	Out-of-plane										In-plane	
	Summer					Winter						
	Aluminum (N/mm^2)				Isolator (N/mm)	Aluminum (N/mm^2)				Isolator (N/mm)	Aluminum (N/mm^2)	
	σ_{oo}	σ_{ou}	σ_{uo}	σ_{uu}	T_v	σ_{oo}	σ_{ou}	σ_{uo}	σ_{uu}	T_v	σ_o	σ_u
Wind load											--	--
Live load											--	--
Thermal load											--	--
Dead load	--	--	--	--	--	--	--	--	--	--		
LC1											--	--
LC2											--	--
LC3	--	--	--	--	--	--	--	--	--	--		

$$\sigma_{max} / \beta_{0.2} = max(max(\sigma_{oo}, \sigma_{ou}) + \sigma_o, max(\sigma_{uo}, \sigma_{uu}) + \sigma_u) / \beta_{0.2}$$

$$=$$

$$T_{max} / (R^S / A_2) = \begin{cases} Summer \\ \\ Winter \end{cases}$$

$$20 / R^T = \begin{cases} Summer \\ \\ Winter \end{cases}$$

Maximum deflection

Horizontal (Wind load at ambient temperature)

$\delta_h =$

$\delta_{h\_allow} =$

$\delta_h / \delta_{h\_allow} =$

Vertical (Dead load)

$\delta_v =$

$\delta_{v\_allow} =$

$\delta_v / \delta_{v\_allow} =$

$$1.1(T_{vw} + T_{vt}) / (R^s / A2) = \begin{cases} Summer \\ \\ Winter \end{cases}$$