Project	Brymbo		
Section	Load Calculation Sheet		
Reference	63287-1		
Page (#of#)	1 of 1	**Telephone**	**01308 459 950**
Date	10/03/2026	**Facsimile**	**01308 420 410**

SNOW LOAD - BS EN 1991-1-3:2003

FIXED	μ_i	Shape Coefficient	0.8	
FIXED	C_e	Exposure Coefficient	1.0	
FIXED	C_t	Thermal Coefficient	1.0	
VARIABLE INPUT	Z	Zone Number (Map)	3.0	Use Figure NA.1
VARIABLE INPUT	A	Altitude	213.00	(m)
CALC	S_k	Ground Snow Load at 100m	0.50	(kN/m^2)
	S		**0.40**	(kN/m^2)

WIND ACTIONS - BS EN 1991-1-4:2003

BASIC VALUE

FIXED	C_{dir}	Directional Factor	0.85	South as maximum effect
FIXED	C_{season}	Seasonal Factor	1.00	12 months of the year
VARIABLE INPUT	$V_{b,map}$	Wind Speed	23.00	(m/s), Use Figure NA.1
CALC	C_{alt}	Altitude Factor	1.21	
LINKED INPUT	A	Altitude	213.00	(m)
CALC	$V_{b,0}$	Basic Wind Velocity	27.90	$V_{b,map}$ x C_{alt}
FIXED	C_{prob}	Probability Factor	0.98	25 Years
CALC	**V_b**	**Basic Wind Velocity**	**23.24**	**C_{dir} x C_{season} X $V_{b,0}$ x C_{prob}**

MEAN WIND

VARIABLE INPUT	N/A	Slope	Less than 3° (1:20)	
CALC	C_o	Terrain Orography	1.00	

WIND TURBULENCE & PEAK VELOCITY PRESSURE

FIXED	$I_v(z)_{flat}$	Roughness Factor	0.2	Wind turbulence NA.5
VARIABLE INPUT	N/A	Distance From Shoreline	18-110km	
CALC	$c_e(z)$	Exposure Factor	1.60	
FIXED	ρ	Air Density	1.226	(kg/m^3)
CALC	q_b	Basic Velocity Pressure	331	
CALC	**$q_p(z)$**	**Peak Velocity Pressure (Where C_o = 1)**	**530**	**$C_e(z)$ x q_b**
CALC	**$q_p(z)$**	**Peak Velocity Pressure (Where C_o > 1)**	**530**	**$q_p(z)$ x $[(C_o(z) + 0.6)/1.6]^2$**

WIND LOAD - CANOPY ROOFS

FIXED	φ	Solidity ratio (canopy blockage)	0	No blockage = 0, Blockage = 1
LINKED INPUT	α	Angle of Panels	20	°
CALC	$c_f(+)/c_{pe}$	Overall Force Coefficient - Downward	0.80	Downward Pressure
CALC	$c_f(-)/c_{pi}$	Overall Force Coefficient - Upward	-1.30	Upward Pressure
CALC	**w_e**	**External Wind Pressure**	**0.424**	**w_e x c_{pe} (kN/m^2)**
CALC	**w_i**	**Internal Wind Pressure**	**0.689**	**w_i x c_{pi} (kN/m^2)**

SUMMARY

Qty Of Panels In Table	30.00	Panels
Total Output Of Table	n/a	kW
Total Length Of Table	20.79	meters
Total Panel Surface Area	99.42	m^2
Total Uplift On Table	68.46	kN
Total Lateral Load On Table	42.13	kN
Number Of Upright Assy	7.00	No.
Number Of Piles	14.00	No.
Uplift On Pile (Unfactored)	**4.89**	**kN**
Lateral Load On Pile (Unfactored)	**3.01**	**kN**

Ballast Summary

Uplift On Upright(s) - Pair (Unfactored)	9.78	kN
kN to Kg conversion (ballast weight)	997.30	Kg
Safety factor - 1.5	498.65	Kg
Final ballast weight (factored)	**1495.94**	**kg**

APPROVAL

Created By	Intial AH	Signed
Checked By	Intial DCC	Signed
Approved By	Intial DCC	Signed