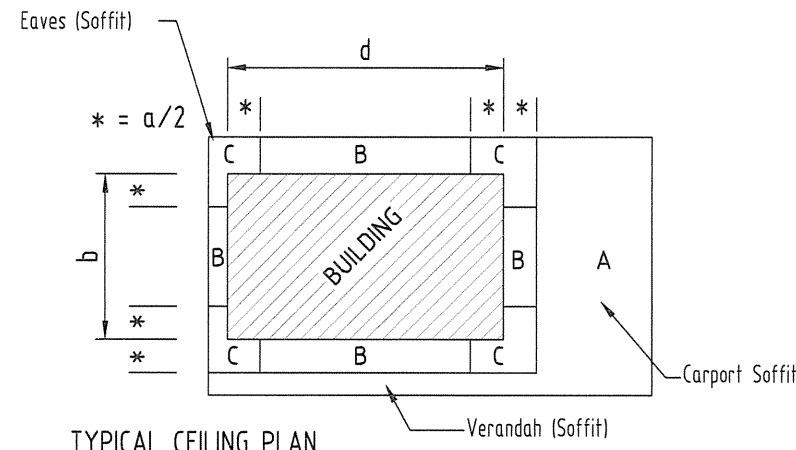


**NORTHERN TERRITORY TO COMPLY MANUAL - National Construction Code Volume 2 (Section 3.0.4 Structural resistance of material in high wind areas)**

This product has been determined to satisfy NCC Performance Requirement P2.1.1 for structural stability and resistance.



**TYPICAL CEILING PLAN**

Dimension 'a' is minimum 0.2 x 'b', 0.2 x 'd' or height of soffit above ground

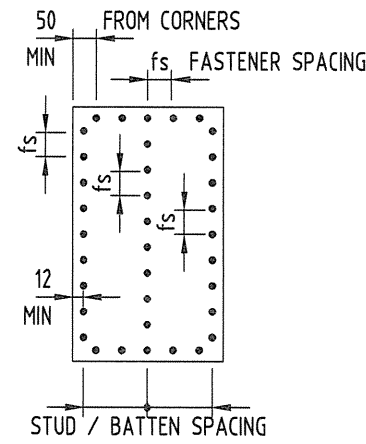
**LOCAL PRESSURE AREAS**

A - general areas away from building (x 1.0)

B - from  $\frac{a}{2}$  from building corners (x 1.5)

C - up to  $\frac{a}{2}$  from building corners (x 2.0)

$k_L$  - local pressure zone factor applied to wind speed



**TYPICAL 6mm 'DURALUX' FIXING DETAILS**

TESTS CONDUCTED		
TESTED CAPACITY PRESSURE (kPa)	STUD/BATTEN SPACING (mm)	FASTENER SPACING (mm)
-2.90	450	200
-5.76	300	150

CARPORT, VERANDAH AND EAVES (SOFFIT) LINING REQUIREMENTS				
TERRAIN CATEGORY	LOCAL PRESSURE AREA	ULTIMATE LIMIT STATE PRESSURE (kPa)	STUD/BATTEN SPACING (mm)	FASTENER SPACING (mm)
1	A	-1.91, +2.65	450	200
	B	-2.87, +3.97	450	200
	C	-3.82	300	150
2	A	-1.55, +2.15	450	200
	B	-2.33, +3.22	450	200
	C	-3.10	300	150
2.5	A	-1.42, +1.96	450	200
	B	-2.13, +2.94	450	200
	C	-2.84	450	200
3	A	-1.29, +1.79	450	200
	B	-1.94, +2.68	450	200
	C	-2.58	450	200
4	A	-1.29, +1.79	450	200
	B	-1.94, +2.68	450	200
	C	-2.58	450	200

**CONSTRUCTION NOTES**

- 'Duralux' shall be fastened to a steel or timber subframe in accordance with the support and fastener spacings tabulated above.
- Fasteners shall be fixed 12mm minimum from sheet edges and 50mm minimum from sheet corners.
- All sheet edges and joints must be supported by steel or timber framing.
- Fasteners to steel supports from 0.60mm B.M.T. to 1.6mm B.M.T. shall be 'Buildex' or similar M5x20 Countersunk Ribbed Head self-drilling screws.
- Fix to Hardwood (F14) supports with 30 X 2.8 galv. flat head nails.
- Duralux shall not be fixed directly to steel frames with a typical B.M.T. greater than 1.6mm, framing to be battened out prior to fixing.
- Exposed 'Duralux' lining must be painted.

**Notes covering basis of DTC (Relevant Test reports etc)**  
 Tables are based on a test program to AS 4040.3:1992 clause 6, carried out by James Cook University Cyclone Testing Station in May 2000.  
 It is confirmed that the requirements of AS 4040.3:2018 CL6 are consistent with the 1992 edition of the code.  
 The negative ULS pressures are deemed to govern, due to the associated critical failure mechanism.

**Checking Engineer**  
 Name: **Hon Yan Woo**  
 NT Registration Number: **47589ES**  
 Date: **16/12/2022**  
 Signature: *[Signature]*  
 Must be a registered structural engineer in the Northern Territory

**Certifying Engineer**  
 Name: **Peter Standen**  
 NT Registration Number: **289952ES**  
 Date: **16/12/2022**  
 Signature: *[Signature]*  
 Must be a registered structural engineer in the Northern Territory

Product Name  
**6.0mm 'DURALUX' Fibre Cement lining**

Product Description  
**EXTERNAL SOFFIT CLADDING (Flush Jointing)**

Manufacturer's Details  
**BGC Fibre Cement (Australia) Pty Ltd**  
 Ground Floor 290 Bushmead Rd, Hazelmere WA 6055, Australia  
 Postal Address: PO Box 1994, Midland DC WA 6936

**Design Criteria**

- REGION 'C' WIND LOADING TO AS / NZS 1170.2:2021 Structural Design Actions Part 2 - Wind Actions
- Limit State design pressures were determined in accordance with AS / NZS 1170.2:2021 Structural Design Actions Part 2 - Wind Actions using shielding, topographic, combination, dynamic response, and wind direction multipliers equal to 1.0.
- Strength: regional wind speed: V500 = 69.3m/s
- Terrain/Height Multiplier (Mz cat):
 

TC	h=5m
1	1.01
2	0.91
2.5	0.87
3	0.83
4	0.75
- Cpe = +0.7, -0.65
- Cpi = +0.0, -0.2 (Refer Below)
- BGC 'DURALINER and DURALUX' are equivalent fibre cemented products with different edge profiles only.

**Limitations**

- BGC External soffit lining to be painted to BGC specifications.
- Ceiling space has been designed for zero internal pressure or -0.2 (pressure coefficient) for sealed structure.
- Domestic housing up to 5 meters high (h ≤ 5m)
- 6mm 'Duralux' is an external soffit lining subject only to external pressure and suction loadings. Internal linings competent to resist internal design pressures must be installed. The racking strength of Duralux has not been tested and therefore should not be allowed for in the design of a structure.
- The building aspect ratio (r) of the structure to be ≤ 1. If r > 1 further checks of additional local pressures to be carried out by a fully qualified structural engineer. r is defined as the average roof height divided by the lesser of b and d.
- Testing was conducted for negative (suction) pressures only. Comparison has only been made between these values and the negative ULS values which are deemed to govern.
- A material capacity reduction factor of 0.8 was applied to the test capacity pressures nominated in the table to calculate the test pressures (Pt) used during the proof testing, which was carried out by Cyclone Structural Testing Station (James Cook University).

**Accepted for inclusion in Deemed to Comply Manual**

DTCM drawing number: **23-0264**

Chairperson Signature: *[Signature]*

Chairperson Name: **NEIL W. CLARKE**

Date of Approval: **25/01/2023** Expiry Date: **24/01/2028**