

Building Advisory Committee



POLICY NUMBER: BAC 2014/01

SHADE SAIL & SHADE STRUCTURE CONCESSIONS

Supersedes Policy BAC/2014/01

Scope: This policy supersedes all previous BAC policies relating to shade sail and shade structures.

The purpose of this policy is to regulate the design of small textile-covered structures in the NT. This concession policy only applies to individual permanent and temporary (event) structures with a canopy fabric area < 500m².

General requirements: Building certification is required for all types of framed (shade structures) and unframed (shade sail) structures. For the purposes of this policy, the terms shall be considered interchangeable. Exemptions exist in the NT Building Regulations for free-standing structures of a minor nature (less than 30 m²).

Textile coverings under this policy shall include impervious tension membranes (eg. PVC coated polyesters except fibreglass and Kevlar coated materials) and shade cloth materials of various permeability. The design of shade structures shall take into account canopy drainage and, where attached to buildings, load transfer.

This policy shall be read in conjunction with LSAA "Guidelines for Design, Fabrication and Installation of Tension Membrane and Shade Structures" (May 2012). This can be found at:

http://lsaa.org/images/pdf_files/LSAA%20Design%20Guidelines_2012_Compact.pdf

Siting Requirements: The requirement for a 1.5m setback to a side or rear boundary is exempt provided:

- (a) the textile fabric is greater than 900mm from the boundary; and
- (b) the structure is not placed over an easement; and
- (c) the structure otherwise complies with the NT Planning Scheme

Concessionary Wind Loading: Shade structures are to be designed in accordance with AS/NZS 1170.2 (latest amendment) using the regional wind speeds (V_R) given below. Wind direction multipliers, site exposure multipliers and area reduction factors may be used as per the Standard. Aerodynamic shape factors and shall be selected on the basis of the Standard, wind tunnel test data, Computational Fluid Mechanics, the European Design Guide for Tensile Surface Structures, Lightweight Structures Association of Australasia or other authoritative papers.

Average Recurrence Interval (ARI)	Application	Region C - (V_R) m/s	Region B - (V_R) m/s	Region A - (V_R) m/s
R = 67 years	Schools, NTG facilities, Shire Councils (public structures) ²	56	46	40
R = 35 years	Domestic structures private sector	49	42	38
Rs = 500 years @ S= 1 week S= 1 month S= 6 months	Temporary structures ¹ (S = duration of exposure for IL 2 structures < 300 pax)	39 50 62	33 43 53	34 39 43

ADOPTED BY THE BUILDING ADVISORY COMMITTEE ON 10 APRIL 2014


STEVEN EHRLICH
Chairman

.....See notes overleaf....



Building Advisory Committee



Notes:

1. Temporary (event) structures may use "Special Studies" as outlined in AS/NZS 1170.0 Appendix A to justify lower wind speeds. In the absence of a specific analysis of wind events for the site, the tabulated values apply. These values are from a paper by Wang & Lam AJSE Vol12 No2 (2012)
2. Structures provided with a viable means of removing the fabric in the event of a cyclone warning (possibly during 15-20 knot winds) and having written standing orders and client acceptance that this will happen, may be designed for a lower wind speed than tabulated above.
3. Notwithstanding the above, the ultimate strength limit state design wind speed (V_{des}) shall be not less than 30m/s.
4. Weak links may be incorporated into structures to prevent failure of the frame and footings provided that they have a proven and consistent failure load and do not release prior to the design wind load. Weak links shall be orientated such that in the event of failure, the main body of the connector remains attached to the support.
5. For background information refer to "Commentary on the existing Shade Structures Policy BAC 2005/1 and the need for a new policy" - Russell et al 2013.

