



HIRE AND RENTAL INDUSTRY ASSOCIATION LIMITED

EVENTS DIVISION

Temporary Structure / Marquee Pegging Guide

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INTRODUCTION EVENTS DIVISION

Temporary Structure / Marquee Pegging Guide

This guide has been put together by concerned members of the Events Division of the HRIA Ltd, including manufacturers, suppliers, rental companies and end users. It has been produced to offer guidance with regards to the safety and stability of marquees or temporary structures in outdoor areas.

The traditional methods of stability have been pegging and weighting. However, in recent years, with the increasing focus on OH&S and regulations, it has become harder and harder to use pegging because of concerns for underground services and ground quality.

This guide should be read in conjunction with the Weighting Guide.

These tables must only be used as a guide. The specific hold down weight equivalent MUST be assessed for the specific pavilions and site location by a qualified structural engineer.

This guide attempts to give all members a realistic pegging guide to ensure the structure is safe. The easy to read table is based on Terrain Category TC 2.5, which covers the majority of locations. The chart defines, through bay size and width, the hold down force required for each leg.

It is recommended that a load measuring peg puller be used to measure the holding power of a peg. This is done in terms of kg force equivalent to a 1kg weight. The number of pegs per base plate can be quickly calculated from this.

Any deviation from this guide should only be considered subject to a qualified engineers report. For example, in Darwin, event organisers and local engineers have agreed to use a wind gust speed of 30ms for events held during the dry season. The building code uses a wind speed of 69ms, so the reduction in hold down force required is very significant! It is advisable to provide a wind speed measuring device in these cases for monitoring purposes. The decision to use a reduced hold down force must not compromise ANY safety concerns regarding hold down.

It is also imperative that the client is made aware of any decisions you make here, as well as the implications of those decisions, eg to evacuate the facility if the wind speed exceeds the client chosen rate for the site.

Members of the HRIA Events Division work to this standard as a general guide and are encouraged to share this information with other interested parties such as councils and event venues.

Feedback is welcomed. Please contact the HRIA by email: info@hireandrental.com.au or phone 1800 015166 if you wish to comment or suggest on the guide and its contents. It can be downloaded from the HRIA webpage.

As with all guides of this nature your attention is drawn to the disclaimer. Also remember that you are responsible for OH&S, so if in doubt please consult the appropriate competent persons or engineer if you feel unsure about terrain or wind rating or location.

We hope you find the document useful and relevant.

James Oxenham
HRIA Ltd CEO

Erin Johnston
Events Division President

PEGGING GUIDE TABLE

Based on Terrain Category 2.5

Terrain Category (TC) 2.5 has been used as (TC) 3 specifies numerous closely spaced obstructions. i.e. Terrain with moderately closely spaced obstructions 3m to 5m such as areas on the fringes of suburban areas and country towns.

NB: Check Terrain Category with Local Authorities or Engineer if in doubt.

STRUCTURE WIDTH (span m)	BAY WIDTH (m)	No. Of PEGS PER LEG	HOLD DOWN FORCE REQUIRED PER LEG (kg)	HOLD DOWN FORCE REQUIRED PER PEG (kg)
6	3	2	513	257
6	4	2	694	347
9	3	2	725	363
10	5	4	1415	354
12	5	4	1657	414
15	5	4	2038	510

DISCLAIMER: This pegging guide has been produced for the use of Hire & Rental Industry Association Ltd members to offer guidance on the aspects of pegging structures as per the document. The information contained in the guide may be changed from time to time without notice. Members may verify the currency of the guide by contacting the HRIA Ltd directly by phone 02 9997 5166 or email info@hireandrental.com.au. The information contained within does not replace or replicate existing instructions, procedures, manuals, warnings or other programs available to owners or users of temporary structures. All information in the guide is given in good faith and is derived from sources believed to be accurate. However, the HRIA Ltd makes no representation as to the accuracy or completeness of this information and takes no responsibility for any damages or losses resulting from the use of the guide.

NOTE:

1. Maximum eave height of 2.1m/2.4m used for design.
2. Design for roof only allows for maximum of 50% of the walling installed. This is worst case scenario.
3. Maximum leg height of 3000mm.
4. Terrain category multipliers $M_d=1.0$, $M_t=1.0$ & $M_s=0.85$ have been used for design.
5. Roof pitch of 19 degrees used for design spans 10m and over, 24 degrees less than 10m.
6. Where structures are located side by side the pegging guidelines per leg still need to be followed.
7. For make and model specific loadings seek advice from the manufacturer or your structural engineer.

PEGGING GUIDE

GUIDANCE INFORMATION

The Engineering requirements for all structures are based on the Australian wind code AS1170. This divides the country into various regions and terrain categories.

For each Terrain Category, ranging from exposed open terrain with few or no obstructions to terrain with numerous closely spaced obstructions such as areas of suburban housing there is a site wind speed. This site wind speed is derived from the regional wind speed and from site environmental influences.

The regional wind speed is derived from the region the structure will be in, and the annual probability of exceedance.

The annual probability of exceedance is the probability that the regional wind speed will be exceeded in any year. It is also dependant on the importance level of a building, (eg a hospital as opposed to a domestic dwelling) and the degree of hazard to life and other property in the case of failure (eg a 20m x 50m pavilion as opposed to, say, a 3m x 3m frame tent).

The Australian Wind Codes as per AS1170 are as follows:

REGION	A1-A5	B	C	D
WIND SPEED	41ms	49ms	57ms	69ms
TERRAIN CATEGORIES				
Category 1	Exposed open terrain with few or no obstructions. This condition is rare and exists only for isolated buildings in flat, treeless, poorly grassed plains of at least 10km width. Usually not applicable to our industry.			
Category 2	Open terrain, grassland with few well scattered obstructions having heights generally from 1.5m to 10m.			
Category 2.5	Terrain with few trees and isolated obstructions. This is usually the worst case scenario for our industry.			
Category 3	Terrain with numerous, closely spaced obstructions such as areas of suburban housing (3 to 5m high).			