

# Safety Manual

This manual provides customers with useful information to help them devise their own processes and procedures for ensuring that their Tentipi® Event Tipis are safely built and remain safe over the time they are erected.

It is the responsibility of customers to ensure that the processes and procedures they adopt are adequate. Customers must not consider this manual as a definitive guide to all matters of safety – but it is a helpful guide.

Over 750 pages of formal structural calculations underpin much of the information presented here. The calculations have been performed by a specialist firm of consulting civil engineers with specific experience in fabric structures. Copies of the full calculations are available for inspection at Tentipi’s premises.

Customers can obtain a new copy of the Safety Manual from Tentipi in the event that the customer ever loses his or her copy, or, in the event that Tentipi modifies the Safety Manual.

Tentipi retains the right to modify the Safety Manual as it deems appropriate and that the customer is charged with the knowledge of the contents of any modified Safety Manual.

## CONFIDENTIALITY

This document is made available to customers who have purchased Tentipi® Event Tipis.

It contains confidential information and customers do not have the right to publish, copy, distribute or pass on this document in any form outside of their own company, save for the need to show it to safety authorities when requested to do so.

Failure to adhere to this restriction is a breach of Tentipi’s terms and conditions of sale.

Tentipi reserves the right to take any and all action it deems necessary to protect its interest in this material including legal and court action.

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# WARNING

Serious damage to property, severe bodily injury, and even death can result from:

- Improper anchoring of tipis;
- Improper assembly of tipis;
- Use of tipis in unsafe wind conditions or otherwise not in accordance with the Safe Wind Loads or Tentipi Event Tents summary sheet;
- Use of fire pit accessories within tipis;
- Failure to use proper personal protective equipment during assembly of tipis;
- Use of tipis on improper site locations; and,
- Failure to follow local building codes or fire ordinances.

# 1 Introduction

## 1.1 Purpose

- 1.1.1 This manual provides customers with useful information to help them devise their own processes and procedures for ensuring that their Tentipi® Event Tipis are safely built and remain safe over the time they are erected.
- 1.1.2 It is the responsibility of customers to ensure that the processes and procedures they adopt are adequate. Customers must not consider this manual as a definitive guide to all matters of safety – but it is a helpful guide.
- 1.1.3 Over 750 pages of formal structural calculations underpin much of the information presented here. The calculations have been performed by a specialist firm of consulting civil engineers with specific experience in fabric structures. Copies of the full calculations are available for inspection at Tentipi's premises.

## 1.2 Applicability

- 1.2.1 This manual applies only to Tentipi manufactured equipment that has been built in accordance with Tentipi's FieldReady™ Training Programme (FRTP) by competent people. It applies to all tipis delivered after 1 October 2014, and to those delivered prior to that date with the following minimum pole dimensions:

	Thick end, minimum diameter in mm	Thin end, minimum diameter in mm
<b>Stratus 72 &amp; Cirrus 72</b>		
Main pole	97.5mm at the end and 97.5mm measured 205cm from the end	60mm measured 15cm from the end
Cross pole	65	65
Roof pole	85mm at the end and 85mm measured at the roof support pole fixing point	75
Roof support pole	45	45
<b>Cirrus 40</b>		
Main pole	90	60
Cross pole	50	50

- 1.2.2 Non-Tentipi equipment, Tentipi equipment not built in accordance with the FRTP, and Tentipi equipment not built by competent people is not covered.
- 1.2.3 The calculations use:

- a) Timber properties relevant to the particular species of timber that Tentipi uses, grown in the location in which it is felled (a particular range of latitudes in the far north of Sweden).
- b) Fabric properties relevant to the fabric that Tentipi uses.
- c) The precise hardware components and fittings that Tentipi uses.
- d) The precise features, construction and sewing of the canvas that Tentipi uses.

1.2.4 Other species of timber, or the same species cut in different locations, other fabrics, other hardware or other canvas features will render the information presented here invalid.

1.2.5 For some Event Tipi models, Tentipi produces Pro and Base level pole sets, as well as Pro, Comfort and Base level canvases. This manual applies to Pro level pole sets and Pro level canvases only.

### **1.3 Basis of Calculations**

1.3.1 The calculations on which this manual is based are to current Eurocodes. They consider a number of tipi configurations as static structures, with wind, snow and service loads applied accordingly.

1.3.2 All the loads applied to each individual element (e.g. a roof pole) are combined to determine the forces within the element. These forces include moments; forces due to bending and shear; forces induced by “cutting actions”, compression and tension; forces due to stretching and squashing from each end.

1.3.3 Each element has a limit to the amount of force it can withstand before it fails (i.e. buckles or snaps). This limit is determined from testing or from standard values from Eurocodes as well as by its size, shape and orientation.

1.3.4 If the forces calculated are less than the limiting values, then the element is deemed acceptable.

1.3.5 Other checks are also performed to ensure an element complies with the relevant code, including combined checks and slenderness checks (as a means of classifying columns or struts).

## **2 Crew Training & Equipment**

### **2.1 Introduction**

2.1.1 Before venturing on to site to build the tipis, crew must be adequately trained and provided with the correct personal protective equipment and tools.

### **2.2 Training**

2.2.1 Health & Safety Training

2.2.1.1 The main areas of risk for crew working with Tentipi® Event Tipis are:

- a) Manual handling
- b) Slips, trips and falls
- c) Loading and unloading vehicles
- d) Driving to and from site
- e) Working at heights
- f) Use of tools.

2.2.1.2 Crew must be trained in all these aspects of risk.

2.2.1.3 Owners should put in place processes to manage these risks, and make sure that crew are properly trained in the processes.

2.2.2 Technical Training

2.2.2.1 Crew building the tipis must be trained in the techniques laid out in Tentipi's FieldReady™ Training Programme.

2.2.2.2 Processes must be put in place to ensure that the crew follow those techniques when on site.

### **2.3 Personal Protective Equipment**

2.3.1 Crew should be equipped with suitable personal protective equipment, such as:

- a) steel toe boots
- b) hard hat
- c) hi-visibility jacket

d) eye protection

e) gloves.

## **2.4 Tools**

2.4.1 Crew should be equipped with tools designed for industrial use. Tools designed for light commercial use are not appropriate.

## 3 Building Tentipi Event Tipis

### 3.1 Use of the Site Form

3.1.1 Tentipi has produced a *Site Form* to help ensure a safe approach to construction and operation each time a tipi is built.

### 3.2 Before Construction

3.2.1 Consider each site as a separate case, assess the risks on the particular site and take appropriate action.

- a) Look upwards. It is not a good idea to build under trees in case a branch falls off. It is a really bad idea to build near power lines as arcing can occur. Refer to local regulations about allowable proximity to power lines.
- b) Look underground. If you have accurate maps of services under the ground then use those. If not, adopt suitable techniques to find any underground obstructions. Live underground cables can be found using a CAT scanner for example.
- c) Look at other features of the site that may cause problems.

3.2.2 Record the result of the site risk assessment on the *Site Form*.

3.2.3 Before every build check the condition of the poles, hardware and canvas. Discard any damaged items, or have them repaired by a competent person. Evidence the check on the *Site Form*.

3.2.4 Check that the position at which the tipi will be erected allows appropriate access and egress for the public or guests (as appropriate), emergency vehicles, staff and equipment. Check the position of entrances to and exits from the tent. Draw a sketch of the site showing access and egress on the *Site Form*.

3.2.5 Immediately prior to construction, reference must be made to reliable weather forecasting services showing expected weather conditions for the duration of the construction, the event and the dismantling. The arrangement of tipis, including orientation, positioning of doors, and raising or lowering of sides, must be adjusted to take account of the expected weather conditions if necessary. Record the expected weather conditions on the *Site Form*.

3.2.6 Winds above 9m/s (20mph) make it extremely difficult and potentially dangerous to build the tipis. If winds above that level are expected, construction should be delayed. Once the tipis are built they are considered safe to use in wind speeds shown on the *Safe Wind Loads for Tentipi® Event Tipis* sheet.

3.2.7 Arrange for all non-construction personnel to be kept out of the site during construction.

### 3.3 Conduct Ground Anchor Tests

3.3.1 Conduct Ground Anchor Tests to check that the minimum pull out forces for the configuration being built can be achieved. Record the results of the tests on the *Site Form*.

3.3.2 The pull out forces needed are defined on the *Ground Anchor Requirements* sheets at the end of this document.

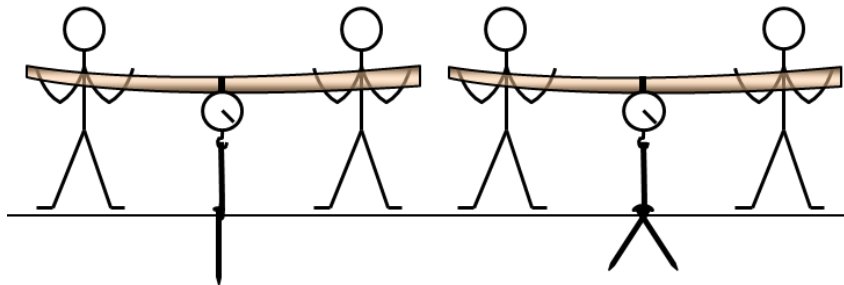
### 3.3.3 45 Degree Test & Vertical Test

3.3.3.1 The forces on each anchor point vary in size and direction. To get a properly representative test for each anchor we specify either a **45 Degree Test** or a **Vertical Test**. The *Ground Anchor Requirements* sheets define which test is needed for each anchor point.

3.3.3.2 The **45 Degree Test** is conducted by placing the anchor in the ground, and then using a pole and weighing scales to measure the pull out force as shown in the diagram below:



3.3.3.3 The **Vertical Test** is conducted by placing the anchor in the ground, and then using a pole and weighing scales to measure the pull out force as shown in the diagrams below:



3.3.3.4 Where it is not possible to exert sufficient force with these methods, use an alternative method (for example tripod and chain hoist).

### 3.3.4 Which Anchors to Test?

3.3.4.1 Tentipi supplies its tipis with a mix of 60cm and 45cm tent stakes which are suitable for a wide range of site conditions. However, there will be some ground conditions where the supplied stakes will not be suitable. Consider, for example, the difference between a site with dry sandy soil, and a site with a thin layer of soil over limestone rock. Consider also the difference on the same site if the soil is dry, or waterlogged, or frozen solid.



- 3.3.4.2 When testing, start with testing single 60cm and 45cm stakes, then move on to “crossed” 60cm and 45cm stakes with Tentipi ground anchor, and if these are not strong enough, devise alternative staking arrangements such as:
- a) Longer stakes.
  - b) Helical ground anchors.
- 3.3.4.3 On sites where the ground is concrete it is possible drill and use tent stakes as normal, or to use expansion bolts.
- 3.3.5 For sites where stakes and anchors are not allowed, Tentipi has developed a ballast solution for Stratus incorporating a wooden floor. It is properly calculated to withstand the wind loadings imposed on the tipis.

### **3.4 Construction**

- 3.4.1 Follow the method described in Tentipi’s FieldReady™ Training Programme (F RTP) to build and link the tipis as required. The F RTP covers:
- a) Building and dismantling of Stratus and Cirrus
  - b) Stratus pair to pair link
  - c) Stratus triangle link
  - d) Stratus – Cirrus 40 link.
- 3.4.2 Techniques and links not covered in the F RTP are not approved by Tentipi. Installers must take their own steps to ensure safety of non-standard techniques and links.

### **3.5 Assembled Structure Check**

- 3.5.1 Once the structure is complete, the person responsible for the construction should carry out an Assembled Structure Check, and record it on the *Site Form*.
- 3.5.2 Anchoring
- 3.5.2.1 Appropriate anchoring is defined by the results of the pull out tests.
- 3.5.2.2 Check that the following items have appropriate anchoring, and that stakes are driven fully home so they do not present a trip hazard:
- a) Every main pole.
  - b) Every D-ring around the bottom edge of the canvas at ground level.
  - c) Every strap.
- 3.5.2.3 No main pole, D-ring or strap should be left unanchored.

### 3.5.3 Fire Safety

3.5.3.1 Check that fire-fighting equipment is located as necessary.

3.5.3.2 Check that doorways are functioning properly with no obstructions.

3.5.3.3 Check that anything inside the tipi is laid out to respect local rule for number and size of fire escape routes and fire exits.

### 3.5.4 Outside the Tent

3.5.4.1 Check that the smoke cap bungees are anchored securely.

3.5.4.2 For Stratus only:

a) Check that every strap is correctly positioned, properly tensioned, not presenting a trip hazard and that the loose end is tied neatly away.

b) Check that gusset cords on all closed gussets are tied so that they can not loosen, and that the loose end is tucked into the bag.

3.5.4.3 For linked tipis only, look at the roof of the tipi in the area of the link. Check that it is tight and that there is no danger of ponding.

### 3.5.5 Inside the Tent

3.5.5.1 Check that there are no holes or tears in the canvas.

3.5.5.2 Check that the three webbing bands in the top edge of the canvas have been strapped to the radial frame.

3.5.5.3 Check that both canvas-fixing-flaps have been secured to each main pole.

3.5.5.4 Check that there is an L-pin connecting each main pole to the radial frame, and that each L-pin has an R-pin in its end.

3.5.5.5 Check that every cross-pole has an R-pin in both ends.

3.5.5.6 Check that the smoke cap is operating correctly.

3.5.5.7 For Stratus and Cirrus 72, check that two secondary poles are in place in each panel where the sides are down.

3.5.5.8 For Stratus only:

a) Check that the strap on every band pin is holding tightly and that the roof pole or roof support pole is tight against the pole it connects to.

b) Look at the canvas in any raised brim. Check that a strap has been fitted to the centre D-ring to create a V-shape for rain to run off and that there is no danger of ponding.

3.5.5.9 For linked tipis only:

- a) Check that linking poles are securely strapped to cross-poles and main-poles, as necessary, so that they can not move.
- b) Where linking poles are strapped to the centre of a cross-pole, ensure that both ends of the cross-pole are securely strapped to the main-pole.
- c) Look at the roof of the tipi in the area of the link. Check that it is tight and that there is no danger of ponding.

## **3.6 Handover**

3.6.1 Handover the structure to the user of the tent, covering as a minimum:

- a) Weather management plan, including evacuation plan
- b) Fire safety
- c) Operation of smoke caps
- d) A telephone number for the user to call in the event of an emergency – both within office hours and outside office hours.
- e) Arrangement for hand back and dismantling.

3.6.2 Record the handover on the *Site Form*.

## 4 Using Tentipi Event Tipis

### 4.1 Introduction

4.1.1 Once the tipis have been built, checked and handed over, responsibility for keeping them safe passes to the person or team who will operate the tipi until it is dismantled.

4.1.2 (In some cases, a handover may not occur, with the team that built the tipis remaining on site for the duration of the event).

### 4.2 Active Wind Management Process

4.2.1 The safe wind conditions in which the tipis can be used depends on the configuration of the tipis, which sides are “up” and “down”, and what linking techniques have been used.

4.2.2 The design wind loads are summarised on a single sheet *Safe Wind Loads for Tentipi Event Tipis*.

4.2.3 Wherever in the world our tipis are used the wind may, on some occasions, exceed the design wind load. To manage the structure safely an Active Wind Management plan must be put in place. Specific advice for such a plan may exist in a particular country or territory. Where local advice does not exist, Tentipi recommends basing the plan on the advice given by the UK’s Institute of Structural Engineer’s guide on Temporary Demountable Structures (3<sup>rd</sup> Edition) – known as TDS.

4.2.4 TDS states that the operational maximum gust speed should be taken as a one-second gust measured at 10m above ground level. To ensure safe operation, the maximum gust wind speed requires continuous measurement of the wind speed whilst people are in or around the structure and requires a management plan defining the procedures and action to be put in place should the operational maximum gust wind speed become likely to be exceeded.

4.2.5 It is suggested that such plans should include two levels of warning:

- a) Level 1 – when monitoring registers a gust wind speed in excess of 75% of the operational maximum gust speed in conjunction with an increasing general trend of recorded wind speed, staff should be put on alert that action may be required.
- b) Level 2 – when monitoring registers a gust wind speed in excess of 90% of the operational maximum gust speed in conjunction with an increasing trend in the wind speed records, the operational procedures defined in the management plan should be implemented and the site secured against access by the public.

4.2.6 Operational procedures can include:

- a) Closing the sides of any Stratus with their sides up.
- b) Fitting a TipiStar™ to a Stratus or Cirrus 72. TipiStar™ is available as an accessory.
- c) Increasing ground anchorage.
- d) Closing the roll up panel of a Cirrus.

- e) Removing the links between Stratus and Cirrus, and securing each tipi individually with all sides down.
- f) In the worst case, removing the canvases from the frames before the wind arrives.

### **4.3 Wind**

- 4.3.1 During the time that the tipi is erected, reference must be made to a reliable weather forecasting service at least once every 24 hours.
- 4.3.2 If expected weather conditions deteriorate such that adjustments to the tipi are needed, then a competent person must make the adjustments. In the worst case situation, it may be necessary to dismantle the tent. At all times the techniques defined in the FieldReady™ Training Programme must be followed.
- 4.3.3 If expected weather conditions deteriorate such that evacuation of the tipis is needed, implement the evacuation plan.

### **4.4 Snow**

- 4.4.1 The Stratus 72 is not designed to withstand heavy snow loads. To prevent the build-up and/or compaction of snow:
  - a) The tipi should be heated to at least 16 degrees C in order to decrease the risk of build-up of snow.
  - b) Fresh snow should be cleared from all canvas immediately.

### **4.5 Service Loads**

- 4.5.1 Nothing must be hung from the tent, except from the main poles and cross poles up to the following maximum loads:
  - a) 20kg/44lbs - Stratus 72/Cirrus 72 main pole
  - b) 11kg/24lbs - Stratus 72/Cirrus 72 cross pole
  - c) 16kg/35lbs - Cirrus 40 main pole
  - d) 9kg/20lbs - Cirrus 40 cross pole.
- 4.5.2 When hanging anything from the poles, take care that no sharp edges are against the canvas to reduce the risk of holes forming.
- 4.5.3 If nothing is hung from the poles, up to 150kg/330lbs can be hung from the radial-frame of Stratus and Cirrus 72, assuming an adequate means of securing the load to the radial frame.

### **4.6 Fire Safety**

- 4.6.1 Refer to local regulations to establish the number and size of fire exits and fire escape routes required in the tipi based on the occupancy. EN 13782:2015 gives useful advice for those in Europe.
- 4.6.2 Layout furniture and other internal equipment to respect the regulations. Ensure that fire escape routes and fire exits are kept clear at all times. Zippered doors functioning as fire exits must remain unzipped when the tipi is in use.

- 4.6.3 Understand and implement all other local fire regulations such as presence of fire extinguishers, access for emergency services and so on.
- 4.6.4 If using a fireplace inside the tipis, ensure that a thorough risk assessment has been performed and that there is a Fire Marshall on hand to tend the fire. Refer to the Fireplaces instructions within the FieldReady™ Training Programme for more information.

## **4.7 Adjust Sides Up or Down**

- 4.7.1 If it is necessary to raise the sides of a Stratus up or down, the work must be carried out by a competent person, using the techniques defined in the FieldReady™ Training Programme. Importantly, the canvas must be properly stretched and staked after the adjustment to ensure that wind loadings are maintained.

## **4.8 Adjust Smoke Cap**

- 4.8.1 To allow smoke from an open fire to escape from the apex of the tent, or to increase ventilation in hot weather, the smoke cap should be opened on the side that is in the lee of the wind. This causes the wind to pass across the tipi and suck the smoke/hot air out. Opening the smoke cap on the windward side will cause the wind to blow the smoke/hot air back into the tent.

## **4.9 Weekly Checks**

- 4.9.1 If tipis are left erected for extended periods, Tentipi recommends that the checks set out in section 3.5 are carried out each week, and immediately following a significant wind event.

## 5 Tipi Care & Repair

### 5.1 Poles

- 5.1.1 Poles must be stored under cover, off the ground and sheltered from rain and snow.
- 5.1.2 Poles must be handled with care at all times, especially when working at height.
- 5.1.3 Poles should not be dropped, they should be placed carefully.
- 5.1.4 Any poles presenting cracks or shakes perpendicular to the grain must be de-commissioned immediately.
- 5.1.5 Any poles presenting large cracks or shakes parallel to the grain should be inspected according to the Annual Checks guidelines.
- 5.1.6 Damage to metalwork fitted to poles can be fixed by replacing the piece of metalwork, as long as the pole has not been damaged.
- 5.1.7 Loose screws holding metalwork in place can be tightened. If a screw is not holding properly it may be possible to reposition it slightly.
- 5.1.8 Damage to timber can not be repaired. The pole must be replaced.

### 5.2 Canvas

- 5.2.1 All canvases must be handled with care at all times. Special care should be taken during erection and dismantling of tipis.
- 5.2.2 It is strongly advised to lay down a clean tarpaulin on the ground before unrolling the canvas when constructing the tent. Also, when dropping the canvas to the ground when dismantling the tipis.
- 5.2.3 Do not walk on a canvas.
- 5.2.4 Canvases must be completely dry before they are rolled up. They must be stored in a dry and vermin-free environment. If it is necessary to roll up a canvas when wet or damp, ensure that it is fully dried out within one week.
- 5.2.5 If a canvas needs cleaning, use cold water and a sponge or a soft brush. Do not use detergents or chemicals of any form. Do not pressure wash. Do not scrub.
- 5.2.6 If mould forms on the canvas a dilute solution of bleach (1 part bleach to 10 parts cold clean water) can be applied, and then immediately washed off with large quantities of clean, cold water. This process is to kill the mould spores to prevent spreading but may not remove the existing mould. Before undertaking this process, test the dilute bleach solution on an inconspicuous area of canvas. If this treatment is applied to a seam and the water repellency of the seam is damaged, Tentipi can supply impregnating agent.
- 5.2.7 Any necessary repairs to canvas should be completed at once.
- 5.2.8 Minor nicks, tears and abrasion damage can be repaired by gluing a patch of canvas to the inside of the tipi (uncoated side to uncoated side).
- 5.2.9 Minor damage to sewing can be repaired by hand-stitching using a sailmaker's palm, needles and thread.

5.2.10 The Tentipi Canvas Repair Kit contains the items necessary for these minor repairs.

5.2.11 More substantial repairs should be carried out by a Tentipi Authorised Repairer. Please ask your retailer for advice if this is needed.

### **5.3 Hardware**

5.3.1 Metalwork, ropes and straps should be kept clean and dry.

5.3.2 Ropes and straps fraying at the ends can be repaired by cutting off the frayed end and heat-sealing the new end, as long as the rope or strap is still long enough for its intended function.

5.3.3 Damage or fraying of ropes or straps, other than at the end, can not be repaired and the rope or strap should be replaced.

5.3.4 Damaged buckles and clips on straps can be repaired by sewing on a new buckle or clip, but it is likely to be cheaper to replace the strap.

5.3.5 Any bent or damaged canvas raising arch, radial frame, crown, spacer, L-pin or R-pin should be replaced.

5.3.6 Minor bending to tent stakes can be repaired by straightening in a vice. Check it after straightening to ensure it is sound. Damaged or badly bent stakes should be replaced.

5.3.7 TipiStar™ should be coiled and not folded, taking particular care not to introduce kinks. Damaged or frayed wires should be discarded.

### **5.4 Annual Checks**

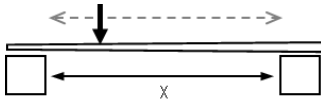
5.4.1 Tentipi suggests that, once a year, a detailed check of each tipi component is carried out and recorded. Ideally these checks should be carried out indoors in a space where it is possible to spread out the canvas.

5.4.2 The following checks should be carried out:

- a) Inspect each section of the canvas in turn. Defects should be logged and repaired. The Canvas Inspection Form can be used to record the results of the inspection.
- b) Visual inspection of each pole:
  - Look for cracks or shakes parallel to the grain that could weaken the pole. Small cracks will appear as the wood poles dry out, however cracks that are wide and deep enough so that a credit card can be inserted to more than half the pole's width should be discarded.
  - Where cracks or shakes are significant and in close proximity, potentially compromising the structural integrity of the pole, the pole should be discarded unless it passes the physical test described in point c).
  - Look at the metal fittings. Damaged fittings should be replaced. Screws should be tightened where possible. If a screw cannot be tightened or remains loose, the screw should be relocated, or the pole de-commissioned.
- c) Physical test of each pole:



- Main, cross and roof poles should be tested to ensure the strength of the pole is not compromised.
- Cross poles should be supported on testing stands, main poles should be supported on a radial frame at the connector end.



Pole Type	Dist. X
Main	8.00m
Cross	1.82m
Roof	3.00m

A person weighing approximately 50kg/110lbs to test the pole by slowly walking its length a minimum of four times. Care should be taken when performing this test to ensure the pole is secure.

d) Straps:

- Each strap shall be visually inspected across its entire length. The strap shall be de-commissioned and disposed of if major defects such as tears or large amounts of fraying are found.
- Each buckle shall be inspected. The strap shall be de-commissioned if the buckle is damaged.

e) Metalwork:

- Visually check all metalwork looking for damage.
- Pay attention to the condition of welds.
- De-commission any damaged metalwork.

## Safe Wind Loads for Tentipi Event Tipis

Configuration of Tipis		Low Wind Conditions	Normal Wind Conditions	High Wind Conditions	Unsafe Wind Conditions
Single Stratus/Cirrus 72 , all sides down	With TipiStar™	< 18.2m/s	< 21.5m/s	< 28.0m/s	> 28.0m/s
	Without TipiStar™	< 12.4m/s	< 16.2m/s	< 18.2m/s	> 18.2m/s
Single Stratus 72 , partial sides up	With TipiStar™	< 12.4m/s	< 16.2m/s	< 18.2m/s	> 18.2m/s
	Without TipiStar™	< 7.4m/s	< 9.8m/s	< 12.4m/s	> 12.4m/s
Single Stratus 72 , all sides up	With TipiStar™	< 7.4m/s	< 9.8m/s	< 12.4m/s	> 12.4m/s
	Without TipiStar™	< 7.4m/s	< 9.8m/s	< 12.4m/s	> 12.4m/s
Two Stratus 72 (pair to pair link), all sides down	With TipiStar™	<12.4m/s	<16.2m/s	<18.2m/s	>18.2m/s
	Without TipiStar™	< 9.8m/s	< 12.4m/s	< 16.2m/s	> 16.2m/s
Two Stratus 72 (pair to pair link), partial sides up	With TipiStar™	<7.4m/s	<9.8m/s	<12.4m/s	>12.4m/s
	Without TipiStar™	< 5.2m/s	< 7.4m/s	< 9.8m/s	> 9.8m/s
Three Stratus 72 (triangle link), all sides down	With TipiStar™	<12.4m/s	<16.2m/s	<18.2m/s	>18.2m/s
	Without TipiStar™	< 9.8 m/s	< 12.4m/s	< 16.2m/s	> 16.2m/s
Three Stratus 72 (triangle link), partial sides up	With TipiStar™	<7.4m/s	<9.8m/s	<12.4m/s	>12.4m/s
	Without TipiStar™	< 5.2m/s	< 7.4m/s	< 9.0m/s	> 9.0m/s
Stratus 72 - Cirrus 40 link	With TipiStar™	<12/4m/s	<15.2m/s	<18.2m/s	>18.2m/s
	Without TipiStar™	<12.4m/s	<15.2m/s	<17.2m/s	>17.2m/s
Cirrus 40, roll up panel closed		< 18.2m/s	< 21.5m/s	< 28.0m/s	> 28.0m/s
Cirrus 40, roll up panel open		< 12.4m/s	< 15.2m/s	< 18.2m/s	> 18.2m/s
Action		Normal care and attention to condition of tent	Special care and attention to condition of tent	Constant monitoring of condition of tent	Evacuate tipi immediately

Equivalent Wind Speeds									
m/s (mph)	5.2 (11.6)	7.4 (16.6)	9.0 (20.1)	9.8 (21.9)	12.4 (27.7)	16.2 (36.2)	18.2 (40.7)	21.5 (48.1)	28 (62.6)
Beaufort scale	3 Gentle breeze	4 Moderate breeze		5 Fresh breeze	6 Strong breeze	7 Near gale	8 Gale	9 Severe gale	10+ Storm
Observable effect	Leaves and small twigs constantly moving, light flags extended.	Dust and loose paper raised. Small branches begin to move.		Branches of a moderate size move. Small trees in leaf begin to sway.	Large branches in motion. Whistling in overhead wires. Umbrella use becomes difficult.	Whole trees in motion. Effort needed to walk against the wind.	Some twigs broken from trees. Cars veer on road. Progress on foot is seriously impeded.	Some branches break off trees, and some small trees blow over. Signs and barricades blow over.	Trees are broken off or uprooted, structural damage likely.

Notes: TipiStar™ is only available on size 72 tipis. With WallFlex fitted, assume “partial sides up” wind loadings.

## Pull Out Forces for Tentipi Event Tipis

Wind speed (m/s)	Main pole	3 D-rings fixed together at base of main-pole	2 D-rings fixed together at transitioning-gusset	D-rings between main-poles	When sides up, strap on centre of "up-panel" or "transitioning-panel"	External 11m clip straps & 3m clip straps outside covering canvases
<b>Test Method</b>	<b>45°</b>	<b>45°</b>	<b>45°</b>	<b>45°</b>	<b>Vertical</b>	<b>45°</b>
<b>Single Stratus, all sides down, with High Wind TipiStar™ (wire star)</b>						
9.0	40 kg / 88 lbs	120 kg / 265 lbs		32 kg / 71 lbs		
12.4	56 kg / 123 lbs	148 kg / 326 lbs		40 kg / 88 lbs		
16.2	104 kg / 229 lbs	170 kg / 374 lbs		64 kg / 141 lbs		
18.2	114 kg / 251 lbs	179 kg / 395 lbs		77 kg / 170 lbs		
28.0	133 kg / 293 lbs	207 kg / 456 lbs		100 kg / 220 lbs		
<b>Single Stratus, all sides down, without High Wind TipiStar™ (wire star)</b>						
9.0	42 kg / 93 lbs	120 kg / 265 lbs		32 kg / 71 lbs		
12.4	66 kg / 146 lbs	148 kg / 326 lbs		40 kg / 88 lbs		
16.2	111 kg / 245 lbs	170 kg / 374 lbs		64 kg / 141 lbs		
18.2	138 kg / 304 lbs	179 kg / 395 lbs		77 kg / 170 lbs		
<b>Single Stratus, partial sides up, with or without High Wind TipiStar™ (wire star)</b>						
9.0	127 kg / 280 lbs	120 kg / 265 lbs	408 kg / 899 lbs	32 kg / 71 lbs	104 kg / 229 lbs	
12.4	178 kg / 392 lbs	148 kg / 326 lbs	640 kg / 1410 lbs	61 kg / 134 lbs	180 kg / 397 lbs	
<b>Single Stratus, all sides up, with or without High Wind TipiStar™ (wire star)</b>						
9.0	72 kg / 159 lbs				79 kg / 174 lbs	
12.4	132 kg / 291 lbs				160 kg / 353 lbs	

## Pull Out Forces for Tentipi Event Tipis

Wind speed (m/s)	Main pole	3 D-rings fixed together at base of main-pole	2 D-rings fixed together at transitioning-gusset	D-rings between main-poles	When sides up, strap on centre of “up-panel” or “transitioning-panel”	External 11m clip straps & 3m clip straps outside covering canvases
<b>Test Method</b>	<b>45°</b>	<b>45°</b>	<b>45°</b>	<b>45°</b>	<b>Vertical</b>	<b>45°</b>
<b>Two Stratus pair-to-pair link, all sides down, with TipiStar™</b>						
9.0	74 kg / 163 lbs	84 kg / 185 lbs	215 kg / 474 lbs	52 kg / 115 lbs		60 kg / 132 lbs
12.4	127 kg / 280 lbs	111 kg / 245 lbs	330 kg / 728 lbs	76 kg / 168 lbs		95 kg / 209 lbs
16.2	186 kg / 410 lbs	140 kg / 309 lbs	461 kg / 1016 lbs	101 kg / 223 lbs		151 kg / 333 lbs
18.2	212 kg / 467 lbs	156 kg / 344 lbs	541 kg / 1192 lbs	119 kg / 262 lbs		176 kg / 388 lbs
<b>Two Stratus pair-to-pair link, all sides down, without TipiStar™</b>						
9.0	77 kg / 170 lbs	84 kg / 185 lbs	215 kg / 474 lbs	52 kg / 115 lbs		60 kg / 132 lbs
12.4	157 kg / 346 lbs	111 kg / 245 lbs	330 kg / 728 lbs	76 kg / 168 lbs		95 kg / 209 lbs
16.2	255 kg / 562 lbs	140 kg / 309 lbs	461 kg / 1016 lbs	101 kg / 223 lbs		151 kg / 333 lbs
<b>Two Stratus pair-to-pair link, partial sides up, with TipiStar™</b>						
9.0	208 kg / 459 lbs	84 kg / 185 lbs	415 kg / 915 lbs	58 kg / 128 lbs	120 kg / 265 lbs	290 kg / 639 lbs
12.4	325 kg / 717 lbs	111 kg / 245 lbs	684 kg / 1507 lbs	92 kg / 203 lbs	212 kg / 467 lbs	440 kg / 970 lbs
<b>Two Stratus pair-to-pair link, partial sides up, without TipiStar™</b>						
9.0	208 kg / 459 lbs	84 kg / 185 lbs	415 kg / 915 lbs	58 kg / 128 lbs	120 kg / 265 lbs	290 kg / 639 lbs
9.8	248 kg / 547 lbs	90 kg / 198 lbs	474 kg / 1045 lbs	66 kg / 146 lbs	136 kg / 300 lbs	312 kg / 688 lbs

## Pull Out Forces for Tentipi Event Tipis

Wind speed (m/s)	Main pole	3 D-rings fixed together at base of main-pole	2 D-rings fixed together at transitioning-gusset	D-rings between main-poles	When sides up, strap on centre of “up-panel” or “transitioning-panel”	External 11m clip straps & 3m clip straps outside covering canvases
<b>Test Method</b>	<b>45°</b>	<b>45°</b>	<b>45°</b>	<b>45°</b>	<b>Vertical</b>	<b>45°</b>
<b>Three Stratus triangle link, all sides down, with TipiStar™</b>						
9.0	95 kg / 209 lbs	80 kg / 176 lbs	144 kg / 317 lbs	60 kg / 132 lbs		37 kg / 82 lbs
12.4	140 kg / 309 lbs	112 kg / 247 lbs	260 kg / 573 lbs	82 kg / 181 lbs		79 kg / 174 lbs
16.2	208 kg / 459 lbs	148 kg / 326 lbs	389 kg / 858 lbs	116 kg / 256 lbs		127 kg / 280 lbs
18.2	245 kg / 540 lbs	167 kg / 368 lbs	464 kg / 1023 lbs	135 kg / 298 lbs		154 kg / 340 lbs
<b>Three Stratus triangle link, all sides down, without TipiStar™</b>						
9.0	112 kg / 247 lbs	80 kg / 176 lbs	144 kg / 317 lbs	60 kg / 132 lbs		37 kg / 82 lbs
12.4	181 kg / 399 lbs	112 kg / 247 lbs	260 kg / 573 lbs	82 kg / 181 lbs		79 kg / 174 lbs
16.2	280 kg / 617 lbs	148 kg / 326 lbs	389 kg / 858 lbs	116 kg / 256 lbs		127 kg / 280 lbs
<b>Three Stratus triangle link, partial sides up, with TipiStar™</b>						
9.0	240 kg / 529 lbs	79 kg / 174 lbs	360 kg / 794 lbs	82 kg / 181 lbs	117 kg / 258 lbs	280 kg / 617 lbs
12.4	373 kg / 822 lbs	104 kg / 229 lbs	600 kg / 1323 lbs	92 kg / 203 lbs	194 kg / 428 lbs	445 kg / 981 lbs
<b>Three Stratus triangle link, partial sides up, without TipiStar™</b>						
9.0	240 kg / 529 lbs	79 kg / 174 lbs	360 kg / 794 lbs	82 kg / 181 lbs	117 kg / 258 lbs	280 kg / 617 lbs

## Pull Out Forces for Tentipi Event Tipis

Wind speed (m/s)	Main pole	3 D-rings fixed together at base of main-pole	2 D-rings fixed together at transitioning-gusset	D-rings between main-poles	When sides up, strap on centre of "up-panel" or "transitioning-panel"	External 11m clip straps & 3m clip straps outside covering canvases
Test Method	45°	45°	45°	45°	Vertical	45°
<b>Stratus-Cirrus 40, all sides down, with TipiStar™</b>						
9.0	112 kg / 247 lbs	74 kg / 163 lbs	111 kg / 245 lbs	36 kg / 79 lbs		181 kg / 399 lbs
12.4	181 kg / 399 lbs	104 kg / 229 lbs	156 kg / 344 lbs	47 kg / 104 lbs		284 kg / 626 lbs
18.2	319 kg / 703 lbs	125 kg / 276 lbs	218 kg / 481 lbs	77 kg / 170 lbs		460 kg / 1014 lbs
<b>Stratus-Cirrus 40, all sides down, without TipiStar™</b>						
9.0	112 kg / 247 lbs	74 kg / 163 lbs	111 kg / 245 lbs	36 kg / 79 lbs		181 kg / 399 lbs
12.4	181 kg / 399 lbs	104 kg / 229 lbs	156 kg / 344 lbs	47 kg / 104 lbs		284 kg / 626 lbs
17.2	335 kg / 739 lbs	119 kg / 262 lbs	205 kg / 452 lbs	64 kg / 141 lbs		428 kg / 944 lbs
<b>Cirrus 40, roll up panel closed</b>						
9.0	32 kg / 71 lbs	74 kg / 163 lbs		32 kg / 71 lbs		
12.4	50 kg / 110 lbs	104 kg / 229 lbs		40 kg / 88 lbs		
18.2	105 kg / 231 lbs	125 kg / 276 lbs		55 kg / 121 lbs		
28.0	176 kg / 388 lbs	143 kg / 315 lbs		61 kg / 134 lbs		
<b>Cirrus 40, roll up panel open</b>						
9.0	49 kg / 108 lbs	96 kg / 212 lbs		48 kg / 106 lbs		
12.4	76 kg / 168 lbs	130 kg / 287 lbs		56 kg / 123 lbs		
18.2	160 kg / 353 lbs	154 kg / 340 lbs		72 kg / 159 lbs		

## Kentledge Requirements for Tentipi Event Tipis

Where it is not allowed to penetrate the ground, Tentipi's Event Tipis can be built using weights instead of stakes. The amount of weight required at each point depends upon the configuration of the tipis, the expected wind conditions, and the friction between the weights and the ground.

The requirements set out in the following tables consider two different friction conditions between the kentledge and the ground. Friction conditions are expressed using a coefficient of friction  $\alpha$ , which is generally expected to have a value in the range of 0.2 to 0.6.

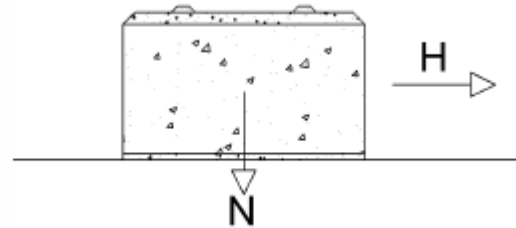
The coefficient of friction is the relation between a dead load (weight) and the horizontal load that makes it slide, according to the following formula:

$$\alpha = \frac{H}{N}$$

Where  $\alpha$  = coefficient of friction

N = dead load

H = horizontal load



All tent configurations in the following tables assume that a TipiStar™ is fitted to each Stratus.

## Kentledge Requirements for Tentipi Event Tipis

Wind speed (m/s)	Main pole	3 D-rings fixed together at base of main-pole	2 D-rings fixed together at transitioning-gusset	D-rings between main-poles	When sides up, strap on centre of "up-panel" or "transitioning-panel"	External 11m clip straps & 3m clip straps outside covering canvases
<b>Single Stratus, all sides down, with TipiStar™</b>						
$\alpha = 0.2$	9.0	180 kg / 397 lbs	467 kg / 1029 lbs		60 kg / 132 lbs	
	12.4	250 kg / 551 lbs	572 kg / 1261 lbs		90 kg / 198 lbs	
	16.2	460 kg / 1014 lbs	658 kg / 1450 lbs		143 kg / 315 lbs	
	18.2	502 kg / 1106 lbs	695 kg / 1532 lbs		172 kg / 379 lbs	
	28.0	586 kg / 1292 lbs	800 kg / 1763 lbs		221 kg / 487 lbs	
$\alpha = 0.6$	9.0	61 kg / 134 lbs	189 kg / 417 lbs		40 kg / 88 lbs	
	12.4	85 kg / 187 lbs	231 kg / 509 lbs		55 kg / 121 lbs	
	16.2	154 kg / 339 lbs	265 kg / 584 lbs		67 kg / 148 lbs	
	18.2	168 kg / 370 lbs	280 kg / 617 lbs		81 kg / 179 lbs	
	28.0	196 kg / 432 lbs	322 kg / 710 lbs		104 kg / 229 lbs	
<b>Single Stratus, partial sides up, with TipiStar™</b>						
$\alpha = 0.2$	9.0	570 kg / 1256 lbs	467 kg / 1029 lbs	1054 kg / 2323 lbs	138 kg / 304 lbs	154 kg / 339 lbs
	12.4	808 kg / 1781 lbs	572 kg / 1261 lbs	1652 kg / 3641 lbs	261 kg / 575 lbs	265 kg / 584 lbs
$\alpha = 0.6$	9.0	210 kg / 463 lbs	189 kg / 417 lbs	500 kg / 1102 lbs	60 kg / 132 lbs	107 kg / 236 lbs
	12.4	297 kg / 655 lbs	231 kg / 509 lbs	782 kg / 1724 lbs	109 kg / 240 lbs	183 kg / 403 lbs
<b>Single Stratus, all sides up, with TipiStar™</b>						
$\alpha = 0.2$	9.0	320 kg / 705 lbs				102 kg / 225 lbs
	12.4	582 kg / 1283 lbs				207 kg / 456 lbs
$\alpha = 0.6$	9.0	121 kg / 267 lbs				75 kg / 165 lbs
	12.4	221 kg / 487 lbs				153 kg / 337 lbs



## Kentledge Requirements for Tentipi Event Tipis

Wind speed (m/s)	Main pole	3 D-rings fixed together at base of main-pole	2 D-rings fixed together at transitioning-gusset	D-rings between main-poles	When sides up, strap on centre of “up-panel” or “transitioning-panel”	External 11m clip straps & 3m clip straps outside covering canvases	
<b>Two Stratus pair-to-pair link, all sides down, with TipiStar™</b>							
$\alpha = 0.2$	9.0	330 kg / 727 lbs	367 kg / 809 lbs	565 kg / 1245 lbs	223 kg / 491 lbs	244 kg / 538 lbs	
	12.4	560 kg / 1234 lbs	482 kg / 1062 lbs	797 kg / 1757 lbs	280 kg / 617 lbs	388 kg / 855 lbs	
	16.2	821 kg / 1809 lbs	612 kg / 1349 lbs	1058 kg / 2332 lbs	351 kg / 774 lbs	618 kg / 1362 lbs	
	18.2	934 kg / 2059 lbs	679 kg / 1497 lbs	1205 kg / 2656 lbs	379 kg / 835 lbs	723 kg / 1593 lbs	
$\alpha = 0.6$	9.0	124 kg / 273 lbs	135 kg / 298 lbs	263 kg / 580 lbs	87 kg / 192 lbs	96 kg / 212 lbs	
	12.4	212 kg / 467 lbs	177 kg / 390 lbs	384 kg / 846 lbs	110 kg / 242 lbs	152 kg / 335 lbs	
	16.2	310 kg / 683 lbs	226 kg / 498 lbs	516 kg / 1137 lbs	139 kg / 306 lbs	241 kg / 531 lbs	
	18.2	352 kg / 776 lbs	250 kg / 551 lbs	591 kg / 1303 lbs	151 kg / 333 lbs	282 kg / 622 lbs	
<b>Two Stratus pair-to-pair link, partial sides up, with TipiStar™</b>							
$\alpha = 0.2$	9.0	660 kg / 1455 lbs	367 kg / 809 lbs	986 kg / 2173 lbs	146 kg / 322 lbs	341 kg / 752 lbs	1032 kg / 2275 lbs
	12.4	1030 kg / 2270 lbs	482 kg / 1062 lbs	1545 kg / 3405 lbs	211 kg / 465 lbs	566 kg / 1247 lbs	1628 kg / 3588 lbs
$\alpha = 0.6$	9.0	298 kg / 657 lbs	135 kg / 298 lbs	469 kg / 1034 lbs	65 kg / 143 lbs	231 kg / 509 lbs	431 kg / 950 lbs
	12.4	465 kg / 1025 lbs	177 kg / 390 lbs	736 kg / 1622 lbs	94 kg / 207 lbs	411 kg / 906 lbs	678 kg / 1494 lbs

## Kentledge Requirements for Tentipi Event Tipis

Wind speed (m/s)	Main pole	3 D-rings fixed together at base of main-pole	2 D-rings fixed together at transitioning-gusset	D-rings between main-poles	When sides up, strap on centre of “up-panel” or “transitioning-panel”	External 11m clip straps & 3m clip straps outside covering canvases	
<b>Three Stratus triangle link, all sides down, with TipiStar™</b>							
$\alpha = 0.2$	9.0	437 kg / 963 lbs	355 kg / 782 lbs	466 kg / 1027 lbs	207 kg / 456 lbs	153 kg / 337 lbs	
	12.4	644 kg / 1419 lbs	497 kg / 1095 lbs	652 kg / 1437 lbs	284 kg / 626 lbs	324 kg / 714 lbs	
	16.2	962 kg / 2120 lbs	652 kg / 1437 lbs	855 kg / 1884 lbs	400 kg / 882 lbs	522 kg / 1150 lbs	
	18.2	1132 kg / 2495 lbs	736 kg / 1622 lbs	965 kg / 2127 lbs	465 kg / 1025 lbs	634 kg / 1397 lbs	
$\alpha = 0.6$	9.0	146 kg / 322 lbs	130 kg / 287 lbs	231 kg / 509 lbs	78 kg / 172 lbs	60 kg / 132 lbs	
	12.4	215 kg / 474 lbs	182 kg / 401 lbs	323 kg / 712 lbs	107 kg / 236 lbs	130 kg / 287 lbs	
	16.2	321 kg / 707 lbs	238 kg / 525 lbs	423 kg / 932 lbs	155 kg / 342 lbs	204 kg / 450 lbs	
	18.2	377 kg / 831 lbs	268 kg / 591 lbs	477 kg / 1051 lbs	180 kg / 397 lbs	247 kg / 544 lbs	
<b>Three Stratus triangle link, partial sides up, with TipiStar™</b>							
$\alpha = 0.2$	9.0	780 kg / 1719 lbs	338 kg / 745 lbs	910 kg / 2006 lbs	171 kg / 377 lbs	311 kg / 685 lbs	1036 kg / 2283 lbs
	12.4	1211 kg / 2669 lbs	442 kg / 974 lbs	1407 kg / 3101 lbs	251 kg / 553 lbs	514 kg / 1133 lbs	1645 kg / 3626 lbs
$\alpha = 0.6$	9.0	350 kg / 771 lbs	126 kg / 278 lbs	428 kg / 943 lbs	77 kg / 170 lbs	230 kg / 507 lbs	432 kg / 952 lbs
	12.4	542 kg / 1195 lbs	168 kg / 370 lbs	674 kg / 1485 lbs	112 kg / 247 lbs	376 kg / 829 lbs	686 kg / 1512 lbs
<b>Stratus-Cirrus 40, all sides down, with TipiStar™</b>							
$\alpha = 0.2$	9.0	531 kg / 1170 lbs	240 kg / 529 lbs	461 kg / 1016 lbs	126 kg / 278 lbs	600 kg / 1322 lbs	
	12.4	856 kg / 1887 lbs	337 kg / 743 lbs	648 kg / 1428 lbs	166 kg / 366 lbs	937 kg / 2065 lbs	
	18.2	1504 kg / 3315 lbs	539 kg / 1188 lbs	908 kg / 2001 lbs	244 kg / 538 lbs	1517 kg / 3343 lbs	
$\alpha = 0.6$	9.0	237 kg / 522 lbs	90 kg / 198 lbs	173 kg / 381 lbs	51 kg / 112 lbs	260 kg / 573 lbs	
	12.4	381 kg / 840 lbs	121 kg / 267 lbs	242 kg / 533 lbs	66 kg / 145 lbs	406 kg / 895 lbs	
	18.2	670 kg / 1477 lbs	192 kg / 423 lbs	338 kg / 745 lbs	97 kg / 214 lbs	656 kg / 1446 lbs	

# Site Form

## Site Details

Site Name & Address

Date of Construction

Person Responsible for Construction

## Site Risk Assessment

Identify site-specific risks and take appropriate action.

Risk Identified

Action Taken

## Site Layout

Sketch the layout of the site and the position of tipis on the site. Show position of doors, and access for emergency vehicles and equipment. Show which sides are up (Stratus only). Draw an arrow to show North.

## Expected Weather Conditions

Day	Date	Max Wind Speed	Wind Direction	Snow?	Rain?
Construction Day					
Day 1					
Day 2					
Day 3					
Day 4					
Day 5					
Day 6					

Notes

## Ground Anchor Tests

Test pull out forces in 5 locations for each of the tests and compare against the minimum pull out forces shown on the relevant Ground Anchor Requirements sheet. If the results of the tests are inadequate, devise alternative staking arrangements.

Test	Location 1	Location 2	Location 3	Location 4	Location 5
Single 45cm stake					
Double 45cm with Tentipi ground anchor					
Single 60cm vertical with 45cm embedment					
Single 60cm vertical					
Single 60cm at 45°					
Double 60cm with Tentipi ground anchor					

Other Tests/Notes

## Assembled Structure Check

Update the Site Layout sketch, giving each tipi a number starting at 1, and recording the serial number of each tipi on the sketch.

Check	Tent								
	1	2	3	4	5	6	7	8	9
<b>Anchoring</b>									
Check that every main pole has appropriate anchoring									
Check that every D-ring around the bottom edge of the canvas at ground level has appropriate anchoring									
Check that every strap has appropriate anchoring									
<b>Fire Safety</b>									
Check fire-fighting equipment									
Doorways functioning with no obstructions									
Correct number and size of escape routes and fire exits									
<b>Outside the Tent</b>									
Smoke cap ropes tied off									
[Stratus only] Straps positioned correctly, tight and tidy									
[Stratus only] Gusset cords secure and tidy									
[Linked tipis only] Roof in area of link tight with no chance of ponding									
<b>Inside the Tent</b>									
No holes or tears in the canvas									
Lifting points at top edge of canvas strapped to radial frame									
Both canvas-fixing-flaps strapped to every main pole									
L-pin and R-pin securing top of each main pole									
R-pin in both ends of every cross-pole									
Service loads not exceeded for hanging equipment									
[Not Cirrus 40] Two secondary poles in each "down" panel									
[Stratus only] Band pins strapped securely									
[Stratus only] Strap on centre of each raised brim and no danger of ponding									
[Linked tipis only] Linking pole securely strapped at both ends									
[Linked tipis only] Cross-poles supporting linking poles securely strapped at both ends									
[Linked tipis only] Canvas tight in area of link with no danger of ponding									
I confirm that the above checks have been carried out									
Signed (Installer)			Name			Date			

## Handover

### Weather management plan

The safe wind speed in which the structure can be used is \_\_\_\_\_. I will check a reliable weather forecast every 24 hours and, if the wind rises above this safe speed, I will evacuate the structure and clear the surrounding area.

I understand that the structure has no snow loading capacity and that, if there is a risk of snow, I must keep the tipi heated to at least 16°C day and night, taking special care that heaters do not run out of fuel.

### Fire Safety

I understand that the structure and the equipment within it has been laid out to respect fire regulations relating to number of size of fire exits and fire escape routes. If I adjust the interior layout, I will ensure that it continues to meet fire regulations.

### Use of Fireplaces

I will appoint a Fire Marshall who will ensure safe use of the fireplace.

I will not move the fireplace from its position in the centre of a tipi. I will not allow any combustible materials to be hung above the fireplace, nor placed on its surrounds. I will not allow anyone to sit on the fireplace surround.

I have been shown how to open and close the smoke caps. Opening the part of the smoke cap in the lee of the wind will help to draw out smoke from an open fire.

If some of the sides of the tipi are “up” and the wind direction is such that the smoke plume or flames are being deflected by the wind making the fire unmanageable, I will extinguish the fire. I will ensure that the fire is never left burning when unattended or when those present are asleep or otherwise unable to monitor it. If the fire needs to be left I will ensure that it is extinguished.

I will ensure that the fire is made of 4 or 5 logs no more than 30cm long. New logs will only be added once 50% of the logs have burned down. I understand that the idea is to create a small fire as a focal point, not a blazing inferno.

### Adjustments to the Structure

I will not make any adjustments to the structure.

### Emergency Number

In the event of an emergency, I can contact the installer day or night on \_\_\_\_\_

### Handback

Handback will occur on \_\_\_\_\_ at \_\_\_\_\_. I, or my authorised representative, will be on site at the time of handback.

I agree to the points noted above.

Signed (User)

Name

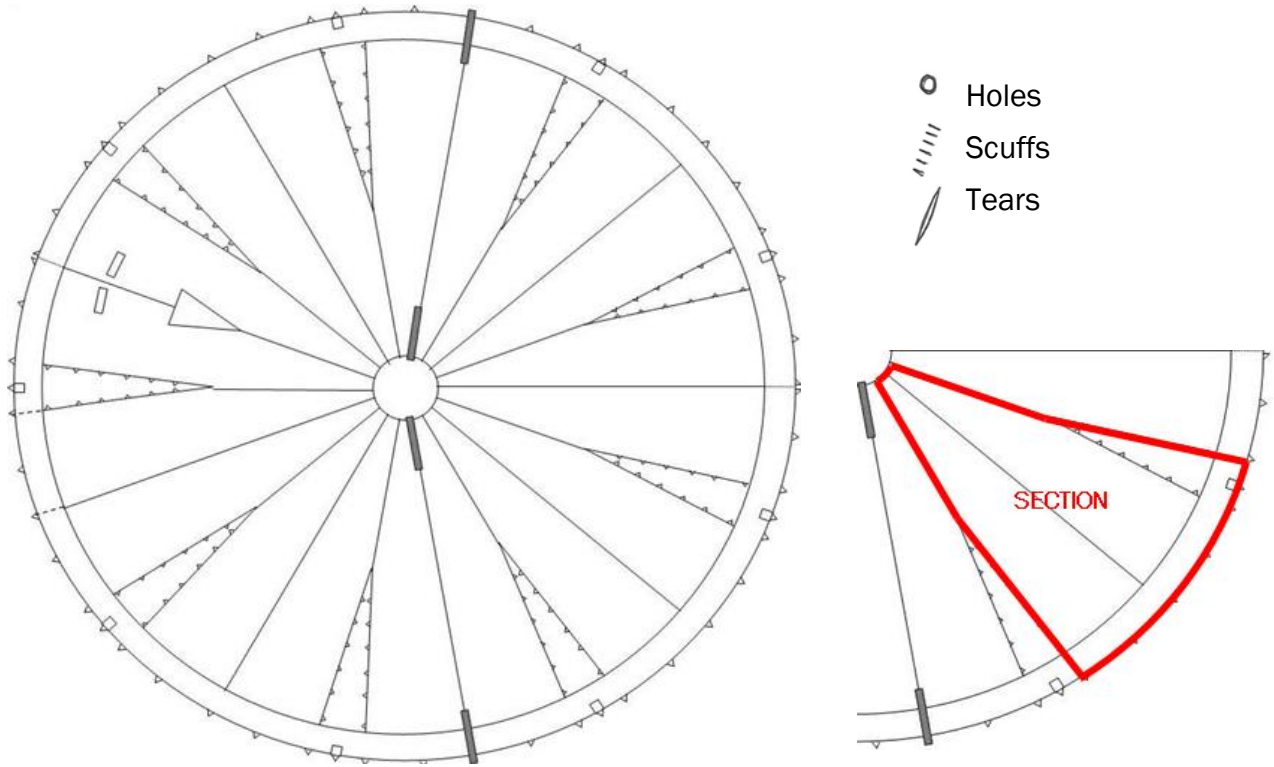
Date

# Canvas Inspection Form

Inspection Details	
Serial number of canvas	
Date of inspection	
Inspection performed by	
Notes	
Approval & Follow Up	
I, the undersigned, approve that the inspection has been carried out correctly, and that all follow up action has been completed satisfactorily.	
Signed	
Name	
Date	
Notes	

Any minor holes, tears or scuffs should be identified and marked on the diagram.

# Canvas Inspection Form



NOTE: Canvas as seen from outside. Some canvas have 2 doors, or no doors. Mark up the diagram accordingly.

Section	1	2	3	4	5	6	7	8	9	Repaired (Who/Date)
Condition of fabric and seams										
6 D-rings to bottom edge										
12 D-rings to gusset										
Inner/outer D-rings top of gusset										
Lacing to gusset										
Lacing pocket										
Upper canvas-fixing-flap										
Lower canvas-fixing-flap										
Door	1			2 (if present)			Repaired (Who/Date)			
Condition of seams										
D-rings either side of zipper										
Zipper										
Lacing channels										
Smoke cap	Notes									Repaired (Who/Date)
Condition of fabric and seams										
Condition of bungees and cords										
Canvas pulling loops	Notes									Repaired (Who/Date)
Condition of band and stitching										