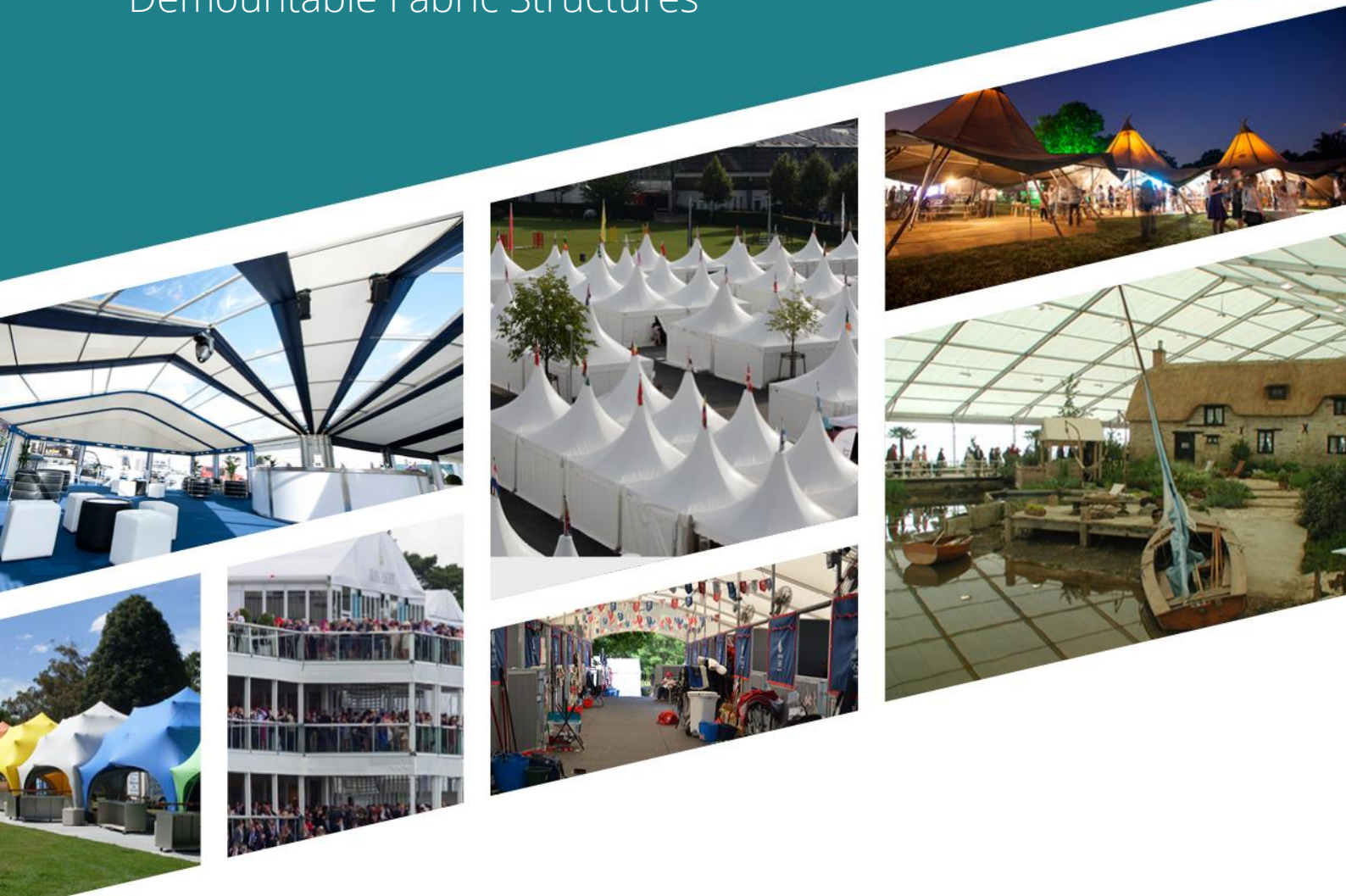


Best Practice Guide

Safe Use and Operation of Temporary
Demountable Fabric Structures



Cover photos kindly provided by
MUTA Members



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Statement by the Health & Safety Executive

“This guidance has been developed by MUTA to help event organisers, contractors, managers and others make health and safety improvements when erecting, using and dismantling marquees and similar temporary fabric structures. The guidance represents best practice which may go further than the minimum you need to do to comply with the law and MUTA acknowledges the support of the Health and Safety Executive in producing this guidance.”

Health & Safety Executive

1 Introduction

1.1 Who should use this guide?

- 1.1.1 This guide is designed for use by all involved in the procurement and provision of temporary demountable fabric structures for events; safety professionals and enforcement authorities; event organisers; occupiers and contractors.
- 1.1.2 It is a definitive guide published by the UK's foremost authority on the temporary demountable fabric structures industry.
- 1.1.3 Selecting contractors that demonstrate competence and provide evidence for their adherence to these MUTA guidelines will greatly improve safety before, during and after the event, and hence improve the risk profile of the event itself.

1.2 Background

- 1.2.1 MUTA has been long recognised as the representative member-led trade association of the temporary structures industry, promoting technical excellence and raising industry standards through skills training, an independent inspectorate and increased public awareness. MUTA is the assessment centre for NVQ Events (Temporary Structures).
- 1.2.2 MUTA recognises the duty that specialist contractors have to ensure that members of the public can have complete confidence in the safety of the products and services supplied by them. For that reason, MUTA runs an accreditation scheme and only admits as Members those contractors who agree to follow this guide, and to submit themselves to independent inspection to check that they do.
- 1.2.3 The periodic inspections ensure not only the safety of finished installations, but also that of the crews during erection and dismantling, thus helping clients to fulfil their obligations under health and safety legislation.
- 1.2.4 In addition to following this guide, MUTA Members are obliged to follow the MUTA Code of Practice (see Annex F).

1.3 Scope

- 1.3.1 MUTA's accreditation scheme covers marquees, pole tents and other fabric-covered temporary demountable structures which are intended for public assembly, a place of work or like purposes (herein referred to as "fabric structures"). It does not cover camping tents and awnings.
- 1.3.2 Multi-storey structures, air-supported structures and fabric tensioned structures are within the scope of this code but are also subject to some special provisions detailed in additional MUTA guidance.
- 1.3.3 MUTA's accreditation scheme also deals with ancillary equipment supplied with a fabric structure including flooring, furniture, interior linings, heating and lighting.
- 1.3.4 In general, the products and services supplied by contractors are provided on a short-term or temporary hire basis. Long-term (over 28 days) or semi-permanent installation may become subject to other codes or regulations outside the scope of this document.

- 1.3.5 The erection of temporary structures at entertainment events falls within the definition of “construction work” in Regulation 2(1) of the Construction (Design and Management) Regulations 2007 (CDM).
- 1.3.6 There is one exception to this set out in paragraph 13(a) of the CDM Approved Code of Practice: “the putting up and taking down of marquees and similar tents designed to be re-erected at various locations”.
- 1.3.7 However, the CDM Regulations do not provide a useful regulatory framework for the entertainments industry and will not be applied to any Temporary Demountable Structures (TDS). Instead, event organisers and contractors involved with temporary structures (including marquees and other fabric structures) will be expected to address safety in such a way that they comply with the Health and Safety at Work Act and its other subsidiary regulations.
- 1.3.8 MUTA **does not** seek to establish the aesthetic standards of any installation. Cleanliness and appearance of fabrics, suitability of colours and quality of furnishings etc. are subject to commercial contract.

1.4 Responsibility

- 1.4.1 Under health and safety law, employers, the self-employed and those in control of premises have a duty to do all that is reasonably practicable to ensure the health, safety and welfare of their employees and anyone else that may be harmed by work activities or the workplace. This includes the venue owner/operator, the event organiser, the fabric structure contractor and other contractors working on the same site.
- 1.4.2 Prior to any event, the fabric structure contractor shall ensure that areas of responsibility for health and safety and contract fulfilment are clearly defined: those of all parties in the contract chain including the fabric structure contractor, sub-contractors and those of the client and organisers. These will normally be set out in the contract and should preferably be standardised. Sales staff should make clients aware of their safety responsibilities.
- 1.4.3 It is vital that all structures used by the public are so far as is reasonably practicable, safe, particularly in case of fire or adverse weather, and that procedures are in place to protect the public and staff in these circumstances.

2 Public Safety

2.1 Structural

2.1.1 Design

2.1.1.1 The design and suitability of a fabric structure shall be proven either by long established use or, particularly for larger structures, by calculation verified by a qualified structural engineer. On more complex structures these designs may need to be independently checked by a competent person. As a minimum, such calculations shall include the maximum wind loading for which the structure is approved and the maximum imposed load permissible.

** Larger structures are pole tents greater than 30ft in span and framed marquees greater than 6m in span. The safety requirements elsewhere in this Best Practice Guide still apply to structures smaller than this.*

2.1.1.2 Guidance contained in "Temporary demountable structures – Guidance on design, procurement and use, 3rd Edition 2007", published by the Institute of Structural Engineers should be followed at all times (Chapters 8.3 and 12.2).

2.1.2 Anchorage

2.1.2.1 Anchors are critical to the stability and safety of fabric structures. The pull out force that an anchorage stake can withstand depends on the type of soil, water penetration, the inclination of the anchor and the depth of the anchor.

2.1.2.2 Loose, non-cohesive soils provide the least resistance and may require special anchors. In these situations pull-out tests would be expected in order to verify the anchorage resistances.

2.1.2.3 Where ground penetration is not possible, heavy ballast weights can be used to withstand uplift forces. These ballast weights (kentledge) require calculation and a suitable factor of safety applied.

Note: The ballast weight requirement is often underestimated and can be several tonnes per anchorage point. Integral wooden flooring will contribute to the anchorage by virtue of its weight, but it is very unlikely to meet the full load requirements as only the outer edge has any effect.

2.1.2.4 Anchorage should always be in accordance with the manufacturer's manual and be sufficient to resist the maximum uplift force expected.

Note: Every upright should be anchored. An absolute minimum for an upright is one stake not less than 450 mm long, 12 mm diameter (18"lg, 1/2" dia.) driven fully into the ground.

2.1.2.5 Intermediate uprights must also be anchored, even if uplift forces are countered at the main anchor points, as lateral movement can destabilise the structure or cause injury.

2.1.2.6 All uprights should have a means to spread the load at the base to prevent sinking when erected on soft ground.

2.1.2.7 It is essential to ensure the security of stabilising anchorages (stakes, kentledge, etc.) at all times.

2.1.2.8 Stakes and ropes near exits or other walking routes should be fenced off or clearly marked to prevent members of the public from walking into or tripping over them. Responsibility

for designating walking routes and erection of fencing will normally lie with the event organiser, but the fabric structure contractor should ensure that the organiser is aware of these safety issues. Purpose-designed stakes with defined heads and/or eyes for rope attachment are generally preferred since they do not need to project significantly above the surface. This provides superior anchorage as well as reducing the risk of tripping. Where necessary, consideration should be given to protecting the heads of any projecting stakes with a suitable padding. This clause generally applies to fabric structures that rely on guys for support.

2.1.3 Thorough Examination and Inspection

There shall be a two-part inspection. Firstly, a thorough annual inspection of all the component parts of the fabric structure and, secondly, an inspection with report/checklist upon completion of EACH assembly by a competent person prior to handing over.

2.1.3.1 Thorough examination

It is generally accepted that the fabric structure hire contracting industry is of a seasonal nature and that the off season is spent refurbishing, repairing, checking and renewing as necessary the hire stock. Particular attention is to be paid to the components that are critical to the structure of the fabric structure. It is strongly recommended that records be kept of such inspections and of any repairs or maintenance carried out to critical components. See Annex A.1.

2.1.3.2 Inspection

On initial erection and before the fabric structure is signed off by the contractor and handed over to the client, it should be subjected to a thorough inspection prior to issue of a report which will incorporate a checklist carried out by the charge hand or foreman whose responsibility it was to erect the structure in the first place.

The charge hand or foreman or person acting in a supervisory capacity should have training in or be thoroughly familiar with the particular structure type and/or size. This competency should be evidenced by a MUTA skills card or equivalent.

The initial erection checklist should be a document provided by the contractor and should have particular reference to the points tabled in Annex A.2.

The checklist should be returned by the charge hand or foreman to his office and kept by the contractor for a period of not less than twelve months. Where the Local Authority licence is required the Local Authority may also inspect the erected structure and documentation before use.

2.1.4 Stability

2.1.4.1 Roof and wall bracing are an integral part of most frame structures and must be fitted to any installation in accordance with the manufacturer's instructions.

Note: normally in each end bay and, on larger structures, every 6th bay.

2.1.4.2 Fabric structure installations should where possible be supplied so as to allow complete closure when not in use and when extreme weather conditions are expected.

Note: Raising and lowering the sides of non-standard fabric structures such as tipis or stretch tents is something that can only be carried out by the contractor. If the sides are left raised then the contractor must have suitable active systems in place to continuously assess the wind

conditions at each site and must take early preventative action to send staff to site to lower the sides if necessary.

- 2.1.4.3 Clients should be informed of the design wind load of the fabric structure and given instructions to evacuate should this be in danger of being reached. A wind monitoring plan, incorporating wind action levels, should be developed and provided to the user.
- 2.1.4.4 Roof panels should be sufficiently tensioned to avoid ponding.
- 2.1.4.5 In winter, where there is a danger of snow, clients should be advised of the need to heat the structure to prevent snow build-up endangering the structure's stability. This is a particular danger where adjacent structures form a valley.
- 2.1.4.6 On uneven ground the excessive use of packing is to be discouraged. Specialist platforms or scaffolding should be considered for variations in height of more than 0.75 metres and special attention to the anchorage is necessary.
- 2.1.4.7 Where fabric structures are erected on a scaffold grid or similar platform, the contractor shall ensure that as a minimum standard the grid or platform complies with BS EN 12811-1:2003 and BS 5975:1996 and that upon completion the supplier certifies in writing accordingly. It is for the contractor to ensure the supplier of such structures receives all relevant design information in respect of the fabric structures to be so erected, e.g. design wind load, anchorage load, point load, occupancy level etc.
- 2.1.4.8 Continual reference should be made to weather forecasting services, particularly with regard to fabric structures erected during the winter months and those erected on exposed sites. With more complex structures on-site wind monitoring devices should supplement information from remote weather forecasting services. If fabric structures cannot be protected or strengthened to withstand forecast wind speeds they should, wherever possible, be made safe by lowering or removing covers, to be reinstated when the danger has passed. In carrying out these measures, no member of the public or work crew should be put at risk, in particular it should be noted that once frame structure roofs are removed, purlins can become dislodged in high winds.
- 2.1.4.9 It is for the contractor to agree with the client at the outset what surveillance/maintenance (if any) will be necessary after the fabric structure has been handed over to the client. This determination shall be made on the basis of a risk assessment which takes into account all relevant factors including the use to which the structure is put, the security of the structure, the weather conditions, time of year etc.
- 2.1.4.10 The contractor shall provide the client with an out of hours emergency telephone number(s).

2.2 Fire & Emergency Exits

Note: This section is offered for guidance but does not absolve the client of the obligation to carry out a risk assessment as required by the Regulatory Reform (Fire Safety) Order 2005.

2.2.1 Fire retardancy of fabrics

- 2.2.1.1 New manufactured membranes and fabrics should be of inherently flame retarded fabric or durably flame retarded fabric when tested to BS 7837. Fabrics tested to BS 5438, tests 2A and 2B, with a 10 second flame application time in each case continue to be acceptable. (The method of test described in BS 7157 is also acceptable). Linings and drapes should conform to BS 5867 part 2, other sheet materials should be Class I surface spread of flame in accordance with BS 476: Part 7. Materials should be free of flaming molten droplet

characteristics and should not readily support combustion. All membranes and fabric should be so labelled.

2.2.1.2 Further guidance on flammability of materials is given in Temporary Demountable Structures, 3rd Edition, 2007, Chapter 12.

2.2.2 Exits

2.2.2.1 See Annex C for factors relevant to Exit calculations.

2.2.2.2 Fabric structures intended to hold more than fifty persons should not have less than two exits.

2.2.2.3 Exits should be distributed as evenly as possible around the fabric structure to provide genuine alternative routes from all parts of the structure.

2.2.2.4 The maximum distance of travel from any part of a fabric structure to a final exit should not normally be more than 24 metres. In exceptional circumstances and where fabric structures are wider than 48 metres it is possible for the travel distance to be extended provided that adequate fire precautions are in place, and that sufficient exits are provided to enable an appropriate evacuation period. As a guideline, an evacuation period of two minutes should be aimed for.

2.2.2.5 If the distance of travel includes a ramp or stairway, an additional 0.25 metres should be added to the distance of travel for every 1 metre of ramp or stairway.

2.2.2.6 All doors on an exit route should open outwards and, where exit doors have to be secured against intruders, they should be fitted with panic bolts or panic latches to comply with BS EN 1125 and BS EN 179. (Please note that BS 5725 is now obsolete but doors complying with this standard can still be used).

2.2.2.7 Where there are no doors, flap exits should be provided of a quick release design to comply with the appropriate rate of discharge, e.g. forty people in two minutes.

2.2.2.8 Any exits that are not intended for public use must be screened with baffles. Any such exit will not be taken into account in determining the number of exits as defined in Annex C.

2.2.2.9 Both emergency exit doors and flap exits should be provided with exit signs, conforming with BS 5499, Fire Safety Signs, notices and Graphic Symbols. Responsibility for provision of such signs is a matter for agreement between contractor and client.

2.2.2.10 It is recommended that all stages or platforms higher than 60cm and accessible to the general public shall be fitted with a handrail at least 1 metre high.

2.2.2.11 Entrance and exit ramps for the general public shall not have a gradient of more than 1 in 12 and shall be surfaced with a suitable non-slip material.

2.2.3 Fire Fighting Equipment

2.2.3.1 Responsibility for provision of fire fighting equipment is a matter for agreement between contractor and client. All places of entertainment should be equipped with means for fighting fire for use by occupants.

2.2.3.2 The advice of the local fire brigade should be sought in cases of doubt. Generally, however, the fabric structure should be provided with water-based extinguishers of a minimum capacity of 6 litres. These should be visible, easily accessible and should be easily operated. One fire extinguisher should be positioned at each emergency exit. CO₂ extinguishers should also be provided where necessary to deal with electrical fires.

2.2.3.3 Where more than 250 occupants are anticipated, sufficient persons should be available who are trained and experienced in the duties of a fire warden. This should normally be the responsibility of the client.

2.3 Capacity & Public Access

2.3.1 Generally, the internal layout (seating, gangways etc.) is not within the remit of the fabric structure suppliers. The contractor shall nevertheless advise clients or licensees to adopt the Department for Communities and Local Government's Fire Safety Risk Assessment guides for Places of Assembly and Open Air Events and Venues. Where catering premises are involved, the client should be advised to consider the provisions of the Food Hygiene (General) Regulations 1970, as amended in 1990 and 1991, and the Food Safety Act 1990.

2.3.2 The occupant capacity is the permissible number of people occupying a fabric structure or part thereof and is an important factor in assessing the means of escape.

2.3.3 In areas where fixed seating is provided, the major part of occupant capacity is determined by amount of seating available. In other cases, however, the contractor should ensure that an assessment is made of the probable density of people within the occupant capacity. For technical requirements and calculations see Annex B.

2.4 Furniture

2.4.1 Where the contractor provides furniture, it shall comply with the following:

- a) Upholstered seating should be capable of meeting ignition sources 0 and 1 of BS 5852: Part I and ignition source 5 of BS 5852: Part II.
- b) Tables provided for food preparation should have hard and easily washable surfaces.

2.5 Lighting

2.5.1 Where the contractor provides lighting, it shall conform with the following:

- a) All parts of the fabric structure and approaches thereto which the public have access and all external exit ways should, if intended for use in the absence of daylight, be provided with normal lighting capable of providing sufficient illumination of those parts for the public to leave the structure safely.
- b) Contractors should inform the client of what power supply is required for the supplied lighting etc., and the client must tell the contractor what power supply they have available.
- c) Electrical installations should be installed, tested and maintained in accordance with the provisions of the IEE Regulations for Electrical Installations. This should include as a minimum:
 - i) regular PAT test
 - ii) visual inspection on each set up
 - iii) RCD in every circuit
- d) Where installations require anything other than connection through a 13A, 16A or 32A socket, a qualified electrician is required. All installations must be carried out by a competent person.

Note: All portable electrical equipment brought onto the site should be in a safe and serviceable condition. Although there is no legal requirement to keep maintenance logs for portable and transportable electrical equipment, there are benefits of recording maintenance, including test results. A suitable log is useful as a management tool for monitoring and reviewing the effectiveness of the maintenance scheme. Similarly, labelling of the electrical equipment can assist in identifying the equipment to be maintained. Further information can be found in HSE guidance HSG107 Maintaining portable and transportable electrical equipment.

- e) Where lighting is necessary, emergency lighting shall be provided on all main fire exit doors and such signs should be capable of operating independently of the central source of power.
- f) For larger events, the emergency lighting must be extended to illuminate the escape routes. Again, this additional lighting must be capable of being powered independently of the central source of power (see BS 5266 Emergency Lighting).

2.6 Heating

2.6.1 Where the contractor provides heating, it shall conform to the following:

- a) All means of heating other than electrical should be indirect type heaters, sited externally and ducted in by means of flame retardant hosing. Care must be taken to ensure that exhaust fumes from heaters are not allowed to enter the structure and are dispersed safely.
- b) All heaters should conform to relevant national standards such as BS 799 for oil burning equipment.
- c) Spare containers of LPG should be stored at least 6 metres from any structure, protected against unauthorised interference and accidental leakage and, where grouped, should be locked together.
- d) Use of naked flames (e.g. effect flames and candles) within a structure requires a full, thorough and adequate risk assessment.

2.7 Client Awareness

2.7.1 The contractor shall make the client aware of the following recommended safety factors to be considered by the client when choosing a site and operating a fabric structure:

- a) No dangerous or combustible or toxic gases or other allied product such as aerosols, explosives or pyrotechnics should be stored within a fabric structure.
- b) To prevent the risk of fire, the client should ensure that, for every installation, the grass and vegetation within the footprint of the fabric structure, an adequate working area around the footprint and the access route to/from it (including emergency access) has been cut and clippings removed prior to installation.
- c) The site should be sufficiently far from overground services, e.g. overhead power lines, and the client should provide information to the contractor prior to installation of the location of underground services (for further details see section 7.3).

- d) Very few fabric structures have snow-load capacity and if snow is a possibility the structure must be heated in order to maintain a minimum temperature of 12°C to prevent build-up of snow on the roof.
- e) Valleys between fabric structures and buildings or adjacent structures, can be a particular problem when snow builds up and clients should be made aware of the danger and the need to remove excess weight from these areas.
- f) Persons other than the contractor's staff or those under his supervision shall not be admitted to a fabric structure during erection or dismantling operations until it is deemed structurally complete and safe.
- g) The area underneath external or internal raised platforms etc. should not be used for storage.
- h) Rubbish should not be allowed to accumulate under any raised platform. Such areas should be inspected daily to ensure conformity.
- i) Exit routes should be kept free from obstruction at all times.
- j) When any person is in the fabric structure, the exit doors should not be locked.
- k) The client should be informed of maximum in service wind speed.
- l) Continual reference should be made to weather forecasting services, particularly with regard to fabric structures erected during the winter months and/or those erected on exposed sites. Contingency plans should be in place to evacuate fabric structures when wind speeds approaching the maximum service gust speed are forecast.
- m) The client is to be made aware that, once the structure has been handed over, it is essential that he/she make no modifications to the structure, in particular structural components (such as removing or repositioning cross bracing in end bays or making changes to the anchorage) or the number and positioning of exits. These changes can only be made by the contractor.

2.7.2 See Annex A.3 for checklist for sales staff.

2.8 Regulations & Guidance

2.8.1 More comprehensive guidance can be found in the following publications:

- a) Temporary Demountable Structures – Guidance on design, procurement and use, available from the Institute of Structural Engineers (3rd Edition, 2007).
- b) Fire Safety Risk Assessment – Small and Medium Places of Assembly and Fire Safety Risk Assessment – Large Places of Assembly, available from the Department for Communities and Local Government (2006).
- c) Fire Safety Risk Assessment – Open Air Events and Venues, available from the Department for Communities and Local Government (2007).
- d) British Standard: Temporary Structures – Tents – Safety BS EN 13782:2005, available from the BSI.

3 Site Safety

3.1 Competency/Licences

- 3.1.1 Foremen and leaders of crews/teams/gangs and those responsible for the supervision on site will have demonstrated their competency for the job in hand, either by long service and experience, or by having achieved a relevant skills qualification. Such competency should be evidenced with a MUTA skills card (see Annex E).
- 3.1.2 All full-time crew/team/gang employees should attend the one-day MUTA StructureSafe site safety course every five years (certification logo pictured).
- 3.1.3 As a minimum, all members of the crew/team/gang shall have undergone basic induction in on-site health and safety, detailing their duty of care to themselves and others.
- 3.1.4 Operation of any mechanical equipment, including road vehicles, forklift trucks and access equipment, must only be carried out by those who are able to show appropriate licenses or evidence of training, usually by means of their MUTA skills card.
- 3.1.5 At least one member of each crew/team/gang will have undergone suitable first aid training and carry documentation as proof of qualification (which can be stated on a MUTA skills card).



3.2 Personal Protection Equipment

- 3.2.1 All crews shall have sufficient and appropriate personal protection equipment available for use when necessary.
- 3.2.2 Protective footwear should be worn at all times.
- 3.2.3 Hard hats should be worn when:
- Overhead work is being carried out (includes adjacent sites).
 - Wind could dislodge overhead components whilst they are being fitted or dismantled (e.g.: purlins before roof sheets are fitted or upon removal).
- 3.2.4 High visibility Jackets should be worn when:
- There is a risk of vehicle movement on site.
 - There is mechanical or manual handling of large components in progress on the site or adjacent sites (includes work inside the structure).
- 3.2.5 Gloves when appropriate.
- 3.2.6 Goggles when appropriate.
- 3.2.7 Ear protection when appropriate, in particular when stakes are being driven by a pneumatic hammer device. Frequent rotation of the pneumatic hammer duties within the site team is recommended.
- 3.2.8 Sun screen when appropriate.
- 3.2.9 Safety harnesses when appropriate.

3.3 Services

3.3.1 The location of any underground services must be identified by the client and clearly marked before any ground penetration operation. If any doubt exists, in order to protect its employees, the contractor or his appointed specialist should carry out additional checks, such as a CAT (Cable Avoidance Tool) scan of the site area where penetration is planned. If the contractor carries out these additional checks then he should be permitted to charge an appropriate fee.

3.3.2 Overhead power lines provide a particular threat. When carrying out work on site it should be remembered that electricity is capable of arcing from high voltage power lines. **Wherever possible working within 6 metres of such cables should be avoided.**

3.3.3 If for operational purposes it is not possible to comply with 3.3.2 then:

- a) The absolute minimum clearances that shall be maintained between an overhead line conductor and any part of the fabric structure installation are shown in Table 1 below (see also Figure 1 overleaf). They allow for a person to stand on or against the structure **but only allow for the free movement of short hand held objects or tools.**

To help determine the height of power lines the publication "Shock Horror" (see below) contains the following information: *"There is a minimum distance (clearance) between the power line (or cable) and the ground. The height of the cable varies according to the voltage carried – generally, the higher the voltage, the higher the power line. Figure 2 shows the types of support, voltage and clearance."*

- b) Utmost care must be taken particularly with the use of power plant (forklifts, platforms etc.) and other access equipment.
- c) In some cases it will be necessary to contact the power line owner to request shrouding of the line.

3.3.4 Guidance contained in the following publications is helpful:

- a) HSE Guidance Note GS 6 (Third edition).
- b) "Shock Horror – Safe working near overhead power lines in agriculture" (available as a download from the HSE web site).
- c) Technical specification 43-8 Issue3 Overhead Line Clearances – Published by the Energy Networks Association.

Table 1 – Minimum Clearances					
Normal System Voltage (kV)	Up to 33	66	132	275	400
Minimum Clearance (metres)	3.0	3.2	3.6	4.6	5.3

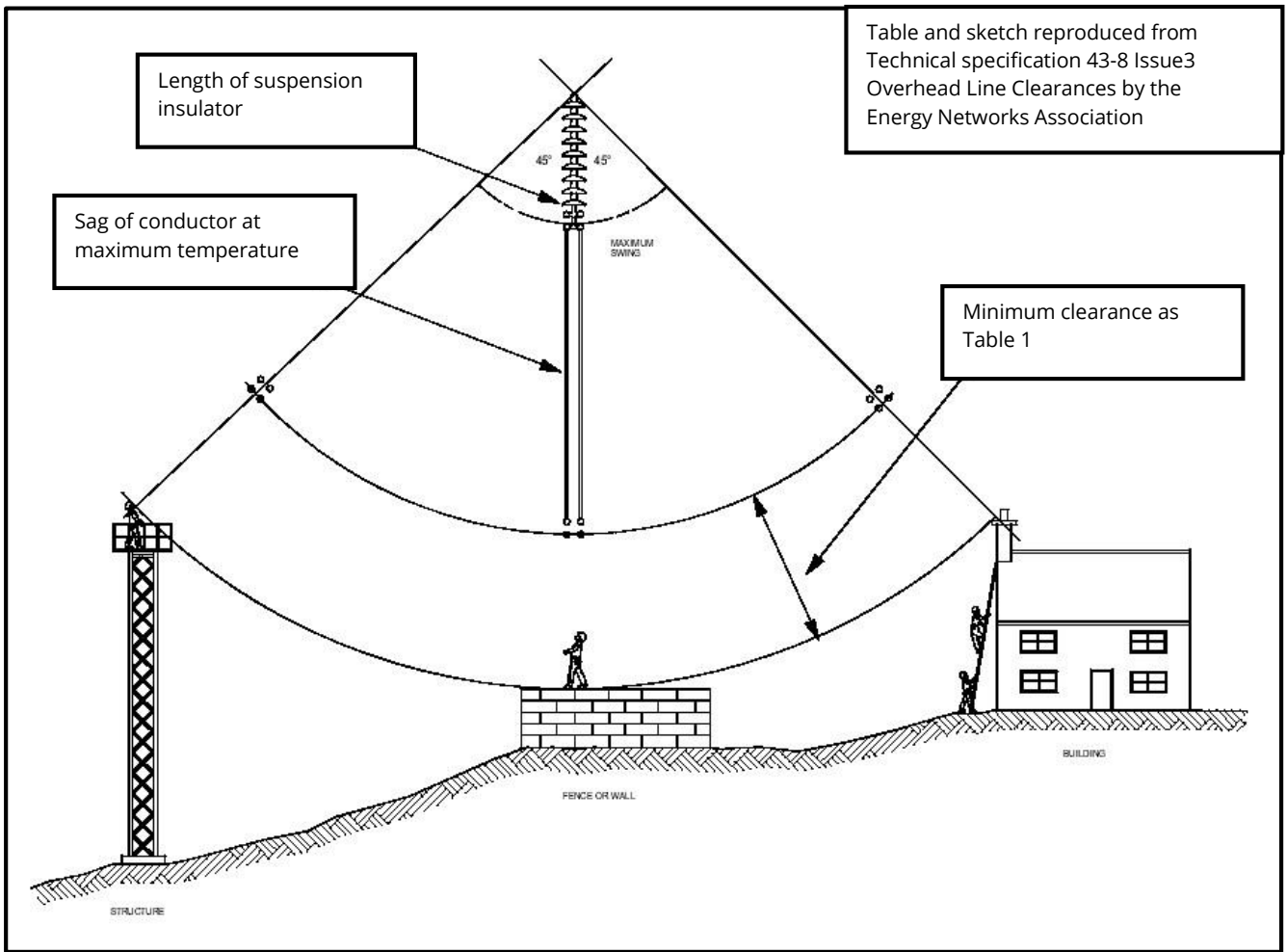


Figure 1

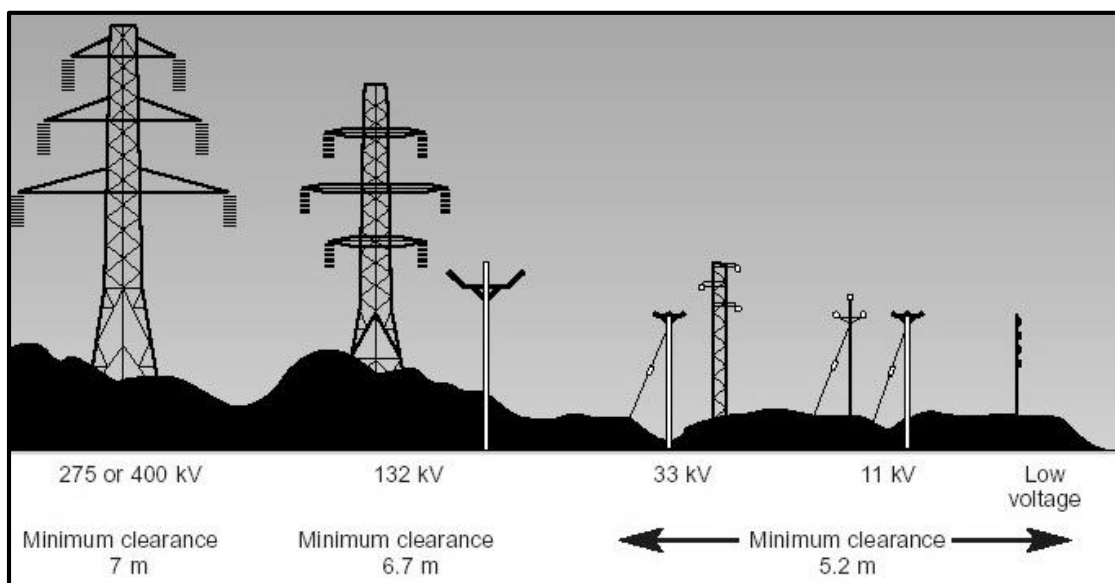


Figure 2

3.4 Welfare

As a minimum, crews must have access to toilet and hand washing facilities. Responsibility for such welfare provision will be determined in the contract. (Normally provided by the client or venue owner).

3.5 Documentation

3.5.1 Crews should have available for inspection copies of:

- a) Site supervisor's MUTA skills card.
- b) The contractor's health and safety policy.
- c) Safe work method statements for all work planned on the site.
- d) Generic risk assessment(s).
- e) Any necessary site specific risk assessment.

3.5.2 In addition, when required to do so by the client or site authorities, contractors must be able to produce evidence of:

- a) Public liability insurance.
- b) MUTA membership.

3.6 Client Awareness

3.6.1 Contractors should ensure that clients are aware of their responsibility to provide a safe working environment for contractors and their crews. This includes:

- a) Warning of known overhead/underground services.
- b) Warning of any other risk or hazard identified by the client's own risk assessment.
- c) Ensuring that any other contractors working on the same or adjacent sites are competent and working safely.

3.6.2 Contractors should not drive on restricted or protected areas where tree roots, flora, wildlife habitats and heritage/archaeological sites are identified by the client.

3.7 Pollution Prevention and Spillage Control

3.7.1 Every team/crew member is responsible for preventing hazardous spillages on site and at their home premises. Discharging fuel, oil or water containing fuel/oil into drains or watercourses is illegal, clean-up costs are high and the long-term environmental damage is substantial.

3.7.2 Best practice includes:

- a) Carrying and training in use of spill-kits
- b) Collection of the contaminated material in the hazmat bag and its responsible disposal
- c) All plant operators should attend their vehicle refuelling
- d) All fuel/oil storage drums should be banded to 125% of capacity and kept locked when not in use
- e) Never ignore a spillage or hose down a spillage, your own or a third party's; always report it to the client's representative

3.7.3 Note: One gallon (4.5 litres) of oil can completely cover a lake the size of two football pitches.

3.8 Waste Management

3.8.1 Every team/crew member is responsible for disposing of their trade and personal waste.

3.8.2 When segregated waste facilities are provided on-site these should be used responsibly and contamination of segregated waste streams should be avoided at all costs.

3.8.3 Contractors are permitted to take away their own trade waste for responsible disposal at their home premises; hazardous wastes (batteries, oil cans, paint cans, aerosols, oily rags etc.) in particular should be treated in this manner.

3.8.4 When on-site and before leaving it, contractors should pick up all waste including electric ties, rope, paper, plastic, wire etc. to protect the local wildlife (fauna) from eating it and dying.

4 Reporting of Incidents

4.1 Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)

4.1.1 Contractors and clients are reminded of their responsibilities to report injuries and dangerous occurrences. The Regulations define even minor injuries as reportable when they result in more than seven days incapacity for their normal work; dangerous occurrences are listed in a schedule to the Regulations.

4.2 Requirement to report incidents to MUTA administration

4.2.1 Accredited contractors shall report to MUTA, on the prescribed form, any incident involving:

- a) a fabric structure operated or supplied by them;
- b) components of such a fabric structure or accessories (such as flooring, lighting, furniture etc.) supplied by them;
- c) a member of their crew or any bystanders during erection or dismantling of such a fabric structure;

where such an incident gives rise to a duty to report under RIDDOR. This requirement is in addition to the requirements of RIDDOR and applies whether or not the duty to report under RIDDOR falls to the member concerned. (For example, a tripping incident involving a marquee contractor's flooring would be reportable to MUTA notwithstanding that the employer of the injured party had separately made a formal report as required by RIDDOR).

4.2.2 In addition, any incident involving the unintentional collapse of a fabric structure or a component thereof shall be reported to MUTA by the accredited contractor wherever they sit in the supply chain.

4.2.3 It is accepted that any such report to MUTA is made without prejudice to the contractor's position in any proceedings. The purpose of the report is not to assign blame, but to alert MUTA to the fact that an incident has occurred so that information on how to prevent similar incidents can be shared with all contractors.

5 Compliance

5.1 Inspection

5.1.1 In advance of the season commencing, accredited contractors shall furnish MUTA with six venues and dates where their completed work can be viewed to enable verification of compliance to this code. This is a minimum requirement. The administration may require additional venues and dates for scheduling purposes.

5.1.2 There are two types of inspection to be carried out by experienced inspectors, appointed by the MUTA administration at randomly selected installations/sites, with action and reporting as defined in 5.1.3:

- a) **Public safety inspection** will generally follow the completed structure checklist (see Annex A.2).
- b) **Site Health & Safety inspection** will generally cover the following aspects:
 - Personal Protection Equipment
 - First Aid
 - Supervision/Competence
 - Manual handling
 - Licences and competencies
 - Tools
 - Underground and overhead services (CAT Scan)
 - Working at height
 - Housekeeping
 - Welfare
 - Documentation (Health & safety, MUTA certificate and insurances)
 - Electrical installations.

5.1.3 Action and reporting by the inspectorate shall follow Table 2. In addition the inspector has the discretion to add/deduct percentage points for overall conduct, items not covered by the checklist and co-operation of site staff if applicable.

Table 2 – Inspectorate Action and Reporting				
	Public Safety	Site Safety HSE Equivalent	Action	Deduct per Item/ Group
A	Pass	Compliance	None	
B	Pass with Comment	Bad Practice	Written comment, via report, to the contractor requesting future improvement	5%
C	Non-compliance with Comment	Improvement Notice	Written comment to contractor demanding future improvement – May occasion further inspection.	10%
D	Non-compliance	Prohibition Order	Urgent contact with the contractor to request immediate remedy – Occasions second inspection paid for by the contractor	50%

5.2 Non compliance - actions

5.2.1 The disciplinary process will operate as follows:

- a) A score of 2 or lower on one or more criteria will trigger a re-inspection within a few weeks of the report.
- b) Failure to improve on the criteria on a second inspection, or a score of 2 or lower on any other criteria, will trigger a third inspection, costing the member in question a fee at the published rate.
- c) Failure to improve on the third inspection will result in suspension from the Association.
- d) Once accreditation is withdrawn, a contractor may only reapply once it has satisfied the administration that the issues causing loss of accreditation have been addressed and cured. This may require further inspection(s) at the contractor's expense.

5.2.1.2 Appeals against the decisions of inspectors can be made to the Executive Committee of the Fabric Structures Section of MUTA whose ruling will be final and binding.

5.2.1.3 Any member of the executive with a conflicting interest will be excluded from the panel hearing appeals.

6 Accreditation

6.1 Evidence of Accreditation

- 6.1.1 Accredited contractors will be given an annual certificate, valid for 12 months beginning in January each year.
- 6.1.2 Accredited contractors will be listed on the MUTA web site.
- 6.1.3 Accredited contractors will be updated regularly as regards their accumulated points status.
- 6.1.4 Accredited contractors will be encouraged to display the MUTA Member logo.

6.2 Administration

The inspection and accreditation scheme is administered by the management of MUTA.

6.3 Eligibility

- 6.3.1 MUTA accreditation is available to any bona fide company whose main activity is the hire of fabric structures as defined in the scope (see 1.3).
- 6.3.2 Accredited Contractors shall:
 - a) Sign an annual declaration to carry out all work in accordance with this code, issued regulations and guidelines
 - b) Satisfy the administration that they are a bona fide organisation;
 - c) Submit to an initial inspection (to be charged at the published rate).
 - d) Agree to periodic and random inspections of premises and systems
 - e) Agree to periodic and random inspections of finished installations
 - f) Agree to periodic and random inspections of the conduct of crews on site in respect of health and safety.
 - g) Maintain adequate Public Liability insurance and to provide evidence of same to the administration if requested.
 - h) Agree to the disciplinary procedures detailed in section 5.2.
 - i) Pay the appropriate fee for the contracted period.
- 6.3.3 MUTA hirer members failing to maintain accreditation will automatically forfeit Membership of the association.
- 6.3.4 The names of all members who leave the association will be published on the website for the year immediately following their departure.

7 Guidance for the Design, Procurement & Use of Inflatable Temporary Structures – A White Paper

7.1 Background

- 7.1.1 The Events Industry has been a major contributor to the increase in demand for Temporary Inflatable Structures. Companies using events as part of their marketing strategy now have such structures at their disposal.
- 7.1.2 They appear unusual and rather unique, therefore succeeding in their objective; to create a complimentary environment in order to enhance their own product and/or service.
- 7.1.3 This document has been produced by MUTA in association with Baconinflate Worldwide to assist professionals who are formulating a summary of ideas and proposals (a brief) that require designs for Inflatable Temporary Structures (ITS).
- 7.1.4 In general terms, there are four definitions for the construction technique of Inflatable Temporary Structures (ITS):
- a) Air beam, tubular or cellular wall construction, relying on a constant supply of air from an inflation fan to make self-supporting. Where appropriate, a canopy/cover is tensioned over the top. (E.g. The EventStation® & EventHaus® designs)
 - b) Combination of cellular wall (as defined above), but with the addition of supporting metal framework. This combination allows for a division of load bearing and the option of less air pressure in the cellular wall. (E.g. The Q-BIT designs)
 - c) A single membrane with pressurised internal environment or positive pressure. Airlock doorways are used to limit footfall and control entry and exit. (E.g. Sports Hall/Tennis Court cover designs)
 - d) Air beam or tubular construction inflated, pressured and sealed. A canopy or tensioned cover is placed over the resulting framework. (E.g. Emergency Shelters, Instant Reception or Registration Booths).
- 7.1.5 It is assumed that each type of Inflatable Temporary Structures (ITS) described above, are to serve the purpose of providing shelter or enclosure for a specified number of people, whether combined with furniture and displays or not.
- 7.1.6 Therefore, they should be designed and engineered to withstand outdoor operational forces such as wind, rain and, where appropriate, snow. In formulating a brief, the advantages and disadvantages of each should be considered.

7.1.7 Safety at Events

For any event that involves attendees being invited inside, whether public or private, the Inflatable Temporary Structures (ITS) should have been thoroughly tested and researched as to their suitability for purpose. Evidence of this should be documented and available for inspection. If the size and scope of the Inflatable Temporary Structure (ITS) demands, the services of an independent Structural Engineer should have been engaged, working in conjunction with the designers to validate operational parameters. If a client and supplier are to work on a new design, then the same process should be adhered to.

7.1.8 This White Paper

A white paper is an authoritative report or guide that helps solve a problem. White papers are used to educate readers and help people make decisions.

This White Paper on the design, procurement and use of inflatable temporary structures has been written to support the event industry in the safe practises from the initial brief through to safe activation for public use.

The White Paper is made up of two sections. The overview or desired thought process and secondly the necessary discussion points at each point.

This document is presented for information purposes only. It is not intended to replace a manufacturer's Operational Manual.

7.2 Proposal/Brief

7.2.1 For the proposal/brief to be communicated effectively, the following key points should be considered and discussed. This will save time and avoid any misunderstandings and possible disappointments at a later date.

7.2.2 Areas for consideration:

- a) What primary function is the ITS to achieve? (E.g. Music Event, Product Launch, Presentation/Seminar)
- b) What type of ITS is being considered to achieve the objective? If there is some innovative input from creatives with regards to the design, however attractive, is it realistically feasible?
- c) How many people are to be in the ITS at any one time? Or is the need more of throughput or access from all sides?
- d) Is the size or span of the ITS physically achievable within the limitation of the chosen inflatable medium?
- e) Where is the ITS being sited and on what surface? (E.g. Grass, hard-standing, snow)
- f) At this early stage, has the method of anchorage been considered? (E.g. ground anchors, tether lines and/or ballast weight)
- g) How long will the ITS be expected to be continually inflated in situ and what impact does this play when considering its suitability?
- h) If a budget has been set, is it realistic to ensure each process can be fulfilled without the supplier cutting corners and, in turn, risking safety issues?

7.3 Design

7.3.1 Is the design proposed at the concept stage? If this is the case, there may be areas needing to be addressed that require professional input as to feasibility.

7.3.2 Areas for consideration:

- a) Will the design provide a suitable number of clear exit points?
- b) Each should cater for emergency situations, with particular regard to the capacity of people envisaged and the internal layout of fixtures and furniture.
- c) Has the design taken The Disability Discrimination Act (DDA) into consideration?

- d) Does the design allow for the need to be anchored or ballast weighted?
- e) When the ITS is pressurized, a degree of rounding or “shaping” will take place. Therefore, 3D modelling is essential to ensure all angles and aspects of the design are properly assessed in relationship to the internal layout of the equipment etc.
- f) The tear strength of the selected fabric is of primary importance. It is also vital that any fabrics meet the necessary flame retardancy standards. (E.g. BS, DIN & NFP)
- g) If excessive low temperatures in operation are anticipated, the flexibility of fabric (cold crack) may need to be considered. Although not a safety issue, there are qualities which can be integral within a fabric that will assist the longevity and continued quality and appearance of the ITS.
- h) Anti-fungal additives and lacquer coatings are well worth consideration; however these come at a cost.
- i) What is the chemical makeup of the coating upon the selected fabric? With consideration to the disposal of the ITS at a later date, can the fabric meet the necessary environmental requirements that would enable the fabric to be recycled, thus avoiding landfill?
- j) If digital print is being applied, is the fabric’s profile designed to provide a decent adhesion level and does the chosen fabric have the necessary tensile qualities to construct a ITS?

7.4 Specification

7.4.1 Engineering

- 7.4.1.1 If a new design is being considered, will it be evaluated by a qualified structural engineer who is familiar with the medium of Inflatable Temporary Structures (ITS)?
- 7.4.1.2 Relevant calculations will need to be carried out in order to give validity to any assumptions that have been made within the design process. If the Inflatable Temporary Structure (ITS) is of hybrid form (metal structure and inflated pressurized wall sections), has the load bearing correlation between the two elements been assessed?
- 7.4.1.3 An Engineer’s report would also need to include a definition as to what limitation of use the Inflatable Temporary Structures (ITS) would have with regard to public safety.
- 7.4.1.4 Anchorage of the Inflatable Temporary Structure (ITS) is of paramount importance. The Engineer’s report should stipulate which weight/loads are required, giving clear directions as to where this weight is to be positioned and how (if at all) it can be dispersed.
- 7.4.1.5 These details cannot be compromised.

7.4.2 Fabric

Suitable fabric will need to be specified to construct the Inflatable Temporary Structure (ITS), given the external wind forces applied to the outer surface. In addition, the tensile forces created within the Inflatable Temporary Structure (ITS), when pressurized, demand that the appropriate materials are selected.

7.4.3 Fans/Inflation Systems

- 7.4.3.1 Are the inflation fans (chosen to pressurize the ITS) suitable for external use, with the appropriate IP rating?
- 7.4.3.2 Areas for consideration:

- a) Will these fans be capable of meeting the operational time span envisaged for the life of the ITS? 20,000 hours should be a minimum.
- b) Will the fans require suitable sound-proofing enclosures in order to minimize any imposition on internal activities expected within the ITS?
- c) Will the overall inflation system cater for the failure of one or more fan units? Are audible alarms fitted to the fans to alert of a breakdown?

7.4.4 Branding

7.4.4.1 If detachable branding is introduced into the design, a suitable fixture(s) and fitting(s) would need to be put in place to ensure the branding doesn't separate from the Inflatable Temporary Structure (ITS) in adverse weather conditions.

7.4.4.2 Areas for consideration:

- a) Should the branding extrude the surface or footprint of the ITS?
- b) Connected elements should be analyzed as part of the overall designs, paying special attention to the connection method and load bearing capabilities of any fixture(s) or fitting(s). (E.g. Flags, banners and inflatable spheres)
- c) Has the durability of the print and/or branding method been considered and further, has the life expectancy been highlighted?

7.4.5 Additional Components

7.4.5.1 Is each component (such as steel rings, cam buckles, ratchets speed links etc) suitable for outdoor use? Have such components been tested as to suitability of load bearing?

7.4.5.2 Areas for consideration:

- a) Are any of the components affected by extremes of hot or cold conditions?
- b) If metalwork is being used in a load bearing capacity, has a specific thickness, dimension and gauge been properly specified with suitable protective coating? (Previously referred to under Engineering)

7.5 Manufacture

7.5.1 How will the Inflatable Temporary Structure (ITS) be fabricated, given the nature of use? Stitching HF welding, hot air sealing and adhesive bonding all have a place. The size of seam, quality of thread and integrity of weld can be compromised if cost cutting is introduced to meet a budget.

7.5.2 Any type of cellular wall inflatable relies completely on the method of constraint, i.e. panel or single tie, holding each surface apart and, in turn, creating the thickness. Has this matter been given due consideration?

7.5.3 Areas for consideration:

- a) How will the air be fed into the ITS? A secure connection needs to be in place between the feeder tube and point of entry. Any manifold systems introduced need to have consideration for the mechanics of air movement as to avoid loss of pressure.
- b) Any specific load points detailed in the engineers report should be reinforced to avoid the possibility of tearing the membrane of the ITS.

- c) If the ITS has a metal framework, have the connection points between the inflatable and metalwork been clearly defined and reinforced suitably for the load applied?

7.5.4 Testing

7.5.4.1 Based on the computer model of a new design, has a theoretical load assessment been undertaken?

7.5.4.2 Areas for consideration:

- a) Once built, has the ITS undergone actual load testing to confirm the stipulated capabilities at the design stage mentioned above?
- b) Has the ITS been tested externally and exposed to quantifiable weather? E.g. Wind, rain and, if applicable, snow?
- c) During testing, has consideration been given to the install and derig procedure, to enable a Method Statement to be written?

7.6 Health & Safety

7.6.1 All parties should have a positive attitude towards health & safety and therefore contribute to a successful event. A cooperative relationship should be developed with venue management and security staff. Venue dates, staffing and accessibility requirements should be communicated at the earliest opportunity. The following points need due consideration:

7.6.2 A Site Survey should be completed well in advance by the company undertaking the install of the Inflatable Temporary Structure (ITS). An agreed scale/ plan of where the Inflatable Temporary Structure (ITS) is to be located should be produced prior to arrival on-site. A safe working environment needs to be established, with suitable clearance around the perimeter taken into account, for crew to work on install and de-rig.

7.6.3 A Method Statement resulting from testing procedures should be created, clearly explaining installation and dismantle procedures.

7.6.4 A Risk Assessment should also be produced, detailing specifics relating to the site/environment that the ITS is to be installed. Therefore, this cannot be generic in its compilation.

7.6.5 A Safe Management Procedure to be put together and carried during the build, "Live Days" and de-rig of the ITS.

7.6.6 Particular attention should be paid to:

- a) Fire/emergency exits
- b) Relevant direction signs capable of backup power supply or self-illuminating
- c) Clearly marked fire extinguishers showing test dates.

7.6.7 Awareness of the weather forecast prior to installation, supplied by the Met Office or the like. Monitoring of weather on-site via the use of an anemometer fitted with an audible alarm. The alarm should be set to go off at the chosen wind speed inline to the operational safety management produce.

7.6.8 In order to cover the eventuality of severe weather, a back-up plan would be advised. Such a plan may also take an alternative venue into account if dates cannot be moved.

7.7 Activation

- 7.7.1 The power supply should be established and either in place through the mains or generated on-site. Is there a secondary back-up electrical supply if the primary supply fails? Observing the site survey, is there a need to mark the underground cable location?
- 7.7.2 Areas for consideration:
- a) The crew used to install the ITS should be experienced, qualified and in possession of the necessary PPE equipment.
 - b) The Crew Manager should possess all safety documentation, to include: proof of fabric FR Certification, structural engineer's report and an operational manual available for referral by the activation team or inspection by any HSE representative.
- 7.7.3 On completion of the installation, a visual inspection should be carried out by an elected representative of the user and supplying company. When each party is in agreement and satisfied with the appearance and condition, particularly with regard to safety, a certificate of compliance should then be signed by both parties.

7.7.4 On-site Management

- 7.7.4.1 A check list should be formulated to ensure that, once the ITS is installed, it maintains the original integrity.
- 7.7.4.2 This will include attention to the following (taken from the written Management Procedure):
- 7.7.4.3 Regular checks to power supply. If generated on-site, the condition and levels of fuel need to be available to cover any overnight periods. Timely inspections to include the anchorage or connection of ballast to the Inflatable Temporary Structures (ITS), inflation fans and any fixture and fittings that rely on adjustment.
- 7.7.4.4 If a wind meter is sited, it is important to check that it is operating correctly and that the emergency audible alarm is functioning at the selected wind speed. This can be done through pre-arrangement with the client/customer or prior to the live period.
- 7.7.4.5 Liaise with security companies to ensure staff will be on-site at agreed times (especially overnight), with duties clearly understood in cases of emergency.

7.7.5 Storage

- 7.7.5.1 As part of the care and maintenance, the following actions should be carried out:
- 7.7.5.2 Areas for consideration:
- a) The ITS should be wrapped and packed in a suitable manner and placed with the protective bag/valise supplied. This will avoid damage during transportation and storage.
 - b) The ITS should be re-inflated and dried in situations where it is packed away wet or damp during the derig. This will ensure the condition, appearance and performance are not compromised.
 - c) If any damage or structural fault has been reported by the on-site management team, such matters need immediate attention. If of a serious nature, a report should be logged and brought to the attention of the Technical Manager.

- d) With prior arrangement, the ITS should be stored in a dry secure environment away from direct sunlight and extremes of cold and heat. If insurance is to be in place, a clear understanding as to who is paying the premium, or part thereof, is required.
- e) If storage is part of the ongoing contract/agreement, terms of condition should be signed and adhered to, therefore avoiding undue inconvenience to the party storing the goods.
- f) All electrical equipment such as fans, units and distribution cables/box, should be checked after use and stored as mentioned above. Where appropriate, portable appliance testing (PAT) would be carried out and recorded as part of the ITS service record.
- g) A suitable budget is allocated to the case, bag, box, the ITS and relevant equipment, to ensure it is protected during storage, transport and handling.

7.8 Summary

- 7.8.1 Creativity and innovation are the ingredients for success in winning business in this market. Hopefully, the information detailed within this document will bring about a successful marriage of innovative design with safety and good operational practice.
- 7.8.2 The publications listed below provide a greater holistic reference for demountable temporary structures and should be considered in support to the guidance above.
 - a) The first 6 chapters of this document.
 - b) IStructE – Temporary Demountable Structures: Third Edition 2007
 - c) HSE – The Event Safety Guide: Second Edition 1999
- 7.8.3 This Chapter 7 has been produced for MUTA by Gary Bennett, Baconinflate Worldwide, 20 Osyth Close, Brackmills Ind Est, Northampton, NN4 7DY, www.baconinflate.co.uk.

8 Saddlespan Installation: Guidance on Best Practice

8.1 Preamble

- 8.1.1 This document outlines best practice methods for safe installation and dismantle of S5000 and S2000 Saddlespan structures in all single structure formats – Canopy, Concert and Enclosed.
- 8.1.2 These guidance notes cover structures manufactured by Tentnology Co, Vancouver Canada only and do not cover similar structures produced by other manufacturers.
- 8.1.3 Saddlespan tents have been manufactured and employed in the events industry for over 40 years. They have been extensively used in the USA and Canada since the mid 1970's but they have only grown in popularity in the UK over the past 10 years. Saddlespans have an enviable record for safety mainly due to the simplicity of the design and the quality of components used. There have been no recorded incidents of structural failure due to component failure or design faults.
- 8.1.4 However, as with all temporary structures, the need for correct installation is paramount and certain aspects of the Saddlespan installation process require particular attention.

8.2 Preparation before installation

- 8.2.1 Particular care should be care to check the following items before taken to site and if any found faulty they should not be used:
- 8.2.2 Aluminium Truss – check for dents and cracks.
- 8.2.3 Base plate and apex assemblies – check for cracks or deformation
- 8.2.4 Guy cables-check for fraying and damage
- 8.2.5 Webbing – check for cuts and wear.
- 8.2.6 Fabric – check for rips or cuts. As the structure is semi-tensile the fabric forms an integral part of the structure and any damage must be repaired professionally.
- 8.2.7 Original manufacturer components should not be substituted for alternatives unless manufactured to the same specifications.

8.3 On site

- 8.3.1 The installation of a Saddlespan should not be attempted unless there is at least 1 experienced and trained installation engineer in charge of the crew and installation process.
- 8.3.2 Installation process should be followed as that contained in manufacturer's Saddlespan Installation Manual
- 8.3.3 Check weather and wind speed before attempting to pull up the structure. Wind should not exceed 15mph (25kph or 6.9m/s) at the time when the roof is pulled into position. Ensure that there is no danger of lightning.

8.4 Ground conditions

- 8.4.1 Ensuring the ground conditions are suitable for the specified reactions and uplift forces as contained in the manufacturer's specifications is essential.
- 8.4.2 Empirical testing of the ground conditions prior to installation is strongly recommended. Ideally, testing the ground pull resistance should be undertaken using a 5 ton electronic load cell (or similar) and Telehandler or winch in various locations around the stake line of the structure. Results should be recorded.
- 8.4.3 If the results of these tests show that the ground provides insufficient resistance to the pull test additional anchors should be employed utilising 3 stake anchor bars in key load locations.
- 8.4.4 If the ground is still deemed to be too soft for conventional anchoring system or if stakes cannot be used then the use of ballast will be necessary.

8.5 Ballast

- 8.5.1 Ballast should be in the form of 1000kg and 500kg weights which are placed in locations highlighted in the manufacturers specification and lay out sheets. These ballast weights can be in the form of steel or concrete weights resting on rubber mats or 1000kg of aggregate contained in new, rated 1000kg capacity polypropylene bulk bags.
- 8.5.2 Due to the need to provide tension and anchorage at the bottom edge of the structure it is not recommended that water filled IBC containers be used. IBC's are not structurally rated and because the load is applied low down on the IBC the IBC can deform when under stress. However IBC's can be mounted and fixed to a steel plate, resting on rubber mats, that have suitable fixing points attached.

8.6 Winching the structure into final position.

- 8.6.1 The roof section of the structure is pulled into position using a gin pole and winch. The winch should only be operated by trained personnel. When the structure is at its halfway point the end wall fabric is fixed to the frame of the structure. At this stage the structure should be secured to ground anchors at the front using two webs to provide safety back up should the winch brake fail.

8.7 Mounting Saddlespans on a deck

- 8.7.1 Saddlespans can be mounted on a suitable deck up to 1.2m high and existing ground supported calculations will still apply. Revised calculations and wind speed parameters will need to be provided for heights above 1.2m . Decks should be supported underneath the Saddlespans base plates with suitable rated steel risers to withstand the down force and uplift specified in the manufacturer's data sheets.

8.8 Dismantling of Saddlespans.

- 8.8.1 To prevent damage to truss structure and fabric the dropping of the roof should not be undertaken if wind speed exceeds 15mph.
- 8.8.2 The normal method of dismantling a Saddlespan involves loosening the front guy cables from the anchors and allowing the roof structure to lower itself under its own weight until the rear end of the roof truss rests on the floor. When removing the back wall the lowering of the roof is halted just above the ground to allow safe removal of the wall from the roof truss. During this process the guy webs should be resecured to

the anchors at the front of the structure. A safety cable should also be attached to the rear of the structure to prevent a gust of wind lifting the rear of the tent and it being thrown forward. Once the end wall has been removed and cleared away the front guys can be completely removed and the roof allowed to fall back under its own weight. If this does not happen due to wind preventing its fall the front cables should be used to pull the roof over . On no account should there be a need to walk on the roof fabric to facilitate this process. The roof will fall gently to the ground cushioned by the air trapped in the folded roof fabric.

8.9 Handover

8.9.1 The end user/client or client's nominated representative should be present at handover of the completed structure and shown all safety critical features of the structure, ie ground anchors and guy tension, door openings etc. The client should be given written guidance regarding the procedures to be followed in the advent of adverse weather. As with the use of all temporary structures this guidance should emphasise the need for the end user to continually monitor national, local and onsite weather conditions in order that if adverse conditions are forecast as likely contingency plans can be put in place

8.10 References

- 8.10.1 For S5000 and S2000 Structural Calculations please refer to Engineers Report Rev 1.2 produced by Tentnology Co, Vancouver, Canada.
- 8.10.2 Installation Process: refer to Tentnology Installation Manual
- 8.10.3 Uplift and anchor reaction forces: refer to Tentnology Site Survey sheets
- 8.10.4 This Chapter 8 has been prepared for MUTA by The Amazing Tent Company, October 2011.

A Annex A - Checklists

A.1 Annex A1 - Annual check on equipment

- A.1.1 Note: These checks should be undertaken as a minimum. Additional checks may be required by the equipment manufacturer's recommendation. The results should be recorded in a permanent form.
- A.1.2 Woodwork shall be structurally sound - splits or major cracks to be bound, clamped or filled and a suitable stress graded test should be initiated and failures discarded accordingly.
- A.1.3 All ropes shall be checked for fraying and anything with over 20% fraying shall be discarded.
- A.1.4 All roof and wall covers shall be checked for tears and repaired in accordance with the manufacturer's recommendations.
- A.1.5 All repairs to load bearing structural members shall be according to manufacturer's instructions or certified by a qualified structural engineer.
- A.1.6 All wire rope shall be checked for fraying and thimble loop integrity.
- A.1.7 All purlins shall be checked to ensure that they are straight.
- A.1.8 All brackets shall be checked to ensure that they are sound and secure.
- A.1.9 All riveted connections shall be checked for soundness.
- A.1.10 All non-galvanised steel shall be checked for sign of corrosion.
- A.1.11 All welds shall be checked for cracks.
- A.1.12 All extruded sections shall be checked for kinking or bowing.
- A.1.13 Safety wires on all ridge poles shall be checked for soundness and secure fixing.

A.2 Annex A2 - Recommended minimum checklist for assembled structures

1	All aspects of the final structure are at a safe distance from power lines & other hazards	
2	Anchorage are suitable for the purpose and soil condition and are holding fast	
3	Bracing wires/bars on roof and walls are in place and adequately tensioned ¹	
4	All ropes, including wire ropes, are sound	
5	Fabric is tensioned and not prone to ponding	
6	Emergency exits are in place, operating correctly and are without obstruction (Minimum of two for tents holding 50 or more people)	
7	Escape routes are clear of obstruction	
8	Exposed ropes and stakes adjacent to exits and entrances are marked and/or roped off	
9	All locking pins and bolts are in place and secure	
10	All structural supports are sound without cracks or significant dents and not overstressed	
11	Eaves connection joints are securely locked home	
12	No unrepaired tears in fabric are present	
13	Flooring is evenly laid and there are no tripping points	
14	Carpet and other floor covering is securely fixed so as to minimise the risk of tripping	
15	Roof lining does not drop significantly below eaves	
16	All timber uprights and ridges are free from splits that are likely to cause failure. ²	
17	Walls are securely pegged and/or secured	
18	A pole tent has a full complement of side uprights, anchor stakes, pulley blocks & guy ropes	
19	The main upright(s) is/are independently guyed where appropriate.	
20	Suspended weights are evenly distributed and do not overload the structure; no excessive weights suspended from roof beams, ridges etc.	
21	Flame retardant labelling is in place on every panel	
22	Final all-round visual check to satisfy that tent is erected securely.	

¹ Generally two per gable/adjacent bay roof and two per gable/adjacent bay walls. Intermediates for structures over six bays as above

² The total depth of shrinkage splits at any point round the pole should not exceed in length more than half the diameter – use credit card or similar to measure

A.3 Recommended minimum checklist for sales staff (client awareness)

- A.3.1 Access and egress for the public including disabled, emergency vehicles and equipment. Stakes and ropes can present a tripping hazard and members of the public and staff should as far as possible be kept away from areas where such dangers are present; the use of fences or other barriers is recommended. Where this cannot be achieved, the contractor can protect stake heads with padding (see below).
- A.3.2 The proximity of surrounding buildings and vegetation and other fire risks in relation to the spread of fire.
- A.3.3 The need for a telephone (to call emergency services).
- A.3.4 Availability of mains services.
- A.3.5 The slope or unevenness of the ground.
- A.3.6 Client must notify contractor of the position of underground services or overhead cables, which may present hazards during the build-up or use of the fabric structure.
- A.3.7 If underground services or overhead cables cross sites where fabric structures are to be erected, the client shall first obtain appropriate advice from the service company concerned.
- A.3.8 For larger events, it is recommended that an outline site plan of all structures should be prepared by the client showing the position of all entrances and exits, generator equipment, vehicles etc. It should be kept up to date on the site and be readily available for inspection. The plan should be agreed by the licensing authority, following consultation with the fire authority, having regard to occupancy, use, position and other factors relevant to safety. It should not be altered without reference to the licensing authority. The fabric structure supplier should be furnished with the latest copies of such a plan.
- A.3.9 The site should be arranged so as to allow for adequate means of access by fire fighting appliances to within 50 metres of any part of the structure. Access routes should be not less than 4 metres wide, should have no overhead structure or cable less than 4.5 metres above the ground and should be capable of taking the weight (about 12.5 tonnes) of fire fighting appliances in all weathers. Emergency vehicle routes within the site should be kept clear of obstruction at all times.
- A.3.10 Access to hydrants and other water supplies should not be obstructed or obscured.
- A.3.11 There must be at least 6 metres between fabric structure establishments.
- A.3.12 Note: Parts of this annex are reproduced, with minor amendments, from the Home Office "Guide to Fire Precautions in Places of Entertainment and Like Premises" with the permission of the Controller of Her Majesty's Stationery Office.

B Annex B - Occupancy

B.1.1 If the maximum use is to be made of a fabric structure, the available exits should be of sufficient number and width to permit safe evacuation of the calculated occupant capacity. Where existing exits are not sufficient, there are two courses of action open to occupiers or to the enforcing authorities. The most satisfactory arrangement is the provision of additional exit capacity by means of either more or wider exits. The other course is to limit the number of people admitted to the fabric structure to that which the exits can serve, provided that the number of persons can be controlled to prevent overcrowding. Regard should also be given to the needs of disabled persons.

B.1.2 The calculated occupant capacity of the premises, or any part thereof, should be determined:

- in areas where fixed seating is provided
- if individual seats, by the number of such seats, and
- if bench seats or similar continuous seating, by dividing the total width of such seating by 450 mm;
- in other areas (including standing areas occupied together with fixed seating) by dividing the floor area in metres squared by the relevant occupant load factor given in the table below. Toilets, stairways enclosures and similar areas are excluded; and
- in the case of other room or floor not covered in the table below, by the number of persons the room or floor is designed to hold.

B.1.3 The occupant load factor should not normally exceed the factors set in Table 3.

Table 3 – Occupant Load Factor	
Use of room or floor	Occupant load factor (m ² per person)
Area for standing	0.3
Amusement arcade, assembly hall, bingo hall, club concourse, crush hall, dance hall, venue for pop concert and like occasion, queuing area.	0.5
Bar	*0.3 to 0.5
Bowling alley, billiard room	9.3
Conference room, dining room, restaurant	*1.0 to 1.5
Studio (radio, film, television, recording)	1.4
Common room i.e. a lounge, reading room, staff room, waiting room	1.0

* depending upon the amount of seating and tables provided

B.1.4 Where premises have a multi-purpose use then the occupant load factor should be the one for the most onerous of the uses.

C Annex C - Exits

This annex is reproduced, with minor amendments, from the Home Office “Guide to Fire Precautions in Places of Entertainment and Like Premises” with the permission of the Controller of Her Majesty’s Stationery Office.

C.1 Occupancy calculations - relevant factors

One unit of exit width	525 mm
Rate of discharge per minute through one unit	40 persons
Maximum permissible calculated evacuation time - Class C buildings	2 minutes
Occupant load factor	See table in Annex B
Floor area in metres ²	
Number of persons	Floor area in metres ² ÷ Occupant load factor

With these factors it is possible to calculate the number of units of exit width and subsequently the number and width of exits required for a given number of persons:-

Number of units of exit width	Number of exits
$U = N \div (40 \times T)$	$E = (U \div 4) + 1$
Where	Where
N = Number of persons T = Time factor in minutes (2 for marquees) U = Number of units required	E = Number of exits or stairs required
Where a decimal of 0.3 or over results, the next whole number is used.	Where a decimal of 0.75 or over result, the next whole number is used.

Note: It is assumed that one exit will not be available for an evacuation.

C.2 Occupancy calculation - example

This example demonstrates the use of rounding up (or down) as the case may be; it also brings into use the variable occupant load factors for bar areas where seating is provided.

Question: What are the exit requirements for a fabric structure (class C building) used as a dance hall?

The dance floor area is 420m², and the bar area is 60m² of which 30m² has tables and chairs.

To arrive at the answer you need to complete the following three calculations:

1. Work out the number of people that the floor area will accommodate:
 - a) The dance floor will accommodate $420 \div 0.5 = 840$ persons
 - b) The bar will accommodate: $60 \div 0.4 = 150$ persons

Total occupancy = 990 persons

2. Work out number of units (U) of exit width required:

The number of units (U) of exit width is calculated as follows:

$$U = N \div (40 \times T) = 990 \div (40 \times 2) = 12.375 \text{ units}$$

Note: As 0.375 units attracts the rounding up rule, the total is rounded up.

Total units of exit width = 13

3. Work out number of exits required:

The number of exits (E) required is calculated as follows:

$$E = (U \div 4) + 1 = (13 \div 4) + 1 = 4.25 \text{ exits}$$

Note: As 0.25 is less than 0.75, it does not attract the rounding up rule.

Total number of exits required therefore = 4

Answer: A minimum of 4 exits comprising not less than 13 units of exit width.

Note: This may be achieved by having 3 exits of 3 units each and 1 exit of 4 units OR 2 exits of 4 units each plus 1 exit of 3 units and 1 exit of 2 units.

Note: Further to this calculation, it is good practice to allow for an additional fire exit, on the assumption that one may be inaccessible in the event of an emergency.

D Annex D – Working at Height

This Annex gives guidance on the safe erection, fitting out and dismantling of structures where working at height is involved.

D.1 Legislation

D.1.1 The UK's Work at Height Regulations 2005 implement the European Temporary Work at Height Directive.

D.1.2 They require those with responsibility for work at height to ensure that **The Regulations Hierarchy** is followed, namely:

- a) **Work at height is avoided where possible;**
- b) **Where work at height cannot be avoided, work equipment or other measures are used to prevent falls;**
- c) **Where the risk of a fall cannot be eliminated, work equipment or other measures are used to minimise the distance or consequences of a fall.**

D.1.3 The actual regulations are available as a free download from <http://www.opsi.gov.uk> - follow the links to "statutory instruments" 2005 no. 735)

D.1.4 The responsibilities of duty holders include ensuring that:

- a) All work at height is properly planned and organised;
- b) All work at height takes account of weather conditions that could endanger safety;
- c) Those involved in work at height are trained and competent;
- d) The place where work at height is done is safe;
- e) Equipment for work at height is appropriately inspected;
- f) The risks from fragile surfaces are properly controlled; and
- g) The risks from falling objects are properly controlled.

D.2 Planning (Regulations 4, 6 (1) & 6(2))

D.2.1 Design and selection of equipment

You must avoid work at height whenever possible; is it safe and reasonably practicable to carry out some of the work in other ways? It may be considered reasonable for you to make some modifications to the equipment or to the method of work in order to achieve this. This should include looking at future designs to see whether the need to work at height can be designed out but also reviewing existing equipment to see where design modifications can be made to reduce the need to work at height.

D.2.2 Project planning

For every project a risk assessment needs to be conducted. A site survey is an integral part of this process. The survey must include site-specific conditions such as vehicle access, ground conditions (including underground features) and overhead hazards such as power

lines, trees etc. Specific method statements are generally produced by adapting a standard template.

The correct selection of equipment for the specific site conditions is a vital part of project planning.

Where a fabric structure is erected on a raised scaffold platform, where practicable, the scaffold should be boarded out by the scaffold contractor before work on the structure itself begins; where this is not reasonably practicable collective fall arrest measures such as safety nets may be employed.

Liaison with client and other contractors requiring access to the fabric structure should be established to ensure that responsibilities for safety are understood and acted upon.

D.2.3 Emergency planning

The Regulations require you to have a plan for emergencies and rescue. Effort should be in proportion to the risk and should cover reasonably foreseeable situations such as a user stranded in equipment (eg MEWPS and deployed fall arrest equipment). You need a plan in place to deal with these situations and workers should be trained in the procedures together with any rescue equipment which may need to be used. It will not generally be sufficient to rely on the Fire and Rescue Service.

D.3 Weather (Regulation 4(3))

Every employer shall ensure that work at height is carried out only when the weather conditions do not jeopardise the health or safety of persons involved in the work. If weather conditions pose a threat to health and safety, stop work (eg risk of being blown off or slipping due to ice). On the other hand, exposure to rain and cold can be dealt with by personal protection equipment.

D.4 Training (Regulations 5 & 6(5)(b))

D.4.1 You must do all that is reasonably practicable to ensure that everyone involved in the work is competent; or, if they are undergoing training, are supervised by a competent person. Although a competent person is not defined in these regulations, it is generally accepted that a competent person is a person who can demonstrate that they have sufficient professional or technical training, knowledge, actual experience and authority to enable them to carry out their assigned duties at the level of responsibility allocated to them. In the case of crew/team/gang foremen and site supervisors this may be evidenced by a MUTA skill card.

D.4.2 Where other precautions do not entirely eliminate the risk of a fall, you must (as far as is reasonably practicable) train staff how to avoid falling and how to minimise injury in the event of a fall.

D.5 The place where work is done (Regulations 6 (4), 6(5), 7, 8 and 12)

D.5.1 Where it is essential for work to be carried out at height, both the access to the work position and the position itself must, so far as is reasonably practicable, be safe and have features to prevent a fall.

D.5.2 If the position in which work at height is done lacks inherent safety features to prevent falls (see above), it will be necessary to provide sufficient suitable equipment to prevent a fall, or, to the extent that this is not reasonably practicable, to minimise the

distance and consequences of a fall. You are required to use the most suitable equipment and to give priority to collective measures (such as safety nets) over personal protection (such as fall arrest harnesses) – but note that this priority is only where the measures being compared are in the same level of the Regulations Hierarchy.

D.5.3 There are specific requirements in the Regulations for particular types of equipment:

Table 4 – Regulations specific to different equipment types		
Schedule	Part	Equipment
1		Existing places of work and means of access
2		Guard rails, barriers etc.
3	1	Working platforms
3	2	Additional requirements for scaffolding
4		Collective fall arresting equipment, eg: nets and airbags
5	1	Personal fall protection equipment
5	2	Additional requirements for work positioning systems
5	3	Additional requirements for rope access and positioning techniques
5	4	Additional requirements for fall arrest systems
5	5	Additional requirements for work restraint systems
6		Requirements for ladders

D.5.4 You should consider whether it is reasonably practicable to provide equipment such as guard rails or barriers to prevent falls at each stage of the work, if necessary by modifying the structure itself or the method of work.

D.5.5 Equipment which has been successfully used in the industry to minimise the distance and consequences of a fall includes fall bags and fall arrest harnesses. Fall arrest harnesses, of course, require suitable attachment points (see also schedule 5 part 4 of the regulations) and providing for these may not be reasonably practicable in every case; in others, there may be a requirement for modification of the structure or of the method of work.

D.5.6 Whatever methods are adopted, it is important to take all reasonably practicable measures so that the necessary equipment is not removed or dismantled (for example to allow access by other contractors) until it is safe to do so. At the point of hand-over, you should communicate effectively with the client the importance of not tampering with the structure. A handover pack has been found to be a practicable method of achieving this.

D.6 Inspection (Regulations 12 & 13)

D.6.1 You must ensure that both the place where work is done (see schedule 1) and any safety equipment provided (covered by schedules 2-6) is inspected at suitable intervals. You should additionally inspect the structure in the event of adverse weather conditions.

D.6.2 You must ensure, before using any equipment which has come from another business, and before any equipment leaves your business, that it is accompanied by a visible indication that the last inspection has been carried out.

D.7 Fragile surfaces (Regulation 9)

- D.7.1 You must ensure that no one working under your control goes onto or near a fragile surface (such as asbestos cement or plastic skylights) unless this is the only reasonably practicable way for the work to be carried out safely. If anyone does work on or near a fragile surface you must, so far as is reasonably practicable, provide suitable equipment to minimise the risk of a fall, and, if any risk remains, to minimise the distance and consequences of a fall.
- D.7.2 Roof panels of PVC coated polyester in good condition are not generally considered to be fragile within the meaning of this clause.

D.8 Falling objects (Regulations 10 & 11)

- D.8.1 Where it is necessary to prevent injury, you must do all that is reasonably practicable to prevent anything falling. You must prevent anything being thrown or tipped from height if it is likely to cause injury and you must prevent anything being stored in such a way that its movement is likely to injure anyone.
- D.8.2 Any areas of the site where there is a danger of injury from falling objects or persons must be clearly marked and, so far as is reasonably practicable, unauthorised access must be prevented.

E Annex E – MUTA Skills Card

E.1 The Basics

- E.1.1 MUTA makes a distinction between “Supervisors” and “Foremen” in that a Supervisor would be someone who not only can run a crew, team or gang and oversee the erection of fabric structures, but can also have input into the planning of jobs and can train junior staff.
- E.1.2 Employers can accredit staff as supervisors, foremen or site crew as appropriate.
- E.1.3 Those accredited as supervisors will receive a gold card, foremen a silver card and site crew a green card.
- E.1.4 Foremen qualifying based on skills, experience and knowledge can only do so through accreditation by their employer and on submission of a brief CV/work history.
- E.1.5 Applicants with NVQ Events (Temporary Structures) Level 3 are automatically qualified as a Foreman.
- E.1.6 Crew, team and or gang employees can only do so through accreditation by their employer and on submission of a brief CV/work history.
- E.1.7 This card is valid for 5 years and can be renewed at that time on evidence of a current H & S qualification, such as MUTA’s StructureSafe site safety course or equivalent, taken in the previous 3 years.
- E.1.8 On passing their NVQ, candidates can upgrade their card on payment of the appropriate fee.

E.2 Card Details

E.2.1 The front of the card carries:

- ◆ Photo ID
- ◆ Foreman’s Name
- ◆ Employer Company Name
- ◆ Colour Coded strip
- ◆ Code for Competencies:
 - Up to 16m Frame
 - Up to 26m Frame
 - Over 26m Frame
 - Multi-storey
 - Up to 50ft Pole
 - Over 50ft Pole
- ◆ Code for Licenses
 - Fork Lift
 - Telescopic
 - Three Wheel Fork
 - Cherry Picker
 - Scissor-Lift
 - StructureSafe
 - Etc.
- ◆ Expiry date
- ◆ MUTA Logo

- ◆ ID Number

The rear of the card carries:

- ◆ Return address (the association)
- ◆ Criteria for renewal
- ◆ Key to Competencies
- ◆ Key to Licenses

- E.2.2 Note: The holder of a MUTA skills card, gained via the Level 3 Events (Temporary Structures) NVQ or via 'grandfather rights' will be deemed to be competent within the meaning of section 12.4.1 of the Institute of Structural Engineers' publication 'Temporary Demountable Structures - Guidance on procurement, design and use'.

F Annex F – MUTA Code of Practice

F.1 Introduction

- F.1.1 The purpose of this Code of Practice is to provide members of the Association with practical guidelines aimed at improving the quality of the service given by all member companies to their customers.
- F.1.2 In drawing up the Code of Practice, the Association has paid particular attention to the recommendations of the Office of Fair Trading.
- F.1.3 The Association, since its formation in 1919, has always actively encouraged the highest standards of workmanship combined with professional integrity of conduct and trading.
- F.1.4 The products supplied and/or hired by MUTA members engaged include temporary fabric structures, awnings, banners, tarpaulins, load restraint equipment, other covers and shelters, and related products and services.
- F.1.5 As the Association recommends to clients that they only employ the services of its members, only reputable, well-established manufacturers, suppliers and contractors are admitted to the Association; the Association therefore places very great emphasis on its membership selection procedure.

F.2 Membership Selection Procedure

- F.2.1 All applicants for membership of the Association must have been in the business of manufacturing, processing and supplying heavy textiles, hiring derivative products such as fabric structures, or related products and services for a minimum of two years at the time of application. Applicants must have the support of at least two members of the Association both of whom must submit references to the Association on the applicant's suitability for membership.
- F.2.2 The applicant's details are also circulated to all existing members to ensure the widest scrutiny before the application can be considered by the Association's Executive Committee who must be entirely satisfied of the applicant's suitability. In cases where there is insufficient information the Council can and does conduct further investigation.

F.3 Code of Practice

F.3.1 Advertising

All advertising shall be in compliance with the Advertising Standards Authority's British Code of Advertising Practice (see appendix). All advertising should therefore be legal, decent, honest and truthful.

Advertisements should not unfairly attack or discredit other products and advertisers or advertisements directly or by implication.

Prices or discounts quoted by the member shall be in no way misleading.

F.3.2 Law

All transactions must be conducted in accordance with statutory and common law requirements, in particular the Sale of Goods Act 1979, regarding the quality of products and services and their fitness for purpose.

F.3.3 Standard of Workmanship

The member company shall observe a good standard of workmanship and any goods or materials supplied or hired by it shall be of appropriate quality. All workmanship and materials shall comply with the requirements of the contract and shall be to the reasonable satisfaction of the client for whom the work is performed.

The member company shall check all of its own work and shall ensure that all work is of a professional standard and carried out in a safe and timely manner (subject to the constraints of weather). When agreed between the supplier and customer, the goods shall be supplied in accordance with the relevant British, European and International Standards.

F.3.4 Sub-Contracting

Where the member company sub-contracts any of its work it shall ensure that its sub-contractor is a competent and bona fide firm with all appropriate insurance cover and shall also ensure that the sub-contractor complies with this Code of Practice. The member shall act with fairness and integrity in all of its dealings with its sub-contractors.

F.3.5 Product Information

Like advertising, all product information shall be truthful and accurate. Members will on request provide information and advice to clients concerning the suitability of the goods for the purpose.

F.3.6 Public Liability

Members shall maintain public liability insurance of at least £1 million.

F.3.7 Complaints

Whilst the contents of this Code of Practice are intended to avoid the possibility of there being cause for complaint against a member, there may occasionally be a time when such a situation does arise. If so the following procedure should be adopted.

(a) In the case of any complaint it is most important that the client first approaches the member concerned, as soon as possible. (The client's contract is always with the member even though assistance may be sought from other parties in resolving the dispute.) The member shall ensure that any such complaint is investigated promptly to assess its validity and, if substantiated, is settled efficiently, quickly and courteously. If it is felt that the client does not have a justifiable complaint, it should be explained why this is so.

(b) If the client is unsuccessful in resolving a complaint relating to an alleged breach of this Code of Practice, then he or she may refer the matter in writing to MUTA. The Secretariat shall make such enquiries as are felt to be necessary and practicable.

Depending upon the outcome of the complaint, the Association reserves the right to impose a charge on either or both the parties concerned to cover all or part of the costs (if any) of the investigation.

(c) If, following the report of the Secretariat, the matter is still not resolved, the MUTA Executive Committee shall consider the complaint at their next meeting. As far as MUTA is concerned the decision of the Executive Committee will be final.

If, in the opinion of Council, the member concerned has been in breach of the Association's Memorandum and Articles of Association or has otherwise conducted business in a manner considered inappropriate to membership, then that member may be subject to the Association's disciplinary procedures.

(d) The above complaint procedure shall in no way affect the client's legal or statutory rights.

F.3.8 Enforcement of the Code

It is a condition of membership of MUTA that this Code of Practice is accepted in its entirety and in the event of a proven breach of the Code of Practice the member concerned may be penalised as decided by the MUTA Executive Committee in accordance with the Association's Memorandum and Articles of Association.

F.3.9 Appendix

The British Code of Advertising, Sales Promotion and Direct Marketing is available from the Advertising Standards Authority at <http://bcap.org.uk/The-Codes.aspx>

BSI Publications can be obtained from BSI Customer Services, BSI Standards, 389 Chiswick High Road, London W4 4AL or <http://www.bsigroup.com>

G Annex G - References

G.1 Reference documents of particular interest to marquee hirers

- G.1.1 MUTA Marquee Fire Safety Certification Scheme, available from MUTA.
- G.1.2 MUTA Marquee Study (Buro Happold Report No 2611/01), available to MUTA members from the association administration.
- G.1.3 "A Guide to the Basics of Risk Assessment", prepared for MUTA by the Symonds Group Ltd
- G.1.4 (The above publication is available to MUTA members from the association web site)
- G.1.5 "Temporary demountable structures – Guidance on design, procurement and use (Third Edition)(2007)" published by the Institution of Structural Engineers (Chapters 8.3 and 12 are of particular interest). The publication is available from the Institution – see <http://www.istructe.org/publications/pubdetails.asp?pid=138>
- G.1.6 Department for Communities and Local Government, "Fire Safety Risk Assessment - Open Air Events and Venues" (2007); and "Fire Safety Risk Assessment - Small and Medium-Sized Places of Assembly" (2006)
- G.1.7 HSE, HSG 195, "A guide to health, safety & welfare at music and similar events"
- G.1.8 Memorandum of guidance on the Electricity at Work Regulations 1989 (ISBN 0-11-883963-2)
- G.1.9 Guidance Note GS 50 from the Health & Safety Executive - Electrical Safety at Places of Entertainment (ISBN 0-11-885598-0)
- G.1.10 (The above publications are available from HSE Books. PO Box 1999, Sudbury, Suffolk, CO10 6FS)
- G.1.11 The current Institute of Electrical Engineers Regulations for Electrical Installations
- G.1.12 (Obtainable from the Institute of Electrical Engineers, PO Box 26, Hitchin, Herts, SG5 1SA)

G.2 British Standards of particular interest to marquee hirers

- G.2.1 BS 1006: 1990 Methods of test for colour fastness of textiles and leather
- G.2.2 BS 2052: 1989 Ropes made from manila, sisal, hemp, cotton and coir
- G.2.3 BS 2087: Preservative treatments for textiles
 - BS 2087: Part 1: 1992 Specification for treatment
 - BS 2087: 2: 1992 Methods of test
- G.2.4 BS 2576: 1986 Method for determination of breaking strength and elongation (strip method) of woven fabrics
- G.2.5 BS 3084: 1992 Specification for slide fasteners
- G.2.6 BS 3102: 1959 (1991) Specification for brass eyelets and washers for general purposes
- G.2.7 BS 3424: Testing coated fabrics
- G.2.8 BS 4344: 1968 Pulley blocks for use with natural and synthetic fibre ropes

- G.2.9 BS 4736: 1985 (1991) Method for determination of dimensional changes of fabric induced by cold water immersion.
- G.2.10 BS 4790: 1987 Specification for determination of the effects of a small source of ignition on textile floor coverings (hot metal nut method)
- G.2.11 BS 4881: 1993 Specification for polypropylene film cords, lines and wires
- G.2.12 BS 5053: 1985 Methods of test for cordage and webbing slings and for fibre cores for wire ropes
- G.2.13 BS 5266: Part 1: 1988 Code of Practice for the emergency lighting of premises other than cinemas and certain other specified premises used for entertainment
- G.2.14 BS 5287: 1988 Specification for assessment and labelling of textile floor coverings tested to BS 4790
- G.2.15 BS 5438: 1976 Methods of test for flammability of vertically oriented textile fabrics and fabric assemblies subjected to a small igniting flame Replaced by BS 5438: 1989 but remains current pending changes in legislation
- G.2.16 BS 5438: 1989 Methods of test for flammability textile fabrics when subjected to a small igniting flame applied to the face or bottom edge of vertically oriented specimens Replaces BS 5438: 1976 which remains current while legislation referring to it is revised
- G.2.17 BS 5651: 1978 Cleansing and wetting procedures for use in the assessment of the effect of cleansing and wetting on the flammability of textile fabrics and fabric assemblies Replaced by BS 5651: 1989 but remains current while legislation referring to it is revised
- G.2.18 BS 5651: 1989 Method for cleansing and wetting procedures for use in the assessment of the effect of cleansing and wetting on the flammability of textile fabrics and fabric assemblies Will replace BS 5651: 1978 when the Nightwear (Safety) Regulations (1985) and the Furniture and Furnishings (Fire Safety) Regulations 1988 are revised.
- G.2.19 BS 5867: - Specification for curtains and drapes
 - BS 5867: Part 1: 1980 General requirements+
 - BS 5867: Part 2: 1980 Flammability requirements
- G.2.20 BS 6085: 1982 (1992) Methods of test for determination of the effects of a small source of ignition on textile floor coverings (methenamine tablet test)
- G.2.21 BS 6399: Part 2 1995 Code of practice for wind loads
- G.2.22 BS 7157: 1989 (1994) Method of test for ignitability of fabrics used in the construction of large tented structures
- G.2.23 BS 7837: 1996 Performance levels of fabrics used in the construction of marquees and large tents when subjected to the test procedures in BS 5438
- G.2.24 BS ISO 20121:2012 Event sustainability management systems. Requirements with guidance for use
- G.2.25 BS 13782:2005 Temporary structures – Tents – Safety.
- G.2.26 Copies of British Standards may be obtained from the Sales Department, British Standards Institution, Linford Wood, Milton Keynes, MK14 6LE.