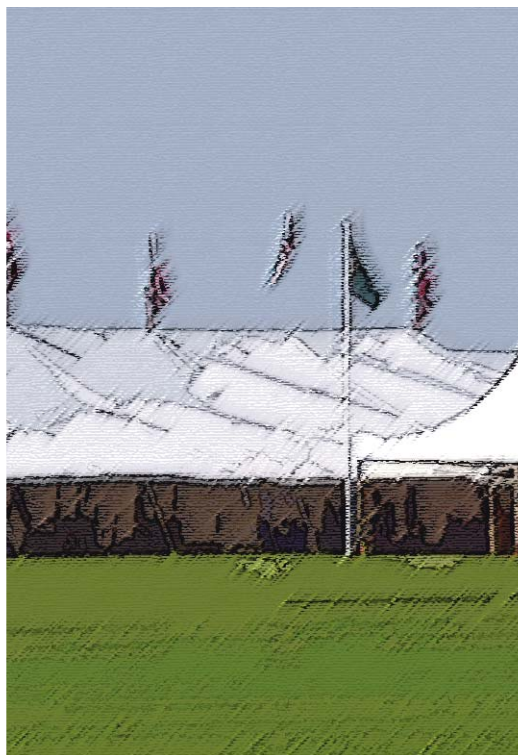
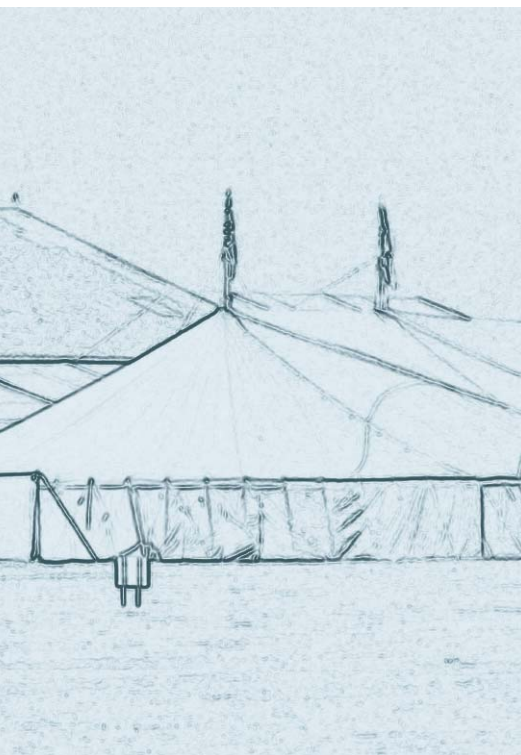


# Safe Use and Operation of Marquees and Temporary Structures



**MUTAmarq**

Accredited best practice





**MUTAmarq**

**Accreditation Scheme  
&  
Best Practice Guide**

**This guide is designed for use by all involved in the procurement and provision of temporary structures for events; safety professionals and enforcement authorities; event organisers; occupiers and contractors.**

**It is a definitive guide published by  
the UK's foremost authority on the marquee industry.**

**This guide was last updated in June 2009.**



**MUTAmarq**

is administered by



**MUTA**

*Supporting Technical Fabrics since 1919*

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“The Health and Safety Executive (HSE) commends the Performance Textiles Association in producing the MUTAmarq “Best Practice Guide for the Safe Use and Operation of Marquees and Temporary Structures”. It is encouraging to see that those who manage and operate marquees and other textile covered framed structures are taking practical steps to identify and manage the real risks in this industry.

“This guide will be of benefit to any contractor or operator in this Industry and also to many event organisers and others involved in the procurement of temporary structures.

“The HSE commends these Guidelines and hopes that they will assist the Industry achieve their aims of continual improvement in standards of safety based on sensible assessment and management of risk. This is an important step for the Industry in ensuring that the safety standards they set are maintained and improved.”

*HSE Glasgow March 2008*

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## **1. STATEMENT BY THE HSE, STSU ENTERTAINMENT SECTION**

"The Health and Safety executive (HSE) commends the Performance Textiles Association in producing the MUTAmarq "Best Practice Guide for the Safe Use and Operation of Marquees and Temporary Structures". It is encouraging to see that those who manage and operate marquees and other textile covered framed structures are taking practical steps to identify and manage the real risks in this industry. This guide will be of benefit to any contractor or operator in this Industry and also to many event organisers and others involved in the procurement of temporary structures. The HSE commends these Guidelines and hopes that they will assist the Industry achieve their aims of continual improvement in standards of safety based on sensible assessment and management of risk. This is an important step for the Industry in ensuring that the safety standards they set are maintained and improved."  
*March 2008*

## **2. WHO SHOULD USE THIS GUIDE?**

Local Authorities, event organisers and venue owners should welcome this guide as a benchmark for the procurement of temporary structures. Selecting contractors that demonstrate competence by adherence to these guidelines will greatly improve safety before, during and after the event.

Contractors seeking a practical way to demonstrate their professionalism and competence should register under this scheme.

## **3. INTRODUCTION**

MUTAmarq is an accreditation scheme run by MUTA, long recognised as the representative body of the industry

MUTAmarq recognises the duty that marquee contractors have to ensure that members of the public can have complete confidence in the safety of the products and services supplied by them. Those contractors accredited under MUTAmarq are subject to periodic inspections to ensure, not only the safety of finished installation, but also that of the crews during erection and dismantling thus helping clients to fulfil their obligations under health and safety legislation.

MUTAmarq provides guidelines for best practice in the use and operation of tents, marquees and ancillary equipment for the benefit of contractors and their customers.

MUTAmarq is the assessment centre for NVQ Events (Temporary Structures).

## **4. SCOPE**

MUTAmarq covers all marquees and all textile-covered framed structures, whether of steel or aluminium, which are intended for public assembly, a place of work or like purposes. It does not cover camping tents, air-supported structures or grandstands.

Multi-storey structures are also within the scope of this code and are also subject to some special provisions detailed in Annex D.

MUTAmarq also deals with ancillary equipment supplied with a marquee or structure including flooring, furniture, interior linings, heating and lighting.

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.

MUTAmarq **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.

MUTAmarq **does not** accredit the business standards of contractors approved under the scheme.

**Approved contractors may however also be members of MUTA which has a separate code of practice that covers this area.**

## 5. RESPONSIBILITY

All parties have a duty of care to both the public and the crews working on site. This includes the venue owner/operator, the event organiser, the marquee contractor and other contractors working on the same site.

Prior to any event, the tent contractor shall ensure that areas of responsibility for health and safety are clearly defined: those of all parties in the contract chain including the tent 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.

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.

## 6. PUBLIC SAFETY

### 6.1 Structural

#### 6.1.1 Design

The design and suitability of a tented structure shall be proven either by long established use or, particularly for larger tents\* and structures, by calculation verified by a qualified structural engineer. As a minimum, such calculations shall include the maximum wind loading for which the structure is approved and the maximum imposed load permissible.

*\* Larger tents and marquees are pole marquees greater than 40ft in span and framed tents greater than 9m in span.*

Guidance contained in "Temporary demountable structures – Guidance on design, procurement and use", published by the Institute of Structural Engineers should be followed at all times. (Chapters 8.3 and 12).

#### 6.1.2 Anchorage

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

6.1.2.2 Loose, non-cohesive soils provide the least resistance and may require special anchors. Where there is doubt as to the holding capacity of stakes sample pull tests should be carried out.

6.1.2.3 Where ground penetration is not possible, heavy weights can be used to withstand uplift forces.

*Note: The 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.*

- 6.1.2.4 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. As an absolute minimum for an upright, is one stake not less than 450 mm long, 12 mm diameter (18"lg, 1/2" dia.).*

- 6.1.2.5 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.

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

- 6.1.2.7 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 marquee 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 tents and structures that rely on guys for support.

### 6.1.3 Thorough Examination and Inspection

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

#### 6.1.3.1 Thorough examination

It is generally accepted that the tent and marquee 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 tent. 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.I.

#### 6.1.3.2 Inspection

On initial erection and before the tented 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 MUTAmarq 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.II

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.

#### 6.1.4 Stability

- 6.1.4.1 Roof and wall bracing are an integral part of most frame structures and must be fitted to any installation in accordance with the manufacturers instructions (normally at each end and, on larger structures, every 6<sup>th</sup> bay).
- 6.1.4.2 Marquee installations should be supplied so as to allow complete closure when not in use and when extreme weather conditions are expected.
- 6.1.4.3 Clients should be informed of the design wind load of the structure and given instructions to evacuate should this be in danger of being reached.
- 6.1.4.4 Roof panels should be sufficiently tensioned to avoid ponding.
- 6.1.4.5 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.
- 6.1.4.6 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.
- 6.1.4.7 Where tentage is 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 marquee contractor to ensure the supplier of such structures receives all relevant design information in respect of the tentage to be so erected, e.g. design wind load, anchorage load, point load, occupancy level etc.
- 6.1.4.8 Continual reference should be made to weather forecasting services, particularly with regard to tents erected during the winter months and those erected on exposed sites. If tents 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.
- 6.1.4.9 It is for the contractor to agree with the client at the outset what surveillance/maintenance (if any) will be necessary after the tented



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 weather conditions, time of year etc.

- 6.1.4.10 As a general rule the contractor shall provide the client with an out of hours emergency telephone number(s).

## **6.2 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. (4.8 for relevant documents).*

### 6.2.1 Fire retardancy of fabrics

- 6.2.1.1 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). 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.
- 6.2.1.2 Further guidance on flammability of materials is given in Temporary Demountable Structures Chapter 12.

### 6.2.2 Exits

- 6.2.2.1 Exit calculations - relevant factors - see Annex C.
- 6.2.2.2 Tents intended to hold more than fifty persons should not have less than two exits.
- 6.2.2.3 Exits should be distributed as evenly as possible around the tent to provide genuine alternative routes from all parts of the tent.
- 6.2.2.4 The maximum distance of travel from any part of a tent to a final exit should not normally be more than 24 metres.
- 6.2.2.5 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.
- 6.2.2.6 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).
- 6.2.2.7 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.

- 6.2.2.8 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.
- 6.2.2.9 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.
- 6.2.2.10 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.
- 6.2.2.11 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.

### 6.2.3 Fire Fighting Equipment

- 6.2.3.1 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 tent occupants.
- 6.2.3.2 The advice of the local fire brigade should be sought in cases of doubt. Generally, however, the tented structure should be provided with water-based extinguishers of a minimum capacity of six litres. These should be visible, easily accessible and should be easily operated. One fire extinguisher should be positioned at each emergency exit. CO<sub>2</sub> extinguishers should also be provided where necessary to deal with electrical fires.
- 6.2.3.3 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.

## 6.3 Capacity & Public Access

### 6.3.1 Capacity

- 6.3.1.1 Generally, the internal layout (seating, gangways etc) is not within the remit of the tent suppliers. The contractor shall nevertheless advise clients or licensees to adopt the Guide to Fire Precautions in Existing Places of Entertainment and Like Premises, Chapter 13, clauses 6.8 to 7.7 as a guideline\*. 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.  
*\*Regulatory Reform Orders now place the onus on venue operators to carry out a fire risk assessment. Guides to fire risk assessment are available from the Department for Communities and Local Government. This guidance to some extent supersedes the previous document, however in many cases its guidance still provides for good practice.*
- 6.3.1.2 The occupant capacity is the permissible number of people occupying a tent or part of a tent and is an important factor in assessing the means of escape.

- 6.3.1.3 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.

## **6.4 Furniture**

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

- 6.4.1 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.
- 6.4.2 Tables provided for food preparation should have hard and easily washable surfaces.

## **6.5 Lighting**

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

- 6.5.1 All parts of the 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.
- 6.5.2 Electrical installations should be installed, tested and maintained in accordance with the provisions of the IEE Regulations for Electrical Installations. Work on electrical installations and appliances, should only be carried out by competent personnel.
- 6.5.3 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.
- 6.5.4 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*).

## **6.6 Heating**

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

- 6.6.1 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.
- 6.6.2 All heaters should conform to relevant national standards such as BS 799 for oil burning equipment.
- 6.6.3 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.

## **6.7 Client Awareness**

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 tented structure:

- 6.7.1 No dangerous or combustible or toxic gases or other allied product such as aerosols, explosives or pyrotechnics should be stored within a tented structure.
- 6.7.2 Very few tented 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.  
  
Valleys between tents and buildings or adjacent tents, 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.
- 6.7.3 Persons other than the contractor's staff or those under his supervision shall not be admitted to a tented structure during erection or dismantle operations until it is deemed structurally complete and safe.
- 6.7.4 The area underneath stages, platforms etc. should not be used for storage.
- 6.7.5 Rubbish should not be allowed to accumulate underneath stages etc. Such areas should be inspected daily to ensure conformity.
- 6.7.6 Exit routes should be kept free from obstruction at all times.
- 6.7.7 When any person is in the tent, the exit doors should not be locked.
- 6.7.8 The client should be informed of maximum in service wind speed.
- 6.7.9 Continual reference should be made to weather forecasting services, particularly with regard to tents erected during the winter months and/or those erected on exposed sites. Contingency plans should be in place to evacuate tents when wind speeds approaching the maximum service gust speed are forecast.
- 6.7.10 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 cross bracing) or the number and positioning of exits.

See Annex A.III for checklist for sales staff.

## **6.8 Regulations & Guidance**

More comprehensive guidance can be found in the following publications:

- 6.8.1 Temporary Demountable Structures – Guidance on design, procurement and use, available from the Institute of Structural Engineers.
- 6.8.2 Fire Safety Risk Assessment – Small and Medium Places of Assembly, available from the Department for Communities and Local Government.
- 6.8.3 Fire Safety Risk Assessment – Outdoor Events, available from the Department for Communities and Local Government.

## **7. SITE SAFETY**

## **7.1 Competency/Licences**

- 7.1.1 Crew foremen and/or gang leaders 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 qualification. Such competency should be evidenced with a MUTAmarq skills card. (See annex E).
- 7.1.2 As a minimum, all members of the crew shall have undergone basic induction in on-site health and safety, detailing their duty of care to themselves and others.
- 7.1.3 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 MUTAmarq skills card.
- 7.1.4 At least one member of each crew will have undergone suitable first aid training and carry documentation as proof of qualification (can be noted on MUTAmarq skills card).

## **7.2 Personal Protection Equipment**

- 7.2.1 All crews shall have sufficient and appropriate personal protection equipment available for use when necessary.
  - 7.2.1.1 Protective footwear should be worn at all times.
  - 7.2.1.2 Hard hats should be worn when:
    - 7.2.1.2.1 Overhead work is being carried out (includes adjacent sites).
    - 7.2.1.2.2 Wind could dislodge overhead components prior to them being secured (eg: purlins before roof sheets are fitted).
  - 7.2.1.3 High visibility Jackets should be worn when:
    - 7.2.1.3.1 There is a risk of vehicle movement on site.
    - 7.2.1.3.2 There is mechanical or manual handling of large components in progress on the site or adjacent sites (includes work inside the structure).
  - 7.2.1.4 Gloves when appropriate.
  - 7.2.1.5 Goggles when appropriate.
  - 7.2.1.6 Ear defenders when appropriate.
  - 7.2.1.7 Sun screen when appropriate.

## **7.3 Services**

- 7.3.1 The location of any underground services must be identified and clearly marked before any ground penetration operation. If any doubt exists then the advice of the appropriate service company must be sought.

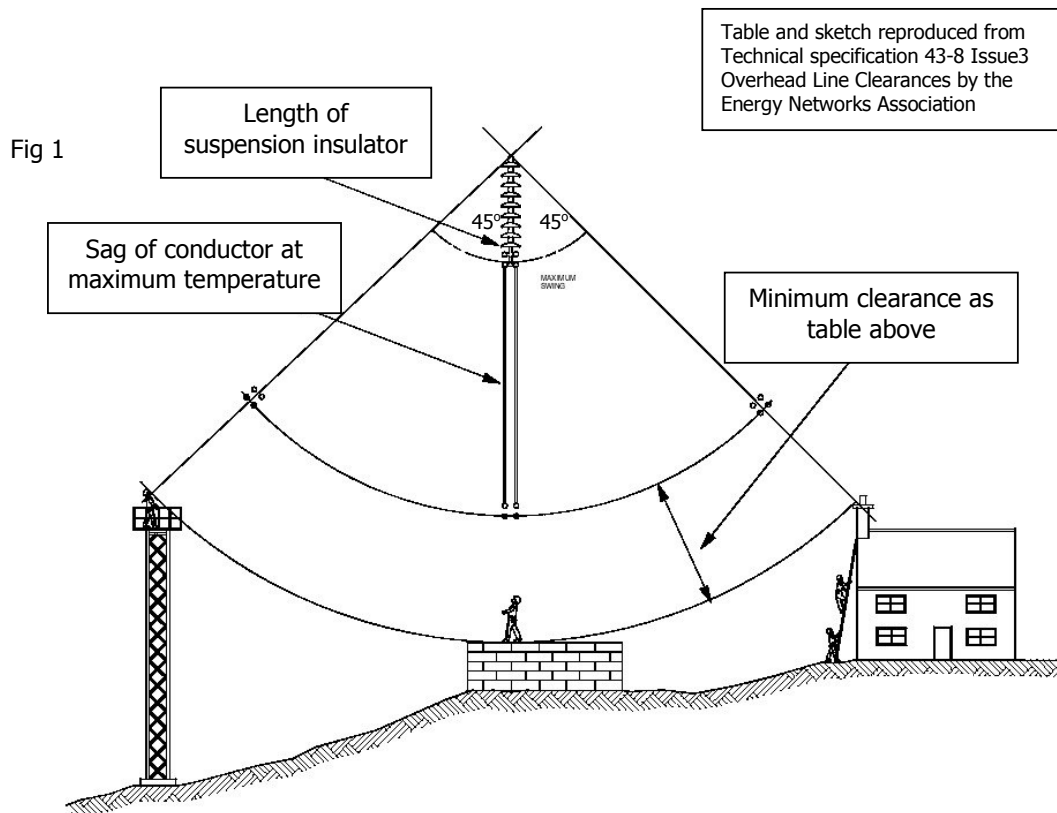
It may be necessary to perform an underground scan of the site area where penetration is planned. If the contractor carries out this scan then he should be permitted to charge an appropriate fee.

7.3.2 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.**

7.3.3 If for operational purposes it is not possible to comply with 7.3.2 then:

7.3.3.1 The absolute minimum clearances that shall be maintained between an overhead line conductor and any part of the tent installation are shown in the table below (see also fig. 1). 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**

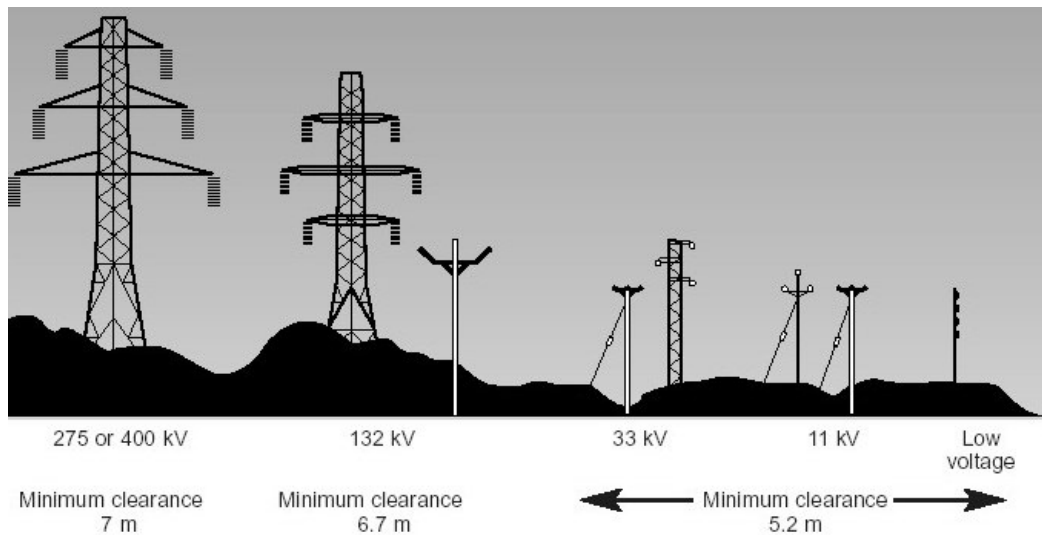
Normal System Voltage (kV)	Up to 33	66	132	275	400
Minimum Clearance (metres)	3.0	3.2	3.6	4.6	5.3



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."*

Fig 2.



7.3.3.2 Utmost care must be taken particularly with the use of power plant (forklifts, platforms etc.) and other access equipment.

7.3.3.3 In some cases it will be necessary to contact the power line owner to request shrouding of the line.

Guidance contained in the following publications is helpful:

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

## 7.4 Welfare

7.4.1 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).

## 7.5 Documentation

7.5.1 Crews should have available for inspection copies of:

7.5.1.1 Site supervisor's skills card.

- 7.5.1.2 The contractors health and safety policy.
  - 7.5.1.3 Method statements for all work planned on the site.
  - 7.5.1.4 Generic risk assessment(s).
  - 7.5.1.5 Any necessary site specific risk assessment.
- 7.5.2 In addition, when required to do so by the client or site authorities, contractors must be able to produce evidence of:
- 7.5.2.1 Public liability insurance.
  - 7.5.2.2 MUTAmarq accreditation.

## **7.6 Client Awareness**

- 7.6.1 Contractors should ensure that clients are aware of their responsibility to provide a safe working environment for contractors and their crews. This includes:
- 7.6.1.1 Warning of known overhead/underground services.
  - 7.6.1.2 Warning of any other risk or hazard identified by the client's own risk assessment.
  - 7.6.1.3 Ensuring that any other contractors working on the same or adjacent sites are competent and working safely.

## **8. REPORTING OF INCIDENTS**

### **8.1 Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)**

- 8.1.1 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 three days incapacity for their normal work; dangerous occurrences are listed in a schedule to the Regulations.

### **8.2 Requirement to report incidents to MUTAmarq administration**

- 8.2.1 Accredited contractors shall report to MUTAmarq, on the prescribed form, any incident involving:
- a tent operated or supplied by them;
  - components of such a tent or accessories (such as flooring, lighting, furniture etc) supplied by them;
  - a member of their crew or any bystanders during erection or dismantling of such a tent;

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).



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

*Note: It is accepted that any such report to MUTAmarq 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 MUTAmarq to the fact that an incident has occurred so that information on how to prevent similar incidents can be shared with all contractors.*

## **9. COMPLIANCE**

### **9.1 Inspection**

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.

#### **9.1.1 Inspection**

There are two types of inspection to be carried out by experienced inspectors, appointed by the MUTAmarq administration at randomly selected installations/sites.

9.1.1.1 Public safety inspection will generally follow the completed structure checklist (see annex A II). Action and reporting as 9.1.1.3 below:

For each applicable item:

A - Pass – No action.

B - Pass with comment – Written comment, via report, to the contractor requesting future improvement.

C - Marginal fail – Written comment to contractor demanding future improvement – May occasion further inspection.

D - Fail – Urgent contact with the contractor to request immediate remedy – Occasions second inspection paid for by the contractor.

In addition the inspector has the discretion to add/deduct percentage points for overall presentation, items not covered by the checklist and co-operation of site staff if applicable.

9.1.1.2 Site Health & Safety inspection will generally cover the following aspects. Action and reporting as 9.1.1.3:

Personal Protection Equipment  
First Aid  
Supervision  
Manual handling  
Licences and competencies  
Tools  
Services  
Working at height  
Housekeeping  
Welfare  
Documentation

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.

#### 9.1.1.3 Actions and Reporting by Inspectorate

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

## 9.2 Non compliance – actions

9.2.1 A points system will operate as follows:

9.2.1.1 An overall score for any one inspection visit of 80% or less – 1 point.

9.2.1.2 An overall score for any one inspection visit of 60% or less – 2 points.

9.2.1.3 Failure to comply with the inspector's instructions in regard to immediate remedial action will attract a further 2 points.

9.2.1.4 Points expire after six further inspection visits, or two years, whichever is the sooner.

9.2.2 Accumulation of 4 points will result in withdrawal of accreditation.

9.2.3 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.

9.2.4 Appeals

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

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

## **10. EVIDENCE OF ACCREDITATION**

- 10.1 Accredited contractors will be given an annual certificate, valid for 12 months beginning in March each year.
- 10.2 Accredited contractors will be listed on the MUTAmarq web site.
- 10.3 Accredited contractors will be updated regularly as regards their accumulated points status.
- 10.4 Accredited contractors will be encouraged to display the MUTAmarq logo.

## **11. ADMINISTRATION**

- 11.1 The scheme will be administered by the management of MUTA, answerable to the executive committee of the marquee section of the association.

## **12. ELIGIBILITY**

Mutamarq accreditation is available to any bona fide company whose main activity is the hire of marquees or temporary structures as defined in the scope (Section 4)

- 12.1 Accredited Contractors shall:
  - 12.1.1 Sign an annual declaration to carry out all work in accordance with this code, issued regulations and guidelines
  - 12.1.2 Satisfy the administration that they are a bona fide organisation;
  - 12.1.3 Submit to an initial inspection (to be charged at the published rate).
  - 12.1.4 Agree to periodic and random inspections of premises and systems
  - 12.1.5 Agree to periodic and random inspections of finished installations
  - 12.1.6 Agree to periodic and random inspections of the conduct of crews on site in respect of health and safety.
  - 12.1.7 Maintain adequate Public Liability insurance and to provide evidence of same to the administration if requested.
  - 12.1.8 Agree to the disciplinary procedures detailed in section 9.2.
  - 12.1.9 Pay the appropriate annual fee.
- 12.2 Membership of the Marquee Section of MUTA has similar criteria as listed in 12.1 and therefore automatically confers accreditation.
  - 12.1.1 PTA members failing to maintain accreditation will automatically forfeit membership of the association.

## **ANNEX A**

### **A.I. Annual check on equipment**

*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.I.i. 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.I.ii. All ropes shall be checked for fraying and anything with over 20% fraying shall be discarded.
- A.I.iii. All roof and wall covers shall be checked for tears and repaired in accordance with the manufacturer's recommendations.
- A.I.iv. All repairs to load bearing structural members shall be according to manufacturer's instructions or certified by a qualified structural engineer.
- A.I.v. All wire rope shall be checked for fraying and thimble loop integrity.
- A.I.vi. All purlins shall be checked to ensure that they are straight.
- A.I.vii. All brackets shall be checked to ensure that they are sound and secure.
- A.I.viii. All riveted connections shall be checked for soundness.
- A.I.ix. All non-galvanised steel shall be checked for sign of corrosion.
- A.I.x. All welds shall be checked for cracks.
- A.I.xi. All extruded sections shall be checked for kinking or bowing.
- A.I.xii. Safety wires on all ridge poles shall be checked for soundness and secure fixing.

**A.II. Recommended minimum checklist for assembled structures**

- A.II.i. Anchorages are suitable for the purpose and are holding fast.
- A.II.ii. Bracing wires on roof and walls are in place and adequately tensioned.
- A.II.iii. All ropes, including wire ropes, are sound.
- A.II.iv. Fabric is tensioned and not prone to ponding.
- A.II.v. Emergency exits are in place, operating correctly and are without obstruction.
- A.II.vi. Escape routes are clear of obstruction.
- A.II.vii. Exposed ropes and stakes adjacent to exits and entrances are marked or roped off.
- A.II.viii. All locking pins and bolts are in place and secure.
- A.II.ix. All structural supports are sound.
- A.II.x. Eaves connection joints are securely locked home.
- A.II.xi. No unrepaired tears in fabric are present.
- A.II.xii. Flooring is evenly laid and there are no tripping points.
- A.II.xiii. Carpet and other floor covering is securely fixed so as to minimise the risk of tripping.
- A.II.xiv. Roof lining does not drop significantly below eaves.
- A.II.xv. All timber uprights and ridges are free from splits that are likely to cause failure
- A.II.xvi. Walls are securely pegged and/or secured
- A.II.xvii. Any pole tent has its full complement of side uprights, anchor stakes, pulley blocks and guy ropes.
- A.II.xviii. The main upright is independently guyed.
- A.II.xix. Finally, an all-round visual check to satisfy that the tented structure is erected securely.
- A.II.xx. Any other observations.

### A.III. **Recommended minimum checklist for sales staff (client awareness)**

- A.III.i. 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.III.ii. The proximity of surrounding buildings and vegetation and other fire risks in relation to the spread of fire.
- A.III.iii. The need for a telephone (to call emergency services).
- A.III.iv. Availability of mains services.
- A.III.v. The slope or unevenness of the ground.
- A.III.vi. 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 tent.
- A.III.vii. If underground services or overhead cables cross sites where tents are to be erected, the client shall first obtain appropriate advice from the service company concerned.
- A.III.viii. 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 tent supplier should be furnished with the latest copies of such a plan.
- A.III.ix. 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.III.x. Access to hydrants and other water supplies should not be obstructed or obscured.
- A.III.xi. There must be at least 6 metres between tent establishments.

*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.*

## ANNEX B

### Occupancy

If the maximum use is to be made of a building, 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 tented 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.

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

- a. in areas where fixed seating is provided
  - i) if individual seats, by the number of such seats, and
  - ii) if bench seats or similar continuous seating, by dividing the total width of such seating by 450 mm;
- and
- b. 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
- c. 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.

The occupant load factor should not normally exceed the factors set in the table below:

#### Occupant load factors -

Use of room or floor	Occupant load factor (m <sup>2</sup> 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

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

## ANNEX C

### Exits

*Note: 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.*

#### Annex 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 <sup>2</sup>	
Number of persons = floor area in metres <sup>2</sup> ÷ 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
$U = N \div (40 \times T)$ Where: N = Number of persons T = Time factor in minutes (2 for marquees) U = Number of units required	$E = (U \div 4) + 1$ Where: 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 results, the next whole number is used

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

#### Annex C.2 Occupancy calculation - example

*Note: 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 tent (class C building) used as a dance hall?

The dance floor area is 420m<sup>2</sup>

The bar area is 60m<sup>2</sup> of which 30m<sup>2</sup> has tables and chairs

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

- I. 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**



II. 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**

III. 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.*

## **ANNEX D**

### **Special Provisions for Multi-Storey Structures**

**Working at Height: guidance on the safe erection, fitting out and dismantling of double deck structures.**

#### **Legislation**

The UK's Work at Height Regulations 2005 implement the European Temporary Work at Height Directive. They require those with responsibility for work at height to ensure that:

#### **The Regulations Hierarchy**

- 1. Work at height is avoided where possible;**
- 2. Where work at height cannot be avoided, work equipment or other measures are used to prevent falls;**
- 3. 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.**

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

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.

## **Solutions**

### **Planning**

*(Regulations 4, 6 (1) & 6(2))*

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.

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 structure is erected on a scaffold, 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 structure should be established to ensure that responsibilities for safety are understood and acted upon.

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.

### **Weather**

*(Regulation 4(3))*

It is an absolute duty to ensure that work is postponed if weather conditions endanger safety. 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.

## Training

*(Regulations 5 & 6(5)(b))*

You must 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 foremen and site supervisors this may be evidenced by a MUTAmarq skill card.

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.

## The place where work is done

*(Regulations 6 (4), 6(5), 7, 8 and 12)*

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.

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.

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

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

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.

Equipment which has been successfully used in the industry to minimise the distance and consequences of a fall includes fall arrest harnesses and fall bags. 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.

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.

## **Inspection**

*(Regulations 12 & 13)*

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.

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.

## **Fragile surfaces**

*(Regulation 9)*

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.

Roof panels of PVC coated polyester in good condition are not generally considered to be fragile within the meaning of this clause.

## **Falling objects**

*(Regulations 10 & 11)*

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.

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.

## ANNEX E

### MUTAmarq Skills Card

MUTAmarq makes a distinction between "Supervisors" and "Foremen" in that a Supervisor would be someone who not only can run a crew and oversee the erection of tents, but can also have input into the planning of jobs and can train junior staff.

- Supervisors with NVQ Events (Temporary Structures) Level 3 automatically qualify. (Colour Code: Gold)  
This card is valid for 5 years and can be renewed at that time on evidence of a current H & S qualification taken in the previous 2 years.
- Those with experience only can qualify through accreditation by their employer, but this option will only be available until the end of 2009, after that time the only route will be by a formal qualification. This includes those currently registered as candidates for the NVQ.

Employers can accredit staff as either supervisors or foremen as appropriate. Those accredited as supervisors will receive a gold card, foremen a silver card.

This card is valid for 5 years and can be renewed at that time on evidence of a current H & S qualification taken in the previous 2 years.

On passing their NVQ, candidates can upgrade their card on payment of the appropriate fee.

### Card Details

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
  - Etc.
  - Expiry date
  - MUTAmarq Logo
  - ID Number

The rear of the card carries:

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

### Note:

The holder of a MUTAmarq 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'.

## **ANNEX F**

### **Reference**

#### **Annex F.1 Reference documents of particular interest to marquee hirers**

MUTA Marquee Fire Safety Certification Scheme  
*(The above publication is available from MUTA)*

MUTA Marquee Study (Buro Happold Report No 2611/01)  
*(The above publication is available to MUTA members from the association administration)*

"A Guide to the Basics of Risk Assessment", prepared for MUTA by the Symonds Group Ltd  
*(The above publication is available to MUTA members from the association web site)*

"Temporary demountable structures – Guidance on design, procurement and use" published by the Institute of Structural Engineers (Chapters 8.3 and 12 are of particular interest)

The Home Office "Guide to Fire Precautions in places of Entertainment and Like Premises" (ISBN 0-11-340907-9) as amended by circular DCOL 14/1995

Guide to Health Safety and welfare at Pop Concerts and Other Similar Events (ISBN 0-11-341072-7)

*(The above publications are available from HMSO bookshops and Accredited Agents)*

Memorandum of guidance on the Electricity at Work Regulations 1989 (ISBN 0-11-883963-2)

Guidance Note GS 50 from the Health & Safety Executive - Electrical Safety at Places of Entertainment (ISBN 0-11-885598-0)

*(The above publications are available from HSE Books. PO Box 1999, Sudbury, Suffolk, CO10 6FS)*

The current Institute of Electrical Engineers Regulations for Electrical Installations

*(Obtainable from the Institute of Electrical Engineers, PO Box 26, Hitchin, Herts, SG5 1SA)*

#### **Annex F.2 British Standards of particular interest to marquee hirers**

BS 1006: 1990 Methods of test for colour fastness of textiles and leather

BS 2052: 1989 Ropes made from manila, sisal, hemp, cotton and coir

BS 2087: Preservative treatments for textiles

BS 2087: Part 1: 1992 Specification for treatment  
BS 2087: 2: 1992 Methods of test

BS 2576: 1986 Method for determination of breaking strength and elongation (strip method) of woven fabrics

BS 3084: 1992 Specification for slide fasteners

BS 3102: 1959 (1991) Specification for brass eyelets and washers for general purposes

BS 3424: Testing coated fabrics

BS 4344: 1968 Pulley blocks for use with natural and synthetic fibre ropes

BS 4736: 1985 (1991) Method for determination of dimensional changes of fabric induced by cold water immersion.

BS 4790: 1987 Specification for determination of the effects of a small source of ignition on textile floor coverings (hot metal nut method)

BS 4881: 1993 Specification for polypropylene film cords, lines and wires

BS 5053: 1985 Methods of test for cordage and webbing slings and for fibre cores for wire ropes

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

BS 5287: 1988 Specification for assessment and labelling of textile floor coverings tested to BS 4790

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*

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 *Replaced by BS 5438: 1976 which remains current while legislation referring to it is revised*

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*

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.*

BS 5867: - Specification for curtains and drapes

BS 5867: Part 1: 1980 General requirements+

BS 5867: Part 2: 1980 Flammability requirements

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)

BS 6399: Part 2 1995 Code of practice for wind loads

BS 7157: 1989 (1994) Method of test for ignitability of fabrics used in the construction of large tented structures

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

*Copies of British Standards may be obtained from the Sales Department, British Standards Institution, Linford Wood, Milton Keynes, MK14 6LE*