

Technical Notes: Outdoor stand structures

on the *Berlin ExpoCenter City (BECC)* exhibition grounds

as a supplement to Tech. Guidelines (→ Item 4.8) by Messe Berlin GmbH

1 Preliminary remarks

These notes give the technical specifications and requirements for stand structures for which permits are required and which are to be erected inside the **fenced-in** outdoor area of the exhibition grounds (*Berlin ExpoCenter City*) of Messe Berlin GmbH. Where the provisions of this document do not contain any supplementary specifications, the **Technical Guidelines** issued by Messe Berlin GmbH shall apply ([Messe Berlin - Downloadcenter](#)).

1.1 Definitions, Explanations

According to the Berlin Building Regulations (*Bauordnung von Berlin*) /BauO Bln, § 62 (1), Nr.13e/, all stand structures erected on the outdoor grounds and intended for use at events are in all cases classified as **temporary structures not subject to specific approval procedures** as well as so-called **special structures** with uses similar to those of places of public assembly within the Exhibition Grounds or, **depending on the type of construction, as a “temporary structure” (Fliegender Bau)** on the trade fair and exhibition grounds.

Accordingly, such special structures must comply with the conditions and requirements imposed by current public regulations as stated in the Berlin Building Regulations and, in particular, with the following **rules and regulations** in their current, valid version.

- BetrVO / Regulation concerning the uses of special structures (*Betriebsverordnung über den Betrieb von baulichen Anlagen*), and, **where deemed suitable for special requirements**, also **MVStättV** / Model Ordinance Concerning the Construction and Operation of Places of Public Assembly (*Musterverordnung über den Bau und Betrieb von Versammlungsstätten*)
- M-FIBauR / Model Guideline on the Construction and Operation of Temporary Structures (*Musterrichtlinie über den Bau und Betrieb Fliegender Bauten*)
- DIN EN 13 782 *) Temporary structure - **Tents – Safety**
- DIN EN 13 814 *) Fairground and amusement park machinery and structures – Safety

In individual cases, in order to implement and ensure decisive, event-related protection objectives, additional special requirements may be specified for stand structures on the outdoor grounds on the basis of the afore-said regulations and ordinances. Similarly, relaxed requirements may be permitted if compliance with the respective regulations is not necessary due to the particular type of event-related use of an outdoor stand structure.

1.2 Outdoor grounds (BECC)

The outdoor grounds of *Berlin ExpoCenter City* comprise **paved or asphalted traffic areas as well as areas with uneven, mostly uncompacted gravel surfaces**. They include all areas outside the existing exhibition halls, which are as follows:

- **Forecourts and intermediate courtyards:** around and next to the exhibition halls, mostly with an even paved or asphalt surface suitable for vehicles.
- **Summer Garden (Sommergarten):** bounded on the north side by lawns: in front of Halls 18 and 20. The surfaces mainly consist of an uneven combination of gravel and grass or non-compacted lawns.
- **Funkturm inner courtyard:** consisting mainly of an asphalt / paved surface suitable for vehicles, together with individual lawn areas.
- **Rail track area** (south) **connected to the railway network:** rail tracks set in concrete, interspersed with small concrete paving stones.
- **Parking areas P 17 + P 18** (near Gate 25) concrete paving slabs.
- **Plaza** (at South Entrance (EMS) and *CityCube* Entrance Jafféstrasse): paved surface, **suitable for vehicles**.
- **Parking area P 14** (in front of *CityCube* Entrance Messedamm): asphalt roadway / paved surface suitable for vehicles.
- **CityCube Terrace (northern access to CityCube: Hall B):** paved surface suitable for vehicles.

After dark, general lighting will be provided for roadways and paths on the outdoor grounds during the opening times of the event.

The necessary utility supply connections are spaced at irregular intervals.

*) replaces the former **DIN 4112** Temporary structures; code of practice for design and construction (*Fliegende Bauten: Technische Baubestimmungen für Bemessung und Ausführung*)

2 Stand construction permits

All stand structures and special structures erected on the outdoor grounds shall be reported and, depending on their type and size, may also be subject to inspection and approval. In all cases, proof of stability must be provided.

Messe Berlin is prepared to inspect any stand construction plans submitted (in duplicate) by an exhibitor / customer, if so requested.

2.1 Stand structures for which a permit is required

Stand structures on the outdoor exhibition grounds that require approval include all building structures that are either classed as regular *temporary structures (Fliegende Bauten)* in accordance with § 75 (2) / BauO and M-FIBauR - **verified by valid model approval** - or are categorised as such by nature of their type and method of construction, such as:

- Tent structures, marquees (**also joined together**) with a **contiguous utilised floor area** of $\geq 75.0 \text{ m}^2$
Tent structures with a floor **area of $< 75 \text{ m}^2$** and similar structures are always classed as *temporary structures*. These are only exempt from model approval and official approval for use but must **still** in all cases conform to the technical specifications and stability requirements for temporary structures (including conformity to DIN EN 13 782).
- Stages, including stage canopies **and side coverings**
- Viewing stand structures
- Playground equipment and equipment for games, sports or entertainment as well as fairground rides or stalls
- **Trucks provided with stage structures or equipped / furnished as presentation trucks (item → 2.1.1)**
- Free-standing scaffolding and advertising installations / large viewing monitor **or LED screens**
- **Other event / show / presentation areas ($> 200 \text{ m}^2$) item → 5.4.1**
- Free-standing masts and signalling installations used for exhibition or presentation purposes
- Additional extensions to and structures at the entrances to existing exhibition halls and / or Messe Berlin's own exhibition marquees
- All other stand structures that can be walked on and/or are roofed over, **covered** or free-standing:
 - ⇒ platforms, walkways;
 - ⇒ canopies and connecting passageways
 - ⇒ single and multi-storey pavilions and/or container structures;
 - ⇒ structures with a fully enclosed cinema or other type of auditorium and visitor rooms.

2.1.1 Show trucks / stage trucks with mobile semi-trailer sections that can be placed on substructures or which have stage elements

In accordance with a decision (in Nov. 2010) of the "temporary structures" working committee (AKFIB – "*Fliegende Bauten*") of the technical commission *Building authority supervision of the building ministries' conference /ARGEBAU*, parked vehicles which have retractable additional structures at the sides and/or top and which possibly have load-bearing supports may fulfil the general criteria for classification as a "temporary structure", in which case they are on all accounts subject to approval and permission.

If such parked show truck or stage vehicles are intended for use / for being walked on by the general public, appropriate test certificates (item → 2.2) must be submitted to Messe Berlin.

Normally these vehicles will only be released for use after an on-site inspection / inspection of utilisation of the finished vehicle setup. Messe Berlin reserves the right to take further action or impose special regulations on operation of the vehicle during the event, especially with regard to fire prevention, after documentation has been submitted and inspection has been approved. Any costs resulting from such measures shall be charged to the exhibitor / customer.

2.2 Inspection / acceptance of **stand structures requiring permits and their utilisation on the outdoor grounds**

Here, the requirements of the Technical Guidelines, Item 4.2.1 apply in all cases.

For testing and approval purposes, possibly with the involvement of the relevant building inspectorate as well, the following stand construction documents must be submitted to Messe Berlin GmbH (messetechnik@messe-berlin.de) in **paper form** (2 copies) and as **digital pdf files**.

The following documents are required in German or English **at the latest 6 weeks** prior to the commencement of construction:

- a) **Stability calculation*)** in compliance with **Eurocodes (EC)**, German DIN standards (**DIN EN**), technical rules for all stand structures referred to under Item → 2.1 for which approval is required.
 - *) If also required, as an approved, **original document including the relevant test report** (may not be submitted as a digital file !)

Stability documents (incl. test report) in the aforementioned sense are considered as approved only if they have been examined, in accordance with the respective state building regulations, by an **officially certified testing engineer or authorised building stability expert**.

- b) **Description of the structure** with details of the materials (test certificates) and **site plan**
- c) **Dimensioned stand construction plans, interior structure and furnishing plans** to a scale of at least 1:100 (layout of all usable areas as well as views, cross-sections), if necessary with construction details at a larger scale.

The following must also be submitted for the construction of canopied, enclosed or multi-storey stand installations (pavilions, containers **or tents**) where the plans provide for rooms / areas for accommodating visitors / trade visitors forming a **contiguous usable area of 200 m² or more**:

- d) **Proof of / concept for fire protection***) stating the materials to be used (test certificates)
 - *) Submission of **verifiable fire protection** proof documents **adapted for the interior stand structures and stand use** (vfdb guideline Richtlinie 01-01, **Brandschutzkonzept** is recommended) in German as well as a corresponding **plan of emergency exits and rescue routes** (so-called FuR plan, in at least **A4** format), as described in DIN ISO 23601, with **fire safety regulations (Part A)** in accordance with DIN 14096 in a **dual language** version (German and English), which must be displayed at a permanently accessible location inside the stand (in the entrance area) for the duration of the event.
- e) **Item a) does not apply if a verifiable type approval certificate or a valid construction execution permit (test log)** in accordance with the Model Guideline on the Construction and Operation of Temporary Structures (*Muster-Richtlinie über den Bau und Betrieb Fliegender Bauten*) / M-FIBauR is submitted in advance. Messe Berlin will present submitted valid inspection and test logs for *temporary structures* to the responsible testing authority on behalf of the exhibitor, whereupon that authority will conduct an on-site approval inspection at the exhibitor's / customer's expense.

In addition to type testing / type approval of individual items of technical equipment, e. g. sports and games equipment with mechanical or electrical mechanisms, the following should be submitted, in German, for inspection:

- construction and operation descriptions,
- design drawings,
- stability proof calculations,
- test certificates, approvals, certificates issued by authorised test and inspection institutions,

or

EU conformity declaration in accordance with Machinery Directive 2006/42/EC or a performance declaration in accordance with the European Construction Products Regulation (*Bauproduktenverordnung*) / BauPVO. In addition, the aforementioned documents may also be required.

The stand structure is not considered as having been approved until Messe Berlin has confirmed this in writing. The exhibitor / customer will be invoiced for the construction approval process costs and fees incurred.

If no verifiable **technical, structural stability proof documents and/or documents relevant to fire protection as described above** are available, Messe Berlin reserves the right to take further action or to impose additional conditions. The costs of these shall be borne by the exhibitor / customer.

The exhibitor / customer may be invoiced additionally for costs incurred due to documents not being submitted on time.

3 Stability

All **event-related** outdoor stand structures requiring a permit must be of sufficient stability that they do not adversely affect public safety and order and, **in particular**, do not present a hazard to life and limb. Exhibitors / customers are responsible for ensuring the load-bearing properties and stability of these structures and must supply the relevant documented proof.

The requirements of the Berlin Building Regulations /BauO/ and the **currently valid versions** of the regulations, guidelines and technical rules referred to under **Item → 1.1** apply in all cases.

3.1 Live loads / design loads

For upper floors above and between the storeys of a two-storey or multi-storey exhibition stand / special structure and which are intended to bear human loads, the following **vertical live load** shall be assumed in accordance with **DIN EN 1991-1-1/NA** in connection with the *National Annex* Table 6.1 DE (formerly **DIN 1055-3, Table 1**) [Cat. C] and in accordance with the Technical Guidelines, → Item 4.9.3.

For **balustrades, parapets and railings** intended to prevent falls, a **horizontal live load** [for areas of Cat. C1 – C4] of **q_k = 1.0 kN/m** shall be assumed at capping height (h = 1.10 m) in accordance with **DIN EN 1991-1-1/NA** in connection with the *National Annex* Table 6.12 DE (formerly **DIN 1055-3, Table 7**). The same load assumptions shall also be made when designing wall cladding elements of full room height which also serve as safety barriers, unless an additional parapet capable of withstanding the expected loads is situated inside and in front of these elements.

In order to ensure that sufficient stability is maintained, **proof in accordance with DIN EN 1991-1-4/NA** in connection with the *National Annex* (formerly **DIN 1055-4**) (see **Item → 3.2**) with regard to regular wind **pressure or suction loads** is required for all load-bearing elements of roofing and outer wall sections of all other upright, **attached** or free-standing stand structures **on the outdoor grounds**.

3.2 Wind loads

For all outdoor stand structures, the regular wind pressure and suction loads as defined by **DIN EN 1991-1-4** (formerly **DIN 1055-4, Table 1**) on all supporting roof structures and external walls shall be observed and the required documented proof shall be provided. For the inner-city trade fair location *Berlin ExpoCenter City* (*BECC* elevation: approx. 55 m above mean sea level) the following characteristic values for specific locations and simplified wind pressures shall apply:

City of Berlin: Wind zone 2 (inland area)

- mean wind speed: $v_{ref} = 25.0 \text{ m/s}$ (< 28 m/s)
- ref. wind pressure: $q_{ref} = 0.39 \text{ kN/m}^2$

Simplified gust velocity pressure at:

- stand structure height of up to 10 m: $q = 0.65 \text{ kN/m}^2$
- stand structure height >10 – 18 m: $q = 0.80 \text{ kN/m}^2$
- Stand structure height >18 – 25 m: $q = 0.90 \text{ kN/m}^2$

Because of the surrounding urban area, the outdoor fair grounds (*BECC*) are always classed as a **Category IV** site (urban housing up to 15 m height).

The following reduced assumed wind load in compliance with **DIN EN 1991-1-4/NA** with the *National Annex* Table NA.B.5 for temporary, fixed term buildings is permitted **throughout the year**, taking into account the **limited** height of the building (up to a max. 7.0 m above the site level), the temporary duration of the structure (**for up to 3 months**) and its proven stability (**without** further safeguards) when exposed to wind:

- Stand structure height of up to 7 m (< 10,0 m) $q_{red} = 0.6 \times 0.65 = 0.39 \text{ kN/m}^2$

3.2.1 Wind loads for temporary structures

More far-reaching load reductions **as assumed** for *temporary structures* (**not tents !**), in compliance with DIN EN 13814, 5.3.3.4, are only permitted if, due to the type, shape and use of the **stand structure**, it is possible that the required **cessation of operations** on the stand when **wind velocities of 15 m/s** are reached (→ wind force **7 Bft.** – also in individual gusts) can be ensured by **organisational** measures.

- Stand structure height of up to 8 m $q_{red} = 0.35 \text{ kN/m}^2$ (*status - not in operation*)

If **operations need to be suspended** following the call for such action by Messe Berlin GmbH (c.f. → **Item 0 3.4** Severe weather warnings), the following measures must be taken **immediately** by the exhibitor / **customer** or stand operator:

1. Securing of the stand structure in accordance with the terms of the operating permit (inspection log, **proof of stability etc.**), including closure of entrances, lowering of stage canopies and/or of sheet covers at the sides of the stage.
2. Complete evacuation of visitors, guests and personnel from the stand structure / **event area**.
3. If necessary, the entire outdoor exhibition area should be cleared and visitors, guests and personnel shall seek safety immediately in the exhibition halls **or by leaving the exhibition grounds**. This shall be done upon the instructions and under the supervision of Messe Berlin's security services.

Cessation of operations in the aforementioned sense does **not** apply, however, to **tent structures** that have already been erected (possibly with a standard model approval / inspection log and a floor area of $\geq 75 \text{ m}^2$) as defined by the (*new !*) DIN EN 13782. This stipulates that tents, as stable structures, must fulfil a so-called protective function and must therefore have proven stability at least for the following **wind** pressures, and should be tested and approved accordingly:

- tent height of up to 5 m $q_{tent} = 0.50 \text{ kN/m}^2$
- tent height of up to 10 m $q_{tent} = 0.60 \text{ kN/m}^2$

For a transition period, the binding obligation to cease operation using the aforementioned measures at the stated wind strength (as a rule 8 Bft – also in individual gusts) applies for older tent structures which still have a valid **or extended** model approval (test log) on the basis of DIN 4112 (*withdrawn !*).

Smaller tent structures with a **floor area** of < 75 m² are also considered to be *temporary structures*. Although they are exempt from model approval, they must nevertheless **adequately** meet the technical and **structural stability** specifications for temporary structures (**M-FIBauR**, DIN EN 13782).

- tent height of up to 5 m, width < 10 m $q_{tent,min} = 0.30 \text{ kN/m}^2$

In order to **guarantee adequate stability**, proof calculations based on the above wind load assumptions shall be provided for all other wall elements that can be opened or are free-standing and are in danger of tipping over, as well as for tall, slender exhibits in the outer areas of stands / event areas in the outdoor grounds.

Calculations proving compliance to these rules must be presented to Messe Berlin upon request. Exceptions may be permitted in cases where they are justified by special reasons, but in these cases more detailed proof of stability must be provided.

In justified cases, Messe Berlin reserves the right to arrange for a structural engineer to conduct an on-site inspection of the object's stability and to charge for this service.

3.3 Snow loads

It is not necessary to take snow loads into consideration for stand construction during the snow-free period (April - October).

In the case of stand construction during the winter (Nov. - March) the regular snow loads must be taken into consideration in accordance with **DIN EN 1991-1-3/NA in connection with the National Annex** (formerly **DIN 1055-5, Table 1**) for all supporting roof structures, and evidence thereof must be provided.

City of Berlin: Snow load zone 2

- altitude of site: approx. **55 m, < 285 m** above mean sea level
- snow load (**minimum**): $s_k = 0.85 \text{ kN/m}^2$

In the case of stand structures that are classified as *temporary structures*, reduced snow loads in accordance with **DIN EN 13782 (Tents), 6.4.3.3, or DIN EN 13814 (other temporary structures), 5.3.3.5** may still be applied:

- red. $s_k = 0.20 \text{ kN/m}^2$,

if it is possible to prevent the accumulation of snow (snow depth $\leq 8.0 \text{ cm}$) by means of suitable stand construction measures such as heating (external surface temperature $\geq +2 \text{ }^\circ\text{C}$ on the entire roofing / tarpaulin) or by ensuring, by corresponding operational and organisational measures, that the snow is cleared at short notice while the structures are standing.

It is not necessary to take the further exceptional snow load conditions applicable for the so-called North German Lowland region (*Norddeutsche Tiefebene - NDT*) into consideration when planning temporary stand structures, or such conditions shall be prevented by specifying the period for which the stand is to be used and, if necessary, by undertaking corresponding organisational measures (see above).

3.4 Severe weather warnings

If exceptionally severe weather is expected, with forecasts of

- **wind squall velocity > 13 m/s (force > 6 Bft.** – including individual gusts)
- **severe thunderstorms with wind squalls, heavy rain or hail;**
- **heavy rainfall > 20 l/m² within one hour;**
- **snowfall up to 10 cm in the next 6 hours, or**
- **local black ice (instantaneous freezing) – caused by instantaneous freezing of rain, drizzle or humidity,**

Messe Berlin GmbH will issue a general severe weather warning to all exhibitors / **customers who have outdoor stand structures**. Thereupon all exhibitors operating either stand structures only permitted with a **reduced** wind load or *temporary buildings* must immediately take action as stipulated in item → 3.2.1 **Wind loads for temporary structures** and shall **cease their operations**.

So that it can provide a direct warning of bad weather to operators of the respective stand structures/pavilions (> 200 m² area), Messe Berlin GmbH shall **be informed, by the opening of the event at the latest**, of the **name of a suitable technically responsible person**, together with a mobile phone number, who will be present on the stand **or event area** during the exhibition / event times and who can then immediately implement the necessary measures to cease operations.

The instructions of the on-site security staff **and** other employees of Messe Berlin GmbH must always be complied with immediately.

3.5 Permissible traffic-bearing capability / floor loads

As a rule, **designated** pedestrian and vehicle traffic areas with asphalt or otherwise paved surfaces are **mostly** constructed as designated emergency fire accesses / traffic areas in accordance with bridge category SLW 30 /DIN 1072/, and can therefore be traversed by **heavy** vehicles with a permitted gross weight of up to 30 tonnes (and 10 t axle loads).

On unpaved, partially compacted gravel areas and grass lawns, it is recommended that a **maximum ground load of 150 – 160 kN/m² is not exceeded** when distributing the building loads of structures on such surfaces. Appropriate effective and suitable load distribution measures shall be taken in such locations and, if so required, proof of these measures shall be provided.

4 Stand construction materials and fire protection

4.1 Stand construction materials

The **safety and fire protection** requirements of the Technical Guidelines, Items → 4.4 + 4.5 apply to all construction materials **used for outdoor** stand structures.

4.1.1 Guyed structures

Guys and mountings that contribute to the structural stability and are attached to essential ballast points or that secure free-standing masts or advertising installations must be made of non-inflammable materials. This applies in particular to the attachment of temporary structures such as stage canopies and tent structures to ballast points.

4.1.2 Glass

Only safety glass suitable for the design, purpose and loads in question may be used for outdoor stand structures.

For load-bearing elements made of glass, such as flooring, façades or balustrades, the requirements and terms of the following technical construction regulations **and rules** apply exclusively in their current, valid form:

- **TRLV** – Technical rules for the use of linearly supported glazing
- **TRAV** - Technical rules for the use of safety glazing
- **TRPV** - Technical rules for the dimensions and design of glazing supported at individual points of contact
- **DIN 18008** – **Glass in Building - Design and construction rules**

On the basis of **said construction regulations and the specifications contained therein**, and depending on the intended purpose, **all** glass constructions must be in the form of

- vertical glazing – possibly serving as barriers
- overhead glazing,
- glazing capable of supporting persons.

Their stability must be **verifiable** and the glass construction must be installed according to the applicable regulations.

Under no circumstances may panes of glass with damaged edges be used. Any exposed edges of the glass should be reworked or protected so as to prevent the risk of injury. Components made entirely of glass and of full room height must be marked at eye-level.

4.2 Special fire protection and safety regulations

(for enclosed pavilions / rooms and **stand structures with a contiguous usable area of > 100 m²**)

4.2.1 Ash bins, ashtrays

If specific areas for smokers have been designated within the stand structures and on terraces, a sufficient number of ashtrays or ash bins made of non-inflammable material and with tight-fitting lids must be provided and these must be emptied by the **customer / exhibitor** at regular intervals.

4.2.2 Heating

The use of **Compressed and/or liquid gas for heating** stand structures is not permitted.

Subject to approval by Messe Berlin, the operation of **heating systems / heaters with suitable oil burners** to heat stand structures is permissible. Systems of this kind, including the associated tanks are always subject to approval and special safety and must conform with protection requirements. Technical documentation regarding heating systems / heaters and the tanks (where necessary with catchment systems), together with information on the external fenced-off installation locations and the intended fuel delivery and safety measures shall be submitted to Messe Berlin at the latest 4 weeks before commencing stand construction and as part of the approval application process.

Electrical heating systems in stand structures are generally permitted, but shall be immovably secured and their power cables shall be securely fastened. Exposed glowing elements of the heater are not permitted. The rear panels and side parts of radiation heaters and hot-air heaters shall be at least 1 m away from walls and combustible objects. Radiation heaters must be at least 3 m away from objects made of combustible materials and must be located in the primary radiation direction.

4.2.3 Lightning protection

Structures and exhibits in the outdoor grounds shall be equipped with permanently effective **lightning protection installations** if their location, type of construction or use may increase the probability of lightning strikes or lead to severe consequences in case of lightning strikes.

Furthermore, all temporary stand structures and exhibits with heights exceeding 15 m and which are to be located on the outdoor grounds shall on all accounts be equipped with a lightning protection installation as specified in DIN EN 62305-3. For lightning-protection installations, proof shall be provided that a professional installation company or expert or authorised electrical (lightning protection) installation surveyor has conducted an approval / function test and inspection. The test and inspection report shall be kept available.

4.2.4 Fire / smoke alarm systems

For the duration of the event, an **automatically activated alarm system** consisting of at least one round optical smoke alarm in accordance with DIN EN 54-7 must be installed in a technically correct manner ensuring its proper function in every enclosed stand structure/pavilion with a floor area of $\geq 100 \text{ m}^2$ **or intended to accommodate > 100 persons**.

The alarm should react to hazardous situations by emitting an auditory signal (DIN tone in compliance with DIN 33404-3) and should serve to provide a direct warning to persons in the enclosed stand structure/pavilion. The auditory signal produced by the alarm must be distinguishable from other operational signals and must at all times exceed the general sound level by 10 dB(A), thus the sound emission level of the alarm signal should not be lower than 85 dB(A).

The smoke alarm should be mounted as high up as possible and approximately in the centre of the ceiling in the largest part of the usable area (room). The manufacturer's instructions must be observed when installing the smoke alarm.

For **extended (double-storied), contiguously used stand structure/pavilions ($\geq 200 \text{ m}^2$ usable area)** the required number of smoke alarms shall be increased accordingly and these are to be distributed as evenly as possible to cover the largest possible usable areas (max. distance between alarms approx. 6 – 7 m for **approx. 60 – 80 m² area to be monitored by each alarm**).

All smoke alarms thus distributed shall be interlinked by a wireless system or by cables to ensure that an alarm is sounded simultaneously from the site of any alarm within the entire area and throughout all sections of the stand structure.

To ensure that an alarm can be given at all times, all lounges and rest rooms in an enclosed stand structure/pavilion which are enclosed on all sides (enclosed rooms) and from where the remainder of the pavilion area cannot be seen must be equipped with an auditory warning system as stipulated for the fire/smoke alarm installations described above. Substitute measures may be approved in exceptional cases.

Technically correct installation of the fire alarm installations can be ordered by the exhibitor / **customer** on his account and the work will be carried out by the company appointed by Messe Berlin GmbH for this purpose. If these systems are installed by other companies or by the customer's/exhibitor's own fair construction company, certification must be submitted in writing (in German) to Messe Berlin GmbH at the latest when approval by the building inspectorate is granted. Such certification shall confirm that the fire alarm system (smoke alarm or similar system) has been correctly installed in the stand structure, that function tests have been successfully carried out (including an activation test) and that the system has been commissioned without any faults.

4.2.5 Fire extinguishers

During construction, dismantling and for the duration of the event, each enclosed stand structure/pavilion measuring 100 m^2 (floor area) **or more** must be equipped with a suitable fire extinguisher system conforming to DIN EN 3, for fire categories A, B, and C, and with at least 10 extinguishing units (LE). During construction, dismantling and for the duration of the event, each larger, stand structure/pavilion measuring up to 600 m^2 , including 2-storey stands, must be equipped with two suitable fire extinguishing systems (one for each storey) conforming to DIN EN 3, for fire categories A, B, and C, each with at least 12 extinguishing units (LE). In kitchen / catering areas where food is prepared (heated oil, fat) fire extinguishers suitable for this purpose (fire categories A, F) shall be provided.

In larger pavilions (usable/floor area $> 600 \text{ m}^2$) additional fire extinguishers may be required.

All fire extinguishers shall be installed ready for use and at clearly visible and easily accessible points that shall be marked as defined by the Accident Prevention Regulation **DGUV-No. 9 (formerly BGV A8)**.

4.2.6 Instruction of stand personnel (prior to start of event)

Prior to commencement of event-related use of the enclosed stand structure/pavilion the stand staff and exhibitor's personnel that will be on the stand during the event must be informed, on the basis of the fire safety regulations (at least Part A), about the fire and safety installations that are provided and about what general action to take when the alarm is given or in emergency situations.

In particular, these instructions shall include all stipulations / regulations pertaining to the

- General fire and safety regulations in force on the exhibition grounds (alarm / emergency telephone no.)
- Alarm installations (internal smoke alarms, signal tones etc.)
- Fire extinguishers (location, use)
- Emergency exits and rescue routes (emergency and rescue route plan, supervision of areas to be kept clear and open during the period of the event)
- Special evacuation tasks (e. g. if disabled people and/or wheelchair users are present)

Documentary proof that staff has been successfully instructed about these issues must be provided in writing and submitted to Messe Berlin GmbH no later than at the commencement of the use of the facilities in connection with the event. The name of the person in charge of the stand structure/pavilion (as the **customer's** / exhibitor's representative who is present there each day) must also be provided, together with a telephone contact number.

4.2.7 Exits / escape routes

Enclosed stand structures/pavilions or individual rooms with a usable area > 100 m² or intended to accommodate > 100 people shall be provided with at least two exits (min. clear width 1.2 m) to the outside or directly to the corridors (escape routes). These exits must be as far away from each other as possible and lead in opposite directions.

The walking distance between each point within the stand area and its exits shall not exceed 30 m.

Depending on the size and type of the usable area and the maximum number of persons permitted on it, the following minimum number and clear widths of escape and rescue routes (exits, stairs, corridors) shall be ensured:

- from 100 m² (> 100 persons) to 200 m² (< 400 persons) 2 escape/rescue routes, each 1.20 m wide
- from 200 m² to 300 m² (< 600 persons) 2 escape/rescue routes, 1,20 m + 2.4 m wide,
or 3 escape/rescue routes, each 1.20 m wide.

All escape and rescue routes including doors are to be clearly indicated by signs in accordance with the accident prevention regulations DGUV - No. 9 (formerly BGV A8 – *Sicherheits- und Gesundheitsschutzkennzeichnung am Arbeitsplatz*).

Doors

It must be possible to open double-leafed doors fully and easily from the inside (in the direction of evacuation) using a single handle. In the event that two or more double-leafed doors are located directly next to each other, suitable door stop and lock mechanisms must be employed to ensure that opening the door leaf does not interfere with opening of the neighbouring door. In such cases all leaves must open to a maximum of 90°.

Swinging doors, rotating doors and other access restrictions requiring force to operate them are only permitted on escape and rescue routes if they have certified building authority approval (abZ - *ausweisbare bauaufsichtlicher Zulassung*). Swinging doors on escape and rescue routes must be equipped with a device to prevent them from swinging back. Manually-operated rotating doors / turnstiles on escape and rescue routes are only permitted if they are equipped with a mechanical device that can be used in an emergency to open the rotary door / turnstile fully (across the entire passageway width) and easily from the inside.

Furthermore, the following may be permitted: automatically or electrically-operated sliding door systems, provided that certified building authority approval (abZ - *ausweisbare bauaufsichtlicher Zulassung*) for the respective system can be presented, that the system is installed in conformance with the approval conditions and that escape and rescue routes are in no way impaired by installation of the sliding door.

If an exhibitor installs additional external exit stairs, a level exit platform (i.e. without a threshold) which is at least as wide as the door leaf shall also be installed between the door and the first step.

5 Structure design

The rented area is marked out on the outdoor grounds by Messe Berlin, or, subject to approval by Messe Berlin, by the event organiser. All exhibitors / customers are required to inform themselves on site about the rented area's location and dimensions and about any fittings, safety installations etc. The boundaries of the stand must be strictly observed.

5.1 Floor areas

Carpets and other floor coverings provided by the customer / exhibitor shall be laid in such a way as to avoid accidents and are not permitted to extend beyond the boundaries of the stand.

Exhibitors/customers wishing to lay floor coverings across general visitors' pathways in order to join outdoor stands require special permission to do so and the work has to be carried out in such a way as to prevent **step formation** and **rule out any danger of tripping** and other accidents. Only adhesive tape which can be removed without leaving any residues may be used to hold floor coverings in place and all other materials laid down shall also be removable without leaving residues.

Substances such as oils, grease, paints etc. must be immediately removed from the ground and ground covering surfaces. Any existing ground covering surfaces shall not be painted on or coated.

If any ground areas are left in an exceptionally dirty condition or there are adhesive residues which are difficult to remove, Messe Berlin will charge the extra cleaning effort to the exhibitor / customer.

5.2 Anchoring points or foundations in the ground

For the purposes of obtaining written approval, precise positional plans of anchoring points in the outdoor grounds for use with tents, guys and any other foundation work, as well as flagpoles shall be submitted to Messe Berlin GmbH in advance. No anchoring points or foundations are permitted in the ground on the site unless written approval has been obtained.

Messe Berlin GmbH must be notified before the commencement of any ground work on the site.

The ground around the anchoring points will be restored to its original condition by Messe Berlin GmbH or its appointed contractors and a charge will be made for this work.

5.3 Penetration of the building fabric

It is not permitted to damage, soil or enclose existing objects, enclosures, parapets and technical installations (lighting, signs, flagpoles, drainage ponds etc.) of the outdoor facilities and gardens, some of which are protected architectural monuments, and any trees, bushes or plant arrangements of the outdoor grounds, nor may these be structurally modified in any way.

Roadways and designated movement areas for emergency vehicles may **not** be occupied or obstructed by stand structures, other stand installations or exhibitors' / **customers'** construction materials. This rule also applies during construction and dismantling. They are intended to provide access for the fire brigades, are marked as such, and must be kept clear across their entire widths **and area**.

Existing technical safety equipment (including above-ground hydrants etc.) on the exhibition grounds shall never be damaged, contaminated or altered in any way. Stand structures, **construction materials** or exhibits shall not obstruct or interfere with such equipment and installations.

Exhibitors are strictly forbidden to carry out work on existing structures or installations on the exhibition grounds. This applies especially to the existing rails and track facilities on the southern outdoor area.

5.4 Advertising measures, flagpoles, presentations and stage areas

The stipulations of the Technical Guidelines, Item → 4.7.7 and 5.9 apply **in all cases**.

Exhibitors are only permitted to distribute printed matter and use other means of advertising on their own stands or own event areas.

Other presentations, optical, slow-moving or acoustic advertising means as well as the reproduction of music (→ item 0) are permitted, provided that they do not cause annoyance to adjoining stands, and do not congestion or hindrances on the paths or the roadways, or drown out public announcements from the Messe Berlin PA systems in the outdoor grounds.

The sound level of acoustic or musical performances, including peak levels, shall not exceed **70 dB(A)** at the boundaries of the stand or event area during the daily exhibition hours. Messe Berlin shall be informed of and given the corresponding data and documents of all outdoor presentations or performances with intended higher noise / sound levels (> 70 dB(A)). All such presentations and performances, without exception, are subject to notification and approval. Corresponding application information and documents shall be submitted to Messe Berlin 6 weeks before start of stand construction.

Advertising facing immediately adjacent stands or event areas must be located at least 1.0 m from the boundary to the neighbouring stand or event area. This rule does not apply to exhibits.

If advertising material blows onto the traffic ways or **public areas** as the result of wind action or any other conditions, those responsible shall be liable for all subsequent damage this may cause and shall bear the cost of any special cleaning work that this necessitates.

Flagpoles / masts on the outdoor grounds shall not exceed a height of 8.0 m.

5.4.1 Stage areas for performances and other presentations

Stage areas inside exhibition stands / in event areas are areas reserved for artistic or other performances, as well as for demonstrations or presentations.

Exhibitors / customers are obliged to inform Messe Berlin if they intend to operate larger stage areas (50 m² and more) for product presentations, possibly with acoustic, musical performances of any kind which may emit higher sound levels on their stand or event area (cf. → item 0), such presentations being subject to prior notification to authorities. In this case the provisions of the Technical Guidelines shall apply (→ 4.7.7 , 5.9).

Messe Berlin shall be informed in advance if stage areas **larger than 50 m²** on the outdoor grounds are planned, in which case a verifiable stand plan, a description of the type of use / programme, sequence of events, participants/performers and any technical stage equipment and sound equipment (stating the expected sound levels) shall be submitted.

The provisions of the Technical Guidelines, item → 4.7.7 and the currently valid statutory requirements in accordance with BetrVO apply without exception to all stage and presentation areas on exhibition stands / in event areas on the outdoor grounds. In keeping with these provisions for stage areas > 50 m², the exhibitor / customer, when notifying Messe Berlin, shall also nominate a qualified **event engineering expert (Fachkraft für Veranstaltungstechnik)** as required by § 34 (4) /BetrVO/ or a respective supervisor, who shall have proven qualifications for the task, be on site to supervise or manage the setting-up, rehearsals, performances, demonstrations and procedures on the scene areas from the technical / organisational aspect as required by regulation DGUV-No. 17 (formerly BGV C1).

For **stage areas of > 200 m²**, Messe Berlin must be informed of the **person responsible for event engineering (Verantwortliche/r für Veranstaltungstechnik)** (who shall be professionally qualified for stage and / or illumination engineering) as required by § 34 (3) /BetrVO/ and who is familiar with the stage equipment / lighting and other technical equipment on the stage areas and can ensure their safety and functionality during the ongoing event, particularly with regard to fire prevention.

Even if a performance or presentation has been permitted in advance, Messe Berlin reserves the right to restrict or prohibit performances which cause noise exceeding the approved / permitted levels or are a visual annoyance or which considerably endanger or impair the ongoing exhibition/event or visitors, other exhibitors and event organisers.

5.5 Barrier-free accessibility for trade fair visitors to stand structures and installations suitable for pedestrian traffic

Barrier-free access shall be taken into consideration when designing stands, installations intended for pedestrian use and event areas on the outdoor grounds. Persons with disabilities should also be able to access and use stands, installations and separate event areas without assistance.

Where walk-in stand structures **which may have multiple storeys** and/or event areas on the outdoor grounds are to be freely accessible to visitors, one main entry/exit of the stand construction **and/or event area** shall be barrier-free. As an alternative, organisational measures regarding operation of the stand (**exhibitor's / customer's staff** available to provide assistance or similar measures) shall be implemented in order to ensure accessibility, accompaniment and, in particular, emergency evacuation of **visitors with impaired mobility** and of wheelchair users. Upon request, the exhibitor / **customer** / stand operator shall explain to Messe Berlin what alternative measures are being implemented.

5.6 Dismantling, restoration and handing back of the outdoor stand / event area

The stand area /event area shall be handed back to Messe Berlin GmbH in its original state, free of all structures and in a clean condition by the specified end-of-dismantling time, at the latest.

All rehabilitation work such as the removal of adhesive tapes and ground coverings including all residues, used by the customer / exhibitor, removal / dismantling of ballast weights, anchorages and foundations **which may have been permitted must be concluded before this time.**

Any resulting demolition rubble shall be immediately removed by the contracting firm appointed by Messe Berlin GmbH. Damaged grassed areas shall be restored exclusively by Messe Berlin GmbH at the expense of the exhibitor / **customer**.

Any damage and contamination caused by exhibitors / customers or their agents or contractors to existing structures or installations / objects on the outdoor grounds must, without exception, be reported to Messe Berlin.

Exhibitors / **customers** must maintain site security and safety until the stand / **event area** has been completely restored and handed back.

If the restoration work has not been completed by the end of the stipulated dismantling period, Messe Berlin GmbH shall be entitled to arrange for this work to be done by its own contractors at the expense of the exhibitor / **customer**.