transport logistic 2021
May 04–07, 2021

Preamble
This notice provides supplementary notes and explanations to the Technical Guidelines (notably point 4.8) and outlines technical specifications and requirements concerning stand structures subject to mandatory approval that are to be erected in the outdoor exhibition area of Messe München GmbH.

Definitions, explanations
All event-related stand structures in the outdoor exhibition area are considered to be procedure-free, temporarily erected, structural facilities pursuant to BayBO (Bavarian Building Directive), and, at the same time, as so-called special structures, in some cases with a usage similar to places of assembly or temporary structures defined according to the type of construction within the grounds of the trade fair and exhibition center.
Such special structures must therefore meet the requirements set out in the valid, public provisions pursuant to BayBO as well as notably the following directives, guidelines and rules in the version valid at the time:
- FlBauR—*Guideline for the Construction and Operation of Temporary Structures*
- VStättV—*Directive for the Construction and Operation of Places of Assembly*
- DIN EN 13 782*)—*Temporary Structures—Tents*
- DIN EN 13 814*)—*Temporary Structures and Facilities for Event Sites*

*) for the former DIN 4112—*Temporary Structures; Technical Construction Regulations for Design and Execution*

In individual cases, stand structures in the outdoor exhibition area can be subjected to further, special requirements on the basis of the aforementioned directives and rules in order to meet and secure, event-related protection goals. In the same way, requirements can be eased insofar as compliance with regulations is not required due to the special nature or event-related usage of a stand construction facility in the outdoor exhibition area.
Depending on the infrastructure to be installed, clearance of 0.5 m is to be maintained behind fixed installations to the rear-side boundary to neighoring stands at the request of the Technical Exhibition Services Division of Messe München GmbH. Care should be taken of all existing utility lines, distribution boxes, etc. when carrying out setup work. They must be accessible at all times even if they are located within individual stand areas.

Outdoor Exhibition Area
Roads and vehicle access areas may not be blocked by stand structures or other items at any time including stand setup and dismantling periods. As fire service access routes (section 31 VStättV, section 22 VVB), they are always to be kept clear across their entire width.
Hydrants, emergency telephones and other safety facilities must be freely accessible and visible at all times; they may not be blocked, built around or modified.

Permissible vehicle access / ground load-bearing capacities
The designated vehicle access routes and areas with asphalt surfaces are for the most part designed as designated fire service access routes / movement zones pursuant to Brückenklasse (Bridge Class) SLW 30 / DIN 1072 / and can, as such, be accessed by heavy duty vehicles with a permissible total weight of max. 50 t (load per axle of 10 t).

Max. ground pressure of 200–500 kN/m² is recommended for the distribution of contact loads on firm or partially compacted grassed gravel (excepting the railway track area) for viable load transfer purposes. Correspondingly effective, suitable load distribution measures are to be taken and, if required, verified. In the absence of any additional provisions or such to the contrary set out here, the Technical Guidelines of Messe München GmbH apply.

Stand construction acceptance
All stand structures and exhibits are to be erected securely. The exhibitor is responsible for the load-bearing capacity and stability of these facilities; the local specifics (ground load capacity, wind and snow load assumptions) are to be observed.
In general, Messe München GmbH offers to check the stand construction plans submitted by each customer / exhibitor.

Stand structures / exhibits requiring approval
Stand structures in the outdoor exhibition area subject to mandatory approval include
- structural facilities with a built-over area exceeding 50 m² or a height exceeding 5 m
- tents (also coupled) with a continuously used ground space of ≥ 75.0 m²
  Also tents with < 75 m² ground space and similar structural facilities are generally considered temporary structures. They are merely exempt from the issuance of a type approval and official certificate of completion and occupancy. These facilities must nevertheless always meet the specifications and requirements for stability of temporary structures (pursuant to DIN EN 13 782).
- stages incl. roofing and side cladding
- grandstand facilities
- game / sport and amusement devices as well as funfair rides and attractions
- show and stage trucks with trailer parts with ramps and base unit capability or stage elements
- freestanding scaffolding and advertising facilities / monitors or LED walls
- other performance areas (≥ 200 m²)
- freestanding pole or signal facilities for exhibition or presentation purposes
- all other walk-in/on and / or covered, room-forming or freestanding stand construction facilities:
  - podiums, walkways;
  - roofing und passageways;
  - multistory pavilions and / or container facilities (see also: Notice “Two-Story Stand Construction”);
  - facilities with fully enclosed cinema, spectator or visitor rooms
- all exhibits with a height in excess of 10 m (see form 1.3b)

Further requirements for exhibition stands with a total floor area exceeding 500 m²
For outdoor exhibition stands with a total floor area exceeding 500m², construction plans a, b, & f pursuant to section 2.2. of the FlBauR directive are to be submitted in quadruplicate to Messe München GmbH, Technical Exhibition Services Division (TAS) for acceptance by the Munich Municipal Fire Department. For the purpose of planning certainty and of obtaining the necessary declaration of agreement from Munich Municipal Fire Department, we ask you to submit your documents in good time, however no later than six weeks prior to your stand setup date. Advice in fire safety matters can be obtained from Munich Municipal Fire Department; appointments for this are to be arranged via Messe München GmbH.

Anchorages and other earthwork
Should any earthwork for foundations, ditches, pipelines, cable trenches, flagpoles, etc. be planned by the exhibitor in the outdoor exhibition area, approval for this is to be obtained in good time from Messe München GmbH’s Technical Exhibition Services Division. No such work may be executed without approval. Messe München GmbH’s Technical Exhibition Services Division is to be notified prior to the start of any earthwork.
For anchorages of tents, guy-ropes and flagpoles as well as for other earthwork in the outdoor exhibition area, detailed site plans have to be submitted to Messe München GmbH’s Technical Exhibition Services Division for approval.
Exhibitors are generally obliged to remove all fixtures completely after the fair has finished. Foundations that are needed again in the same location for the next exhibition may be left in if their component parts are located at least 30 cm below the topsoil and a contractual agreement was concluded with Messe München GmbH (cf. form 1.3c).

Warning due to severe weather
In the case of expected severe weather events with forecast
- wind gusts > 13 m/s (wind strength > 7 Bft.—including in single gusts)
- severe storms in conjunction with wind gusts, heavy rain or hail
- heavy rain > 20 l/m² in an hour
- snowfall up to 10 cm in the coming 6 hours
- local black ice (sudden ice) formation due to rain, drizzle or moisture freezing instantly

a general severe weather warning will be issued by Messe München GmbH to all exhibitors with stand structures in the outdoor exhibition area.
Thereafter, exhibitors with wind load-reduced stand structure facilities or temporary structures are asked immediately to undertake all measures to discontinue operations. The necessary measures are to be defined in a site-related manner in accordance with any execution approval that may have been issued or stipulations / test report issued by Messe München GmbH’s structural engineering inspector.

In the case of mobile facilities (such as small exhibits, furniture, sunshades, small promotional displays, etc.), the exhibitor must ensure that the latter are dismantled and stowed away without delay at any time should such severe weather warning be issued. Appropriate storage facilities must be available on the stand.
For the direct severe weather warning of stand structures / pavilions / facilities, Messe München GmbH's Technical Exhibition Services Division is to be notified in the application or by the start of the stand setup period at the latest of one or more relevant persons with technical responsibility by name and with mobile phone numbers, who will be in the stand / event area during the setup / dismantling and event periods and are capable of initiating and executing the necessary operation discontinuation measures without delay.

The instructions issued by the security and public order personnel and Messe München GmbH staff are to be followed in all cases without delay.

Snow clearance

Insofar as the exhibition area is fully covered by a layer of snow prior to the start of the stand setup period, an application for snow clearance can be submitted to Messe München GmbH (lead time prior to execution of work: 48 hours). This work will be carried out by Messe München GmbH at the request of the exhibitor on a one-off basis prior to occupancy of the exhibition area, insofar as the area concerned is freely accessible for snow clearance equipment. After the exhibition area has been occupied, the exhibitor himself is responsible for snow clearance on his stand.

Lightning protection

Structural facilities and exhibits in the outdoor exhibition area must be equipped with an effective lightning protection system if a risk assessment states that lightning can strike easily or could have serious consequences due to the location, design or usage (BayBo section 44).
All temporary stand structures and exhibits in the outdoor exhibition area above 12 m in height are therefore to be equipped with a lightning protection system for the protection of exhibitors, employees and visitors, following consultation with Messe München GmbH and the specialists appointed by it. The design of the system is to be coordinated with the aforementioned in advance and good time.
After installation of the lightning protection system in accordance with DIN EN 62305, appropriate certificates issued by a specialist confirming that the lightning protection system is free of defects and effective in the long term (SprüfV) are to be kept available for presentation on request.
Messe München GmbH and the specialists it appoints reserve the right in justified cases to demand the installation of a lightning protection system in accordance with DIN EN 62305 also for stand structures and exhibits under 12 m in height.

Identification of exhibits above 50 m in height

The identification of obstacles to aviation above 50 m in height is required at the exhibition center. A yellow, red or orange coat of paint is sufficient as identification by day. If other coloring is used, a warning sign (red / white) must be attached to the exhibit in a clearly visible location. For identification by night, cranes are to be illuminated pursuant to the General Administrative Regulation for Obstruction Marking and Lighting of Obstacles to Air Navigation of September 2004.

Return of stand areas at the end of the dismantling period

All exhibition areas are to be returned to Messe München GmbH in their original state by the stipulated deadline for completion of dismantling, whereby the areas to be returned should be registered with the Technical Exhibition Services Division for acceptance. Spaces in the outdoor exhibition area should be levelled and any parts loosened by earthwork compacted mechanically as required.
Any asphalted and grassed areas will be restored exclusively by Messe München GmbH at the expense of the exhibitor concerned.
Should the exhibitor fail to carry out any restoration work due at the end of the dismantling period, Messe München GmbH is entitled to have the work carried out at the expense of the exhibitor.

Fire Prevention and Safety Regulations

(for enclosed pavilions / rooms and stand structures)

Clearance areas

A minimum clearance of 10 m is required between structural facilities > 75 m^2 (e.g. tents, container facilities, etc.). The necessary clearance areas are to be kept free in all cases. Please contact Messe München GmbH's Technical Exhibition Services Division with regard to the positioning of structural facilities > 75 m^2 at least six weeks prior to the start of the stand setup period. Coordination with neighboring stands for compliance with minimum clearances or additional construction work (e.g. fire protection walls) may be necessary.

Exits / rescue routes

Structurally enclosed stand structures / pavilions must have at least two exits (clearance width: at least 1.2 m) leading to the outside. Such exits are to be as far away from each other as possible and located at opposite ends of the stand, whereby the maximum permissible escape route length of 30 m to the exits leading to the outside must be observed.
In the case of multistory stands, each story must have access to at least one exit leading directly to the outside.
All exits required are to be identified with signs pursuant to BGV A8, ISO 7010 and ASR A1.3.
Rescue route identification must be clearly visible.
The size of any sign required depends on the distance from which it is to be seen:

For distances up to (DIN 4844-1:2005-05)	Type	Sign size in mm a x b (DIN 825:2004-12)
15 m	internally lit illuminated	74 mm x 148 mm 148 mm x 297 mm
30 m	internally lit illuminated	148 mm x 297 mm 297 mm x 594 mm

Fire extinguishers

On every exhibition stand (tent, container) and other facilities there should be one standard water fire extinguisher (content min. 9 l) at least at each exit point, one carbon dioxide extinguisher (content min. 5 kg) in kitchen areas, and one fat fire extinguisher (content min. 6 l) in accordance with EN 3 or DIN 14406 in areas where deep-fat fryers are operated.
The locations of the fire extinguishers are—if not clearly identifiable—to be marked with safety signs pursuant to ISO 7010, sign F01 (or comparable signs).
Fire extinguishers must be checked by a specialist (at least every two years).

Safety lighting

Depending on the type, size and design of the stand structure, it may be necessary to install safety lighting separate from the main lighting network that guarantees sufficient illumination of the escape routes to the safe outside should the main lighting fail.
It may be operated in form of an individual battery system.
A certificate issued by a specialist confirming that the system has no defects must be available for presentation at the request of Messe München GmbH or the relevant authority for acceptance.

Doors (on escape routes)

Two-winged door facilities must be capable of being opened easily with a single movement from the inside (in the direction of escape) and to its full width. Should two-winged doors be arranged adjacent to each other, suitable blocking or immobilizing systems must be used to prevent the door wings from opening wide into the clearance width of the adjacent door. In such cases, no door wing may exceed a 90° position in its opened state.
Usage of swing doors, revolving doors and any other access blocks with power operation on escape routes is only possible with verifiable building inspectorate approval (abZ). Swing doors on escape routes must be fitted with a device preventing them from swinging back and forth. Rotating doors / turnstiles operating manually are only permissible if they are equipped with a mechanical device ensuring that they open easily from the inside to their full width in case of danger.
Moreover, automatic or electrically operated sliding door facilities are permissible insofar as valid general building inspectorate approval pursuant to AutSchR (Guideline for automatic slinding doors in escape routes) is available for presentation, the on-site installation complies fully with the approval, and the escape routes are not compromised by the sliding door installation.
Should a downward stairway be located on the outside, a threshold-free descent landing must be fitted between the escape door (with the minimum width of a door wing) and the stairway leading downwards.

Heating

The usage of compressed and/or liquid gas for heating purposes is not permissible. The operation of heating installations / heating equipment with suitable oil-fired systems for stand structures is possible with the consent of Messe München GmbH. Such installations including the associated tanks require approval in all cases and are subject to special safety and security requirements. The technical documents for the heating installation / heating equipment and tanks (with spillage collectors if applicable) are to be submitted as part of the approval procedure together with details of the external, inaccessibly enclosed installation site and planned fueling and safety measures. The manufacturer's setup and operation regulations require compliance. Insofar as fireplaces or heating oil tanks are located on the stand, they are to be equipped with at least fire-retardant screening (walls, ceilings, doors, air inlets and outlets). The heating installation is to be protected from unauthorized access. No flammable materials may be stored within a radius of 5 m of the fireplace concerned (cf. FIBauR). Heating installations and fireplaces generally require the acceptance of the Munich Municipal Fire Department.
Electric heating installations are permissible on stands but must be fixed immovably in place and have cabling secured with fasteners. Radiator parts that glow may not be openly accessible. The rear and side parts of radiant heaters and fan heaters must be located at least 1 m away from walls and flammable items. Radiant heaters must be located at least 3 m away from items made of flammable materials in the direction of radiation.

Instruction of stand personnel (prior to the start of the fair)

Prior to the start of the event-related usage in an enclosed stand structure / pavilion, the entire stand and exhibitor personnel in attendance for the duration of the event is to be informed of the existing fire protection and safety facilities as well as of the general rules of conduct in case of alarm / emergency on the basis of the fire protection code (parts A+B) that has been drawn up. This instruction should encompass notably all specifications / regulations concerning

- general fire protection and safety provisions at the exhibition center (alarm / emergency numbers)
- alarm facilities (internal smoke alarms, acoustic signals)
- fire extinguishers (location, usage)
- escape and rescue routes (constant monitoring of cleared and open state during the event period)
- special evacuation tasks (e.g. for any disabled persons and / or wheelchair users present)

The successful execution of this staff instruction is to be documented and available for presentation to Messe München GmbH on request at the start of the event-related usage. The manager responsible (or the exhibitor's representative(s) present on site) should be indicated by name in this, together with telephone contact details.

Munich Municipal Fire Department reserves the right to impose additional conditions insofar as the necessity to do so arises from the fire safety inspection or during operation.

Structural safety verification

Wind loads

All stand structures in the outdoor exhibition area must generally be designed to withstand any wind loads occurring pursuant to DIN EN 1991-1-4 while taking account of the site-related wind zone.

As such, regular wind pressure and suction loads on supporting roofs and outer walls / areas are to be given due consideration for all stand structures in the outside exhibition area.
Based on the suburban location of the exhibition center (site height: < 600 m above sea level), the following site-related key indicators and simplified velocity pressures to be taken into account apply:
Munich: Wind zone 2 (inland)

- mean wind velocity: $v_{b,0}$ = 25.0 m/s
- related velocity pressure: $q_{b,0}$ = 0.39 kN/m² (< 28 m/s)

Simplified gust velocity pressure for:

- stand construction height up to 10 m: q = 0.65 kN/m² (→ > 30 m/s)
- stand construction height > 10 – 18 m: q = 0.80 kN/m²
- stand construction height > 18 – 25 m: q = 0.90 kN/m²

The fair center's outdoor exhibition area is to be classed in site category III (suburbs).

Pursuant to DIN EN 1991-1-4, NA.B.5, a reduction in the velocity pressure determined as a temporary state and without any safety measures is admissible for temporary stand construction facilities as follows:

- q_{red} = 0.7*) x 0.65 = 0.46 kN/m² (approx. 28 m/s)

*) *NOTE (from aforementioned DIN EN 1991-NA.B.5 section 4):*
This reduction in the calculated velocity pressure based on table NA.B.5, applies to the verification of unsecured constructions. Its application presupposes that the weather situation is observed with sufficient accuracy, storm warnings are obtained from a qualified weather service if applicable, and suitable safety measures can be concluded in good time prior to any imminent storm.

By way of illustration, the aforementioned dynamic pressure values [q] to be taken into account can be attributed approximately to the following causal wind velocities:

Stand construction height up to	Dynamic pressure (WZ 2)	Mean wind velocity (at 20° C air temperature)	
	in kN/m²	in m/s	in km/h
q_{red}	0.46	approx. 23.0	approx. 83
10 m	0.65	approx. 30.0	approx. 108
18 m	0.8	approx. 35.5	approx. 128
25 m	0.9	approx. 40.0	approx. 144

Note

A **discontinuation of operations** is required for regular temporary structures from a wind velocity of **15 m/s** (also in individual gusts).

Wind loads for temporary structures

For temporary structures subject to type approval pursuant to section 72 BayBO, the relevant inspection or construction log (original) with valid type approval incl. audited stand safety verification and test reports is required.
For temporary structures requiring no type approval pursuant to section 72 BayBO, audited or auditable stand safety verification must be submitted to Messe München GmbH's Technical Exhibition Services Division for approval.

For further information and advice the apointed structural engenieers of Messe München GmbH can be contacted.
Deviations to the above are possible in justified individual cases whereby precise verification thereof is required. Messe München GmbH reserves the right in justified cases to have stand safety checked on site by its structural engineering inspector subject to payment of a charge.

Wind loads for cranes

Regular wind pressure and suction loads pursuant to DIN EN 1991-1-4 (2010) in conjunction with DIN-EN 1991-1-4 / NA (2010) are to be taken verifiably into account for non-operational cranes.

Snow loads

For stand construction activities during the snow-free period (May 1 to September 30), snow loads need not be taken into account.
For stand construction activities in the winter period (October 1 to April 30), regular snow loads pursuant to DIN EN 1991-1-3 (2010) in conjunction with DIN EN 1991-1-3 / NA (2010) are to be taken verifiably into account for all supporting roofs:

Snow load zone 1a

- Site height < 540 m above sea level
- Snow load: S_k = 1.15 kN/m² (pursuant to circular issued by Munich City Council)

For stand construction facilities classed as temporary structures, reduced snow loads pursuant to DIN EN 13782 (tents), 6.4.3.3 or DIN EN 13814 (other temporary structures), 5.3.3.5 may apply:
red. S_k = 0.20 kN/m² if snow accumulation (snow height < 8.0 cm) in the service life of the facilities can be avoided via appropriate stand construction measures such as heating (≥ + 2° C outer surface temperature on the entire roof cladding / covering) or corresponding organizational measures such as immediate snow clearance.

Anchorages

Structurally supporting anchorages and ties to any necessary ballast weights relevant for stand safety or for securing freestanding pole or advertising installations must be made of non-flammable materials. This applies notably to the ballast points of temporary structures such as stage roofing and tent constructions.

Glass

Supporting constructions made of glass (in walk-on floors, ceilings, outer façades and / or parapets) in stand structures / event sections in the outdoor exhibition area are subject exclusively to the requirements and specifications set out in the relevant technical construction regulations (DIN) and rules (in the version valid at the given time).
Specifically the construction regulations and rules mentioned below must be taken into account:

– TRLV—Technical Rules for the Use of Linear-Mounted Glazing
– TRAV—Technical Rules for the Use of Safety-Barrier Glazing
– TRPV—Technical Rules for the Design and Execution of Point-Mounted Glazing
– DIN 18008 – Glass in the Construction Industry

All glass constructions pursuant to their planned purpose of use as
– vertical glazing, safety-barrier glass if applicable
– overhead glazing
– walk-on glazing

require auditable structural verification and rule-compliant execution on the basis of the aforementioned construction regulations / rules.

Asian Longhorned Beetle

The Munich Exhibition Center is located in a quarantine zone designated for the control of the Asian longhorn beetle (pursuant to the General Ordinance of the Bavarian State Research Center for Agriculture). Certain plants and woods may not be brought into the exhibition grounds. Exceptions to this are: lumber and wood, which has not retained its natural round surface. Detailed and up-to-date information can be found in the Notice “Asian Longhorned Beetle”.