Deutsche Messe

Supplementary Bulletin

Multistoried stands and other structures requiring approval

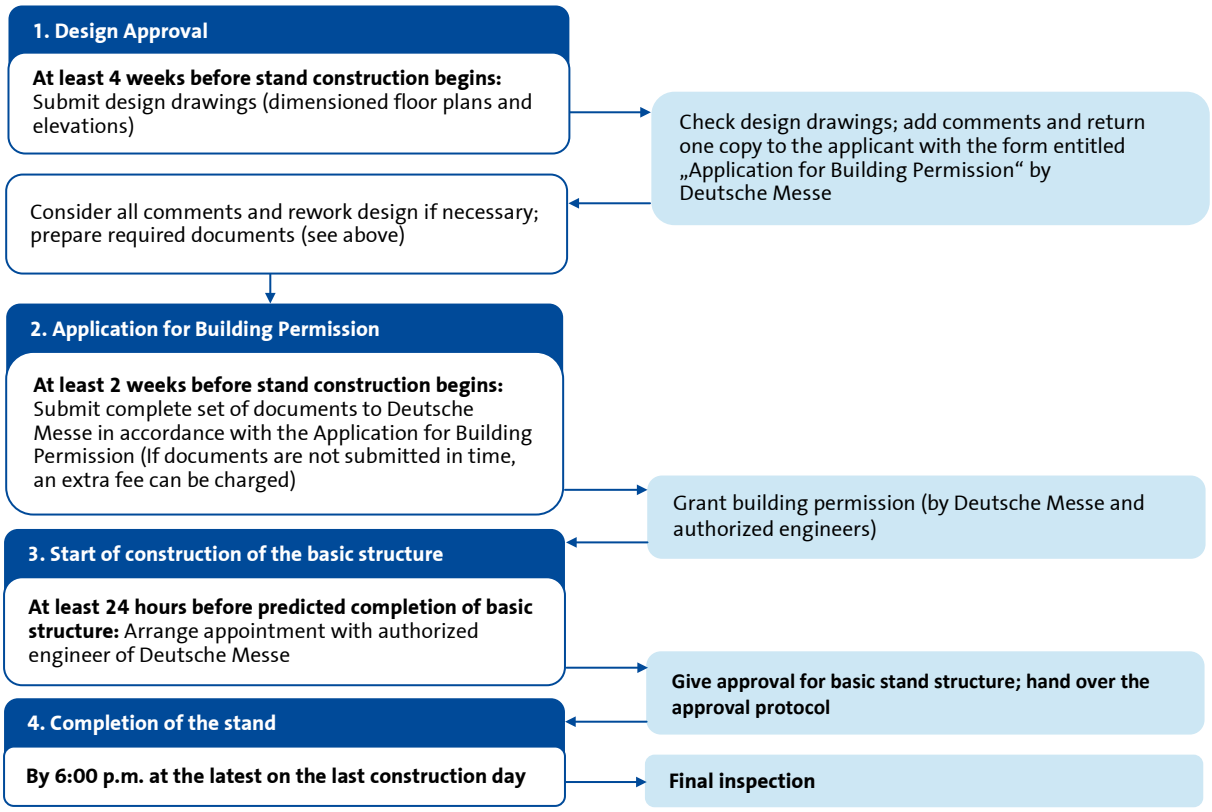
Supplementary to point 4.2.1, Technical Regulations

Procedure for obtaining building permission

Both the Lower Saxony Building Regulations (NBauO) and the Lower Saxony Law on Public Assembly Venues (NVStättVO) apply.
The construction of multistoried stands, structures on the open-air site, special structures and exhibits over 6.50 m require approval and are subject to specific conditions. The cost of obtaining a building permit will be invoiced to the exhibitor. Following documents must be submitted by the applicant as part of the procedure:

- **Form "Application for Building Permission"**
  A completed Application, signed by the exhibitor.
- **Verified static calculation**
  Structural calculations verified by a second independent structural engineer based on German Standards, prepared in German or English including a position plan.
- **Description of the structure**
  With details on materials used and their flammability classifications.
- **Dimensioned stand setup drawings**
  Measured and to a scale of 1:100, floor plan, elevations, sections, plus construction details.
- **Escape route plan**
  Stand layout drawing showing all escape routes and their lengths and widths in compliance with the Lower Saxony Law on Public Assembly Venues (NVStättVO).
- **Area calculations**
  Verifiable area calculations of the usable upper floor area and supported structure.

Procedure



Technical requirements

Stand height	▪ The maximum permissible construction height in a hall is 6.50 m (Hall 8: max. 6.00 m; max. height in the pavilions on request). ▪ Structural restrictions may be on the stand area. ▪ Outward facing advertisements must be at least 1.00 m away from neighboring stands.
Stand design	▪ Stand partitions or similar elements must be placed in upper floor, which prevent the line of sight at all stand boundaries which do not adjoin aisles. ▪ The sides of the upper storey facing neighboring stands must be closed, with clean surfaces of neutral appearance. ▪ Sides of stands adjoining the aisles must be of a transparent design. Long, closed stand structures are not allowed along the aisles. ▪ The floor of the upper storey may be constructed to a maximum height of 3.50 m above the hall floor. ▪ All ceilings must be at least 2.30 m high.
Working and design loads	Stand designs must comply with the DIN EN 1991 working loads standard under due consideration of German application guidelines: ▪ Assembly rooms, exhibition areas, and similar spaces 5.0 kN/m² ▪ For offices & similar spaces, the working load may be reduced to 3.0 kN/m² ▪ Stairways 5.0 kN/m² ▪ An alternative option to ensure room stability is to consider a system inclined from H/20 in each direction ▪ Horizontal load for balustrades and handrails at rail height 1.0 kN/m ▪ Horizontal load for outer walls on the upper level at a height of 1.0 m above floor level 1.0 kN/m The maximum permissible floor load is 0.25 kN/cm². A base plate at least 300 mm x 300 mm in size must be used for loads of F = 40 kN to be borne by shaft and supply channel covers.
Escape routes	From any location within the stand, a hall aisle must be no more than 20 m away. Additional stairways are normally required for greater distances. Upper levels with a floor area of over 100 m² must have a minimum of two stairways as escape routes, located at opposite ends and as far apart as possible. The size of upper level and the number of people present govern the minimum required usable width (e.g. between handrails or in doors) and number of escape routes (stairways, exits, aisles) as follows: ▪ Stands up to 100 m²: 1 stairway, 0.90 m wide ▪ Stands > 100 m² and up to 200 m²: 2 stairways, each 0.90 m wide ▪ Stands > 200 m² and < 400 m²: 2 stairways, each 1.20 m wide
Stairways	All stairways must comply with the DIN 18065 standard: ▪ Spiral stairs or stairs with newel post are not acceptable as escape routes. ▪ Treads must be closed. ▪ The steps shall be no higher than 0.19 m and the tread depth no less than 0.26 m along a theoretical line from the midpoint of the lower step width to the midpoint of the upper step width. ▪ Handrails are required on both sides of the stairway, each with an adequate handhold for grasping and extending continuously beyond the end of the stairway. ▪ Handrails must be mounted at a height of 0.80 m - 1.12 m. ▪ Side clearance of the handrail to an adjacent structure must be at least 0.05 m. ▪ The witdh of necessary stairways may not exceed 2.40 m. ▪ The clear height (headroom) on stairways must be at least 2.00 m.

Balustrades, safety railings	▪ Balustrades must be at least 1.00 m high (recommended height = 1.10 m) and consist of a top, middle and bottom rail. ▪ For open balustrades on upper floors, a strip of at least 0.05 m height must be mounted on the floor edge to prevent objects from rolling away or falling. ▪ Outer walls of upper floors must be designed to preclude the possibility of accidental falling.
Fire preventions	▪ For multistoried stands, all load-bearing elements, the first floor ceiling, and the floor of the second storey must be constructed of materials that are nonflammable pursuant to the DIN 4102-1 B1 or EN 13501-1 C standards. For safety reasons, load-bearing structural components may be required to meet special specifications (e.g. nonflammability). ▪ Wooden stairs are permissible. ▪ Pursuant to the provisions of ASR A 2.2, each level of a multistoried stand must be equipped with fire extinguishers. ▪ Networked smoke detectors shall be installed at false ceilings. The smoke alarm must be visible/audible in a permanently staffed area of the stand.
Stand ceilings	In Hall 19/20, exhibitors shall install their own sprinkler system in a closed stand with an area of ≥ 50 m². More information may be requested from the Technical Event Management department. Closed stand ceilings are permitted in Halls 2 – 18 and 21 - 27 under the following conditions: ▪ Networked smoke detectors must be used in rooms, aisles with closed ceilings and at false ceilings. The smoke alarm must be visible/audible in a permanently staffed area of the stand. ▪ Stands with closed ceilings of 200 m² to 1,000 m² must be equipped with smoke detectors, additional fire extinguishers, and be staffed with a security guard. ▪ Additional restrictions apply to stands with closed ceilings of over 1,000 m². More information may be requested from the Technical Event Management department. Pursuant to the NVStättVO regulations, closed meeting rooms with a floor area of over 200 m² and a closed ceiling must have an approved mechanical ventilation and smoke venting system; sufficient vents are permissible for floor areas up to 1,000 m².
Glass and acrylics	▪ Before incorporating glass elements in floors, balustrades, facades or ceilings, please request the information sheet: „Use of glass in stand construction and design inside trade fair halls“ from the Technical Event Management department of Deutsche Messe. ▪ Only safety glass appropriate for the intended purpose may be used.

Requirements for static calculations

Structural calculations submitted together with the application for building permission must be verified by a second (independent) structural engineer and must be prepared in German, in accordance with all standards applicable in Germany.

The calculations must be specifically based on the building project submitted, and must include the following specifications and checks:

- Specification of applied loads (static loads, live loads, horizontal loads
- Proofs of load-bearing capacity
- Check on the overall stability provided by frames / joints / plates including connections and anchorages
- Complete layout plan showing the positions on which the structural integrity calculations are based, including all necessary design specifications (details on profiles and dimensions of the structure)
- Check on banisters and the upper storey balustrade spar forces including mounting fixtures
- Check on glass components which are subject to approval (see information on page 3 “Glass and acrylics”)
- Check on maximum connection forces for standard connecting elements
- Details of the column cap / column base design including floor load - point loads

Wooden floors on the upper storey	Chipboards used for load-bearing purposes must be approved for the application purpose and marked (e.g. by stamp imprint in accordance with DIN EN 13986). Products that are not marked as such must not be used. (DIN EN 312, DIN EN 300, DIN EN 636, DIN EN 622). Coreboards are not suitable for walking on. If any different construction materials are to be used, a certificate of approval regarding their load-bearing capacity must be submitted. Wooden floors consisting of individual sheets must – if required to stiffen the structure laterally – be laid such that the ends of each sheet are staggered in relation to the ends of the neighboring sheet, and each sheet must be firmly attached (by frictional means) to the underlying structure at regular intervals (a ≤ 50 cm), including the outer edges of the floor. In cases where the structure’s lateral stability cannot be ensured by these means, floor bracing members must be installed. This also applies in principle to roof covers made of trapezoidal metal sheeting.
Wooden stairways	In the case of wooden stairways also serving as an integral part of the supportive structure, a design drawing must be submitted. Proper attachment of railing supports must be ensured (see Balustrades and stairways railings).
Balustrades and stairways railings	Railing, balustrade or stabilization posts of walls shall generally be fixed to the steel structure of the building. In exceptional cases, these posts can be fixed to laminated wood panels (multiplex) if through bolts and large counter disks are used. The laminated wood panels must be anchored sufficiently to the substructure.
Wind bracing	Diagonal struts must be installed non-positively and carry in a straight line up to the supporting profiles. Bolted on tie bars have proved suitable for this purpose. The base points of vertical supports must be connected with compression struts or anchored to the hall floor. Any lifting vertical supports must be anchored to the hall floor or secured with additional ballast. Due to the special floor structure, it is essential to use reaction anchors, which must be anchored in the reinforced concrete slab. The thickness of the floor structure above the slab is varies between 6 cm to 18 cm, depending on the particular hall.
Corner supports / corner framework	All supports must be adequately secured against displacement on the hall floor. This can be done by static proof of sufficient friction, by tie rods between the columns or by anchoring to the hall floor. This applies in particular to external frame supports. The pretension of screwing in frame corners must be carried out according to the static calculation.
Support footings located over supply channels	If the placement of support footings on top of supply channels is unavoidable, the following must be observed: ▪ Support loads of $F = F_k < 40$ kN with base plates ≥ 300 mm x 300 mm may rest on channel covers. ▪ Support loads of $F = F_k \geq 40$ kN must be sustained by reinforced steel plates or traverses welded on both sides. No loads may be exerted on the border profiles of the supply channels, nor may anything be attached to them.