

Chalet Structures on the Open Air Grounds at the ILA

4.10 Chalet modules on the open air grounds at the ILA

Supplement to Item [4.10](#) of the Technical Guidelines for the ILA by Messe Berlin GmbH

As part of the ongoing measures for construction of BBI Airport the well-known lightweight-construction, firmly installed chalets situated for many years on the flight line have been dismantled, and as a result will no longer be available at the ILA 2010 in their customary form.

By way of replacement, a temporary row of interlinked, single-storey, modular construction chalets is to be set up for the ILA 2010 in almost the same place, located slightly to the east.

This information sheet lays down the technical specifications and requirements for the actual chalet modules, as well as for all the equipment and ancillary structures requiring permits which are to be erected inside or in front of the chalet modules on the southern section of Schönefeld Airport. In all other cases the **Technical Guidelines** issued by Messe Berlin GmbH (www.messe-berlin.com) apply.

.1.0 Preamble

According to the *Brandenburg Construction Regulations* [BbgBO, § 44 (2) / § 71 (1)], as so-called temporary structures, the chalet modules, including all the equipment required for the trade fair and event as well as ancillary structures, are in all cases classed as **special structures** within the Exhibition Grounds. Special structures must in all cases conform to the requirements of the valid public provisions of the *Brandenburg Construction Regulations* [BbgBO], and comply with the following conditions and rules in their current, valid form:

- FIBauR – *Directive by the Ministry of Infrastructure and Land Use on the construction and use of temporary structures*
- DIN 4112 – *Temporary structures*; technical construction regulations concerning their dimensions and design

.2.0 Safety equipment

Fire and smoke detectors, fire extinguishing equipment (including hand-held fire extinguishers), smoke flues, air vents and other safety equipment and installations. The signs indicating their whereabouts, green emergency exit signs and posted maps showing escape routes must be accessible and visible at all times and may not be obstructed in any way.

.3.0 Technical specifications and equipment of the chalet modules

ILA chalets are specified as single-storey, modular construction tents, interlinked and arranged in rows.

With a basic area measuring 100 m² and an open-air terrace measuring 50 m², a single chalet (basic module 10 m x 10 m), has a slightly larger usable area than earlier lightweight chalets.

A basic module is connected to identical expansion modules to form a row which can be used as a larger combined unit.

Additionally, in front of the entrance to each chalet there is an area permitting construction (maximum depth 1.50 m), an area for lessees to optionally install ancillary/entrance area structures (see Items 4.3.2 + 4.7).

.3.1 Technical specifications of the chalet modules

Modular construction tents with supports and lock bars, consisting of aluminium system sections and roof system elements (self-supporting over 10 m), using pyramid-type framework elements making up grids measuring 5.0 m x 5.0 m.

On all outer frontages, grid system supports integral to the modular structure are installed at intervals of 5 m. These must be taken into consideration when planning and furnishing/equipping the interior.

Chalet module	Specifications, description
Dimensions	10 m x 10 m
Basic area	100 m ²
Spacing of supports (outside)	5.0 m
Inside room height up to eaves (side)	3.60 m
roof apex (centre)	6.04 m
Roof support grid dimensions	5 m x 5 m
Maximum permissible suspension load	max. 1.0 kN (100 kg)
Roof covers	Tensioned tarpaulins, white (non-transparent)
Flooring	Waffles with sealed plywood or wooden boards
Load-bearing capacity of floor (live load)	5.0 kN/m ² (500 kg/m ²)
Width of grid: side / front gable end / panels	Rigid PVC – waffle panels (no cladding), white (non-transparent) approx. 1.0 m
Partition (inside)	Wooden partition (2-layers), no cladding
Glazed frontage facing terrace	Tinted glass, h = 3.5 m, dimensions same as panel grid, with 1 winged glass door (2 wings)
Frontage at entrance	As for side / front gable end, with 1 winged glass door (2 wings)
Raised platform	Painted wood, with painted metal handrail
Glass doors (2 wings)	Hinged, lockable push glass door, no entrance threshold to chalet floor
Dimensions (b / h)	b = 2.2 m / h = 2.0 m
Number: basic module	2 (1 for each frontage)

2 nd – n th expansion module	1 each on each frontage (max. spacing 15 m to next doors on same frontage)
Terrace dimensions	5 m x 10 m (50 m ²)
Terrace surfacing	As for chalet flooring, according to lessee's specifications

.3.2 Handover specifications

The handover specifications of the chalet modules correspond to the construction specifications in the above table. Water supply and drainage as well as electrical connections (type and number of connections to exhibitor's order specifications). Furthermore, all chalet modules are without

- suspended/partitioned ceilings,
- lighting,
- carpeting.

Standard specification chalet units are not equipped with any heating or ventilation systems.

.3.3 Technical faults

In the event of technical faults the trade fair company management must be notified without delay. Messe Berlin shall not be liable for damage resulting from these technical faults.

.4.0 Stand construction provisions

.4.1 Safety of stands / barrier-free construction

All items installed inside the chalet required for the event, including furnishing/equipment, exhibits and external ancillary structures and/or advertising installations are to be erected in such a way as to ensure they present no danger to public order and safety, and in particular life or personal health.

Exhibitors are responsible for ensuring and supplying proof of the load-bearing capacity and stability of all chalet installations and any ancillary structures. In all cases the requirements of the *Brandenburg Construction Regulations* [BbgBO] and the provisions and guidelines of Item 1.0 shall apply.

If chalet areas are to afford access to the general public, then main entrances and exits must be barrier-free constructions.

Alternately, stand operators/exhibitors must supply proof of stand-related, organisational measures (staff offering assistance etc.) to ensure access for wheelchair users and their evacuation in the event of any emergency.

.4.2 Structures requiring permits

All interior installations in the chalets as well as all free-standing ancillary structures required for the event for which the exhibitor is responsible require a permit.

Stand structures in front of and inside the chalets requiring a permit include:

- Free-standing, external ancillary structures (such as roofed platforms, steps etc., including cladding) at the front entrance.
- All other stand structures in the chalet suitable for pedestrian traffic:
- Platforms, steps/stairs, galleries, (more than 20 cm above the chalet floor), including handrails;
- Loads suspended from the supporting framework of the tent, e.g. for systems installed beneath the ceiling, media installations.
- Individual exhibits displayed inside the chalet resting on individual supports or exerting loads at individual points, if necessary requiring reinforcement of the chalet flooring.

Verifiable proof of stability must be supplied in all cases.

.4.2.1 Inspection/approval of structures for which permits are required

For purposes of inspection and in order to obtain approval, diagrams of the interior installations of the chalet, with measurements, reproduced to a scale of 1:100, basic dimensions, cross-sections and views, must be submitted to Messe Berlin at the latest 6 weeks before construction begins. *Following inspection one copy of the stand diagram will be returned with a notification of approval to the exhibitor / stand construction company. Construction of the stand shall only be permitted with a notification of approval.*

If a larger, jointly used expanded chalet has a net area exceeding 300 m² (→ combining three chalet modules), then the following documents pertaining to the stand structure must be submitted to Messe Berlin.

These documents are required in order to obtain official approval for the chalet.

The following documents are required (**in duplicate**) in German or English **at the latest 6 weeks** before construction begins:

- Stability calculations (in duplicate) conforming to German DIN norms, technical rules or Eurocodes (EC, DIN EN) for the above-listed stand structures and ancillary structures in chalets requiring permits.
- Description of the structure and **proof of fire safety measures or of a fire safety concept***, stating materials (test certificates) for interior installations, including ancillary structures of the chalet.

* In the case of a jointly used expanded chalet **exceeding a net display area of 300 m² a verifiable fire protection concept** specifically for these installations must be submitted in German, (ref. *vfd guidelines 01-01*), as well as a corresponding **map showing escape routes** as defined by DIN 4844-3, and **fire safety regulations** as defined by DIN 14096, which must subsequently be posted in the chalet at easily accessed points for the duration of the event.
- Diagrams of the interior installations of the chalet, with measurements, reproduced to a scale of 1:100, with basic dimensions, cross-sections and views, including diagrams of the ancillary construction, if necessary with a construction diagram to a finer scale.

In the event that verifiable documentation containing technical specifications or stability calculations as requested above are not available, Messe Berlin shall employ inspectors/authorised experts to carry out an on-site inspection and evaluate the stand structure in question. The resulting costs will be invoiced to the exhibitor/stand construction company.

.4.3 Construction height

.4.3.1 Inside the chalet

Following installation of suspended ceilings by the exhibitor the inside height of the chalet modules must not be below 2.30 m at any point (measured from the upper edge of the floor).

Installations exceeding the overall inside height of the eaves of the modular structure (approx. 3.60 m) require a permit.

Providing they do not exceed the inside height of the eaves of the modular structure exhibits are not subject to a height limit, thus facilitating transport inside the structure.

.4.3.2 Ancillary structures

Ancillary/entrance area structures require permits and documentation in all cases. These structures may only be erected within a prescribed area where construction is permitted (ancillary structure zone), directly in front of the entrance area to each chalet.

- Maximum depth of an ancillary structure in the entrance area: **1.50 m**
- Maximum height, measured from the floor of the chalet: **4.0 m** (to upper edge of eaves of chalet)

.4.4 Fire safety and general safety regulations

.4.4.1 Stand structure materials and decoration materials

Materials and/or noxious gases which are highly inflammable, produce flaming droplets and/or smoke while burning, such as polystyrene, or which are similar, are not permitted.

For safety reasons, in individual cases load-bearing elements of the structure may be subject to special requirements (e.g. non-inflammable materials).

Decoration materials must, at minimum, be classed as flame retardant as defined by **DIN 4102-1 B1, may not produce flaming droplets while burning**, or must conform to **EN 13501-1 C-s3, d0**.

Suspended curtains and cladding may not touch the floor.

Use of plastic cable ties to secure elements subject to structural stress is not permitted.

Current and valid test certificates verifying the categories of the construction materials used must be submitted to Messe Berlin on demand.

.4.4.2 Roofed stands, suspended ceilings

Horizontally installed decorations and suspended ceilings covering the entire area at a minimum height of 2.30 m require permits.

Materials used for these areas must, at minimum, be classed as flame retardant as defined by **DIN 4102-1 B1, may not produce flaming droplets while burning**, or must conform to **EN 13501-1 C-s3, d0**. Test certificates must be submitted.

Use of plastic grid ceilings is not permitted.

.4.4.3 Ash containers, ash trays

Unless smoking is generally banned in the chalets or parts of the chalet (ref. TR, 1.1, Item 09), a sufficient number of ash trays or ash containers must be supplied, consisting of non-inflammable material and with lids providing a tight seal, the contents of which must be disposed of at regular intervals.

.4.4.4 Waste bins, containers for recyclable materials

Containers for recyclable materials or waste bins made of inflammable materials may not be installed inside the chalets. Containers for recyclable materials and waste bins placed there are to be emptied at regular intervals, at the latest in the evening after the fair has closed, and the contents to be disposed of in the containers for recyclable materials in the outdoor area of the ILA grounds. Larger amounts of inflammable material must be disposed of several times a day.

.4.4.5 Empty packaging

It is not permitted to store empty packaging of any kind (e.g. boxing and packing material) either inside or outside the chalets. Empty packaging must be disposed of without delay.

Fire extinguishers

During construction, dismantling and for the duration of the event, each chalet module measuring 100 m² must be equipped with a suitable fire extinguisher conforming to DIN EN 3, for fire categories A, B, and C, and with at least 10 extinguishing units.

During construction, dismantling, and for the duration of the event, jointly used chalet areas up to 600 m² in size must be equipped with at least two suitable fire extinguishers conforming to DIN EN 3, for fire categories A, B, and C, each with at least 12 extinguishing units. If the chalet dimensions exceed 600 m² it may be necessary to install additional fire extinguishers.

Fire extinguishers must be installed inside the chalet at clearly visible and easily accessible points, and must be marked as defined by Accident Prevention Regulation BGV A8 (VBG 125).

.4.4.7 Glass and acrylic glass

Only safety glass suitable for the design, purpose and loads in question may be used for all installations in the chalets and the relevant ancillary structures.

The requirements and terms of the following technical construction regulations 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*

For further information on installations in chalets please refer to our information sheet entitled "Use of glass and acrylic glass in stand construction and design inside fair halls" (www.messe-berlin.com - Location & Grounds / Guidelines and Conditions / Information sheet: Supplement to Technical Regulations - download).

Forming the basis for all the specifications referred to herein, and in accordance with the intended purpose, **all** glass construction must be

- vertical glazing, made of safety glass if necessary;
- overhead glazing;
- glazing capable of supporting persons,

Its stability must be verifiable and the glass construction must be installed according to the applicable rules.

Under no circumstances may panes of glass with damaged edges be used. Any exposed edges of the glass should be reworked in such a way or protected so as to prevent the risk of injury. All-glass components spanning room height must be marked at eye-level.

.4.4.8 Enclosed lounges

All lounges inside a chalet which are enclosed on all sides (enclosed lounges) and which are separated visually from the remaining chalet area must be equipped with a visual and acoustic system to relay alarms at all times. Substitute measures may be approved in exceptional cases.

Individual rooms with a net area exceeding 100 m² must have at least two exits (inside width of at least 1.2 m) close to the corridors of a chalet. These exits must be as far away from each other as possible.

.4.5 Exits/escape routes, doors

.4.5.1 Exits/escape routes

No area inside the chalet may be further than 30 m walking distance from an exit.

For this reason, every chalet up to a maximum of 200 m² in size (→ basic module + 1 expansion module) is fitted with one double-winged exit door each at opposite front ends, being the standard arrangement with a basic number of doors.

Jointly used chalet areas larger than 300 m² in size (→ 2nd to nth expansion module) are fitted with at least one additional exit door per front end at regular intervals of 15 m, in addition to the basic number of doors specified above.

Corridors and escape routes leading to these doors must be at least 1.2 m wide. Escape routes must be marked as defined by the provisions of BGV A8.

.4.5.2 Doors

No swing doors, revolving doors, doors requiring access codes, sliding doors, nor any other objects impeding access may obstruct the path of the escape routes. A single grasp must at all times suffice to fully open double-winged doors from the inside in the direction of the exit.

In the event that other doors are located directly next to each other, suitable door stop mechanisms must be employed to ensure that opening the wings of the door does not interfere with opening of the neighbouring door. In such cases all wings must open to a maximum of 90°.

If an exhibitor installs additional outside exit stairs/steps (including part of an ancillary structure) then outside the exit door the distance which the platform measures to the next step must be at least the same as the width of the wing of the door.

.4.6 Platforms, parapets

Generally accessible walkways directly bordering other areas at least 0,20 m lower in height must be enclosed by parapets at least 1.10 m high.

Parapets bordering areas inside the chalets or inside ancillary structures where there is limited and controlled trade visitor access must be fitted with a continuous, fixed, non-slip handrail, as well as belts both at medium and low height. Handrails must also be installed on steps/stairs and landings. In order to prevent persons (children) from climbing over the parapets, it is recommended to install filling material or vertical bars spaced no more than 0.12 m apart.

Proof of stability must be submitted for platforms and the necessary parapets. Depending on its use, the platform must be designed to sustain a minimum load of **3.0 kN/m²** and conform to DIN 1055-3, Table 1 [Cat. C1].

Platforms accessed by only one step may not be higher than 0.20 m. Ladders, steps, catwalks and stairs must comply with accident prevention regulations.

.4.7 Ancillary structures

In front of the entrance to each chalet there is an area permitting construction (maximum depth 1.50 m), an area for lessees to optionally install ancillary/entrance area structures. Ancillary/entrance area structures (such as roofed entrances, steps etc., including cladding on all sides) require permits and documentation in all cases (ref. Item 4.2).

Proof must be supplied in all cases of relevant wind load, live load and dead load tolerance, in order to verify the stability of these ancillary structures, which are considered **free-standing and self-supporting structures**.

Item 4.9 specifies the relevant wind load and live load limits.

During use an ancillary structure may not exert any forces or loads on the supporting elements of the neighbouring chalet modules. For this reason it is not permitted to connect or secure the ancillary structure to the system sections supporting the chalet modules in any way.

The exhibitor is responsible for the design of the ancillary structure. In doing so he must observe the relevant criteria as specified for the exhibition. Surfaces on the side bordering the line dividing individual chalets should be kept neutral so as not to interfere with the design of the neighbouring chalet.

Bracing and fasteners attached to necessary weights and anchor points sustaining loads critical to stability must be made of non-flammable materials.

In order to install anchor points and carry out other foundation work written approval must be obtained. To do so precise diagrams must be submitted in advance to Messe Berlin GmbH, Dept. Veranstaltungstechnik ST 21.

No anchoring or foundations of any kind are permitted in the ground of the outdoor site surrounding the chalet modules without written approval.

The ground will be restored to its original state by Messe Berlin GmbH or its contractors. A charge will be made for this work.

.4.8 Modifications to the basic construction of the chalet

Supporting sections and wall panels may not be damaged, soiled or modified in any other way (e.g. by drilling holes, inserting bolts/screws and nails). Nor is painting, papering and use of adhesives permitted.

However, on condition that they are not damaged it is permitted to build around tent supports at the front and gable ends of the chalet, within the regulation height limit.

.4.8.1 Hall floor

Carpeting and other floor covering must be installed on the floor of the chalet module in such a way as to minimise the risk of accidents. Only adhesive tape may be used for securing purposes, which on removal must leave no deposits.

All materials used must be removed so as to leave no deposits. Substances such as oil, grease, paint etc. must be removed immediately from the floor of the chalet.

No adhesives or paint may be used on the floor of the chalet. It is not possible to install anchor points or mounts in the floor of the chalet.

.4.8.1 Suspended installations inside the chalet module

Under certain conditions installations may be suspended from the eaves framework inside the chalet modules. Attachment points for suspending a maximum of 1.0 kN / 100 kg each are located at all intersections of the modular roof frame at grid intervals of 5.0 m x 5.0 m.

No attachment points exist along the inside partition which separates the individual chalets. Due to the maximum limit placed on loads all suspended loads must be approved and conform to BGV C1.

It is not possible to suspend heavy loads (> 1.0 kN / attachment point) from the roof framework of the chalet modules.

.4.9 Live loads / design loads

In standard specification chalet modules the floor of the tent is built to sustain live loads of up to 5.0 kN/m² (500 kg/m²).

In the case of raised platforms with pedestrian traffic vertical live loads must conform to DIN 1055-3, Table 1 [Cat. C] as follows:

- In the case of **limited use by trade visitors (customary use inside the chalets)** or stand personnel for discussions and assisting customers, i.e. furniture including tables and chairs in no fixed locations or in separate discussion booths a live load [Cat. C1] of **$q_k = 3.0 \text{ kN/m}^2$** .
- In the case of **unrestricted used** as a freely accessible exhibition and meeting area either with or without a large number of chairs a live load [up to Cat. C3] of **$q_k = 5.0 \text{ kN/m}^2$** .
- **Steps and platforms accessed by steps** must always be designed to sustain a live load [Cat. T2] of **$q_k = 5.0 \text{ kN/m}^2$** .

In the case of platforms or steps, in order to achieve sufficient **longitudinal and lateral stability** the floor at its highest point must be designed to sustain a **lateral load of $1/20 q_k$** (q_k = vertical live load).

In the case of **parapets and handrails** as defined by DIN 1055-3, Table 7, a horizontal live load [Cat. C] of **$q_k = 1.0 \text{ kN/m}$** at capping height must be sustained.

The same loads must also be sustained by wall cladding standing at room height which also serves as safety barriers, providing no additional parapet capable of tolerating loads is situated on the inside.

.4.9.1 Supports – individual loads

If, due to an exhibitor's installation or his exhibits, the floor of the chalet sustains extra loads from individual supports (\geq approx. 10 kN) then this information must be supplied separately in a **diagram of the supports, with measurements, reproduced to scale**, in German, and submitted for inspection to Messe Berlin.

The offices of Messe Berlin responsible for stability calculations will be required to examine the extra loads sustained by the raised chalet floor (which, if necessary, will require reinforcement by underpinning), a charge for which shall be made.

Messe Berlin will submit documentation of the inspection and diagram of the supports to the offices for stability calculations. The exhibitor or stand building company is the customer and shall be invoiced. Should any modifications be necessary then the exhibitor or stand building company shall be obliged to carry them out.

.4.9.2 Wind loads (pertaining to ancillary structures of the chalets)

For the ancillary structures of chalets, as for all outdoor stand structures on the ILA grounds, the regular wind and eddy loads as defined by **DIN 1055-4** or EC 1 (DIN ENV 1991, Part 2 – 4) on all elements supporting roof structures and external walls must be observed and required proof provided.

Please refer to our **Information Sheet on Stand Structures on the open-air ILA grounds (Merkblatt Standbauten im ILA-Freigelände)** (see C 1.1), which specifies applicable wind load information under Item 4.8.1.2.

Due to the limited construction height (a maximum of 4.0 m above the floor of the chalet) and the proximity to the chalets of all ancillary structures, the limited wind load specified therein as defined by DIN 4112, 4.5.1 for so-called *temporary structures* is only permissible with a reduced eddy load:

$$\text{Height of the ancillary structure} = 5 \text{ m: } q_{\text{red}} = 0.5 \text{ kN/m}^2$$

However, further reductions of loads on *temporary structures*, as defined by DIN 4112, 4.5.1 are not permissible, as this requires cessation of operations of the ancillary structure in winds exceeding 8 Bft ($\rightarrow v_{\text{wind}} = 20 \text{ m/s}$, including gusts). However, such a cessation of operations does not apply to the neighbouring chalet module, which with its ancillary structure is in all cases to be regarded as a stable functional unit (entrance).

In order to guarantee adequate stability all other vertical or free-standing wall elements outside the chalets or on the terraces of the chalet modules must conform to DIN 1055-4.

.4.10 Dismantling and returning the chalet modules

All chalet modules must be handed back to Messe Berlin GmbH clean and in their original state at the end of the event.

All installations inside the chalets as well as ancillary structures with weights, and if necessary approved anchor points, foundation work etc. in the outside area must be dismantled and removed.

Any resulting building rubble must be removed immediately by the contractor appointed by Messe Berlin GmbH.

Exhibitors must maintain security at the site until the chalet has been completely restored and handed back.

If the restoration work has not been completed by the stipulated end of the dismantling period Messe Berlin GmbH shall be entitled to arrange for it to be carried out by its contractors at the expense of the exhibitor/stand construction company.