Inspection of constructions requiring approval

Deadline: 11.04.2018

The following stand constructions are not subject to approval:

- single-storey stands
  - as far as they are not considered special constructions
  - having a surface no larger than 100 m²
  - not higher than 4.00 m

The following stand constructions are subject to approval:

- two-storey structures
- outdoor structures/temporary structures
- screening or spectator rooms/stages/platforms
- stand areas larger than 100 m²
- stand structures and exhibits higher than 4.00 m (for exhibits and the use of gases and hazardous materials please see the corresponding information sheets)
- special constructions:
  - suspensions
  - boundary construction to the aisles
  - moving component
  - foundation work
  - glass and acrylic glass
  - stair/reiling/platform with a height > 20 cm
  - stand with ceiling/closed ceiling
  - darkened stand area

The following documents have to be uploaded in the Exhibitor Portal (www.achema.de) in German or English language for verification:

- dimensioned stand plans (e.g. scale 1:100) with floor plans, top/side/perspective views and sectioned drawings
- description of construction specifying the materials used; if applicable with certificates
- checked static calculation in accordance with German standards or type certification/certification book
- escape route plan including lengths and widths of emergency escape route(s)
- ceiling schematic including dimensions of the enclosed ceiling area(s)
- plans of suspension giving the corresponding distribution of weights
- stand constructor and person to contact (company, e-mail, phone, person to contact on-site including mobile number)

In the event that static calculations examined by a second, independent structural engineer were submitted, a fee for the inspection on-site is incurred.

If there is no certified static analysis at hand or a certified static is not feasible, costs arise for the verification of the static calculations as well as for the inspection on-site.

If there is no static at all, costs arise for the static calculations as well as an omission surcharge of 30% of this sum and for the inspection on-site.
### Inspection of constructions requiring approval

#### Costs

<table>
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<tr>
<th>Costs for rental space two-storey exhibition stand and structural calculation (will be charged by DECHEMA Ausstellungs-GmbH)</th>
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<td>Structural calculation of the static (if there is no certified static or a certified static is not feasible)</td>
</tr>
<tr>
<td>Structural calculation as well as an omission surcharge of 30% of this sum (if there is no static at all)</td>
</tr>
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<table>
<thead>
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<th>Costs for structural inspection/visual assessment on-site (will be charged by Messe Frankfurt)</th>
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<td>Structural inspection for stands in outdoor areas, 1 - 1,000 m² with an upper storey</td>
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<td>Structural inspection for stands in outdoor areas, 101 - 1,000 m² without an upper storey</td>
</tr>
<tr>
<td>Structural inspection for tents in outdoor areas, 1 - 100 m²</td>
</tr>
<tr>
<td>Structural inspection for tents in outdoor areas, 101 - 1,000 m²</td>
</tr>
<tr>
<td>Structural inspection for show trucks with an awning and/or an accessible upper storey</td>
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<td>Structural inspection for accessible glass constructions and platforms/rotating platforms higher than 20 cm or rotating stages in exhibition halls or outdoor areas</td>
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<td>Structural inspection for advertising materials or product presentations higher than 4 m and floor/ceiling connections</td>
</tr>
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<td>Structural inspection for movable product presentations/walls/modules and structurally complex constructions</td>
</tr>
<tr>
<td>Structural inspection, additional expenditure because of not submitted plans/structural inspection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs for the fire protection (will be charged by Messe Frankfurt)</th>
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</thead>
<tbody>
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</tr>
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<td>Fire alarm system from 801 - 2,400 m² ceiling/covered area</td>
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<td>Fire alarm system from 2,401 m² ceiling/covered area</td>
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<tr>
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<tr>
<td>Visual and acoustic warning system</td>
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<tr>
<td>Sprinkler</td>
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</tbody>
</table>

All prices quoted are subject to statutory VAT.

In case of any questions, please contact: E-mail: standapproval@dechema.de
Phone: +49 69 7564 – 650 / Fax: +49 69 7564 – 273

DEHEMA Ausstellungs-GmbH - Technical Organisation

January 2018
Exhibits require approval if they
- are shown in operation
- are higher than 4.00 m
- exceed the permitted load bearing capacity

The following documents have to be submitted for verification:
- dimensioned drawings/cross section
- technical data sheet
- position on stand plan
- static calculation of stability and safety against overturning checked/checkable

On demand, a risk analysis has to be presented on-site for exhibits in operation.

Documents can be uploaded in the Exhibitor Portal from May 2017.
If no checkable static calculation is available, the contracted structural engineer for ACHEMA will perform the inspection. The exhibitor will be invoiced for the cost of the static calculation.

If exhibits with a weight of more than 7,500 kg or with a height or width of more than 5 metres need to be brought into the halls and whose transport could cause problems during regular set-up times, please contact the Logistics Service of Messe Frankfurt in good time to arrange a delivery date (Tel. +49 69 7575-6075, Fax +49 69 7575-96075, e-mail: logistics@messefrankfurt.com)

We prepared information sheets on the following subjects:

Employment of gases and hazardous materials
Prevention of legionnaires' disease
Utilisation of helium-filled balloons in the exhibition halls
Before the employment of all hazardous media it must be examined if the use is essential for the exhibition purpose or if a safer substitute can be applied.

Please note the Technical Regulations (above all point 5), in the following referred to as TR.

The employment of above mentioned media during the event and during set-up and dismantling periods is subject to approval. Below, please find an overview of the various uses that are notifiable and subject to approval together with the corresponding documents:

- Use of welding equipment and work involving open flames (TR 4.4.1.10 and information sheet: Operating exhibits with open flames through the use of flammable liquids), notification by e-mail to safety@dechema.de, if applicable form: Use of flammable liquids in connection with exhibits - application for permit

- Use of pressurised gases and liquid gases (TR 5.7.1 and information sheet: Liquid gases), form: Set up of pressurised and liquid gas cylinders - application for permit

- Use of combustible liquids (TR 5.7.2) form: Use of flammable liquids in connection with exhibits - application for permit

- Use of hazardous materials (TR 5.7.4), form: Use of hazardous materials in connection with exhibits - application for permit

- Use of laser systems (TR 5.10.3), form: Registration of laser equipment

- Use of radioactive materials (TR 5.10.1), form: Use of radioactive material in connection with exhibits - application for permit

- Use of x-ray systems and sources of broadcast interference (TR 5.10.2), form: Use of x-ray systems or sources of broadcast interference in connection with exhibits - application for permit

- Use of fog machines/hazers (TR 4.4.1.7), form: Use of fog machines/hazers - application for permit

- Use of high-frequency equipment, radio transmitters, exhibits emitting electromagnetic radiation (TR 5.11), requests for approval to Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen Außenstelle Eschborn, Auf der Ludwigshöhe 204, 64285 Darmstadt, GERMANY, Tel. +49 6151 170-255, Fax +49 6151 170-181, consultation with DEHEMA, written information to the fire protection authorities of the city of Frankfurt am Main (Branddirektion der Stadt Frankfurt am Main, Vorbeugender Brandschutz, Feuerwehrstr. 1, 60435 Frankfurt, GERMANY)

- Use of powerful or very bright LED systems (TR 5.10.4 and information sheet: Devices with LED emitters and/or powerful LED spotlights/systems), a risk analysis of the manufacturer is to be kept available at the stand

- Use of pressure vessels (TR 5.6), approval certificates according to the Industrial Safety Regulation (Betriebssicherheitsverordnung [BetrSichV]) shall be kept on hand for inspection by regulatory agencies, on-site approval is also required, application 6 weeks prior to the start of the fair to Messe Frankfurt, Technical Event Management, E-mail: veranstaltungstechnik@messefrankfurt.com

The applications for permit can be uploaded in the Exhibitor Portal from May 2017.

In case of any questions, please contact: E-mail: safety@dechema.de
Ms. Hild
Phone: +49 69 7564 – 601 / Fax: +49 69 7564 – 273

March 2017
INFORMATION SHEETS ON SPECIAL ISSUES
Air conditioning in the halls

The outdoor temperature, the atmospheric humidity, the volume of visitors together and factors in relation to the stand construction have an influence on the ambient condition of the hall.

Please consider that stand construction elements do not restrict the function of technical ventilation equipment. For example, ceilings may reduce the efficiency of a ventilation system. This also applies when the ceilings are made of fabric. Furthermore, ‘incorrectly’ positioned wall and floor elements can interfere with the operation of the air-conditioning system if they completely or even partially cover air intake or exhaust openings.

For question concerning the stand construction in relation to the ventilation and air conditioning of the halls please contact:

- for two-storey structures your contact partner is Mr. Patrick Dietrich from Messe Frankfurt (patrick.dietrich@messefrankfurt.com), phone: +49 69 7575-5040
- for all other stands please contact the Stand Approval Team from DEHEMA Ausstellungs-GmbH (approval@dechema.de, phone: +49 69 7575-650)

In cooperation with Messe Frankfurt DEHEMA undertakes all available technical measures to achieve an agreeable temperature in the exhibition halls as far as possible. Under the motto ‘cool light’ DEHEMA will include LED spotlights or similar light sources with little waste heat in the offered stand construction packages to reduce the amount of waste heat in the halls. Exhibitors are kindly asked to follow the lead. DEHEMA offers to check illumination concepts of stand constructions in regard to efficiency (light effect, heat development and power consumption) and where required our service provider for electrical installations will make a modification proposal at no surcharge. Please send your lighting concept including all details to the Technical Organisation Team of DEHEMA (technicaleservices@dechema.de, fax: +49 69 7564-273).
Any structures built above the aisles must be coordinated with the Technical Organisation of DEHEMA Ausstellungs-GmbH (e-mail: standapproval@dechema.de / phone: +49 69 7564-650) prior to the exhibition.

The following regulations must be observed whenever two exhibition stands separated by a hall aisle are linked:

**Floor coverings**

The hall aisle must be marked, for example through the use of a floor covering of a different colour, or of circular markings which are 10 cm in diameter and located one metre apart.

If two exhibition stands are connected by a platform, in the aisle area both sides must be equipped with a ramp with a maximum slope of 6%.

In the event that two stands are linked via a platform, the edges of the platform must always be straight.

Steps are not permitted in the hall aisle.

Floor covering, such as boards made of wood composite, fire protection class B1, flame-retardant in accordance with DIN 4102 / EN 13501-1 class C, is permitted in the aisle area. The edge must be bevelled and clearly marked.

**Superstructures**

The clear height of a superstructure must be at least 2.50 m.

Only such lighting fixtures which are installed in compliance with the current state of the art and the relevant regulations such as DIN, VDE and UVV (particularly DGUV 17/18 [former BGV C1]) are permitted in the aisle area.

Advertising and company logos are not permitted in the aisle area.

If superstructures obscure the view of pictograms, information signs or other items relevant to safety or security at the trade fair, remedial measures are to be undertaken in agreement with the Technical Services Team to rectify this problem.

**General regulations**

The entire width of the aisle is to be kept clear at all times; neither additional stand structures (including doors and curtains) nor exhibits may be placed there.

All materials used must be flame retardant in accordance with Fire Protection class B1 pursuant to DIN 4102 and/or class C of EN 13501-1. The use of easily flammable materials, those which cause flaming droplets when burning, or which lead to the production of noxious gases, such as polystyrene foam (styrofoam) PVC or similar acrylic glass products, is prohibited.

Any costs incurred for modifications, enhancements or remedial measures in the course of the construction of aisle superstructures shall be borne by the exhibitor.

In order not to impede the set-up, superstructures/floor coverings are scheduled for the last set-up day from 15 h onwards (prior to that, halls must be accessible for fork-lift traffic). Exceptions require the written permission of DEHEMA.

The dismantling must take place directly after the event finishes. DEHEMA Ausstellungs-GmbH reserves the right to invoice any follow-up costs to any stand builder/exhibitor who does not observe this arrangement.
DECHEMA Ausstellungs-GmbH, Technical Organisation shall be notified of the employment of balloons filled with an inert gas in the exhibition halls or on the outdoor exhibition areas, which is subject to approval.

Should helium balloons be used at a stand for advertising purposes, the following guidelines must be observed:

- The maximum construction height of the respective hall may not be exceeded by the balloons.
- The balloons must be secured by cables; under no circumstances may the balloons break free.
- The balloons may only be used within the area of the stand.
- If the balloons display printed advertising, they must remain at least 1 meter from the neighbouring stands.
- Only one compressed gas cylinder of max. 11 kg may be kept at the stand for refilling the balloons.
- The compressed gas cylinder must be protected against unauthorised access.
- The compressed gas cylinder must be secured to prevent falling during the filling process.

German regulations set forth in TRBS 3145 and TRGS 745 (Technical Rules for Compressed Gas/German Trade Association Guidelines for Gases) must be adhered to.

Please also refer to the guidelines for compressed gas in our technical guidelines (see item 5.7 and the following).

All equipment used must be suitable for the fabric, the desired pressure and the temperature. The compressed gas cylinder must be kept away from sources of heat. The gas cylinder CANNOT be stored within the exhibition halls.

For proper storage options please contact the Logistics Services at: logistics@messefrankfurt.com. They will provide appropriate storage space at exhibitor’s expense.

In case of any questions, please contact: E-mail: standapproval@dechema.de
Phone: +49 69 7564 – 650 / Fax: +49 69 7564 – 273
Instructions for exhibitors, service providers and stand constructors

- Deep fat fryers and hot plates must be placed on non-flammable surfaces.

- These devices must be kept at least 1 metre away from flammable objects/walls/items in every direction.

- Manufacturers’ specifications for the minimum height of the extractor hood (with activated carbon filter) are to be observed.

- A fire extinguisher for grease/oil fires and a suitable fire blanket should be kept in the direct vicinity of the deep fat fryers/hot plates; their location is to be designated with suitable pictograms.

- No ceilings may be mounted above these areas; otherwise, additional measures are necessary (to be coordinated with the Technical Organisation Team).

- Additional fire protection measures are necessary for deep fat fryers with a capacity of more than 50 litres (to be coordinated with the Technical Organisation Team).

- DECHEMA Ausstellungs-GmbH will inform the preventive fire protection staff of your intentions.

- Legal provisions regarding the Food Hygiene Regulations are to be complied with; for more information, please refer to Technical Regulations for ACHEMA 2018, 5.15 Food Inspections.

In the event that other exhibitors are disturbed by vapours/smells, the activities in question are to be stopped without delay. DECHEMA’s decisions in such matters shall be final.

The activities in question are also to be stopped in the event that, in spite of the utilisation of an active carbon filter, the concentration of vapours produced is too strong and therefore triggers the smoke alarms located in the hall.

Please note that there must also be a wipeable floor, disposable towels and a water connection available.

Approved fire extinguishers for grease/oil fires in accordance with DIN-EN 3:

Officially approved in accordance with DIN-EN 3 for Fire Classification A and in accordance with DIN V 14406-5 for extinguishing fires involving cooking oils and fats. The special extinguishing agent FETT-EX is primarily suitable for fighting fires involving cooking oils and fats. When the extinguishing agent meets the surface of the fire, the flames collapse immediately, and a cooling foam layer is formed which is an effective extinguisher and which also helps to prevent re-ignition of the fire. Extinguishing units (LE): 4.
**Use of glass and acrylic glass in stand construction and design inside trade fair halls**

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1 SCOPE OF APPLICABILITY

This information sheet discusses the regulations concerning the use of glass and acrylic glass in stand construction and design inside trade fair halls. It does not apply to stand construction and design outside trade fair halls.

Designing, dimension calculations and assembly of glass components for use inside trade fair halls require that the design, planning and assembly personnel involved is adequately qualified for glass construction projects.

Glass structures which have received general construction approval (including European Technical Approval ETA) may be used in all cases in trade fair halls in accordance with the wording of the approval. This information sheet does not impose restrictions on the use of such structures.

2 DEFINITIONS AND EXPLANATIONS

2.1 Types of supports

- Glazing secured by linear supports:
  secured by linear supports on at least two opposite edges over the full length of each edge of the glass plate.

- Glazing secured at individual points:
  glazing anchored through drilled holes or by a clamping system.

2.2 Types of glass and acrylic glass

Types of glass granted statutory construction approval in Building Regulation List A:

- Float glass (polished plate glass – PPG) as specified in DIN EN 572-2:
  Also called flat or plate glass. It is characterised by relatively low ultimate flexural strength, and when destroyed, it fragments into large sharp-edged shards. Its use as single sheet glazing in trade fair construction is prohibited. If used in LSG, it is permitted in trade-fair construction.

- Tempered safety glass (TSG) as specified in DIN 12150-1:
  TSG is a fully thermically pre-stressed type of glass. It has internal residual stress characteristics: core tensile stress and surface compression stress. It has high ultimate flexural strength and when broken, it shatters into crumb-like fragments. Where TSG is referred to in this information sheet, TSG made of float glass is always meant.

- Laminated safety glass (LSG):
  LSG consists of at least two sheets of PPG, TSG or HSG glass. The individual thicknesses of these are not permitted to differ from each other by a factor of more than 1.5. The sheets of glass are laminated together by intermediate film layers (PVB or SGP films). If a sheet is broken, then the film prevents the fragments from being scattered, thus providing residual load-bearing capacities and reducing the risk of injury from cuts.

- Heat-strengthened glass (HSG) as specified in DIN EN 1863-1 or with other general approvals by building authorities (German: allgemeine bauaufsichtliche Zulassung – abZ):
  HSG is a type of glass that is only partially thermically pre-stressed. Its ultimate flexural strength is lower than that of TSG (tempered safety glass). When broken, HSG fragments into shards which are larger than those of broken TSG. Therefore LSG sheets made of HSG have higher residual load-bearing capacities than LSG sheets made of TSG. HSG laminated with PVB film is included in Building Regulation List A. A general construction approval by building authorities (German allgemeine bauaufsichtliche Zulassung – abZ) for the SGP film is required for HSG laminated with SGP.

Types of glass for which no statutory construction approval has been granted:

- Acrylic glass:
  Acrylic glass is a transparent thermoplastic product marketed under the brand names Plexiglas® and Perspex®, for example. At present no recognised technical regulations are available for the use of acrylic glass.

- Polycarbonate products: e.g. Makrolon

Acrylic glass and polycarbonate may only be used for non-load-bearing, decorative infill components.
2.3 Design calculation standards

The static strength proof calculations for glass components can be carried out in accordance with the following design calculation concepts and structural design standards:

<table>
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<th>Design concept</th>
<th>A: comprehensive safety concept</th>
<th>B: load factor concept</th>
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<td>Proof concept</td>
<td>$\sigma &lt; \text{allow. } \sigma$</td>
<td>$\sigma, \gamma_f &lt; 1.5, k_{\text{mod}}/\gamma_M$</td>
</tr>
<tr>
<td>Determination of action effects and stresses</td>
<td>at SLS (GZG)</td>
<td>at ULS (GZT)</td>
</tr>
<tr>
<td>Deformation checks</td>
<td>at SLS (GZG)</td>
<td>at SLS (GZG)</td>
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<tr>
<td>Designation of forces /stresses in the serviceability limit state SLS (forces due to characteristic loads, without $\gamma_f$)</td>
<td>no designation</td>
<td>SLS (GZG) after the number or index after formula symbol</td>
</tr>
<tr>
<td>Designation of forces /stresses in the ultimate limit state ULS (forces due to characteristic loads, multiplied by $\gamma_f$)</td>
<td>SLS (GZG)</td>
<td>ULS (GZT) after the number or index after formula symbol</td>
</tr>
<tr>
<td>Designation of the allowable material stress</td>
<td>allow. $\sigma$ or allowable $\sigma$</td>
<td></td>
</tr>
<tr>
<td>Designation of the limit stress</td>
<td>$f_k$</td>
<td></td>
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<tr>
<td>Standards applying to loads and actions</td>
<td>this information sheet and DIN EN 1991-1-1</td>
<td>this information sheet and DIN EN 1991-1-1/NA: (2010-12)</td>
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<tr>
<td>Normal load factors $\gamma_f$ for permanent loads (e. g. dead loads)</td>
<td>1.35</td>
<td></td>
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<tr>
<td>Normal load factors for variable loads and actions (e. g. dynamic pressure, imposed loads, cross-bar pressures)</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Duration of loads typically encountered at trade fairs for $k_{\text{mod}}$, taken from DIN 18008-1, Table 6.</td>
<td>Own weight: permanent $(k_{\text{mod}} = 0.25)$</td>
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<tr>
<td></td>
<td>Working loads:medium $(k_{\text{mod}} = 0.4)$</td>
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</tr>
<tr>
<td></td>
<td>Horizontal substitute load: short $(k_{\text{mod}} = 0.7)$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cross-bar pressure: short $(k_{\text{mod}} = 0.7)$</td>
<td></td>
</tr>
</tbody>
</table>

*) German designations and abbreviations Grenzzustand der Gebrauchstauglichkeit - GZG and Grenzzustand der Tragfähigkeit - GZT [as listed in chapter 8] for the respective limit states.

For static load calculations, either concept A, comprehensive safety, or concept B, load factors, shall be used as a basis. The two concepts must not be mixed (used together). After the design dimension calculation concept A or B has been chosen, all design requirement specifications (e. g. flexing limits, glass clamping depth etc.) given in the set of standards chosen for the design concept are to be applied. The verbal description and the symbols and abbreviations used in equations must make it absolutely clear which concept is being applied. Supporting forces transmitted by glass components must always be stated for the SLS (GZG) and the ULS (GZT) so that the loads of the connected force-transmitting components of concrete, steel or wood can be calculated using the load-factor concept without transmission errors.
2.4 Material properties of glass products

Glass products have a bulk density of 25 kN/m³, a thermal expansion coefficient of 8.4·10⁻⁶/K and their Young's modulus is 70,000 N/mm². For structural design calculations, the bending stresses listed in Table 1 are allowed (concept A) or the design calculation values of the resistance Rd listed in Table 2 must be observed (concept B).

<table>
<thead>
<tr>
<th>Table 1: Allowable bending stresses for various glass sorts, in N/mm² (for static proof calculations according to the allowable stress concept)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Product</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Overhead glazing</td>
</tr>
<tr>
<td>Vertical glazing</td>
</tr>
</tbody>
</table>

Table 2: Normal material properties for design calculation concept B, application of load factors

<table>
<thead>
<tr>
<th>Property</th>
<th>Polished plate glass (not printed, not sand-blasted)</th>
<th>HSG (not printed, not sand-blasted)</th>
<th>TSG (not printed, not sand-blasted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal limit stress f_k as spec. in DIN EN 572-1, DIN EN 1863-1 or abZ, DIN EN ISO 12150-1</td>
<td>45 N/mm²</td>
<td>70 N/mm²</td>
<td>120 N/mm²</td>
</tr>
<tr>
<td>Design coefficient k_c, normal</td>
<td>1.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>k_BSG for laminated safety glass</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>k_SG for calculating the effect of glass edges</td>
<td>0.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Material factor γ_M</td>
<td>1.8</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Modification factor for calculating the effect of load durations</td>
<td>0.25</td>
<td>0.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Rated value of the resistance to stress failure R_d = k_mod* k_c* k_VSG* k_Kante* f_k* γ_M</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The intermediate films in LSG shall be made of PVB or SGP (SentryGlas® plus). Films made of PVB must have a tear strength of at least 20 N/mm². SGP films shall have general approval by building authorities (including European Technical Approval ETA) and shall be processed in accordance with this approval.

3 STAND DESIGN, CONSTRUCTION AND LOADS

3.1 Vertical glazing not intended to prevent falling

3.1.1 Vertical glazing of a height h ≤ 4 metres above hall floor level

Neither static proof of structural characteristics in accordance with the regulations specified in chapter 2.3 is required, nor is it necessary to submit documentation of testing. In this case the exhibitor alone is responsible for ensuring that the construction/design is technically safe for general use and that it meets current and accepted technical standards. Table A provides an overview of the types of structural designs that are possible.

- Either TSG or LSG must be used.
- The glass sheets may be secured by linear supports or at individual points.
- Glass walls tilting at an angle of more than 10° from the vertical are considered to be overhead glazing for which the provisions of chapter 3.3 shall apply.

3.1.2 Vertical glazing of height h > 4 metres above hall floor level

Vertical glazing not intended to prevent falling and whose uppermost edges are higher than 4 metres above hall floor level does not require installation approval for a specific case (c.f. 4.2) provided that the type of glass used, structural design details and the type of supports securing the glass comply with the regulations specified in chapter 2.3.

In addition, the following provisions shall be observed:

- Verified structural calculations or structural calculations suitable for verification and the corresponding construction plans must be submitted.
- In addition to the load of its own weight, the material must be capable of resisting horizontal forces, i.e. a pressure corresponding to at least h_1 = 0.125 kN/m² for visible surfaces of up 4 m above hall floor level and at least h_2 = 0.063 kN/m² for visible surfaces at more than 4 m above hall floor level.
Wherever there is a high risk of impact, e.g. where there is a descending ramp leading towards the glazing, additional measures are required.

Proof of structural characteristics is not required if the area of each individual sheets is less that 1.6 m² and TSG with a thickness of at least 4 mm is used, and the sheet(s) is(are) held on four sides by linear supports.

Glazing secured at individual points may be used without further proof documentation if:
- general construction approval (abZ) has already been granted for the combination of point-mounting method and glass type and thickness, or
- the design specifications, and the dimensions and thickness of the glass as stated in TRAV, TRPV, DIN 18008-3, DIN 18008-4 or Table B are adhered to.

TRAV, DIN 18008-3 / -4 and Table B are referred to above because the fall-prevention glazing barriers described in these references are of course also suitable for glass panels not explicitly intended to prevent falls.

Installation approval for a specific case is required for all other designs.

If the use TSG glazing is planned, a heat soak test certificate must be submitted.

Table A provides an overview of possible designs and the necessary proofs.

### 3.2 Vertical glazing intended to prevent falls

In all three of the following categories, A, B and C, static load proof calculations for the glass and the supporting structures and proof of the load-bearing capacity under impact-like conditions are required.

The static structural design calculations for the glass and the supporting structure shall be based on an assumed cross-bar pressure load and as an additional load case, a horizontal assumed surface load of \( h_1 = 0.125 \text{kN/m}^2 \) for all visible surfaces at up to 4 m above the hall floor level and of \( h_2 = 0.063 \text{kN/m}^2 \) for surfaces located at more than 4 m above hall floor level.

The load-bearing capacity of the structure under impact action can be verified as follows:
- a pendulum impact test in accordance with DIN EN 12600 if design calculation concept A is used, or in accordance with DIN 18008-4 if design calculation concept B is used, or
- the relevant design specifications, glass dimensions and thicknesses as stated in Table B of this information sheet are adhered to, or
- by providing proof calculations in accordance with the rules described in chapter 2.3.

Table B contains an overview of possible designs and the proofs required. All structural design details (including flexing/sag and glass insertion/clamping depths) shall be modelled in accordance with the rules described in chapter Pendulum impact tests must be carried out by one of the test centres/institutes named in chapter 4 well in advance of the fair and outside the trade fair halls.

#### 3.2.1 Category A – vertical glass wall

**Definition:** Lineally-supported vertical glazing that does not contain any load-bearing bars at capping height and is not protected by a rail or cross-bar located in front of it, making it suitable for the direct action of rail or cross-bar loads, e.g. glazing of full room height.

If protection is required to prevent persons falling from a height of more than 1 metre, then it will be necessary to refer to the Technical Regulations for the Use of Accident-Prevention (barrier) Glazing [Technische Regeln für die Verwendung von absturzsicheren Verglasungen (TRAV)] or DIN 18008-4.

- Only LSG shall be used.
- Verified proof of structural characteristics or static structural calculations suitable for verification, as well as a pendulum impact test (test in accordance with DIN EN 12 600 or DIN 18008-4) are required.
- The pendulum impact test is not required for glass with linear support on all sides, provided that the appropriate dimensions and glass thickness conform to Table B (or TRAV 6.3. and Table 2), DIN 18008-3 and DIN 18008-4, or proof calculations are carried out in accordance with DIN 18008-4.
- The glazing supports must provide adequate protection to the edges of the glass sheets.

#### 3.2.2 Category B – clamped glass balustrade with continuous handrail

**Definition:** Load-bearing glass balustrades held by linear supports secured by clamp-type base mountings, the individual glazing elements of which are connected by a continuous, load-bearing handrail (see example in chapter 6.1) attached to the top of the structure.

- Only LSG shall be used.
- Verified proof of structural characteristics or static structural calculations suitable for verification, as well as a pendulum impact test (test in accordance with DIN EN 12 600 or DIN 18008-4) are required.
- If LSG made of 2 x 10 mm TSG (or 2 x 10 mm HSG) is used, no pendulum impact test is required, provided that the dimensions as stated in Table B are adhered to (design details in accordance with TRAV or DIN18008-4).
- The thickness of the intermediate PVB/SGP film must be at least 1.52 mm.
- The securing clamps must be at least 100 mm above floor level.

Calculations shall be provided proving that the loads will be distributed via the capping to neighbouring glass sheets in the event of an individual sheet being destroyed. The stresses occurring in the neighbouring glass sheets under the resulting conditions may then increase to 50 % above permissible limits if structural design calculation concept A was applied. If structural design concept B has been applied, this case can be classified as an extraordinary design calculation situation. The destroyed or damaged glass sheet shall be replaced immediately after the incident.

3.2.3 Category C – Railing and balustrade infills and glass walls with load-distributing cross-bar fitted in front of it

Definition: Accident-prevention (barrier) glazing which is not intended to distribute capping loads and which corresponds to one of the following groups:
  C1: Railing/balustrade infills secured by linear supports and/or at individual points on at least two opposing sides.
  C2: Vertical glazing beneath a crosswise load-distributing spanning member located at capping level and secured by linear supports on at least two opposing sides.
  C3: Category A type glazing with a load-distributing cross-bar placed in front of it.

- For category C1 and C2 type glazing, the use of TSG is allowed if the sheets are secured by linear supports on all sides. For all other types of supports and for category C3, only LSG may be used unless other statutory construction approval exists.
- Table B contains an overview of possible designs and the proofs required.
- The pendulum impact test is not required if the relevant design specifications and the dimensions and thickness of the glass as stated in Table B or TRAV or in DIN 18008-4 are adhered to.

Alternative measures / protection against glass breakage:
If the proof calculations for category C in accordance with TRAV or DIN 18008-4 are not submitted for accident-prevention (barrier) glazing, then the accident-prevention (barrier) attribute can be achieved by installing adequately sturdy knee-height cross-bars or steel rope of at least 5 mm diameter at a vertical spacing of not more than 35 cm and at an adequate distance in front of the glass infill sheets. Measures to protect against scattering glass splinters shall always be installed above and along the length of walkways, if this is not possible, LSG shall be used.

3.3 Horizontal glazing
3.3.1 Overhead glazing
Glass walls tilted at an angle of more than 10° from the vertical are considered to be overhead glazing. Table C contains an overview of possible designs and the proof documentation required.

Only the following glass products may be used:
- LSG made with float glass (PPG)
- LSG made of HSG,
- Wire glass (only for existing components)

In addition to submitting certification of load-bearing capacities, experimental proof of residual load-bearing capacities must be provided or, if this is not possible, a safety net must be hung under the glazing. If the structural design requirements of TRLV or as specified in DIN 18008-2 are met, proof of the residual load-bearing capacities in not required.

The design loads to be assumed are the sheet's own weight and a horizontal pressure corresponding to at least

\[
h_1 = 0.125 \text{ kN/m}^2 \text{ for visible surfaces of up 4 m above hall floor level or } h_2 = 0.063 \text{ kN/m}^2 \text{ for vertical visible surfaces at more than 4 m above hall floor level.}
\]

The sheets must secured in such a way as to properly safeguard against them slipping out of the mounts and forces which may lift them off the mounts.

The design dimensions of glass sheets mounted at individual points and HSG sheets shall either be calculated according to the rules outlined in chapter 2.3 or they must have general construction approval (abZ).

If, for cleaning purposes, overhead glazing periodically has to support human loads, then such additional loads must be taken into consideration and experimental proof of residual load-bearing capacities must be provided [8]. In such cases a special individual construction approval is always required.

- LSG sheets with an effective span exceeding 1.20 m shall be supported on all sides. The ratio between length and width may not exceed 3 to 1. The overall thickness of the intermediate PVB/SGP films must be at least 0.76 mm. If a sheet is supported on all sides, then a thickness of 0.38 mm is allowed under the condition that the length-to-width ratio is not greater than 3 to 1 and that the effective span in the direction bearing the main load is not greater than 0.8 m.
The effective span of a wire glass sheet may not exceed 0.7 m, and the glass shall protrude into the supports by at least 15 mm.

Cutting of recesses or notches in the glass sheets is not allowed.

Only holes conforming to TRPV and/or DIN 18008-3 are allowed.

The maximum permissible sag shall not exceed 1/100 of the effective span between the closer supports of the sheet.

3.3.2 Glazing designed to support human loads

This kind of glazing is specifically intended to be subjected to persons walking over it, e.g., stairs, platforms, landings and cat-walks. The design and proof calculations shall take both dead loads (own weight) and the working loads into account. In addition, proof of impact resistance and residual load-bearing capacity shall be provided.

Proof of impact resistance and residual load-bearing capacities as a result of component tests must be submitted. The requirements are specified in [8] and in DIN 18008-5.

For glazing mounted in linear supports at all four edges and an assumed working load of not more than 5.0 kN/m² for design calculations, proof of impact resistance and residual load-bearing capacity is deemed to have been provided if the sheets conform to the dimensions listed in Table 3.

**Table 3:** Glazing mounted in linear supports at all four edges and intended to support human loads, with proven impact resistance and residual load-bearing capacity.

<table>
<thead>
<tr>
<th>max. length [mm]</th>
<th>max. width: [mm]</th>
<th>LSG structure [mm] (top */ centre */ bottom)</th>
<th>Minimum supporting surface depth [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>400</td>
<td>8 HSG */ 10 Float */ 10 Float</td>
<td>30</td>
</tr>
<tr>
<td>1500</td>
<td>750</td>
<td>8 HSG */ 12 Float */ 12 Float</td>
<td>30</td>
</tr>
<tr>
<td>1250</td>
<td>1250</td>
<td>8 HSG */ 10 HSG */ 10 HSG</td>
<td>35</td>
</tr>
<tr>
<td>1500</td>
<td>1500</td>
<td>8 HSG */ 12 HSG */ 12 HSG</td>
<td>35</td>
</tr>
<tr>
<td>2000</td>
<td>1400</td>
<td>8 HSG */ 15 Float */ 15 Float</td>
<td>35</td>
</tr>
</tbody>
</table>

*/ = 1.52 mm PVB or SGP (SentryGlas® plus) intermediate film layer

Glazing designed to support human loads may be secured by linear supports or at individual points. It must be made of LSG consisting of at least three layers of TSG and/or HSG/float glass. From the point of view of impact resistance, the use of TSG or HSG for the top layer is recommended. This surface must possess non-slip characteristics in accordance with DIN 51097. In order to achieve the required residual load-bearing capacity, the two lower layers will normally be made of float glass or HSG.
Glazing, mountings and supporting structure must be designed and their dimensions calculated to withstand the load of their own combined weight (dead load) as well as intended human (working) loads in accordance with the chosen design calculation concept and all relevant and applicable standards.

<table>
<thead>
<tr>
<th>Design calculation concept</th>
<th>A (TRLV)</th>
<th>B (DIN 18008-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working surface load $q_k$, depending on usage category</td>
<td>C1: 3.0 kN/m²</td>
<td>C1: 3.0 kN/m²</td>
</tr>
<tr>
<td></td>
<td>C3, T2: 5.0 kN/m²</td>
<td>C3, T2: 5.0 kN/m²</td>
</tr>
<tr>
<td>Point load $Q_k$, as an additional changing load parameter to be investigated</td>
<td>C1: 4.0 kN</td>
<td>C1: 4.0 kN</td>
</tr>
<tr>
<td></td>
<td>C3: 4.0 kN / T2: 2.0 kN</td>
<td>C3: 4.0 kN / T2: 2.0 kN</td>
</tr>
<tr>
<td>Application area of point load</td>
<td>100 x 100 mm</td>
<td>50 x 50 mm</td>
</tr>
<tr>
<td>Inclusion of top sheet in structural static calculations allowed</td>
<td>no</td>
<td>only for constant design situation and for temporary design situation</td>
</tr>
<tr>
<td>Proof calculation for situation with broken top sheet (i.e. only the two lower sheets still bear the load)</td>
<td>standard proof</td>
<td>proof for an extraordinary design load calculation situation</td>
</tr>
<tr>
<td>Standards relating to the action of loads</td>
<td>DIN EN 1991-1-1</td>
<td>DIN EN 1991-1-1</td>
</tr>
<tr>
<td>Max. sag / flexure with 3 load-bearing sheets</td>
<td>l/200</td>
<td>l/200</td>
</tr>
<tr>
<td>Max. sag / flexure with 2 load-bearing sheets</td>
<td>l/100</td>
<td>l/100</td>
</tr>
</tbody>
</table>

In the case of stairways the construction/design must guarantee sufficient distribution of loads. Stairs on stand structures shall always be classified with usage category T2.

4 APPROVAL PROCEDURES

4.1 Basics

If a glass component and its glass products conform to the technical building regulations outlined in chapter 2.3 and to generally accepted technical principles, then it shall be sufficient to submit the verified structural calculations and the verified plans, following which construction approval will be granted. In addition, the construction work on site will be checked and the results subjected to an approval inspection.

If additional components are installed for which statutory construction approval, a statutory construction test report or type approval are required, then these documents are to be submitted together with the structural calculations.

If a glass component or parts of this component do not conform to the construction engineering regulations and generally accepted technical principles outlined in chapter 2.3, and if no statutory construction approval or statutory construction test certificate can be produced, then an individual construction approval (Zustimmung im Einzelfall – ZiE) shall be required. An Installation Approval for a Specific Case may be granted instead of the individual construction approval if glass is used only within the rules and limitations described in this information sheet.

4.2 Installation approval for a specific case

This approval procedure is similar to the procedure for obtaining individual construction approval. If an Installation Approval for a Specific Case has been granted once for a particular construction/design and type of usage, then the trade fair companies in question will accept this for an identical design serving an identical purpose.

Nevertheless, a new application for construction work approval and approval inspection shall be submitted for each repeated case. The test report, all certificates and approvals, design details, as well as glass dimensions and thicknesses must be submitted with the application.

Glass components requiring approval and which require type 3 proof documentation are listed in column 14 of Tables A, B and C.

Installation approvals for specific cases cannot be granted at short notice, as they require a considerable period of time for processing. Applications for these should therefore be submitted at least 6 weeks before the commencement of construction.

Prior to conducting component tests, it is advisable to contact the relevant trade fair company in good time in order to coordinate procedures and intended testing methods. Normally, component testing requirements stipulate inclusion of parts of the glass component’s actual substructure in order to simulate realistic loads.
The procedure for obtaining an **Installation Approval for a Specific Case** is as follows:

- The structural calculations and the required certificates confirming the identity of the product(s) (glass manufacturer/processing company's factory certificates) must be verified and checked by a publicly certified structural building surveyor and tester (in the field of steel, concrete and brick construction/engineering).

- The surveyor shall confirm that there are no objections with regard to the design's suitability for use. It is his responsibility to decide on the necessity of additional testing of materials, impact resistance and whether further proof of residual load-bearing capacities must be obtained. The test report must be submitted to the trade fair company along with the other application documents requesting construction work permit (construction permit) and subsequent monitoring of the stand construction work and stand approval inspection.

- Final approval will be granted on location following an inspection to confirm that the construction/design on site conforms to the previously inspected documents. The engineer carrying out the monitoring and inspection acts on behalf of the trade fair company.

**Recommended institutes for testing components used in glass construction/design:**

<table>
<thead>
<tr>
<th>Technische Universität Dresden, Institut für Baukonstruktionen (Beyer-Bau) Prof. Dr.-Ing. Weller George-Bähr-Str. 1 01069 Dresden</th>
<th>MFPA Leipzig GmbH Hans-Weigel-Str. 2B 04319 Leipzig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institut für Massivbau Prof. Dr.-Ing. Marx Leibnitz-Universität Hannover Appelstr. 9a 30167 Hannover</td>
<td>Materialprüfanzstalt für das Bauwesen Braunschweig Beethovenstr. 52 38106 Braunschweig</td>
</tr>
<tr>
<td>RWTH Aachen Lehrstuhl für Stahlbau Prof. Dr.-Ing. Feldmann Mies-van-der-Rohe-Str. 1 52074 Aachen</td>
<td>MPA Darmstadt Grafenstr. 2 64283 Darmstadt</td>
</tr>
<tr>
<td>FMPA Baden-Württemberg FB 2, Abt. 21, Referat 214 Pfaffenwaldring 4 70569 Stuttgart (Vaihingen)</td>
<td>Universität Karlsruhe Versuchsanstalt für Stahl, Holz und Steine Otto-Amman-Platz 1 76131 Karlsruhe</td>
</tr>
<tr>
<td>FH München Labor für Stahl- und Leichtmetallbau Prof. Dr.-Ing. Bucak Karlsstr. 6 80333 München</td>
<td>TU München Lehrstuhl für Stahlbau Prof. Dr.-Ing. Mensinger Ancisstr. 21 80333 München</td>
</tr>
<tr>
<td>TU Hamburg - Harburg Institut für Baustatik und Stahlbau Prof. Dr.-Ing. Starossek Denickestr. 7 21073 Hamburg</td>
<td></td>
</tr>
<tr>
<td>Institut für Massivbau Prof. Dr.-Ing. Marx Leibnitz-Universität Hannover Appelstr. 9a 30167 Hannover</td>
<td>Materialprüfanzstalt für das Bauwesen Braunschweig Beethovenstr. 52 38106 Braunschweig</td>
</tr>
<tr>
<td>MPA Nordrhein-Westfalen Marsbruchstr. 186 44287 Dortmund</td>
<td></td>
</tr>
<tr>
<td>TU Darmstadt Institut für Werkstoffe und Mechanik im Bauwesen Petersenstr. 12 64283 Darmstadt</td>
<td></td>
</tr>
<tr>
<td>Universität Karlsruhe Versuchsanstalt für Stahl, Holz und Steine Otto-Amman-Platz 1 76131 Karlsruhe</td>
<td></td>
</tr>
<tr>
<td>Universität Karlsruhe Versuchsanstalt für Stahl, Holz und Steine Otto-Amman-Platz 1 76131 Karlsruhe</td>
<td></td>
</tr>
<tr>
<td>Friedmann &amp; Kirchner Gesellschaft für Material- und Bauteilprüfung Große Ahlmühle 7 76865 Rohrbach</td>
<td></td>
</tr>
<tr>
<td>Institut für Fenstertechnik e.V. Theodor-Grieß-Str. 7-9 83025 Rosenheim</td>
<td></td>
</tr>
</tbody>
</table>
5 NOTES ON DESIGN AND DESIGN CALCULATIONS

- Glass is a brittle material, any failure of which will occur spontaneously and without warning.
- Glass is sensitive to blows with hard, pointed objects.

These properties lead to the following guideline notes:

- Proof calculations for the load-bearing capacity of structural glass not only take into consideration the unbroken glass but always include an investigation of the broken or partially broken glass (proof of residual load-bearing capacity).
- The support design must ensure that glass sheets are not subjected to pressure or stresses by the supports.
- Direct glass-to-glass contact and contact between glass and other hard materials (e.g. metal) shall be prevented at all times, whereby the effects of load and temperature fluctuations have to be taken into account.
- The minimum supporting depths of glass sheets (“glass insertion depth”) on their respective support sections as well as the allowable sheet and supporting beam sections as specified in the standards listed in chapter 2.3 for the selected design calculation concept must be adhered to.
- After glazing has been installed, the markings identifying the individual type of glass sheet used (e.g. TSG, HSG) must be durable and legible at all times. In the case of LSG glazing, a section of the edge must be left free for inspection purposes (to check the number of glass sheets, thickness, interlayer films) until the construction has been approved. If required, a manufacturer's certificate shall be submitted as well.
- The edges of glass sheets must be finished or protected in such a way as to exclude any possibility of injury.
- In the case of TSG, HSG, or LSG glazing manufactured from sheets of TSG or HSG, subsequent reworking of the finished product such as cutting out sections or drilling holes is not possible.
- Sheets intended to bear human loads must have a durable non-slip surface finish.
- Load-bearing adhesive joints may only be used if a general construction approval (abZ) has been granted for the entire adhesive system (i.e. the glass, adhesive and metal combination), and under the condition that the joint is made exactly as described in the approval documents.
- The rules described in chapter 2.3 do not yet make allowance for applying more favourable assumptions of the joint effect of the intermediate film layers in LSG and therefore an Installation Approval for the Specific Case has to be applied for if these assumptions are used in calculations. Trade publications [18] contain information on suitable calculation assumptions to account for the joint effects in LSG. This may possibly be useful for LSG in which SGP is used.

6 EXAMPLES OF STRUCTURES (BARRIERS) DESIGNED TO PREVENT FALLS

All possible dimensions, types of glass, thicknesses and the necessary proof documents are summarised in Table B.

6.1 Category B

![Diagram of Category B barrier]

Note: If LSG made of 10 mm TSG + 1.52 mm PVB/SGP + 10 mm TSG or of 10 mm HSG + 1.52 mm PVB/SGP + 10 mm HSG in the dimensions as stated in Table B is used, only static structural proof calculations are required.

As specified in TRAV or DIN 18008-4, this also applies to parallelogram-shaped balustrades.
6.2 Category C1

6.2.1 Railing infills secured vertically on 2 sides

Note: If the types of glass and the dimensions listed in Table B are used, only static structural proof calculations are required.

6.2.2 Railing infills secured horizontally on 2 edges

Note: If the types of glass and the dimensions listed in Table B are used, only static structural proof calculations are required.

6.2.3 Railing infills secured on 4 sides

Note: If the types of glass and the dimensions listed in Table B are used, only static structural proof calculations are required.
6.2.4 Glazing secured at individual points by means of drilled anchorage points (design specifications in accordance with TRAV and/or DIN 18008-4)

**Note:** If the types of glass and the dimensions listed in Table B are used, only static structural proof calculations are required.

In accordance with Appendix D of TRAV 2003 and DIN 18008-4, the rules for Categories C1 and C2 also apply to parallelogram-shaped balustrades.

**Category C1**

**Kategorie C2/Category C2**
6.2.5 Point mounting with lateral clamps and anti-slip grips
- Designs that have a general construction approval (abZ) shall be used in accordance with.
- For all systems that have not been granted general construction approval, a pendulum impact test is required. Minimum requirement: LSG comprising 6 mm TSG + 1.52 mm PVB + 6 mm TSG or 6 mm HSG + 1.52 mm PVB + 6 mm HSG shall be used.

![Diagram of point mounting with lateral clamps and anti-slip grips]

6.2.6 Point mounting with clamps at top and bottom
- System designs that have a general construction approval (abZ) shall be used in accordance with the specifications in the approval documents.
- For all systems that have not been granted general building approval, a pendulum impact test is required. Minimum requirement: LSG comprising 6 mm TSG + 1.52 mm PVB + 6 mm TSG or 6 mm HSG + 1.52 mm PVB + 6 mm HSG shall be used.

![Diagram of point mounting with clamps at top and bottom]

6.3 Balustrade with horizontal bars (protection against falling is provided solely by sufficiently strong handrails and knee-height bars)

![Diagram of balustrade with horizontal bars]

The type of glass used shall be selected from Table A, glazing not intended to protect against falls. The spacing between horizontal bars should not exceed approx. 35 cm.
7 CONSTRUCTION ENGINEERING REGULATIONS, GENERALLY ACCEPTED RULES OF ENGINEERING AND REFERENCES


[8] Communications (Mitteilungen) of DIBt no. 2 / 2001: Anforderungen an begehbare Verglasungen; Empfehlungen für das Zustimmungs-verfahren - Fassung März 2000 -, Berlin (Requirements on glazing intended to be walked on, recommendations for approval procedures Version of March 200 – Berlin)

[9] Wörner, J.-D; Schneider J.: Closing report on experiments and calculations to determine the dynamic stresses on glass as a result of a light impact, Fraunhofer IRB Verlag Stuttgart 2000, Booklet T 2935


[17] Technische Regeln für die Bemessung und die Ausführung punktförmig gelagerter Verglasung [Technical rules for the use of glazing with supports at individual points] (TRPV), (final version August 2006), DIBT.


[19] Building rules list (see www.dibt.de )

[20] ETB-Richtlinie: Bauteile, die gegen Absturz sichern (June 1985) (ETAss directive: Building components designed to prevent falls)
## 8 ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>abZ</td>
<td>Abkürzung für AbZ (Abkürzung für AbZ) (German: Allgemeine Bauaufsichtliche Zulassung (general construction approval))</td>
</tr>
<tr>
<td>C1, C3</td>
<td>Category 1, Category 3 for vertically acting working loads on floors of public meeting spaces in buildings as specified in DIN EN 1991-1-1 / NA</td>
</tr>
<tr>
<td>DIBt</td>
<td>Deutsches Institut für Bautechnik (German civil engineering institute)</td>
</tr>
<tr>
<td>ESG</td>
<td>German: Einscheiben-Sicherheitsglas (fully-tempered glass / toughened safety glass)</td>
</tr>
<tr>
<td>HSG</td>
<td>Heat-strengthened glass</td>
</tr>
<tr>
<td>LSG</td>
<td>Laminated safety glass</td>
</tr>
<tr>
<td>PPG</td>
<td>Polished plate glass</td>
</tr>
<tr>
<td>PVB</td>
<td>Polyvinyl butyral (intermediate film material for LSG)</td>
</tr>
<tr>
<td>SGP</td>
<td>SentryGlas® plus (intermediate film material for LSG)</td>
</tr>
<tr>
<td>SLS</td>
<td>Serviceability limit state</td>
</tr>
<tr>
<td>SLS</td>
<td>Serviceability limit state</td>
</tr>
<tr>
<td>SPG</td>
<td>German: Spiegelglas (float glass or PPG)</td>
</tr>
<tr>
<td>T2</td>
<td>Category for vertically acting working loads on stairs / staircase landings for large traffic loads and escape staircases as specified in DIN EN 1991-1-1 / NA</td>
</tr>
<tr>
<td>TRAV</td>
<td>Technische Regeln für die Verwendung von absturzsichernden Verglasungen [Technical rules for the use of accident-prevention (barrier) glazing]</td>
</tr>
<tr>
<td>TRLV</td>
<td>Technische Regeln für die Verwendung von linienförmig gelagerten Verglasungen [Technical rules for the use of glazing with linear supports]</td>
</tr>
<tr>
<td>TRPV</td>
<td>Technische Regeln für die Bemessung und die Ausführung punktförmig gelagerter Verglasung [Technical rules for the use of glazing with supports at individual points]</td>
</tr>
<tr>
<td>TSG</td>
<td>Toughened safety glass</td>
</tr>
<tr>
<td>TVG</td>
<td>German: Teilvorgespanntes Glas (heat-strengthened glass)</td>
</tr>
<tr>
<td>ULS</td>
<td>Ultimate limit state</td>
</tr>
<tr>
<td>VSG</td>
<td>German: Verbund-Sicherheitsglas (laminated safety glass)</td>
</tr>
<tr>
<td>ZIE</td>
<td>German: Zustimmung im Einzelfall (individual construction approval)</td>
</tr>
</tbody>
</table>
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- acrylic glass ........................................... 2
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<table>
<thead>
<tr>
<th>Description</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working loads</td>
<td>7</td>
</tr>
<tr>
<td>Action duration</td>
<td>3</td>
</tr>
<tr>
<td>Usage category C1</td>
<td>6</td>
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<td>Usage category C3</td>
<td>6</td>
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<tr>
<td>Usage category T2</td>
<td>8</td>
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</table>
### Table A: Vertical glazing, not intended to prevent falls

<table>
<thead>
<tr>
<th>Structure type</th>
<th>Sheet support</th>
<th>Glass type</th>
<th>Allowed, years</th>
<th>Glass thickness in mm</th>
<th>SGF / PVF film thickness</th>
<th>Width in mm</th>
<th>Height in mm</th>
<th>Min. glass insertion depth in mm</th>
<th>Type of proof required</th>
<th>Civil engineering rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical glazing</td>
<td>Linear support on 2 sides</td>
<td>TG2</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linear support on 4 sides</td>
<td>TG2, LS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acrylic glass</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Point supports</td>
<td>TG2, LS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>Acrylic glass</td>
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<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linear support on 2 sides</td>
<td>TG2</td>
<td>yes</td>
<td>yes</td>
<td>2.5</td>
<td>A</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>2</td>
<td>A</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>2</td>
<td>A</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acrylic glass</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Point supports</td>
<td>TG2, LS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>2.3</td>
<td>C</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>2</td>
<td>C</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acrylic glass</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Railing in hill system with cross-bar and flat-prevention crossbars at knee height (the actual glass sheet has no barrier function)</td>
<td>Linear support on 2 sides</td>
<td>TG2</td>
<td>yes</td>
<td>yes</td>
<td>1.5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linear support on 4 sides</td>
<td>TG2, LS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acrylic glass</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Point supports</td>
<td>TG2, LS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TS2, layers</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acrylic glass</td>
<td>yes</td>
<td>yes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Proof by:**
1. No specific proof
2. Static calculations
3. Installation approach specific case
4. Pendulum impact test
5. Heat soak test
6. Residual load-bearing cap. test
7. Shock impact resistance test

**Civil engineering rules:**
A: TRV or DIN 18008-2
B: TRAV or DIN 18008-12
C: TRPV or DIN 18008-3

1. Proof type 2 (verified static design calculations) are not required for sheet areas $A \leq 1.0 \text{ m}^2$ and $b \leq 4 \text{ mm}$
Table B: Vertical glazing, intended to prevent falls (barrier glazing)

<table>
<thead>
<tr>
<th>Structure type</th>
<th>Sheet support</th>
<th>Crack, yyes</th>
<th>Glass thickness mm</th>
<th>SGP / PVG glass thickness mm</th>
<th>Width in mm</th>
<th>Height in mm</th>
<th>Min. glass insertion depth in mm</th>
<th>Type of proof required</th>
<th>Civil engineering rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear support on 2 sides</td>
<td>TSG</td>
<td>yes</td>
<td>0.6</td>
<td>500</td>
<td>1000</td>
<td>1000</td>
<td>2000</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Linear support on 4 sides</td>
<td>TSG</td>
<td>yes</td>
<td>0.6</td>
<td>500</td>
<td>1000</td>
<td>1000</td>
<td>2000</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Point support</td>
<td>TSG</td>
<td>no</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1000</td>
<td>2000</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Linear support at top and bottom</td>
<td>TSG</td>
<td>yes</td>
<td>0.6</td>
<td>500</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>Linear support at left and right</td>
<td>TSG</td>
<td>yes</td>
<td>0.6</td>
<td>500</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>Point support</td>
<td>TSG</td>
<td>no</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>Glass and acrylic glass in stand construction and design inside trade fair halls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proof by:
1. No specific proof
2. Visual static calculations
3. Installation approval
4. Psychomotor impact test
5. Structural wind loading test

Note: The table contains specific technical regulations and guidelines for the use of vertical glazing in trade fair halls. For a detailed understanding, refer to the original document or contact the relevant authorities for specific requirements.
### Table C: Horizontal glazing

<table>
<thead>
<tr>
<th>Structure type</th>
<th>Glass type</th>
<th>Sheet support</th>
<th>Glaz. thickness in mm (SPF/PPB*film thickness)</th>
<th>Min. glaz. interstitial gap</th>
<th>Type of proof required</th>
<th>Civil engineering value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overhead glazing</strong> (angled at &gt;10° to the vertical)</td>
<td>TSG 1-layer</td>
<td>na</td>
<td>0.76</td>
<td>1,06 4</td>
<td>2</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>TSG 1-layer</td>
<td>na</td>
<td>0.76</td>
<td>709 4</td>
<td>2</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>TSG 1-layer</td>
<td>na</td>
<td>0.76</td>
<td>709 4</td>
<td>2</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>TSG 1-layer</td>
<td>na</td>
<td>1.63</td>
<td>2,2,7,7</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TSG 1-layer</td>
<td>na</td>
<td>1.63</td>
<td>2,2,7,7</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>Glazing capable of supporting persons (to be walked on)</strong></td>
<td>TSG 1-layer</td>
<td>na</td>
<td>1.63</td>
<td>2,2,7,7</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- Decimal fractions are indicated in the table, e.g. 1.63 means 1.63 mm.
- The glazing system is subject to a special approval procedure.
- The use of acrylic glass for horizontal glazing is not allowed. However, exceptions may be possible if the trade fair company can substantiate their request to the competent authorities with regard to fire prevention, protection, and structural stability.
The operation of laser systems is subject to approval and DECHEMA Ausstellungs-GmbH, Ausstellungstechnik must be notified in writing (Form “Registration of laser equipment”) of the use of such devices until 11 April 2018. In addition, the Darmstadt Regional Council, Department of Occupational Health and Safety and the Environment must also be informed thereof:

Regierungspräsidium Darmstadt
Abt. Arbeitsschutz und Umwelt, Dezernat IV / F45.2
Gutleutstraße 138
60327 Frankfurt am Main
GERMANY
Tel. +49 69 2714-0, Fax +49 69 2714-5951

In the event that your laser/LED equipment, during normal operation and/or during the set-up phase, corresponds to Class 3R, 3B or 4 in accordance with DIN EN 60825-1, you must have a trained laser protection advisor pursuant to IEC/EN 60 825 and/or 2006/25 EG/OStrV (national) at your stand. Please include a copy of the certification of the laser protection advisor with your registration, along with a copy of the necessary certification/classification of the laser system from an independent testing institute (e.g. TÜV, BG-Zert, VDE, BSI, UL, FDA).

- General: Laser systems in accordance with DIN EN 60825-1 generate extremely intense radiation that is concentrated to create a high energy density using optical systems. Even at great distances, the decline in energy density is very small. If laser radiation strikes human eyes, it can result in irreparable damage to the retina. Improper handling can also result in skin burns. As a result, the following must be observed when setting up lasers and LED equipment at trade fairs, exhibitions and shows:

- Only those lasers that emit visible light (wavelength from 400 to 700 nm) can be used. The output power must be limited to that which is required for the use in question.

<table>
<thead>
<tr>
<th>Class</th>
<th>Output power</th>
<th>Basic concept</th>
<th>Comments</th>
<th>Authorisation required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt; 25 μW</td>
<td>Eye-safe; the accessible laser radiation is harmless or the laser is located in a closed housing</td>
<td>No additional protective equipment is required</td>
<td></td>
</tr>
<tr>
<td>1M</td>
<td>&lt; 25 μW</td>
<td>Eye-safe; the accessible laser radiation is harmless, as long as no optical instruments such as magnifying glasses or binoculars are used</td>
<td>No additional protective equipment is required, as long as no optical instruments are used</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>≤ 1 mW</td>
<td>Eye-safe under certain conditions; the accessible laser radiation lies solely in the visible spectral range (from 400 to 700 nm). It is also eye-safe if exposure is brief (up to 0.25 s)</td>
<td>No additional protective equipment is required</td>
<td></td>
</tr>
<tr>
<td>2M</td>
<td>≤ 1 mW</td>
<td>Eye-safe under certain conditions; as with Class 2, as long as no optical instruments such as magnifying glasses or binoculars are used.</td>
<td>No additional protective equipment is required, as long as no optical instruments are used</td>
<td></td>
</tr>
<tr>
<td>3R</td>
<td>1 bis 5 mW</td>
<td>The accessible laser radiation is dangerous for eyes.</td>
<td>Poses a danger to eyes, protective goggles are recommended</td>
<td>X</td>
</tr>
<tr>
<td>3B</td>
<td>5 bis 500 mW</td>
<td>The accessible laser radiation is dangerous for eyes, and in some circumstances for the skin as well. Diffuse/scattered light is generally harmless. (lasers in CD/DVD burners; laser radiation is not directly accessible, however)</td>
<td>Poses a danger to eyes and potentially to the skin, protective goggles are required</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>&gt; 500 mW</td>
<td>The accessible laser radiation is very dangerous for eyes, and is dangerous for the skin as well. Diffuse/scattered radiation can also be dangerous. The use of this laser radiation can pose a danger of fire or explosion. (material processing, research lasers)</td>
<td>Personal protective equipment is required (goggles, shielding)</td>
<td>X</td>
</tr>
</tbody>
</table>
Laser equipment

- Laser systems must be assigned to a class (1-4) in accordance with DIN EN 60825-1/11.01 and must be labelled accordingly.

- Laser systems must satisfy the requirements of the German Product Safety Act [ProdSG] and generally recognised engineering standards. Laser equipment must comply with the requirements of the German occupational health and safety regulations on artificial optical radiation 2006/25 EG/OStrV, DIN EN 60825-1 and DIN EN 12254, and show lasers must also meet the requirements of DIN 56912.

- The operation of Class 3R, 3B or 4 laser systems at stands is only permitted if they have been inspected by a publicly appointed and sworn authority before the start of the trade fair and certified as safe. In the event that the exhibitor is unable to produce this certification, DECHHEMA Ausstellungs-GmbH or Messe Frankfurt reserves the right to have this inspection conducted at the expense of the exhibitor or to prohibit the operation of these systems.

- If lasers of class 3A to 4 are used, optical installations must be employed to widen the beam such that it is reduced to a harmless power density in all areas where people are present. Otherwise, it must be located at least 2.7 metres above the floor. Laser beams can only be used if the beams have been widened such that the energy of the direct or reflected beam anywhere within the room would not generate a temperature over 80 °C even with extended exposure. Furthermore, a laser protection advisor must be present on location at all times.

- In the event that it is not possible to comply with these requirements, the following protective measures must be taken: Fixed installations are to be used to direct the laser beam such that people cannot enter the beam area. In addition, radiation reflected either intentionally or unintentionally from reflective surfaces (mirrors, metal surfaces, glasses, bottles) cannot be directed at areas in which people are present. If this possibility cannot be excluded or if it is accepted that this may happen during demonstrations, then the people thus affected must be given suitable certified protective goggles. When they are being used to create lighting effects for shows and other such events, no people are permitted in the projection area of the laser. This also applies to areas through which the laser beam may pass as a result of reflection equipment. No focusing facilities are permitted in the laser area. The unintentional straying or deflection of the laser beam is to be prevented by the use of non-flammable barriers.

- Laser systems must be shielded such that only the useful beam is emitted.

- Laser systems must be set up such that they are stable and secured against shifting out of position.

- Optical equipment, deflector devices, scanners etc. must be secured against falling or being moved unintentionally. The applicable rules and regulations of event engineering must be observed.

- Optical equipment that is intended for use with the lasers but which is not directly attached to the laser system must include information that makes it possible to assess the changes in the beam data.

- The adjustment of the laser system must be tested before every demonstration. If it is determined that the system is out of adjustment, the system must be taken out of operation immediately and repaired by an expert.

- It must be ensured that unauthorised individuals cannot access the laser systems, operating consoles and other control facilities or accidentally activate these (emergency-off switch with key).

- The operating personnel must be able to view the laser’s entire area of action.

- Laser pointers that are designated “IIIa”, “IIIA”, or “3A” in accordance with the US-American ANSI/CDRH regulations do not correspond to the applicable EN 60825-1 and cannot be used.

DECHHEMA Ausstellungs-GmbH and Messe Frankfurt can intervene in the event that these rules are violated and may demand that the systems be deactivated.

In case of any questions, please contact: E-mail: safety@dechema.de
Ms. Hild
Phone: +49 69 7564 – 601 / Fax: +49 69 7564 – 273
LED and lighting systems

The operation of high-energy or high-performance lighting and LED systems, such as larger video screens, and the utilisation of powerful lighting units, must be agreed with Messe Frankfurt Venue GmbH’s Technical Event Management Department.

In the event that your LED equipment, during normal operation and/or during the set-up phase, corresponds to Risk Group 2 or 3 in accordance with DIN EN 62471 or if this equipment poses dangers comparable to those for lasers of Class 3R, 3B or 4, notification thereof must be provided in writing (“Registration form for devices with LED emitters and/or powerful LED spotlights/systems” form).

In the interests of all exhibitors and visitors, the emissions resulting from these systems or products are to be configured such that there is no glare outside the boundaries of the exhibitor’s stand, and that there is no negative impact on the appearance of neighbouring stands.

In the event that there is a negative impact on neighbouring stands, the positioning of the spotlights must be corrected and/or the luminous intensity of LED screens must be reduced accordingly.

LED and lighting systems with higher electrical power and radiation

In order to perform the required hazard assessment pursuant to OStrV in accordance with TROS IOS, Part I of hazards arising from incoherent (broadband wavelength range) artificial optical radiation, which also includes LED lights, German occupational health and safety regulations (OStrV) and the following standards and regulations will be applied:

- DIN EN 14225-1/-4 “Incoherent optical radiation”
- DIN EN/IEC 62471 “Photobiological safety of lamps and lamp systems”
- IEC/PAS 62717:2011 LED modules for general lighting – performance requirements
- TROS IOS Incoherent optical radiation
- Classification DIN EN 62471 “Photobiological safety of lamps and lamp systems”
- DGUV Information 215-314 (former BGI 810-4)

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Potential hazard</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exempt Group (RG 0)</td>
<td>No Risk</td>
<td>Eye-safe; the LED is safe even for long-term exposure (eight-hour working day) at the reference distance</td>
</tr>
<tr>
<td>RG 1</td>
<td>Low risk</td>
<td>Eye-safe; the LED does not pose a hazard due to normal behavioural limitations on exposure.</td>
</tr>
<tr>
<td>RG 2</td>
<td>Moderate risk</td>
<td>Eye-safe under certain conditions; as a result of reflexive turning away (for bright sources of light) or thermal discomfort arising from limited exposure, this LED does not normally pose a hazard.</td>
</tr>
<tr>
<td>RG 3</td>
<td>High risk</td>
<td>This LED is dangerous for eyes even with limited exposure at the reference distance.</td>
</tr>
</tbody>
</table>

Equipment and products must be certified in accordance with the German Equipment and Product Safety Act (GPSG), and must also be labelled in accordance with DIN EN/IEC 62471.

The relevant hazard analyses from the manufacturer, including specifications of exposure times and values, must be kept at the stand.

In case of any questions, please contact: safety@dechema.de

Ms. Hild
Phone +49 69 7564 – 601 / Fax +49 69 7564 – 273
Leaflet on the prevention of legionnaires' disease

Please forward this leaflet to service providers commissioned by you (agencies, exhibition stand constructors, etc.).

The General Conditions and the Technical Regulations of ACHEMA 2018 generally apply, as do the valid and generally recognised rules of engineering such as the DVGW [German Technical and Scientific Association for Gas and Water] worksheets (DVGW W 551 in particular) and the DIN standards [German Industrial Standards]. In addition, the following regulations of the City of Frankfurt Public Affairs Office and Department of Health shall apply:

All exhibits that contain water and in which aerosols can form and be released as a result of water movement, air jets or other influences require permanent chemical disinfection of the water contained therein in order to prevent infection with legionella bacteria.

The Public Affairs Office stipulates that the following reference values be adhered to:

- Free chlorine: upper reference value: 1.5 mg/l; lower reference value: 0.5 mg/l
- pH value: upper reference value: 8; lower reference value: 6

This applies to whirlpools, various bathtubs, fountains, etc. For this purpose, chlorine tablets must be used for disinfection as they pose fewer safety risks than chlorine bleach solution or chlorine gas. If the water in the exhibits is changed daily and, prior to the daily refilling, cleaning is performed to remove any biofilm that may have formed, disinfection is not required.

When using chlorine products and pH correction agents, the relevant provisions pertaining to the German Hazardous Substances Ordinance [GefstoffV] and the German Chemicals Prohibition Ordinance [ChemVerbotsV] must be adhered to.

Compliance with these regulations during our exhibitions will be monitored by the Frankfurt Health Department.

The Frankfurt Health Department specially points out that disinfection using UV radiation is not as effective due to the fact that any legionella bacteria which might be present within the system in biofilms cannot be reached in this way.

For further questions, please contact Ms. Voigt of the Frankfurt Health Department (Phone number: +49 69 / 212-30471, E-mail: kerstin.voigt@stadt-frankfurt.de) or Mr. Rangol, Managing Director of the Association of Swimming Pool and Wellness Technology (bsw) (Phone number: +49 221-2716691).
The use of liquefied gas is subject to various regulations for the safety of the public and of co-workers. Please also refer to the guidelines for liquefied gas in our technical regulations (see items 5.5, 5.6 and 5.7.)

- Liquefied gas-consuming appliances must bear a CE mark.
- Operating instructions for liquefied gas installations, containing all data necessary for safe use, must be provided in a clear form and intelligible language. They are to be kept at the operation site.
- All co-workers using the liquefied gas installation must receive instruction based on the operating instructions. The instruction is to be conducted prior to use of the installation and thereafter at least once a year. Both the content and the date of the instruction are to be recorded in writing.
- Liquefied gas installations are to be set up so that they are not accessible to the public (including after hours) or else the safety and control systems and also the actuator controls of the supply system must be secured from access by third parties (e.g. lockable cylinder cupboards).
- Inspections: The entrepreneur has to ensure that liquefied gas installations are inspected by an expert as follows:
  - before the initial start-up
  - after maintenance work that might impact operating safety
  - after modifications that influence operating safety
  - after time-out of more than one year.

Liquefied gas installations with mobile gas-consuming appliances must be inspected periodically, at least every 2 years, by an expert. Inspection certificates, documenting the results of inspections, are to be kept at the operation site and must be available for presentation at all times.

- The minimum distance to inflammable materials specified by the manufacturer must be observed.
- Liquefied gas-consuming appliances may only be connected to flexible tubes no longer than 0.4 m. Exceptionally, liquefied gas-consuming appliances may be connected to longer tubes for special technical reasons and if special safety measures (e.g. tube burst safety device) are observed and the tubing is as short as possible.
- When setting up liquefied gas appliances and storing cylinders, please ensure that no leaking gas can escape into neighbouring cellars, air shafts and light wells.
- The storage of compressed gas cylinders (liquefied gas cylinders) in rooms below ground level, staircases and passages is not permissible since leaking gas can accumulate to form an explosive mixture and emergency exits can be obstructed.
- Cylinder cupboards must be made of flame-resistant material. They must be ventilated by openings in the top and the bottom of 1/100 of the base area or at least 100 cm². The air vents must lead into the open air.

Please note
This data sheet does not affect the advisory statements and special requirements of other agencies.
Operating exhibits with open flames using easily inflammable liquids

In all cases, please keep ready at least one fire extinguisher (ABC 6 kg) and one fire blanket (complying with EN 1869 standard).

Furthermore, highly flammable materials may not be kept in the immediate vicinity of the exhibit.

All bases and rear/side walls surrounding the exhibit must be made of non-flammable materials.

Exhibits featuring open flames may not be placed directly at the edge of stands. Please consult DECHEMA Ausstellungs-GmbH with regard to the required positioning within the stand area.

Only the daily requirement of easily inflammable liquids may be stored at the stand.

Excerpt from Technical Regulations of ACHEMA 2018

5.7.2 Combustible liquids
5.7.2.1 Storage and use

Storage or use of combustible liquids (cf. Industrial Safety Regulation [BetrSichV]) and German Ordinance on Hazardous Substances [GefStoff V]) in the exhibition halls or in outdoor areas without written authorisation is prohibited.

Approvals for storage and/or use of combustible liquids for operating and/or demonstrating exhibits may be granted.

The associated applications shall be submitted to DECHEMA Ausstellungs-GmbH along with safety data sheets.

5.7.2.2 Storage of operating supplies

Supplies of combustible liquids sufficient for one day’s operation and/or demonstration only may be stored on stands. The quantities involved shall be stated on applications for approval.

When storing flammable, highly flammable or extremely flammable liquids in mobile containers, the requirements of the Technical Rules for Hazardous Substances TRGS 510 “Storage of hazardous substances in non-stationary containers” in conjunction with the Technical Rules for Operational Safety TRBS 2152 “Hazardous Explosive Atmospheres” (General and Parts 1 to 3) and TRBS 2153 “Avoidance of ignition hazards resulting from electrostatic charges” must be implemented.

5.7.2.3 Storage vessels

The daily supply shall be neatly stored in closed, unbreakable vessels and be protected against unauthorised access. Storage vessels shall be stored in non-flammable collecting basins.

5.7.2.4 Storage locations

Smoking shall be prohibited at all times at storage locations. Suitable “No Smoking” signs shall be posted. Suitable manual fire extinguishers shall be on hand at all times.

In case of any questions, please contact: safety@dechema.de
Ms. Hild
Phone +49 69 7564 – 601 / Fax +49 69 7564 – 273
Please forward this information sheet to the service providers you have commissioned (agencies, caterers, stand constructors etc.).

This information sheet is designed to help you avoid injury to persons and damage to property while conducting presentations. Our common aim must be to create the right conditions, so that your presentation runs smoothly and safely.

Here too, the Technical Regulations of ACHEMA 2018 shall apply, together with applicable and recognised engineering standards and the respective regulations, such as DIN [German Industrial Standards], VDE [Association for Electrical, Electronic & Information Technologies Regulations], the Accident Prevention Regulations, DGUV 17 and H-VStättR [Hessian guidelines on public meeting places].

- Even during presentations, the exhibitor is only entitled to use the space they have rented. Presentations for an audience, particularly if they involve the use of transmission technology/microphones, cannot take place right at the edge of the stand. It is necessary to have an audience area in front of the presentation area (including platforms higher than 0.20 m) that is at least 2 metres wide and within the area rented by the exhibitor.

- Presentations and the playing of music at your stand are allowed in accordance with our Technical Regulations, insofar as these do not disturb the neighbouring stands and visitors and do not drown out Messe Frankfurt’s own public address system. The volume may not exceed 70 dB(A) at the edge of the stand.

- Stand furniture, tables and chairs cannot be placed in aisles.

- All materials used for decoration must comply with building materials class B1 of DIN 4102, and/or class C of EN 13501-1, i.e. they must be flame retardant (see Technical Regulations 4.4.1.1).

- As a general rule, candles are not permitted to be lit in the exhibition halls.

- Please note that the exhibitor/stand operator bears sole responsibility for any damage or consequential damage.

- No pyrotechnic shows or demonstrations are permitted.

- The use of balloons and flying objects filled with an inert gas in the exhibition halls is subject to the approval of DECHEMA, Technical Organisation (see Technical Regulations 4.4.1.5).

- The use of fog machines is only permitted in agreement with DECHEMA, Technical Organisation (see Technical Regulations 4.4.1.7).

- The operation of laser systems is subject to approval and must be agreed with DECHEMA, Technical Organisation (see Technical Guidelines 5.10.3).

- For musical reproductions of all kinds, the permission of GEMA [Society for Musical Performing and Mechanical Reproduction Rights] must be obtained, pursuant to the provisions of Section 15 of the currently applicable version of the Act for Protection of Copyright and Related Property Rights (Federal Gazette) (see Technical Regulations 5.13).

- In the event that the aforementioned rules are violated, Messe Frankfurt shall be entitled to shut down the stand immediately, without prejudice to the exhibitor’s continuing liability for full stand rent. The exhibitor is not entitled to claim damages.

Our Technical Regulations are available for download at www.achema.de/technical-regulations

In case of any questions, please contact:  E-mail: standapproval@dechema.de
Phone: +49 69 7564 – 650 / Fax: +49 69 7564 – 273
Based on Section 55 of the Telecommunications Act of 22 June 2004 (Federal Law Gazette Part I no. 29 p1190 et seq) any frequency used in Germany requires frequency assignment. Unless a general frequency assignment has been issued, the Federal Network Agency for Electricity, Gas, Telecommunications, Posts and Railway (Federal Network Agency) issues individual assignments. Where frequencies are to be used for a short time only, eg for car races, sports events, concerts and trade fairs, assignments are issued as short-term frequency assignments based on a simplified procedure. For short-term frequency assignments the following data is required:

<table>
<thead>
<tr>
<th>Information on short-term frequency Use (car races, sports events, concerts, trade fairs)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Address of applicant / company name, telephone, fax number, e-mail</th>
<th>address for invoice (if different)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of contact person on location, mobile number</td>
<td>event for which the frequencies are required</td>
</tr>
<tr>
<td>coverage area / locations of use equipment</td>
<td>equipment location</td>
</tr>
<tr>
<td>duration of use</td>
<td>day of use</td>
</tr>
<tr>
<td>tuning range of equipment</td>
<td>wanted frequency (MHz)</td>
</tr>
<tr>
<td>occupied bandwidth (MHz or kHz)</td>
<td>Max. transmitter output power (W / dBW)</td>
</tr>
<tr>
<td>Max. antenna gain (d111 B)</td>
<td>type of link (ground-ground, ground-air, air-ground, satellite)</td>
</tr>
<tr>
<td>Number of equipment</td>
<td>Type of equipment (microphones, in ear, camera link, telemetry, communication,…)</td>
</tr>
</tbody>
</table>

In accordance with Section 142 (1) of the Telecommunications Act of 22 June 2004 (Federal Law Gazette p1190) in conjunction with the current version of the Frequency Fee Ordinance, a fee is levied for each channel assigned for short-term use. For temporary operation (up to 30 days at a location) of a channel a fee of € 130.00 and for each additional channel a fee of € 50 is payable.

**If you use frequencies without a valid frequency assignment, under Section 149 of the Telecommunications Act this may be punishable by a fine not exceeding € 500.000.**

Applicants are requested to submit their applications not later than 4 weeks prior to the intended start of use. As regards applications received at a later date - especially if the frequency is intended to be used in the vicinity of a border to a neighbouring country - timely frequency assignment cannot be guaranteed.
Applications for short-term frequency use have to be submitted to the following Federal Network Agency offices:

• Applicants should contact the local Federal Network Agency regional office responsible for the location of operation of the radio equipment (trade fair compound, concert hall, etc.).

Federal Network Agency Eschborn can be contacted under the following address:

Holger Winter

Federal Network Agency
Frequency Management
Auf der Ludwigshöhe 204
64285 Darmstadt

Fon: +49 6151 170-255
Mobil: +49 160-97881878
Fax: +49 6151 170-181

Holger.Winter@BNetzA.de

Should you have any questions we shall be pleased to answer them
**Stand ceilings**

Excerpt from the Technical Regulations ACHEMA 2018 (4.4.2)

In order to ensure that sprinkler protection is not impaired, stands on the exhibition levels must always be open at the top.

**Ceilings — sprinkler-compatible — without compensatory measures:**

Ceilings are to be considered open when no more than 50% of the ceiling area, i.e. of each individual square metre, is closed. Sprinkler-compatible ceiling materials with a mesh size of at least 2 x 4 mm or 3 x 3 mm are permissible (no Smoke Out). Tarpaulins are to be hung horizontally and only in one layer. Tarpaulins should not be allowed to sag.

**Sprinkler-compatible ceiling materials — examples:**

![2 x 4 or 3 x 3 mm](image)

**Requirements for ceiling materials:**

All stand ceiling materials must comply with construction materials class B1 of DIN 4102, and/or class C of EN 13501-1, i.e. they must be flame-retardant and must not drip while burning or generate toxic gases. A copy of proof of compliance must be kept at the stand.

**Ceilings — closed — with and without compensatory measures:**

Up to 30 m² of contiguous ceiling area may be covered for one stand without any additional measures being necessary, as long as this does not exceed 50% of the stand area. In order to ensure that multiple ceiling areas taken together do not exceed the maximum size of 30 m², a distance of at least 1.50 m from the edge of the stand is to be maintained at all times. It is also possible to have multiple ceiling areas of up to 30 m² within a single exhibition stand, as long as a minimum distance of 3.00 m is maintained between each ceiling area. If multiple ceiling areas are placed next to one another (including across multiple stands), resulting in a total area of greater than 30 m², suitable compensatory measures are required (please see Item 4.4.1, Table 1 “Fire protection programme for one-storey exhibition stands with closed ground floor ceilings and two-storey exhibition stands with open first floor ceilings”).

The installation of corresponding compensatory facilities (1. Fire alarm system, 2. Wall hydrant, 3. Visual/acoustic alarm, 4. Automated smoke extraction system, 5. Sprinkler system) is to be performed by Messe Frankfurt contractors and entails a fee.

A permit is required for closed ceilings larger than 30 m². Plans are to be submitted to the Technical Organisation of DEHEMA Ausstellungs-GmbH for approval by no later than **11 April 2018**.

With two-storey constructions, ceilings as exhibits and darkening systems, closed ceilings can be permitted with certain restrictions.

All requirements relating to the installation of closed ceilings can be found under Item 4.4.1, Tables 1 and 2, of the Technical Regulations ACHEMA 2018.

In case of any questions, please contact: E-mail: standapproval@dechema.de
Phone: +49 69 7564 – 650 / Fax: +49 69 7564 – 273
General Information on holding stand parties and evening events during ACHEMA 2018. (Please forward this information sheet to your service providers.)

We charge a flat-rate plus VAT per event. The flat rate covers services required for operating the hall and the exhibition grounds after the regular daily exhibition hours. The services include electricity, cleaning of the halls and, if necessary, the grounds (but not stand cleaning), shuttle buses to the parking lots, provision of toilet facilities, stand-by-services.

In order to allow a smooth order processing the deadline for your orders is 11 April 2018. Orders which are received after 12 May 2018 shall be subject to a surcharge of 25 %. Stand parties not registered will be charged with a 100 % surcharge.

1. The aim of this information is to ensure that your party runs smoothly and to assist you in preventing personal injuries and material damage at your party. DEHEMA Ausstellungs-GmbH advises you that the following regulations shall apply: the Technical Regulations of ACHEMA 2018, the House Rules and the currently recognized engineering codes of practice and relevant regulations, such as DIN, VDE, UVV, BGV C1 and H-VStättR (“Hessische Versammlungsstättenrichtlinie” – Hessian guidelines on public meeting places). The exhibitor shall be solely liable for damage and consequential damage.

2. The maximum duration of a stand party is from 17.30 to 22 h. All persons (incl. caterers, band, personnel, etc., but with the exception of stand security) must have left the stand by 23 h at the latest.

3. Musical performances may not commence before 18.30 h. Fees for musical performances shall be payable to GEMA, the musical authors’ rights society. The exhibitor shall apply directly to the Regional Office of GEMA (see www.gema.de). The volume must be adjusted so that it does not disturb other exhibitors and visitors.

4. A shuttle bus service to the Rebstock parking area will run twice an hour up to 23 h. Guests and personnel may park their vehicles on the Rebstock parking area at a charge. The Torhaus and Portalhaus entrances will be open and the Via Mobile will be lit until 23 h. The moving walkways will not run after 19 h. Please inform your guests that the cloakrooms close at 19 h. If you wish to provide a cloakroom for your guests, this can be arranged at a charge. Please contact us using the contact details given.

5. Only the rented stand area is available. Please check that the proportion of available space to number of invited / anticipated persons complies with H-VStättR. Stand furniture, tables and chairs may not be placed in the aisles. On no account shall neighbouring stands be entered. It is mandatory for all escape and emergency routes, doors / emergency exits, wall hydrants / fire extinguishers, fire detectors and similar to be kept clear.

6. For every 100 persons or part thereof the exhibitor must order a security guard to ensure the security of neighbouring stands. The exhibitor or stand operator shall be fully liable for all damage and consequential damage caused by the exhibitor, his employees, the employees of contractors or by party visitors.

7. All decorative materials shall comply at least with building materials class B1 of DIN 4102 and/or Class C EN 13501-1, i.e. shall be flame-retardant. Burning candles, combustible pastes/gels and other combustible materials are generally prohibited. Pyrotechnic and laser shows are not permitted. The use of fog machines is subject to approval.

8. Please inform Mr. Stottut at stottut@dechema.de of the number of service vehicles (caterer, band, etc.) for which you require service passes. We will supply passes bearing the date and the relevant entrance gate – you must enter the vehicle registration number and a mobile phone number.

9. Guests may only enter the exhibition grounds with a valid admission ticket. After opening hours, the exhibitor’s original written invitation must be produced on demand. DEHEMA Ausstellungs-GmbH requires a copy of this invitation beforehand. For safety reasons, guests cannot be admitted without the invitation.
This information sheet offers individual explanations of portions of the technical specifications and requirements for suspensions requiring approval for stand construction installations using the existing suspension points in the exhibition halls.

Unless specified otherwise herein, the Technical Regulations of ACHEMA 2018 (in particular items 4.7.5.1 and 4.7.5.2) shall apply.

The use of lifting equipment (e.g. manual and electric chain hoists) must be coordinated with Messe Frankfurt’s technical Service (only allowed with heavy-load suspensions).

The lowest extremity for a suspension is 2.30 metres above hall floor level.

As a rule, suspensions outside the stand area are subject to the express approval of DEHEMA.

Suspensions from the hall ceiling may only be handled by companies working under contract to Messe Frankfurt. Orders for same must be submitted to DEHEMA.

Regardless of whether you require suspension points for light loads or for heavy loads, please submit until 11 April 2018 the following information with your order:

- Dimensioned sketches with the positions of the desired suspension points
- Sketch must clearly show the position and orientation of your stand (including cardinal directions, neighboring stand etc.)
- Loads to be suspended from each point
- Load plan showing the total load, individual loads and line loads (only for complex systems
- Proposed installation aids (“Genie“ lift, manual / electric chain hoists)
- Desired transfer height (for suspensions for heavy loads)

Statutory requirements

Companies may only commission persons to suspend loads above people if they are in possession of the necessary skills.

With regard to the provision and use of load-securing devices, load-handling attachments, lifting equipment, suspension elements, connecting elements, cable end connections, secondary securing apparatuses and equipotential bonding, all applicable safety regulations and generally recognised engineering standards must be complied with.

In particular, the following must be observed:

- DGUV 1 (former BGV A1) – General rules and regulations
- DGUV 17/18 (former BGV C3) – Event and production locations for stage presentations
- DGUV 54/55 (former BGV D8) – Winches, lifting and pulling equipment
- DGUV Info. 215-316 (former BGI 810-1-5) “Safety for productions and events / Safety for productions and events – for practical application / Safety for productions and events – loads suspended above people Spotlights / Special staged effects and processes”
- IGVW SQ P1 Cross beams
- IGVW SQ P2 Electric chain hoists
- IGVW SQ Q1 Electrical technician for event engineering
- IGVW SQ Q2 Expert for event rigging

The specifications and provisions of the currently valid versions of the aforementioned rules and regulations must be checked at one’s own initiative and compliance on location must be ensured. This excerpt is intended as an overview and is not meant to be complete.

Permissible suspension types

- Securing/suspending stand construction components/ exhibits
- Suspended constructions with a rigid/frictional connection to the hall floor
  A structural certification is mandatory here.
Suspensions from the Hall Ceiling

- Suspensions for lighting systems, cross beams and advertising banners

Secondary securing apparatus and safeties

Spotlights, speakers, effect appliances etc. must also be secured using a second, independent securing apparatus (safety cable)! The provisions of BGI 810-3 must be observed with regard to the ratings/size of the safety cable. The safety attachment is to be made such that it does not allow the item being secured to drop. If some drop is unavoidable, the drop distance is to be kept as short as possible.

Equipotential bonding for metal constructions

For cross beams with electrical appliances, the constructor must fit such beams with an additional equipotential bonding (copper, at least 10 mm²) (VDE 0100 Part 711). The transfer point on the hall floor (stand earthing) can be ordered via the ACHEMA-Exhibitor Portal (www.achema.de)

Permissible suspension elements/lifting equipment

The use of lifting equipment (e.g. manual and electric chain hoists) must be specified in the order documentation and coordinated with Messe Frankfurt Venue GmbH, Infrastructure Services.

The nominal loads specified in the manufacturer’s specifications are to be observed!

Please note that the use of manual chain hoists (= dynamic loads) is not permitted with suspensions for light loads or with 5 mm and 6 mm steel cables.

In order to avoid excess load on individual suspension points, it is essential that the system be practically horizontal for operation (one person per manual chain hoist!).

In accordance with DGUV Regulation 17 (former: BGV C1), dynamic loads are only permissible with steel cables of at least 8 mm in diameter.

Both the live load on the suspension point and the weight of the manual chain hoist itself are to be taken into account.

Once the work has been completed, the manual chain hoist is to be removed and replaced by a suitable load-securing device (e.g. steel cable), or to be bridged using a load-securing device (secondary securing apparatus – see figure 1).

It is essential here that no drop is possible!

When using electric chain hoists (in accordance with the provisions of DGUV 17/18 and DGUV 54/55), the specific manufacturer’s specifications must be observed!

Permissible load-securing devices and cable end connections

Ratings/size of equipment used:
Manufacturers specify the load-bearing capacity or minimum breaking load of equipment that is used as load-securing devices or load-handling attachments.

The following applies for the suspension of loads above people:
- If the load-bearing capacity – e.g. WLL (working load limit) – is specified, this piece of equipment must not be subjected to any more than half of this value.
- If the minimum breaking load is specified, this value must be divided by the necessary working coefficient in order to determine the maximum permissible load-bearing capacity, (see also the table “Minimum required working coefficients for load-securing devices” BGI 810-3)
Cable end connections/cable gliders

Cable gliders:
Only permitted with certification

Please note that this type of cable glider is not suitable for dynamic loads and can therefore not be used with lifting equipment!

Example

Permissible load-securing devices

Please note that the load-securing devices used must be adequate in design and size to withstand the strains resulting from operation.

Excerpt:
Wire cable with thimble

The minimum diameter for the operation of lifting equipment is 8 mm.

It is essential that the end of the suspended cable has a thimble!

Cables that are 100% encased in plastic sheathing are not permitted. It must always be possible to examine the entire cable by moving the sheathing.

Round slings

It is absolutely essential that they be identified by means of a label.

Required information:
- Manufacturer
- Load-bearing capacity
- CE-marking
- Standard
- Year of manufacture

When purely polyester round slings are used, it is absolutely mandatory that the connection be bridged using a wire cable.

Round slings with steel inlays (“Steelflex”) do not require any special steel safety apparatus.

Impermissible load-securing devices and impermissible cable end connections:

- Unauthorised wire cables/cables that do not comply with the cables described under “Permissible load-securing devices”
- Sheathed wire cables (sheathing > 1/3 cable length)
- Long-link chains (inner length of the chain link > three times the nominal diameter of the chain material) are not suitable for attachment.
- The use of cable ties without a secondary securing apparatus (safety) comprising a steel wire cable with thimble and ferrule and a connecting element (DIN 56927)
- Unauthorised chain glider
- Open hooks
- Open body turnbuckles in accordance with DIN 1480
- Quick links with sleeve nuts (emergency chain links) without load-bearing capacity ratings
- Damaged load-securing devices (e.g. kinked cables, load-bearing slings with damaged sheathing, load-bearing slings without any recognisable identification)
- Other connecting elements without load-bearing capacity ratings

This information sheet only offers a condensed overview. Please be sure to also refer to the Technical Regulations Achema 2018.

The installation of suspensions is not possible in the Foyer hall 4.1, in hall 5.1, in the passage 5.1 – 6.1 and Galleria.

Please note that punctual execution of the assembly work can only be guaranteed if the order for suspension points is received by the due date.

If you have any questions, please contact:

Hall level Forum, 3.0, 3.1, 8.0, 9.0, 9.1, 9.2, 11.0, 11.1
Messe Frankfurt Venue GmbH
Team Suspensions
E-mail: suspensions@messefrankfurt.com

Hall level 1.1, 4.0, 4.1, 4.2, 5.0, 6.0, 6.1
Electronica GmbH
Herr Dannhäußer, Herr Lamparter
E-mail: achema@electronicagroup.de
We are obligated to inform you that the mechanical processing of wood and plasterboard using cutting or grinding tools in Messe Frankfurt Venue GmbH's exhibition halls is only permissible with an appropriate dust extraction system.

The dust that is generated by the mechanical processing of wood and plasterboard is considered to be a hazardous substance pursuant to the German Hazardous Substances Ordinance (GefStoffV). These substances are generally considered to be carcinogenic and hazardous to health pursuant to the Technical Regulations for Hazardous Substances 553 (TRGS 553).

In order to prevent health hazards according to the German Hazardous Substances Ordinance (GefStoffV Section 8 para 2.2 and 2.7), it is necessary to avoid or entirely restrict dust exposure of all kinds.

Excerpt from the Technical Regulations of ACHEMA 2018 - 5.2 Employment of tools and other equipment

The employment of woodworking machinery that lacks sawdust/chip extraction systems is prohibited.

Should these rules not be complied with, we will be forced to stop your set-up work immediately.

We therefore ask that you comply with these regulations at all times in order to ensure that your set-up work runs smoothly.