

Leistungsverzeichnis über Kunststoff-Fenster und Verglasungsarbeiten

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Datum

Stempel

Unterschrift

Technical preliminary remarks on plastic windows

General In

In addition to the General Terms of Contract for the Execution of Works (AVB) -VOB / B and the General Technical Terms of Contract (ATV) -VOB / C-, the following statements apply, including the listed standards in the most recent versions. With regard to manufacturing drawings and measurements (surveying work) are ancillary services in accordance with ATV DIN 18299 No. 4.1 which, unless otherwise expressly determined, are to be included accordingly in the contract prices.

Submittal drawings

The window overview (s) attached to the specification of services serve only for the presentation of window layout, design and opening types. In any case, the actual window sizes must be checked for their respective shell construction situation by measurement before production. Insofar as no information on profile formation is provided in the position descriptions, the information necessary for determining the profile formations (for example required moment of inertia, horizontal loads, etc.) can be taken from the window overview or from the details of the construction object. The detailed sketches attached to the various items are just a guide to the calculation and are a possible solution. Other solutions may be accepted if they meet the requirements. Modifications to the desired connection situation must be clearly highlighted.

recycling

Only window / door systems are considered that ensure disposal with subsequent recycling. Old windows and profile remnants must be reconditioned, materially separated and reused. Proof must be provided at the request of the construction management.

manufacturing drawings

Drawings on changed details of the window construction and the connections to the structure are to be presented in time on request of the construction management. Production may only begin when the drawings have been approved by the client or his authorized representative. Otherwise, the desired construction connection details apply.

Dimensions

Required surveying work on the basis of on-site height reference points (meter cracks) must be carried out by the contractor before commencement of production. If shell tolerances are above the specifications of DIN 18202, the client must be informed immediately in writing. On the fundamental check and notice obligation of the contractor gem. § 4 no. 3 VOB / B is expressly pointed out. Unless otherwise stated, the dimensions given in the individual items are body dimensions.

Scaffolding

All scaffolding required for the installation of the windows as well as for their external sealing work will be provided on site for the entire construction period. The heights of the working positions and the required distances between the scaffoldings and the structure must be agreed in good time with the construction management. Remodeling work on the scaffolding - if required - is carried out exclusively on site. When using the scaffolding, the regulations of the professional association must be taken into account and - if necessary - the provisions of the building inspectorate.

Requirements for the window construction

Static requirements (essential requirements):

The window constructions, including their fasteners, must be able to absorb all forces acting on them as planned. The elements are statically sufficient to be fastened to the structure in such a way that all the forces acting on it as planned can be introduced into the structure. Starting points for the determination of the object-related performance requirements on the basis of the local wind load with regard to wind resistance, watertightness and air permeability can be found in DIN 18055 "Criteria for the application of windows and exterior doors in accordance with DIN EN 14351-1." A force may be applied from the building to the elements not take place.

Under the assumed loads, the frame construction between two supports may not bend more than $1/200$ of the length or max.15 mm for the entire construction (minimum requirement).

The scheduled loads are to be accepted in accordance with the following regulations, in the most recent versions:

Additional loads can be found in the item description or the details of the building. Static proof can be required according to DIN EN 1991-1-4 / NA. For window elements with fall-arresting function the DIN 18008-4 "Glass in building - Design and construction rules - Part 4: Additional requirements for fall-resistant glazing

A valid proof for the determination of the carrying capacity of plastic frame systems (glass folding stop) according to DIN 18008-4 appendix D "proof of the shock resistance of bearing constructions" point D.1.2 can be demanded.

Glazing must be selected, taking into account the thermal and sound insulation requirements, such that a deflection between the edges of the window is not exceeded by more than $L / 300$ of the length, but not more than 8 mm. Specifications from glass manufacturers are also to be observed.

The proofs are suitability tests according to RAL-RG 716 or the submission of the corresponding system tests of the profile system sender. Otherwise, a test report of a recognized test institute for the maximum sizes depending on the color of the offered window and door opening types must be submitted.

Building physics requirements (essential requirements):

Requirements for heat and moisture protection

To meet the requirements for heat and moisture protection

- Building Energy Act (GEG)
- DIN 4108 "Thermal insulation in building construction" in the latest version
- Guidelines of the Building Regulations List A
- DIN EN ISO 10077 "Thermal performance of windows, doors and shutters / calculation of the heat transfer coefficient" in the most recent version.

The energy saving regulations, the DIN 4108 as well as the guidelines in the Building Regulations List A in the most recent versions apply to the requirements for thermal insulation.

Verify the U_w value according to DIN EN ISO 10077-1 in the latest version, based on a standard test dimension 1.23 m x 1.48 m.

The effect of driving rain and condensation must be limited so as to avoid damage (eg impermissible reduction of thermal protection).

Requirements for sound insulation (essential requirement)

For the requirements of sound insulation apply:

- DIN 4109 "Sound insulation in building construction" in the latest version.
- VDI Guideline 2719 "Sound insulation of windows" in the most recent version.

Required for the elements is a rated sound reduction level in the installed state of:

Deviating R_w , R values can be found in the item overviews.

The connections between the windows and the building are to be designed in compliance with the requirements for sound insulation of the windows. Horizontal or inclined sheet metal surfaces subject to weathering (e.g., sheet metal, window sills, etc.) should be de-drummed. It is a backside Antidröhn coating required by about 2/3 of the total discharge area. This is to be included in the contract prices. In the case of vertical sheet metal surfaces, an anti-drone coating is only to be included if a corresponding requirement is included in the specification of services.

materials

plastics

Window profiles made of hard PVC

The high-impact plasticizer-free rigid PVC molding compound used must meet at least the following requirements:

- Vicat softening temperature VST / B50, according to DIN EN ISO 306: 75 ° C
- Charpy impact strength, according to DIN EN ISO 179, 1eA: 20 kJ / m²
- Modulus of elasticity: flexural modulus E_f DIN EN ISO 178 or tensile modulus E_t DIN EN ISO 5271-3: 2200 N / mm²
- Stability time is, according to DIN 53381-1 or DIN EN ISO 182-2 > 30 min)
- Classification for fire behavior: According to DIN EN 13501-1: Class E
- Chemical resistance: In accordance with DIN 8061 (Supplement 1) resistant to building materials used in the vicinity of the window or roller shutter box (such as lime, cement, etc.).

metalwork

aluminum

For the requirements of aluminum:

- DIN 1748 for extruded profiles
- DIN EN 485 for sheets and strips

stole

All steel parts that are no longer accessible after installation must be galvanized. Components made of steels are to be protected against corrosion on surfaces which remain accessible after installation in accordance with DIN 18360. The wall thicknesses of the steel reinforcements must be at least 1.5 mm.

Assembly of different metals

When assembling different metals, the electrochemical voltage series must be observed. Metals with different voltage potentials are to be separated by suitable insulating liners so that no contact corrosion and no other unfavorable influences can occur.

sealing profiles

All seals that are exposed to external weather must comply with the quality and test regulations for plastic windows RAL-GZ 716. This also applies to APTK (EPDM) seals

All sealing profiles must be compatible with adjacent materials (e.g., frame profiles and paints).

GEALAN-SMOOVIO

The innovative sliding system from GEALAN

Quality of life without compromise

The new generation of sliding elements

Living space is valuable, so it should be put to the best possible use. For the first time, GEALAN-SMOOVIO combines the space-saving convenience of sliding solutions with extraordinarily compact design. This is made possible through a synergy of newly developed hinge parts, innovative profile geometry and optimised seals.

applies to the following items:

0001 Quick planning

profile colors

Outer colour / structure

Frame

White

Sash	White
<u>Inner colour / structure</u>	
Frame	White
Sash	White

applies to the following items:
0001 Quick planning

(* Note: Our range of standard acrylic colors or standard foils are constantly adapted to current market requirements.) An up - to - date overview of our standard acrylic colors is available on our homepage at: <https://www.gealan.de/en/innovations/colouring-acrylcolor>

Dew water drainage of the window constructions

Frame drainage

Any accumulating condensation in the rebate area must be able to be discharged directly and in a controlled manner to the outside. For this purpose, drainage openings are to be provided for all types of window openings in the lower frame / transversal crosspieces. Drainage is basically via the antechamber either to the outside (visible) or down (concealed) and is ensured by outlet openings (slots 28 x 5 mm and 8 mm in exceptional cases). The drainage arrangement must be carried out according to the respective system description. Drainage holes through reinforcement chambers are not permitted. There must be a return-proof ridge irrigation.

Glassfold drainage

Due to the warranty conditions of the insulating glass manufacturer, the glazing rebate must have openings for moisture compensation in the case of glazing with sealant-free rebate base and must comply with the specifications in the system description. The ventilation / drainage openings must be of minimum dimensions (slots 28 x 5 mm and, in exceptional cases, 8 mm holes).

Reinforcement of the window profiles

In principle, the stiffening guidelines of the system manufacturer specified in the system description apply. All stiffeners must be made of DX 51 D + Z 275 N A galvanized steel and have a minimum wall thickness of 1.5 mm.

Profile corner connection of the window construction

Corner joints are to be produced by butt welding. The breaking point under load of the corner connection must not be less than the values specified in the system description for each profile. For other frame connections the suitability has to be proved. The frame joints must have sufficient strength, rigidity and tightness. The strength of the frame joints must comply with the requirements of RAL-GZ 695 and RAL-GZ 716. For welded frames made of PVC profiles the guideline DVS 2207 part 25 applies. For mechanical connections the suitability has to be proven. This proof must be in accordance with ift guideline FE-06/1 "Testing of mechanical and butt welded T-joints in plastic windows". In addition, the applicable standards and regulations of RAL-GZ 716 must be met.

Fold seals

The rebate seals in the sealing levels between sash and frame are to be installed uniformly in a single plane. Alternatively, corner-welded solutions are also permitted provided they are permanently sealed against wind and water. It must be possible to easily replace the sealing profiles. The drainage channel must be dimensioned so that a comfortable and unhindered cleaning possibility is guaranteed. It must be possible to choose between black and gray for the sealing profiles.

Forged

Fittings must meet the requirements of EN 13126 and be designed for the expected loads. The fittings must be readjustable, the materials used to be protected against corrosion. For installation, the specifications of the respective hardware manufacturer and system supplier must be observed. A permanent, as well as secure attachment of all fittings is to ensure. The possibility of maintenance and possibly replacement of the fittings must be given. Corner hinges on Tilt & Turn fittings must guide the sash safely in every sash position, even if the sash is suddenly pushed open by a gust of wind. If no special protective measures, such as Fehlbewegungsperren or devices of a special opening sequence come to execution, it must be ensured that the wing can not sag in case of incorrect operation. The sash must be able to be opened by at least 90 ° when installed, provided the structural conditions allow it.

The following additional equipment (s) (eg mishandling device, opening limiters, turnstiles, lockable handles, etc.) are required in principle and must be offered together with the hardware (different versions can be found in

the item descriptions):
Additional device (s): *(to be specified by the contractor)*

The operating heights of the window handles are to be defined in consultation with the client. Within a room, these are to be implemented as uniformly as possible.

The following window handles come to execution: *(please delete as appropriate, or fill in missing information)*

- standard handle, white

or

- make / model name _____

Aluminum, color: _____ / stainless steel / brass

Deviating explanations can be found in the item descriptions.

In the case of tilting sashes and skylight sashes, unless otherwise stated in the position descriptions, additional catching and cleaning shears shall be provided.

All user information, in particular for maintenance and care work, must be submitted to the customer without being requested to do so, at the latest with the final invoice, in accordance with the requirements of the respective state building regulations and the product liability law.

glazing

glass thickness

The glass thicknesses are to be determined taking into account the loads specified in the section "*Requirements for the window construction / Static requirements*". If additional loads (eg snow load on overhead glazing, etc.) have to be taken into account, or the installation of special glass is required, this is indicated in the individual positions / position views.

Glass installation and blockage

The glazing must be installed according to the approved system description. For glazing work, DIN 18361 "glazing work" as well as the regulations of the insulating glass manufacturer as well as the "glazing guideline" of the Institute of Glassworks must be observed. For special glazing, samples may be requested upon request. Only systems are approved whose hollow rebate, designed as a hollow chamber, has a height of at least 20 mm. The height is measured from the top of the pad supporting surface. The support and spacer blocks are to be executed according to the type of wing opening according to the "blocking guidelines" of the Institute of the Glazier Trade in Glazing Technique and Window Construction (IHG) Hadamar. Basically, no wooden blocks of any kind may be used. In question, only blocks of plasticizer-free plastics such. Nylon, rigid PVC, polystyrene and the like. The load-bearing blocks must be 80 mm to 100 mm long and should project beyond the edge of the window 2 mm on each side.

Glazing beads

The glass retaining strips ensure a uniform contact pressure over the entire length of prefabricated sealing profiles. The glass retaining strips are close in the corners and must be interchangeable at any time. The information provided by the system provider must be observed.

Requirements for the production of window elements

The implementation of the requirements of the state building regulations for windows, balcony doors, window elements and curtain walls requires a documented production control from the raw materials to the final product. Quality Assurance RAL-GZ 695 is valid for the evaluation of the processing. The presentation of the RAL quality mark plastic windows is a possibility to prove the requirements of the state building code. Proof of other forms of quality assurance must be provided accordingly.

Installation of the windows

To carry out the planning and execution of building connections according to the recognized rules of technology. The connection training must meet the requirements of heat, sound and moisture protection. The following regulations must be observed in the most recent versions:

- DIN 4108 Supplement 2
- DIN 4108-7
- Building Energy Act (GEG)
- Current guideline "Guidelines for installation" of the RAL Quality Assurance Association for Windows and Front Doors

Fixing the windows

The dead weight of the window or door elements shall be introduced into the structure via pressure-resistant substructures (such as supporting blocks). The respective substructures must be arranged so that both the inner and outer element seals can be made without any interruption. When installing the windows, make sure that the anchors / substructures:

- The forces from windows and window walls are perfectly transferred to the structure
- be able to record the movements, both from thermal loads on the windows and window elements, as well as from the expected changes in shape of the building
- be secured against being moved.
- the function of the seals is not affected

The following structural changes to the structure can be expected: (to be specified by the contractor)

- Ceiling deflection of _____ mm
- Shift from _____ mm

By installing roller shutter boxes, the stability of window elements according to clause 1.1 shall not be impaired. If, due to the roller shutter box, sufficient fastening of the upper window frame can not occur, the window frame must be suitably made stable by suitable measures (for example, additional horizontal steel pipe chocks). The inspection opening for the roller shutter boxes must be able to open without hindrance despite these additional measures.

Sealing to the building

The connections to the structure must meet the building physics requirements, i. The requirements of thermal insulation, moisture protection, sound insulation and joint movement must be observed. Room-side seals are designed to be vapor-tight. These must thus prevent moisture from entering between the frame and the wall. The external seal must be designed to withstand driving rain and allow vapor pressure equalization to the outside.

When sealing connection joints with elastic sealants, the specifications of DIN 18540 must be applied analogously. This is valid both for the constructive joint formation, as well as for the permissible total deformation of the sealant.

sealing systems

Joint sealing tapes

Pre-compressed, impregnated sealing tapes made of foamed plastic for external and internal seals. The respective manufacturer's instructions are to be observed. Only systems tested and classified according to DIN 18542 may be used. Outside, sealing tapes of stress group 1 (BG1) are permitted. Sealing strips of the BG2 may only be used protected from direct sunlight. During processing, the processing guidelines of the respective manufacturers must be observed.

Bauabdichtungsfolien

Construction sealing foils must correspond in their property to the intended use and DIN 18195. They must not contain any aggressive components in accordance with DIN 52452 and must be compatible with the adjacent building materials (such as PVC frames, aluminum and paints). Sealing films must be resistant to aging and - if they are exposed to direct weather conditions - be resistant to them. If the waterproofing membrane is glued, the adhesive surfaces must be free from contamination and foreign substances. To maintain the functionality they are mechanically secure. PVC profiles must not come into contact with bituminous substances, only cold-sealable foils may be used. The manufacturer's instructions are to be observed.

Elastic sealants

When sealing connection joints with sprayable sealants, DIN 18540 and DIN 18545-2 as well as the respective manufacturer's instructions apply. When determining the joint width, the permissible total deformation must be taken into account. In the execution a two-sided adhesion is to be ensured. For this a non-absorbent, closed-cell backfill material should be used. Further information on the state of the art can be found in the IVD leaflet no. 9 "Sealants in the joint for windows and external doors - Principles for planning and execution".

For other sealing systems the suitability according to the ift guideline MO-01/1 "Structural connection of windows - Part 1 Method for determining the usability of sealing systems" must be proven.

The installation guidelines / application instructions of the manufacturer are to be observed.

Glazings / panels

glazing

The following is the description of the planned glazing for the execution. In the individual position descriptions of the elements, only the following abbreviations of the glass used are then mentioned:

Glass types GT (= glass type)

GT 1 Thermal insulation glass 4-16-4-16-4

Glazing requirements

Thermal transmittance	$U_g = 0.6 \text{ W/m}^2\text{K}$
Light transmission	TL = 74 %
Total energy transmission	g = 53 %
Noise insulation dimension	Rw = 32 db
Total thickness	approx. 44 mm

applies to the following items:

0001 Quick planning

Panel infills

For the delivery and installation of infills, the regulation described in detail in the section Glass / Glazing applies mutatis mutandis. The information given in the following description of the panels on the materials to be used and their cross-section are formal minimum requirements. The specified substances must be checked by the contractor for their suitability for the intended use. The information on thermal protection provided in the technical preliminary remarks as well as the DIN standards valid for these areas must be taken into account. The insulation core of the panels must always be made in pressure-resistant design and / or with a pressure-resistant edge band. If mineral wool is used as insulating core, it must be processed in stagnant fiber and with additional mechanical protection against sagging.

The described panels must be formed according to the prior art. Constructive measures must be taken to prevent moisture penetration and mechanical destruction of the insulation material. A deformation of the surfaces is to be avoided by a possible pressure equalization.

Following is the description of the panels planned for execution.

In the individual position descriptions of the elements, only the following abbreviations of the glass used are then mentioned:

Panel types PT (= panel fillings)

Additional Technical Terms

These Preliminary Remarks are ADDITIONAL TECHNICAL TERMS AND CONDITIONS - ZTV.

As such they are part of the service description and become an integral part of the contract. In addition to official requirements such as, for example, state building regulations, workplace guidelines, etc., the VOB and the general terms and conditions of contract, the following statements, including the cited standards, and the DIN regulations and guidelines of the Institute for Window Technology e.V. in Rosenheim apply.

The following performance definitions determine the contractual performance of the contractor.

Only companies are allowed to manufacture the window elements in their own production plants and carry out local assembly work with in-house fitters and equipment.

The Bidder confirms that the wage rates listed below are determined in compliance with the price regulations and that they already contain the usual calculation features.

The specification of services is only valid if the following hourly rates, sets of equipment and material prices are completed.

Rates and prices are for the entire construction period.

All prices are net prices. The valid VAT at the time of commissioning is added.

The contractor is obliged, in the event of non-contractual delivery, to rework the quality specified in the specification of services without special compensation and to carry out the necessary repairs on his own account. This also includes the replacement of windows and doors and other elements, provided that they distort after moving so that they do not close or only inadequately.

The contractor has until the acceptance of its services to protect against damage. Proof of damage by third parties is the responsibility of the contractor.

The following general technical conditions of contract explain the scope of services of the service specification:

- the manufacture, delivery and installation of the window / door elements.

It is essential to use the products, systems and designs specified in the invitation to tender, the specification of services, the planning and calculation documents of the client and required.

All static questions, design suggestions such as masonry connections, glass dimensions, information on maximum wing sizes and permissible weights or window and door heights and the like, are to be determined by the bidder alone responsible.

The axes of posts, transoms, couplings or rungs, the heights of handles and other operating elements above OKFF as well as the direction of rotation of the wings shall be agreed by the contractor with the customer before the start of production.

Additional services of the contractor without special remuneration are additional:

Dimensional drawing, preparation of the necessary approval and construction drawings including billing of the works.

Transportation of all substances and components up to the installation sites.

Protection and security measures, as far as they are necessary in the context of their own services.

drawings

The drawings, sections and floor plans attached to the specification serve as a guide for the calculation.

From the view drawings window layout, construction and opening types are visible.

Insofar as the position description does not specify profile training, the information necessary for determining the profile formation (for example, the required moment of inertia, horizontal loads, etc.) can be taken from the details of the construction object.

Production documents

Drawings on the details of the window construction and the connections to the structure must be submitted in good time on request by the construction management without special compensation.

The offer is complete, valid and informative test reports, material or product data sheets of the individual materials and assemblies / parts with manufacturer's information u. a. for profiles, glass, fittings, controls (olives), etc.

In case of doubts and in all cases of exceptional load, it is necessary to explain additional details, connections, etc. by means of drawings and, if necessary, to have static calculations checked by the structural engineer.

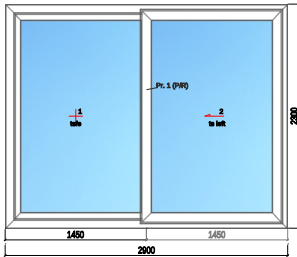
If the contractor has reservations about the intended type of execution, the quality of the materials and components supplied by the client or the services of other contractors, he must inform the construction management immediately in writing (if possible before the start of the work).

dimensions

Dimensions are to be checked on the construction. All dimensions of the title positions are shell dimensions.

New group

Item	Designation	Quantity	Price	Total
0001	Quick planning	1 Pieces		

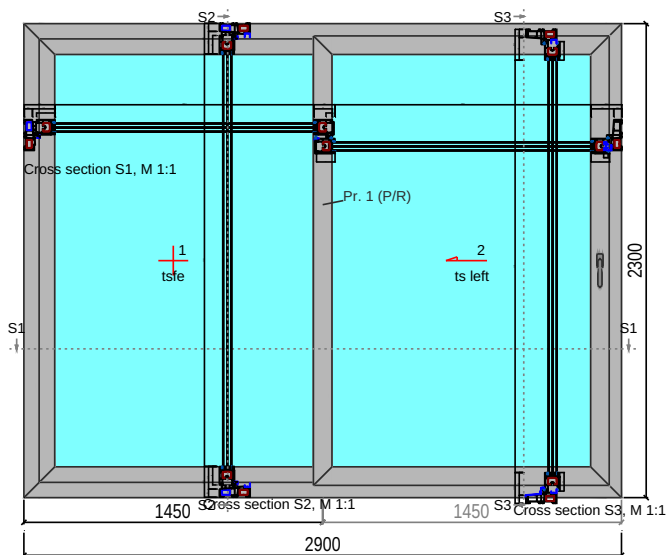


[1] 2-part Tilt/Slide-door (GEALAN-SMOOVIO®), Two-part, plan A, turn off sliding sash, right

Designation	[1] 2-part Tilt/Slide-door (GEALAN-SMOOVIO®), Two-part, plan A, turn off sliding sash, right
Size	2900 mm x 2300 mm
Material	PVC
Profile system	GEALAN-SMOOVIO (Roto)
Colour	White
Gasket	Grey
Frame	5860 Frame profile 74 mm (bottom, right, top) Reinforcement: Chamber 1: 6718 Reinforcement 26x40.5x2 mm, Chamber 2: 5896 Reinforcement 26.3x40.5x2.5 mm 5860 Frame profile 74 mm (left) Reinforcement: Chamber 1: 6718 Reinforcement 26x40.5x2 mm, Chamber 2: 5896 Reinforcement 26.3x40.5x2.5 mm
Sash	5864 Sash 90 mm [outside] Reinforcement: Chamber 1: 5880 Reinforcement 43x33x2 mm, Chamber 2: Without reinforcement
Fitting	Fixed exterior (Field: 1) Tilting/sliding on the left interior (Field: 2)
Handle	Tilt/Slide door (Opening 2) Abstellschiebetür Griff Aluminium
Glass / Infill panel	Thermal insulation glass 4-16-4-16-4
Accessories	5899 Kick plate 25 mm (bottom)
Teilungsmaße vertikal	1450mm
Glass type: GT 1	

Produce, deliver and install element according to techn. preliminary remarks.

Total section



Schlusswort Ausschreibung

Bitte überprüfen Sie alle von uns in den Texten gemachten Angaben hinsichtlich Richtigkeit und Vollständigkeit. Fehlende Angaben in den Texten bitten wir, wo erforderlich, zu ergänzen. Für die als Anlage übersandten Ausschreibungstexte wird keine Gewähr übernommen.