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***Attention: The technical specification of the fibreglass curtain wall VARIOPLANplus depends on a large number of factors of influence. Before establishing a tender we recommend a technical consultation with our product specialists in order to determine the best possible product specification for each application.***

**Tender specification VARIOPLANplus 40s / 60s fibreglass curtain wall with vertical orientation of the panels**

Fabrication, supply and installation of a curtain wall as specified below, with light-transmitting lightweight twin-walled fibreglass panels in vertical orientation, with a frame construction of thermally broken, weather-resistant aluminium profiles.

**Product quality and features**:

Only a curtain wall system with a general approval of the German Institute for Construction DIBt, according to the approval number Z-10.1-429, may be installed.

The curtain wall system must be tested and certified according to European Standard DIN EN 13830 and meet following minimum requirements:

**Air permeability**: Class AE acc. to DIN EN 12152

**Water tightness static:** RE 1800 acc. to DIN EN 12154

**Resistance to wind load:** permissible load 2.0 / -1.2 kN/m² acc. to DIN EN 13116; extended load 3.0 / -1.8 kN/m² acc. to DIN EN 13116

**Resistance against impact**: E5 / I5 acc. to DIN EN 14019

The curtain wall described hereafter represents the favoured option. The tenderer may work out an alternative proposition, however the architectural, physical and technical parameters described hereafter have to be fulfilled imperatively.

**Frame construction:** to be executed with thermally broken aluminium system profiles.

Material: DIN 17615 / ALMgSi 0.5 F22

Inter-spacer: Polyamide 6.6 / Polyethylene

Surface treatment: E6-C0 anodised. Option: powder coating acc. to RAL \_\_\_\_\_\_ (except metallic shades)

The dimensions presented in the specification are based on a system construction. If another systems option is tendered, the respective dimensions must be determined and presented by the tenderer.

**Infills:**

Translucent twin-walled fibreglass panels with approx. 40 mm / 60 mm infill thickness. Type: Butzbach. Another equivalent product fulfilling the technical features below may be tendered. In case of other fibreglass panels, samples have to be provided as well as a proof of equality by respective test protocols. All panels have to be sealed on all four sides by means of laminated covers, assuring a reliable protection against intrusion of dust and water.

**Physical features:**

• Weathering resistance acc. to ISO 4892-2 (2,000 hours), colour difference Δ E (DIN 6174) 1.1 (SSt)

• Thermal transmittance coefficient Up ≤ … W/m²K

• g-value approx. …%

• Sound insulation … dB

• Light transmittance value τv up to …% acc. to DIN EN 410

• Erosions resistance (no divesting of glass fibres)

• Absence of radar reflection

• UV transmission value τuv 0% acc. to DIN EN 410

• Colour reproduction Ra up to 93 acc. to DIN EN 410

• Reaction to fire: class E (non-flaming dripping) acc. to DIN EN 13501-1

* Optional reaction to fire: class C-s3 d0 acc. to DIN EN 13501-1 (thickness 60 mm)

• Colour: Brilliant, Emerald-green or Sapphire-blue

All works described hereafter are finished feats including fixations such as angles and plates in galvanized surface if not exposed to weathering, and in stainless steel if exposed.

The necessary static calculation has to be included in the prices and to be presented to the architect in time.

The time schedule of the execution of the work steps has to be coordinated with the other lots.

In the views and sections the curtain wall is presented with several detail points, see also the plan list in the enclosure.

**Performance description**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pos.** |  |  |  |  |
| 1.1 | **Fibreglass curtain wall with vertical orientation of the panels**  Fabrication, supply and installation of a curtain wall as detailed in the description above. Vertical orientation of the panels. Structure according to enclosed plans. Grid width 1,000 mm (option: 500 mm)  Steel frames existing on site can be used for the load transmission.  Infills: as described in title 1  Thermal transmittance coefficient Up ≤ … W/m²K  Colour: ..................    Frame: as described in title 1  Uf DIN EN ISO 13947:2007-7 = ….W/m²K  Surface treatment: E6-C0 anodised    Width: .......mm  Height: ........mm  (see plans)    Tendered construction........................................... | | | | |  |  |  |
|  |  | **Quant.:** | **Price(€):** | **total(€):** |
|  |  |  |  |  |

E Optional positions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pos.** |  |  |  |  |
| 1.2 | **Connections to the structure**  Execution of the connection joints between curtain wall and building structure, with customary joint sealant acc. to DIN 18540, with a total admissible deformation of 25%.  For the preparation of the adhesive surfaces, DIN 18540, section 4.3, and the respective processing specifications of the relative producers have to be respected.  Examples: Exterior: Silane-modified polymer (MS polymer). Interior: PU sealant Connection joints up to 20 mm thick |  |  |  |
|  |  | **Quant:** | **Price(€):** |  |
|  |  | **1 m** |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pos.** |  |  |  |  |
| 1.3 | **Lower window sill connection**  Fabrication, supply and installation of aluminium window sills including the lateral aluminium finishing caps and the necessary expansion strips. Overhang … mm.  Surface treatment: E6-C0 anodised. Assembly with impermeable bonding films and joint sealing. |  |  |  |
|  |  | **Quant:** | **Price(€):** |  |
|  |  | **1 m** |  |  |

**Manufacturer notification:**

Butzbach GmbH Industrietore

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