**GM RAILING® DOUBLE**

**Frameless –Glass Railings**

**Text for Invitation to Tender**

GM RAILING® is a fully prefabricated frameless-glass balustrade system. GM RAILING® DOUBLE is designed or particularly high loads, e.g. at events, and easy side mounting to a steel construction. The glass is designed to be clamped along its full lower edge and meets loading and Building Regulations.

\*: delete as appropriate.

**42.0 Frameless-Glass Railing**

**42.1.00 General Description**

**Tech. Advantages:**

Frameless, single-edge supported fixed glass balustrade with evenly distributed load bearing fixings. There is no unevenly distributed point loading of the glass (wedges directly on the glass) or clamps. The method of fixing the glass protects the laminated glass against early delamination. The system is fully tested as a complete fabricated unit to building standards. Both sides of the U-profile are static effective, tuned for attached profiles to build a second sealing level.

**Construction:**

DOUBLE SIDE\*: for a assembling to the side,

DOUBLE TOP\*: for a assembling to the top,

Dimension of the aluminium-profile 80mmx100mm

Surface: natural anodised EV1\*/powder-coated RAL ..........\*/mill finish\*

**Requirements:**

private use\* / public use\*

public and crowded areas, up to 3 kN/m

as per EN 1991-1-1 cat. C fall height < 12 m\*

Fall height < 12 m\* / fall height > 12 m\*

Interior use\* / exterior use\*

(Wind load ………..kN / m²)

**Glass specification:**

Laminated safety glass (LSG) made of float glass, SSG or HSG, based upon loading requirements. The interlayer is clear PVB film – min. thickness 1,52 mm. All visible glass edges are polished. There are no holes drilled into the glass for fixing. The glass is bonded into the supporting anodised aluminium base profile. Vertical fine adjustment of the glass is possible to (± 20 mm). Rapid replacement of panels is also possible due to the system being manufactured in pre-assembled component parts. All bonding is certified according to the specification criteria.

**Glass type:**

LSG/Float\*/LSG/SSG\*/LSG/HSG\*

**Glass thickness:**

16.4 (2 x 8 mm)\*/20.4 (2 x 10 mm)\*/24.4 (2 x 12mm)\*

**Glas design:**

GM VSG LAMIMART COLOR\* (Collection-No.: ………)/

Matt film 1\*-/2\*-/3\*-/4\*-fold/low iron glas\*/ICE-H\*

**Cover profile:**

Covering on-site, Sheet flashing with longitudinal connections

Aluminium\*: natural anodised EV1\*/

Powder-covered RAL ..........\*/mill finish\*

Stainless steel\*: 1.4301, grounded K320

Interior cover [mm]:…….……..

Exterior cover [mm]:……………

**Sealant profil:**

Aluminiumprofile with a black silicone sealant to build a second sealing level.

Surface: natural anodised EV1\*/

Powder-covered RAL ..........\*/mill finish\*

**Handrail / edge protection:**

Edge protection:

Stainless-steel U-profile\*, 8 x 24\*/29\*/35\* [mm]

surface: grounded K 320\*/polished\*

Handrail:

 Stainless-steel U-profile\*, 26 x 28\*/34\*/39\* [mm]

Surface:  grounded K 320\*/polished\*

Wood-covered\*: round\*/oval\*/angular\*

Wood type: beech steamed\*/oak\*/europ. maple\*

Surface: stained\*/oiled\*/varnished\*

Stainless steel grooved tube\*, round, 37 x 42\*/43 x 48\*/

52 x 60\* [mm]

Surface: grounded K 320\*/polished\*

**Product:**

GM RAILING®

**Series:**

GM RAILING® DOUBLE

**Producer:** Glas Marte GmbH

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[glasmarte.at](http://www.ausschreiben.de/online/usr/view.php?mode=link&tb=glas_marte&url=http%3A%2F%2Fwww.glasmarte.at)

or equal quality: .......................

**42.1.10 Loading, Dimensions and Planning**

Type statics, static proof of glass and construction compliance with standards, mathematical documentation of glass, substructure and fixation means.

If any particular approvals of a local authority or institution are required, they must be obtained by the client. These must be based on the documentation to be provided by the bidder.

The system is also supplied with full instructions for installation and material specification, spare parts list and maintenance instruction, together with manufacturer declaration of product compliance are provided.

If the test statics or authority requires extraordinary proofs or original-component tests, they must be charged by actual expenditure.

Overall technical design\* UP ……… TP ………

**42.1.20 Horizontal Frameless-Glass Railing**

Full-glass railing according to description

Component: ………………………….

Level: ………………………

See diagram no.: …………………

Railing height (hb) from upper edge of finished floor line …… m

Glas stick-out (h1) from upper edge of profile ………… m

Profile height or substructure height (h2) …………m

Number of corners …………units

Regular length of individual glass construction modules approx.

ca. ……… m bis ……… m

Total ………. Running metres UP……… TP………

**42.1.30 Inclined/raked Frameless-Glass Railing for Stairs and Ramps**

Full-glass railing according to description incl. platforms

Component: ………………………….

Level: ………………………

See diagram no.: …………………

Railing height (hb) from upper edge of finished floor line (step edge) ……… m

Glass stick-out (h1) from upper edge of profil ….… m

Number of corners ……… units

Regular length of individual glass construction modules approx.

ca. .… m bis .… m

(running metre indication corresponds to handrail length; glass formats normally parallelograms, platform length > 3m are calculated horizontally, heigths vertically)

Total: ………. Running metres UP ……… TP ………

**42.1.40 2te Dichtebene**

Aluminiumprofile with a black silicone sealant to build a second sealing level. (both-sided)

Total: ………. Running metres UP ……… TP ………

**42.1.50 Handrail**

Handrail design in-line with specification and description horizontal and inclined bonded with silicone (no dry profiles) to glass edge on site.

Gesamt ……….running metres UP……… TP………

**42.1.51 Glass Stripe Edge Protection**

Instead of the handrail, a 22x6mm profile glass stripe is available with chamfered and fine-ground edges, single lengths < 3m, made of borosilicate glass. This is applied to the upper glass edge in the factory as an edge protection. Based on loading requirements, the glass type and glass thickness must be considered when using this solution.

Total: ………. Running metres UP ……… TP (Requirement)

**42.1.60 Handrail Connections**

Connections made of ground high-grade steel K240

Handrail connection to wall .……. units

90° edge connections .……. units

Longitudinal connections …….. units

End upright …….. units

Connections total UP ……… TP ………

**42.1.70 Fixation tot he Building Structure**

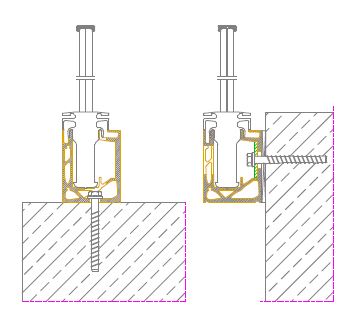
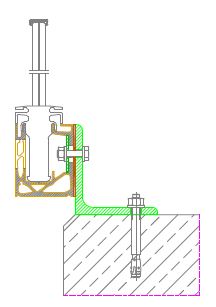
Dowels, screws and fasteners, high-grade steel for exterior use, approved products only.

Total ………. Running metres UP ……… TP ………

**Summe Titel 42.0 GM RAILING® PLAN $ ...............**

**+ 20 % VAT $ ...............**

**Total price, gross $ ...............**

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