FH - 1200

FRAMELESS HANDRAIL SYSTEM

ALUMEG

Integrated Façade Solutions

FRAMELESS HANDRAIL **FH -1200**

Handrails and Barriers

FRAMELESS GLASS BALUSTRADE

ALUMEG FH-1200, frameless glass balustrade with aluminium channel emphasize minimalistic design of glass railing. This versatile aluminium system can be used both internally and externally. Totally hidden in the finishing or exposed with two different designs of cover caps "straight lines and curved design".

ALUMEG FH-1200, sophisticated design using latest structural design software, state of the art architectural design, superior structural integrity, unbeatable quality, installation flexibility, modular design, rapid assembly and tested excellent safety.

System Description

The glass is fixed in position using aluminium trussed wedge and PTFE/PA shims as well as two lines of weather sealant to weather tight the railing. The base is fixed to concrete slab using two components epoxy chemical anchor material and 12mm stainless steel grade 316 thread allowing for consistent performance in un-cracked and cracked concrete of variable strength .

Construction

Varies fabrication and installation methods based on the required handrail strength. The rail could be in pieces spaced according to structural calculation results or in full length for extra strength. The elegantly designed cover caps will cover both railing proposals.

Edge distance must be satisfied according to chemical/ mechanical supplier recommendations and periodic pull out test must be conducted for quality control.

System Drainage

Concealed drainage provision could be provided to drain water. Custom glass finishes and handrail or capping options are available.

Glazing Thickness

Glass should conform the requirements of BS 6262 & ASTM E 1300-3 for thickness and type, in terms of wind resistance, safety and security. Based on handrail allocation the glazing configuration could be as follows:
- 06mm FT + 1.52mm PVB Kuraray + 06mm FT
- 08mm FT + 1.52mm PVB Kuraray + 08mm FT
- 10mm FT + 1.52mm PVB Kuraray + 10mm FT
- 12mm FT + 1.52mm PVB Kuraray + 12mm FT
- 12mm FT + 1.52mm SENTRY Kuraray + 12mm FT

Materials

- **Aluminum Extrusions:** Extruded aluminium profiles using alloy **6063** subject to **T5/T6** thermal treatment, following **UNE EN-573-1** standard. Profiles are extruded following **UNE EN-12020 & 755** standards.
- **Coatings:** Polyester, PVDF and anodized.
- **Chemical Anchor:** Two components epoxy adhesive according to **ETA-13/0397, ESR-3298, F120**
- **Structural Sealant:** Comply with **ASTM C 920**
- **Weather Sealant:** Comply with **ASTM C 920**
- **Glazing Manufacturer:** SAINT GOBAIN, PPG, AGC, GLAVERBEL, PILKINGTON, & GUARDIAN
- **Screws:** Authentic stainless steel grade **A2**
- **Gaskets:** Gaskets are made of EPDM conforming to BS 4255 Part 1.

Technical Performance

The system can achieve the following criteria when manufactured, installed and glazed according to ALUMEG recommended procedures and fabrication manual.

System Classifications

Structurally tested according to the following American standards:
- Horizontal load test on infill area: **1.5 KN/m².** Tested according to **ASTM E 2353-2016.**
- Horizontally distributed load on top rail: **1.5 KN/m.** Tested according to **ASTM E 2353-2016.**
- Horizontally concentrated load on top rail: **1.5 KN.** Tested according to **ASTM E 2353-2016.**
- Impact test, shot bag: **Class A** "highest safety class". Tested according to **ANSI Z97.1- 2015**
- Uniformly distributed load applied to infill: **1.5 KN/m²**
- Wind load resistance pressure of :
  Tested according to Ad Hoc Test "Pressure bag test"
  a) **0.3 ton/m'** which equal **2942 Pa** without top rail.
  b) **0.34 ton/m'** with top rail.

Size limitations

Size limitation of the system depends on varies parameters such as wind load, glazing thickness, concentrated and linear applied load and top rail design and fixation details. **ALUMEG FH-1200**, handrail system dimension limits when manufactured, installed and glazed according to ALUMEG recommended procedures and fabrication manual.
- Handrail dimension limit   (width) up to 4800 mm
- Handrail dimension limit   (height) up to 2600* mm

* Additional stiffener might be required based on project specs.