



# Aluminium Railings Systems

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A Product Brochure

A low-angle photograph of a modern building with a balcony. The balcony has a glass railing system with dark frames. The building's facade is composed of large, light-colored panels and dark, textured sections. The sky is a clear blue with some light clouds.

# FASTEST INSTALLATION, UTMOST CONVENIENCE

GREAT QUALITY – SUPERB PRICING – HIGHLY CUSTOMISABLE – READY MODULES

KALCO offers you all the benefits of a high-grade aluminium railing with quality built-in, plus great looks. Its stylish modern design is stripped down, yet more than strong enough to create safe railings for walkways, balconies and upper levels of atriums and lobbies.

**What sets this system apart?**

Its attractive pricing, its great customisation and prefabrication options and the fact that you can preassemble the components to complete railing sections in your own workshop.

Or, speed things up still further: Order ready-to-install modules, custom made to your specifications. Anchor them to the floor and you are done!

## ALUMINIUM

No other material can match the characteristics of aluminum. Light weight but strong at the same time, resisting to the most severe weather conditions, due to the application of oxide layer that protects the metal from corrosion. This layer is further strengthened by anodisation, providing even greater weather resistance. Furthermore, it is the most environmental friendly metal, as it is fully recyclable and non-toxic.

Aluminium has a unique combination of attractive properties:

Low weight

High strength

Superior malleability

Excellent corrosion resistance

Easy to mill, drill, cut, punch, bend, weld, bond, tape.

Easy machining

Unless stated otherwise in our catalogue, all of Crystalline types are brushed and anodized, make them ideal for both indoor and outdoor use.

## USE OF GLASS PANELS

A wide range of glass panels can be integrated with railing systems, in various thicknesses and characteristics according to specifications. There are two main categories according to EN12543 and EN12600 concerning the thermal treatment of the glass. More specifically, EN12543 specifies the use of tempered and laminated glass with the insert of PVB membranes.

This type of glass panels have the following qualities:

a) In case of breakage, they do not break in large and sharp pieces.

b) Even in case of such breakage, the broken glass pieces remain attached on the PVB surface without putting in danger the safety of nearby persons. The fabrication of these tempered and laminated glass panels is being carried out by thermal treatment of ordinary glass which is afterwards sandwiched together with the PVB membranes to give the various grades and thickness of laminated glass panels.

## PVB FILMS

The common characteristics amongst the two categories mentioned previously, are the use of the PVB interlayer films. The film is of a tough yet pliable material known as polyvinyl butyral (PVB), placed in layers between the glass.

Rollers press the layers together to expel any air pockets. The glass is then heated to 70°C in a pressurized oil bath to permanently bond all layers together. Typically the thickness of each PVB film is 0,38 mm, additional layers of glass and PVB film increase the strength of the material. Applying two interlayers of film, the thickness becomes 0,78 mm, with three at 1,14 mm and so on.

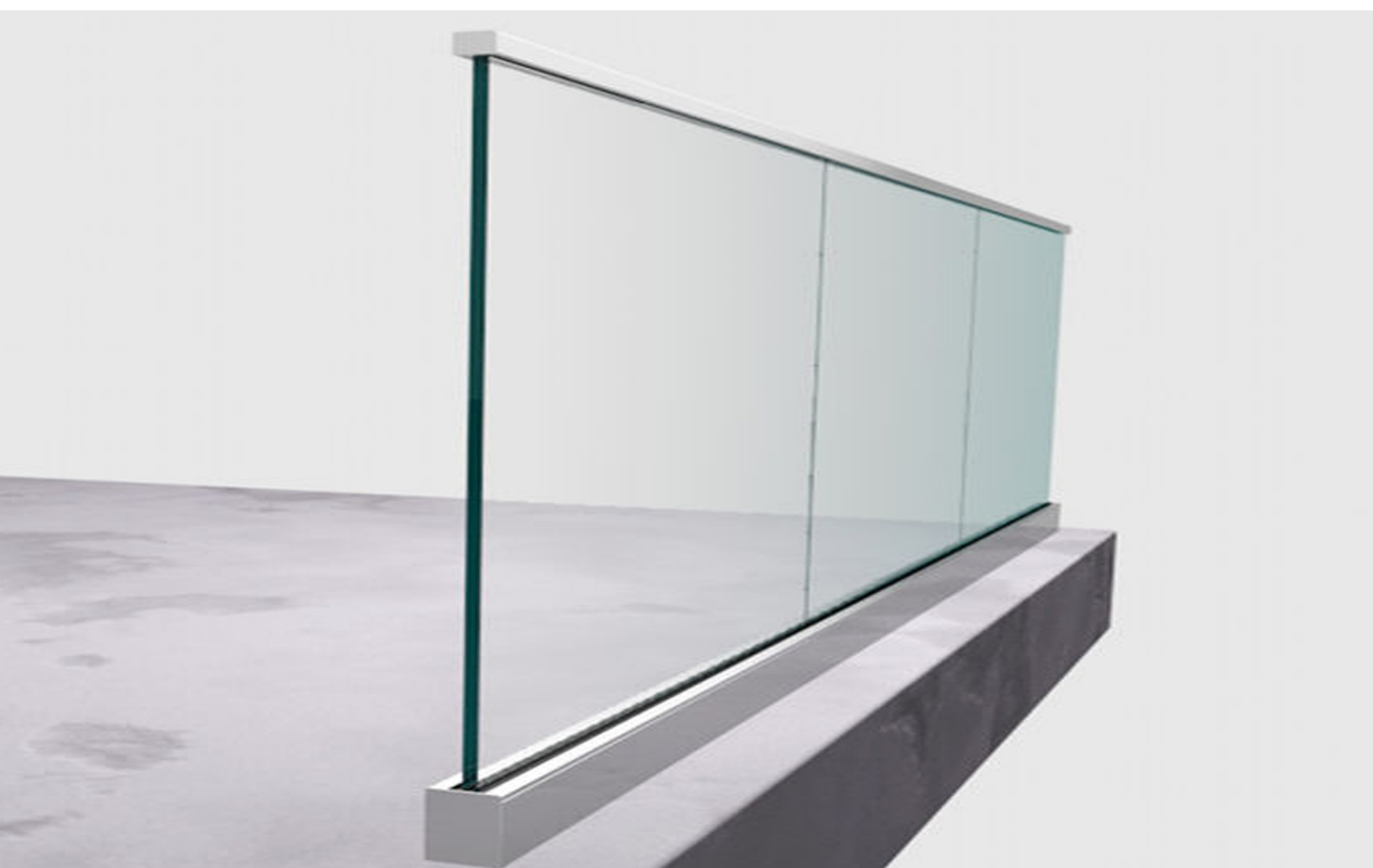
Apart from the different thickness of glass and PVB, a wide range of colored PVB, for example grey, blue green or yellow is available, offering a particular esthetics to modern buildings.

Even in the event that the glass breaks, the two layers are held together by the PVB, allowing the sheet as a whole to bend and absorb the impact. This characteristic is especially important for places where safety or security are paramount.

## SUSTAINABILITY

KALCO makes every effort to reduce any negative environmental impacts resulting from production processes. This means that KALCO is passionately interested in sustainability, by being at the forefront in the development of energy saving, recycling and waste management and sustainable products.





# K-Rail 01

## ON FLOOR SUPPORT SYSTEM WITH 17MM GLASS

The perfect solution for attractive and affordable railings!

Light in weight but safe for residential and light-weight commercial use, this wedge system is designed to be installed on a finished floor, with a laminated glass of thickness of 17.5 mm.

Suitable for the interior as well as exterior balconies, terraces and swimming pools.

Easy and quick to align, the glass panels are secured with gaskets and bolts, supplied by the manufacturer.

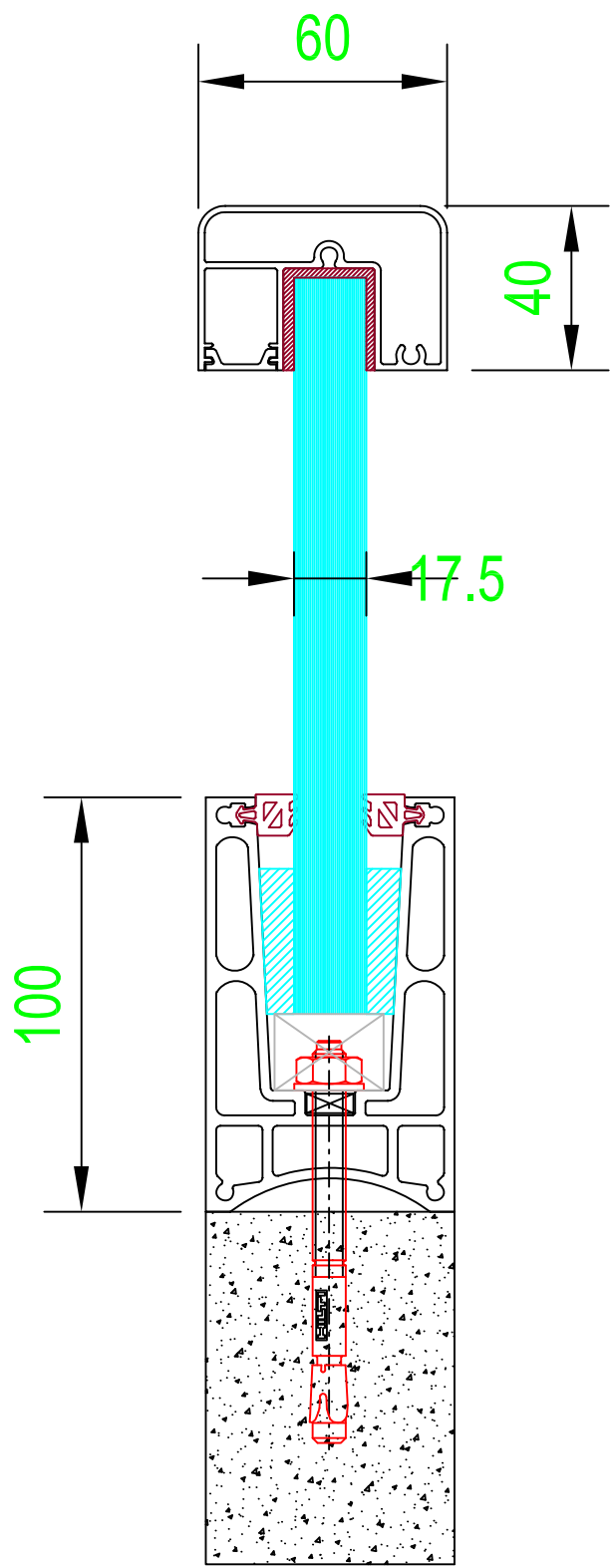
Maximum height at 100 cm is recommended and use of top handrail is essential.

### FEATURES

The perfect choice for private or light commercial use, with impressive simplicity and elegance.

- Attractive slim lines
- Affordable quality for 10 mm glass
- No maintenance required
- Patented system
- Compliance by TRAV specifications
- Quick installation

Balustrade Type	Tempered Glass Panel	Height of balustrade	Static loading category (horizontal loads)	Dynamic Loading Category (Impact Test)
K-Rail 01	17.5	1000 mm (Only with use of rail top)	Residential use	Residential use





# K-Rail 02

## ON FLOOR SUPPORT SYSTEM WITH 13 MM GLASS

The perfect solution for attractive and affordable railings!

Light in weight but safe for residential and light-weight commercial use, this wedge system is designed to be installed on a finished floor, with a laminated glass of thickness of 13.5 mm.

Suitable for the interior as well as exterior balconies, terraces and swimming pools.

Easy and quick to align, the glass panels are secured with gaskets and bolts, supplied by the manufacturer.

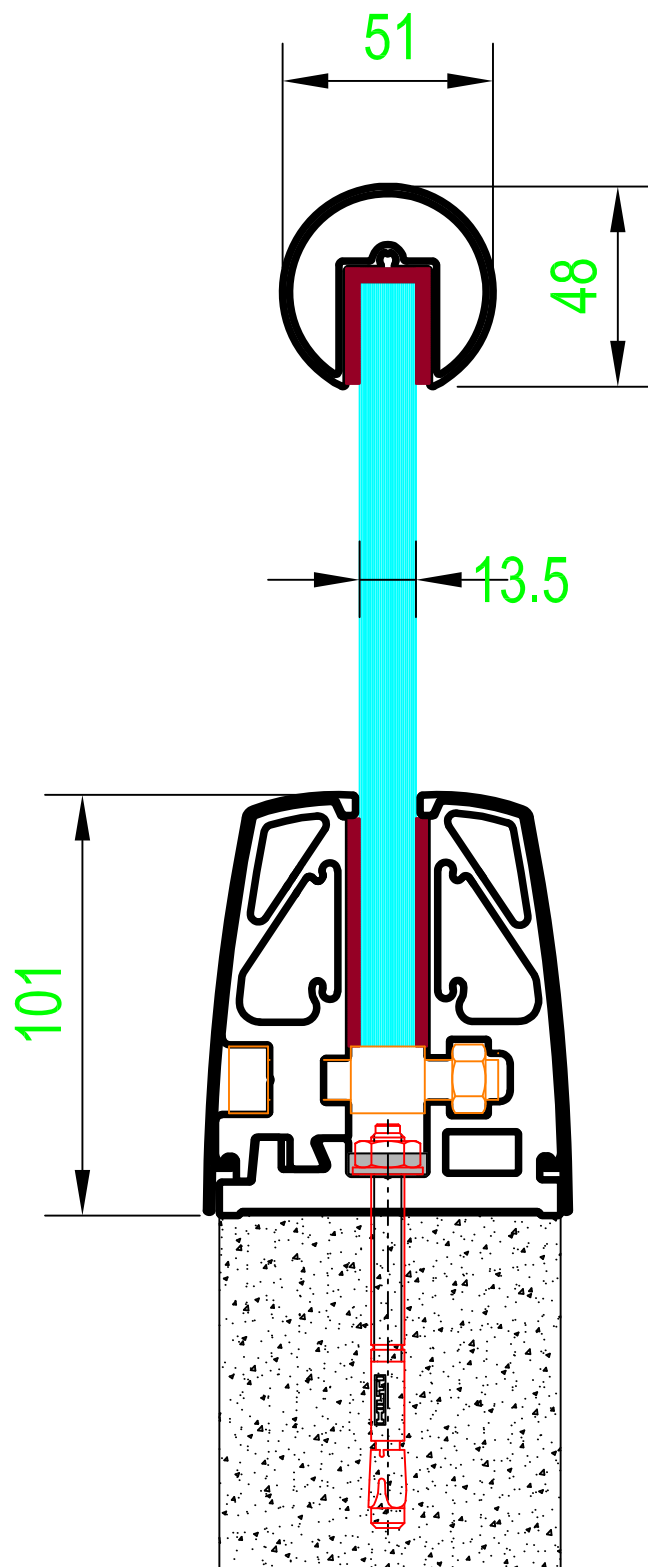
Maximum height at 100 cm is recommended and use of top handrail is essential.

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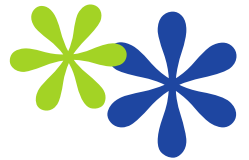
Balustrade Type	Tempered Glass Panel	Height of balustrade	Static loading category (horizontal loads)	Dynamic Loading Category (Impact Test)
K-Rail 02	13.5	1000 mm (Only with use of rail top)	Residential use	Residential use



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