

Eurograte[®] GRP

Fiberglass Handrails



Features and benefits

The handrail system components are manufactured with the pultrusion process (raw materials pulled through a resin bath and pre forming die) and contain up to 70% fiberglass which guarantees remarkable mechanical properties.

The internal composition of continuous directional glass fibers, determines an exceptional resistance to impact and fatigue (permanent deformations do not occur in case of accidental over load).

Lightweight and very easy to install, Eurograte® handrail systems are an economical choice as painting is not required and they are virtually maintenance free.

The concept of the Eurograte® handrail system includes standardized modules with the possibility of including several accessories in order to adapt the system to specific needs and for an easy installation.

- corrosion resistance
- lightweight
- electrical insulation
- maintenance free
- ease of installation
- no grounding is necessary
- mass coloring
- radio transparency

Safety as a priority

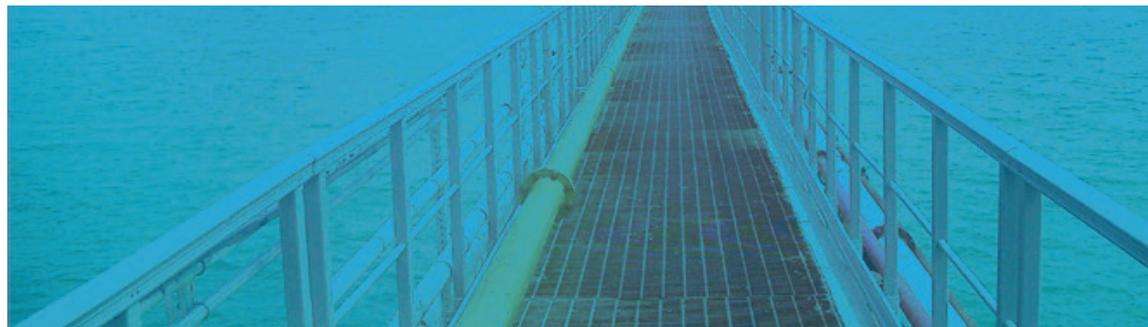
Complies to EN 14122-3 normative

When the height of a possible fall exceeds 500 mm, a guardrail must be installed. The minimum height of the guardrail shall be 1100 mm from the flooring. The guardrail shall include at least one intermediate knee rail. The clear opening between horizontal elements shall not exceed 500 mm. A toe-plate shall be placed 10 mm maximum from the walking level. The distance between the axes of the vertical posts shall be limited to 1500 mm maximum.

Standard resin: Polyester Isophthalic.

Standard colours: Safety yellow or Grey (other colours on demand).

- chemical plants
- desalination
- power
- marine
- naval
- oil & gas
- textile industry
- electrical substations
- pulp & paper
- waste treatment
- telecommunication
- mass transit
- tanneries
- water treatment



Specifications

Concept

The components of the handrail system are mechanically manufactured with the pultrusion process and are composed by continuous glass fibers type Roving and thermosetting resin system.

The composition

The Matrix material is based on an isophthalic polyester resin system which binds with the glass fibers and gives the chemical resistance to the final product. The resin system can be also vinyl ester or acrylic or with fire retardant self extinguishing with low smoke emission without the use of halogen additives. The Eurograte® resin systems are tested and certified according to ASTM or AFNOR normatives.

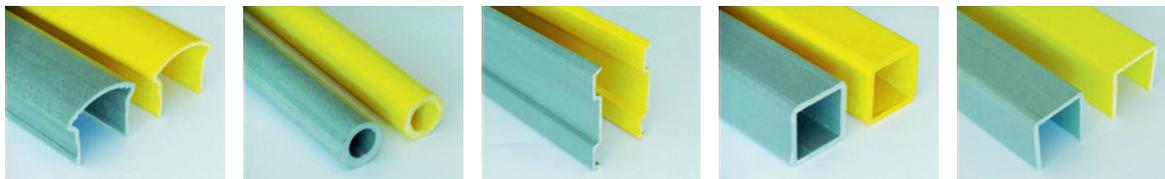
The mechanical reinforcement is achieved using continuous unidirectional fiberglass strands type E Roving.

Additional reinforcements and protection (a distinction of quality by Eurograte®)

Every Eurograte® pultruded profile includes, as a standard in the manufacturing process, the use of continuous multi directional glass mats which increase the transverse mechanical resistance. Furthermore all profiles are manufactured with the implementation of an external synthetic surfacing veil: this increases the chemical protection and avoids fiber blooming as well as adding further protection to possible deterioration caused by UV exposure and environmental attack.

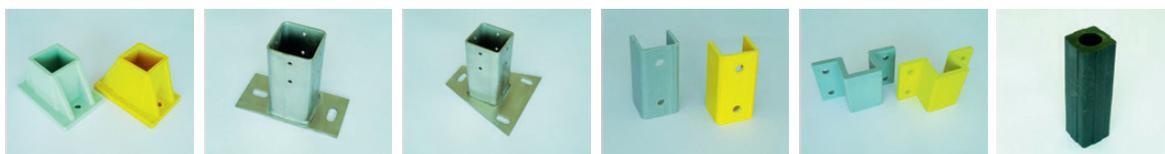


Components



Ergonomic handrail U-07506010 Knee rail T-02606010 Kick plate B-15006010 50 x 50 profile Q-05006010 60 x 50 profile U-60506010

Code	Section	Dimension	Weight	Color	Length	Material
U-07506010	Ergonomic handrail	75x60x5 mm	1,30 kg/m	yellow/grey	Standard 6000 mm	FRP isophthalic
T-02606010	Knee rail	diameter 26x5 mm	0,55 kg/m	yellow/grey	Standard 6000 mm	FRP isophthalic
B-15006010	Ribbed kick plate	150x15x5 mm	1,35 kg/m	yellow/grey	Standard 6000 mm	FRP isophthalic
Q-05006010	Square beam (post)	50x50x5x5 mm	1,60 kg/m	yellow/grey	Standard 6000 mm	FRP isophthalic
U-60506010	"U" handrail	60x50x5 mm	1,30 kg/m	yellow/grey	Standard 6000 mm	FRP isophthalic



FRP fixing base A-BASEI2 S.S. fixing base A-BASE02 S.S. fixing base A-BASE03 FRP fixing base U-60501510 FRP omega base A-BASE011 PA66 reinforce insert A-IN-SER50X50

Code	Section	Dimension	Weight	Color	Material
A-BASEI2	FRP base 2 holes	100x150 sp. 14 mm	0,83 kg	yellow/grey	FRP isophthalic
A-BASE02	Rectangular base 2 holes	70x100 sp. 3 mm	0,80 kg	steel	AISI 304/316
A-BASE03	Trapezoidal base 3 holes	150x150 sp. 3 mm	0,90 kg	steel	AISI 304/316
U-60501510	FRP vertical base	60x50x5 L = 130 mm	0,17 kg	yellow/grey	FRP isophthalic
A-BASE011	Omega base 4 holes	160x100 sp. 10 mm	0,45 kg	yellow/grey	FRP isophthalic
A-IN-SER50X50	Reinforcement insert	40x40 L = 130 mm	0,17 kg	black	PA66



FRP cap
A-TAPPO7PP

FRP cap
A-TAPPO8PP

90° connection
A-CONN0110

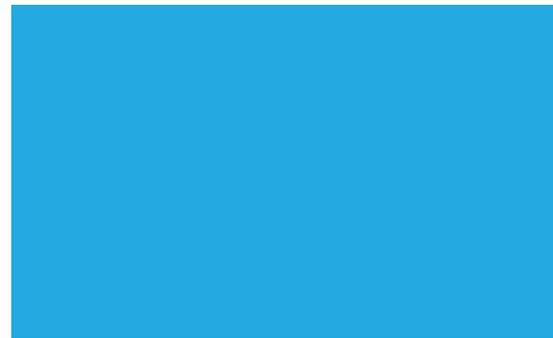
90° connection
A-CONN0210

90° connection
A-CONN0310

Swivel connection
A-CONN01PP

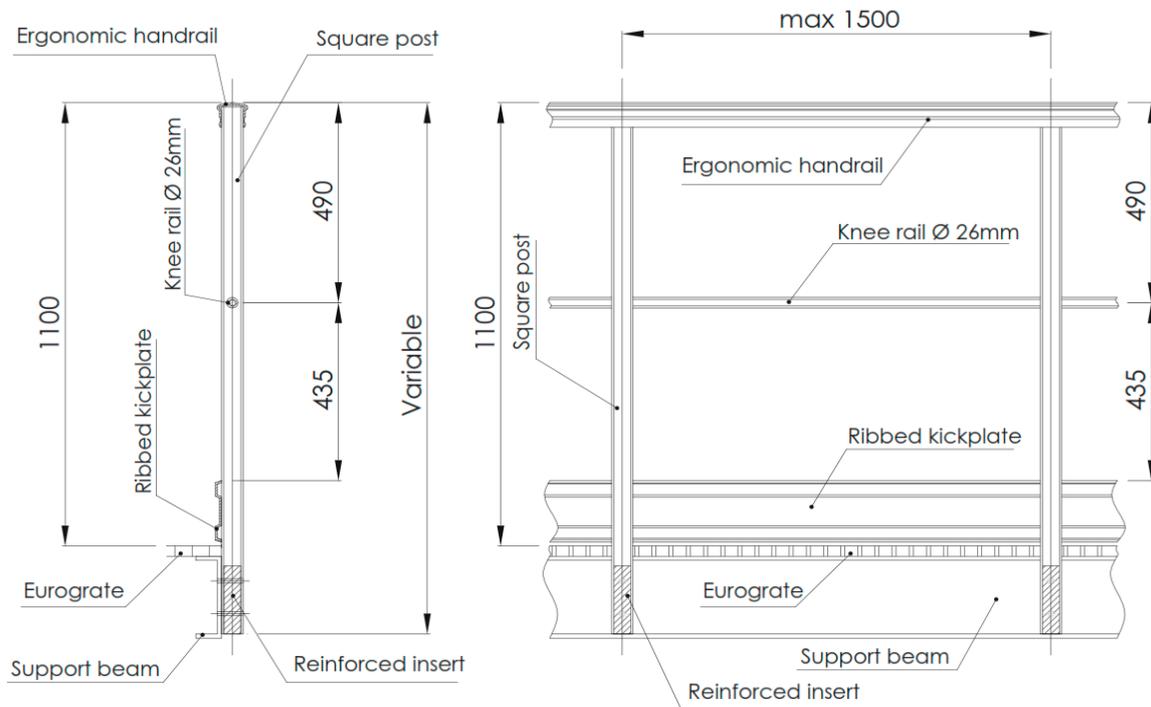
Swivel connection
A-CONN02PP

Code	Section	Application	Dimension	Weight	Color	Material
A-TAPPO7PP	Cap	Ergonomic handrail	70x60 sp. 3 mm	37 g	yellow/grey	PA66
A-TAPPO8PP	Cap	Knee rail	-	5 g	yellow/grey	PA66
A-CONN0110	90° connection	Ergonomic handrail	150x150 mm	0,25 kg	yellow/grey	FRP isophthalic
A-CONN0210	90° connection	Knee rail	140x140 mm	0,20 kg	yellow/grey	FRP isophthalic
A-CONN0310	90° connection	Kick plate	60x60 L = 150 mm	0,25 kg	yellow/grey	FRP isophthalic
A-CONN01PP	Swivel connection	Ergonomic handrail	-	0,15 kg	yellow/grey	PA66
A-CONN02PP	Swivel connection	Knee rail	-	0,21 kg	yellow/grey	PA66

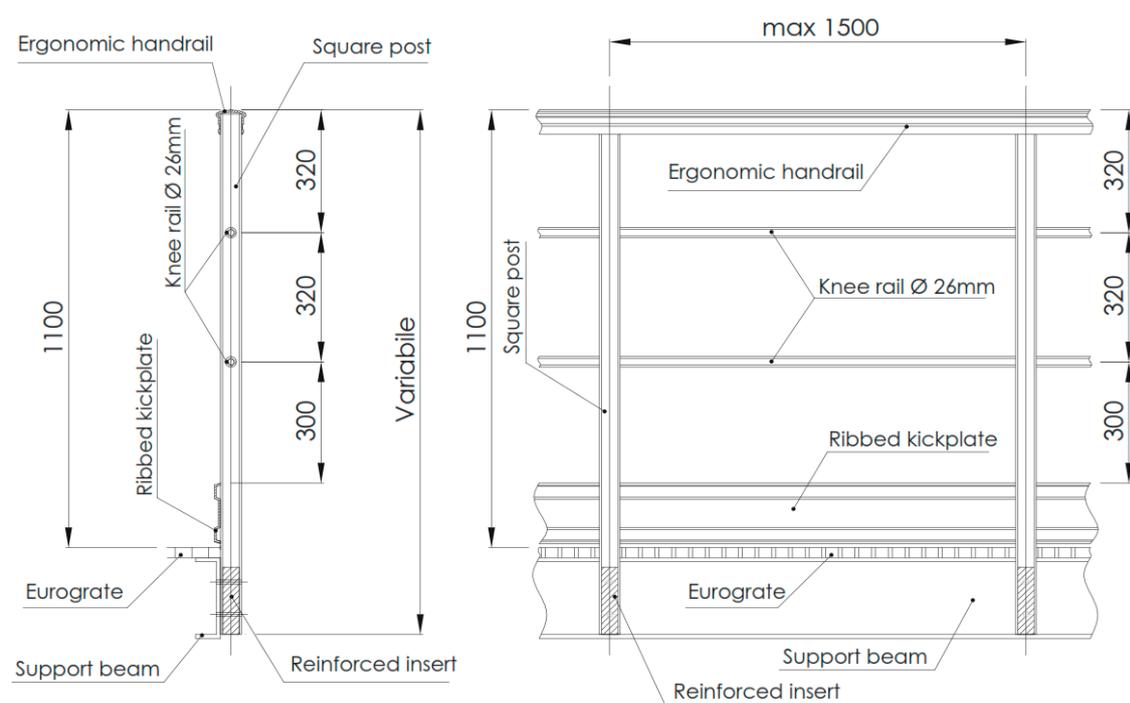


Standard modules

STD 1 Handrail

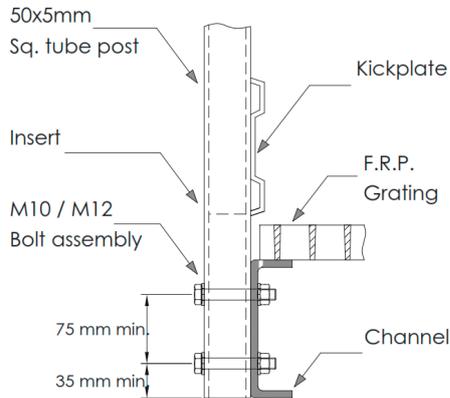


STD 2 Handrail

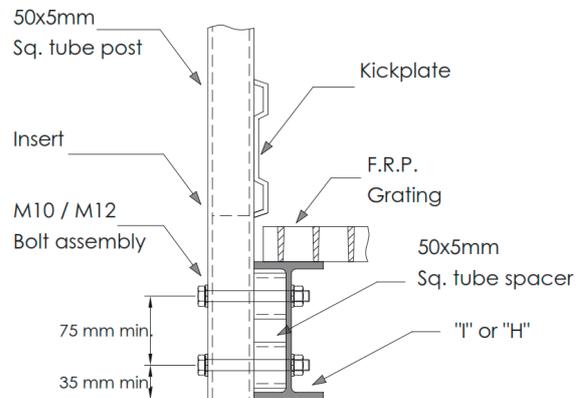


Typical fixing

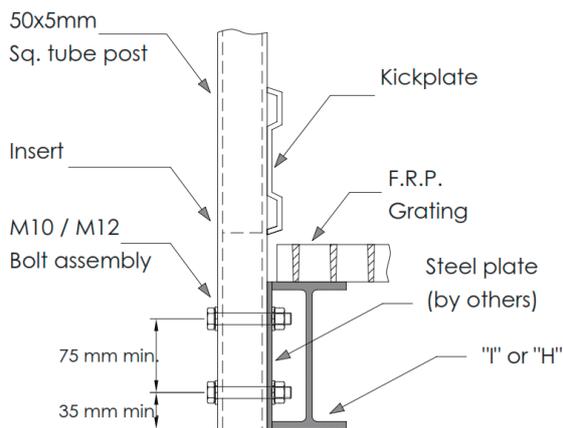
Channel beam fixing



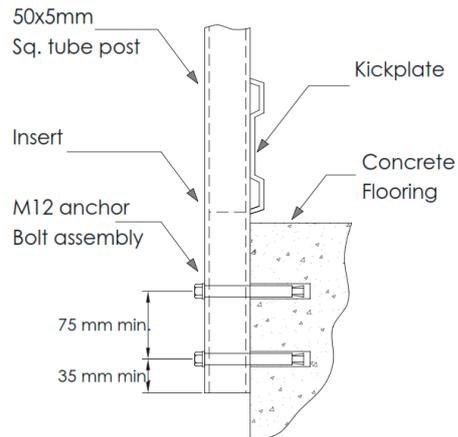
I-beam & wide flange beam fixing



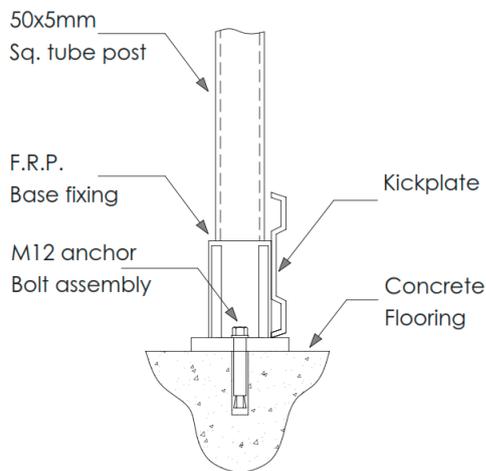
Flat welded plate fixing



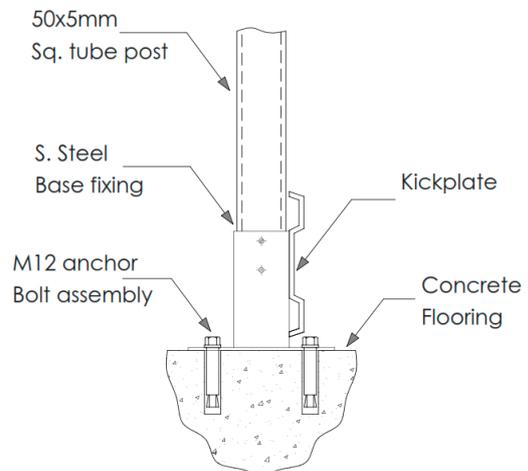
Vertical fixing to concrete



FRP horizontal base fixing

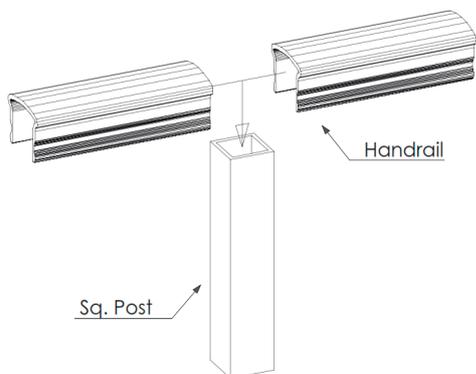


Stainless Steel horizontal base fixing

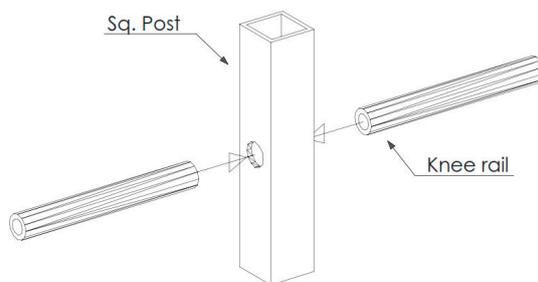


Typical assembly

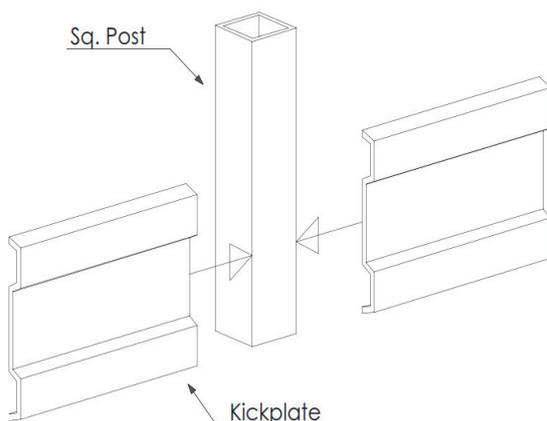
Handrail assembly



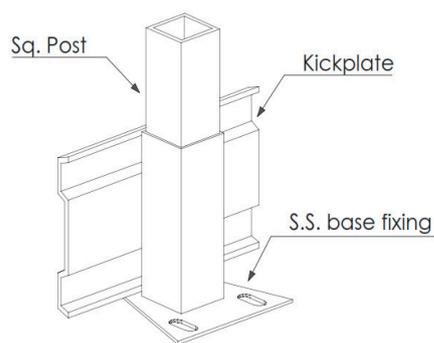
Knee rail assembly



Kick plate assembly

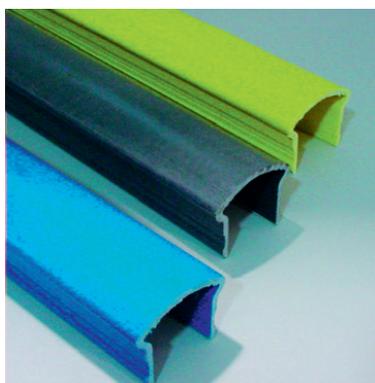


Assembly of kick plate to steel base



Eurograte® Handrails - Options

Custom colors



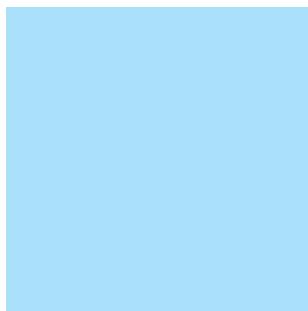
Gates



Special handrails



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