ATA

Tubular Guardrails

For the love of lives™

Tubular Guardrails

The unique and aesthetic design of FMK tubular road restraint systems was introduced to the market in 1987. Today the FMK tubular profile is a preferred choice in many prestigious projects.

The complete family of road restraint systems includes verged road barrier, median central barriers, bridge parapets, pedestrian and bicycle system and solutions for car park barriers.

All systems are manufactured with our special designed and patented tubular profiles to render a simple and stylistic impression with see-trough characteristics.

The closed tubular profiles offer improved safety and high durability and are resistant to snow removal. Compared to traditional systems the FMK profile can withstand small impacts without maintenance. Thanks to the tubular profile with a u-shaped protrusion the speed of installation is best in class.

FMK profile

The FMK profile with the closed section offer higher strength and increased durability as the road restraint systems withstand smaller vehicle impacts and pressure from snow ploughs without deformation.

Closed tubular section – increased safety and durability

The profile consists of a closed tubular 3 mm thick profile; roll-formed and fuse-welded to its elliptical design with the unique u-shaped protrusion. All profiles are manufactured in our factories with special tools and are protected by patents and registered designs. The aesthetic shape of the profile with no protruding bolts or sharp edges creates a stylish design that fits well in the modern traffic environment offering increased safety for vulnerable road users.

The profile – Reinforcement by design

- U-shaped protrusion makes the tubular rail more rigid with increased bending resistance of the profile.
- Three reinforcement pins are welded through the u-shaped protrusion. This production method increases the strength and maintain the shape and straightness of the rail when stressed in the harsh traffic environment.
- Internal joints in the same section with the u-shaped protrusion to eliminate protruding bolt heads and edges.
- The round post shape without sharp edges with a welded clamp make installation fast and easy.

Function

U-shaped holders are welded to post. The rails are clamped to the posts with hexagon bolts. The u-shaped protrusions as well as the clamps are slightly wedge-shaped to increase the strength of the connection between the post and the rail. A washer is placed between the screw and protrusion profile to avoid damages to the galvanized steel. The tubular rail profiles are linked with an internal extension joint and two bolts on each side of the joint. When impacted the rail profiles detaches from the clamp as the post folds backwards. The profiles remain at the right height to redirect the errant vehicle back to the carriageway.

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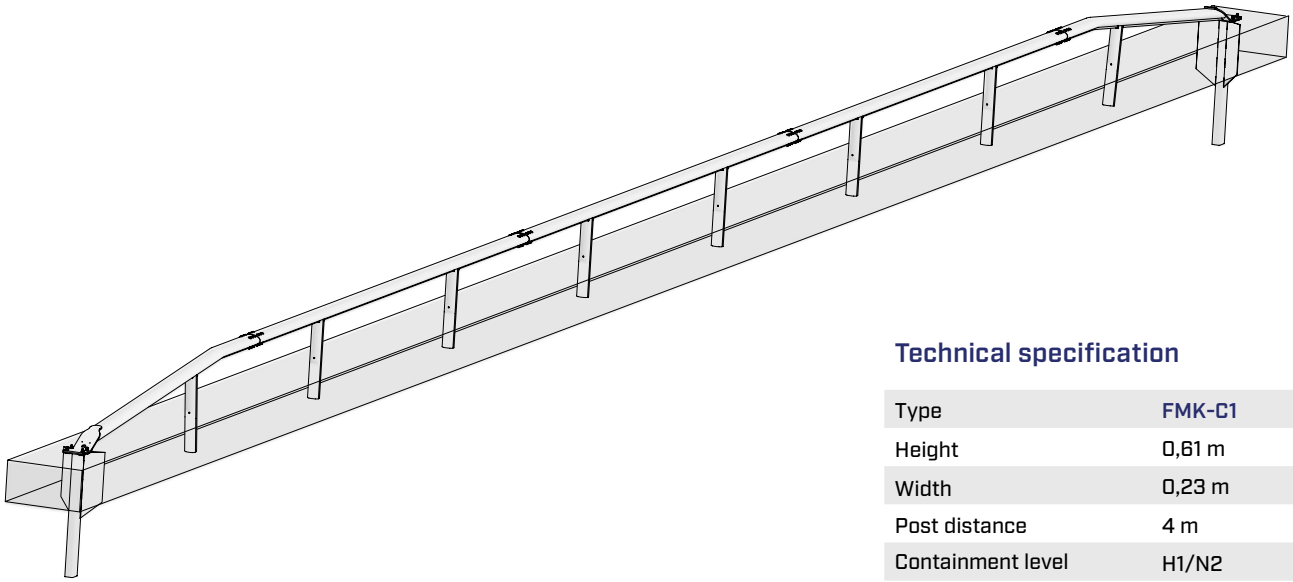
MEDIAN BARRIER MIDGUARD C1

The latest addition to the FMK family is the new median barrier; MidGuard C1.

The objective when designing MidGuard C1 was to create a median barrier in the same unique tubular cross section and ratio as our existing road and bridge barrier systems, made of a closed tubular profile. The barrier is also designed to encroach as little as possible into the road, while its low height maximizes visibility between traffic lanes. The MidGuard C1 section consists of two posts with one 8-meters long horizontal closed profile with a U-shaped protrusion.

The FMK MidGuard C1 is exceptionally easy to install and offers great flexibility since the U-shaped protrusion is clamped to posts. The longitudinal profiles are linked with internal joints. The median barrier can be installed with driven posts, surface mounted posts, in socketed posts or posts casted into concrete.

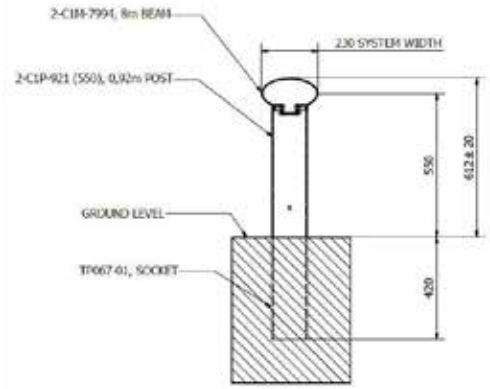


Technical specification

Type	FMK-C1
Height	0,61 m
Width	0,23 m
Post distance	4 m
Containment level	H1/N2
Impact severity level	A
Class of working width	W4
CE-certificate	Yes

For further information, see the installation manual.

Section view



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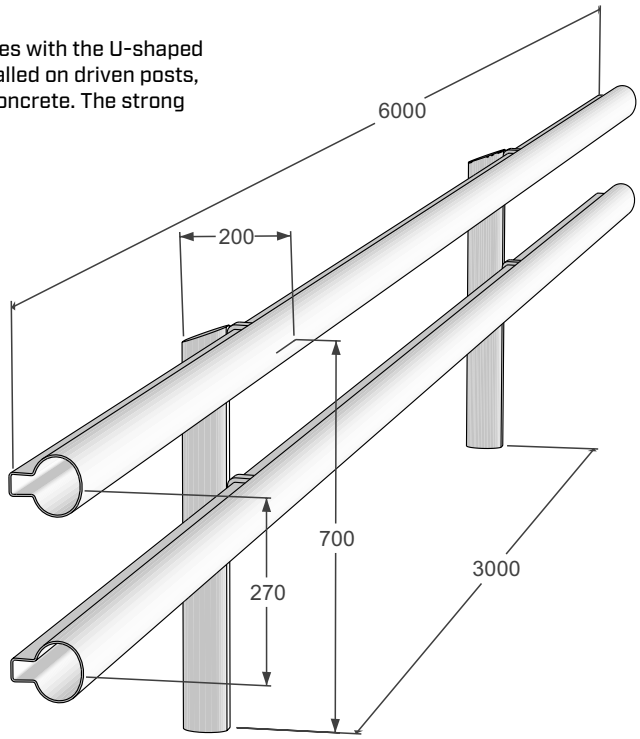
VE-3 TUBULAR GUARDRAIL

The design criteria for the VE-3 tubular guardrail offers both functional and aesthetical advantages in comparison with conventional guardrails. An attractive design maintained over the life cycle of the installed system, high durability, easy installation and increased safety for all road users including motor cyclist.

The system consists of round posts, two longitudinal tubular rail profiles with the U-shaped protrusions and the internal extension joints. The systems can be installed on driven posts, surface mounted posts, in socketed posts or posts cast directly into concrete. The strong closed longitudinal sections can easily be shaped to radii.



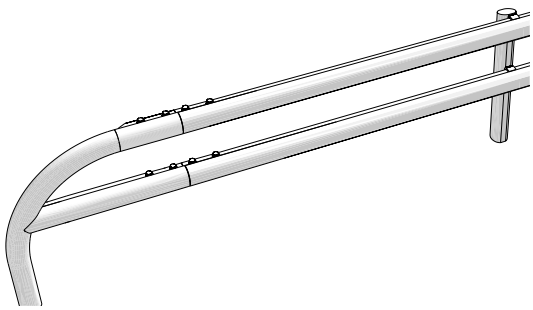
Technical specification

Type	FMK-VE3
Height	0,745 m
Width	0,2 m
Post distance	3 m
Containment level	N2
Impact severity level	A
Class of working width	W3
CE-certificate	Yes

For further information, see the installation manual.

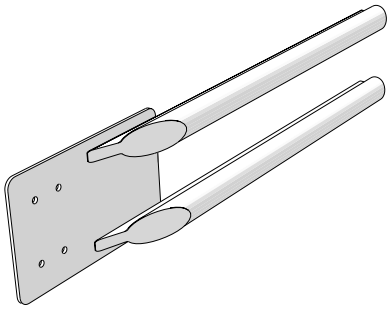
Terminals

Several terminal options available depending on speed limit, traffic direction and ground conditions



Transitions

Several transition options available to other road restraint systems; energy absorbing terminals, concrete barrier and bridge parapet systems.



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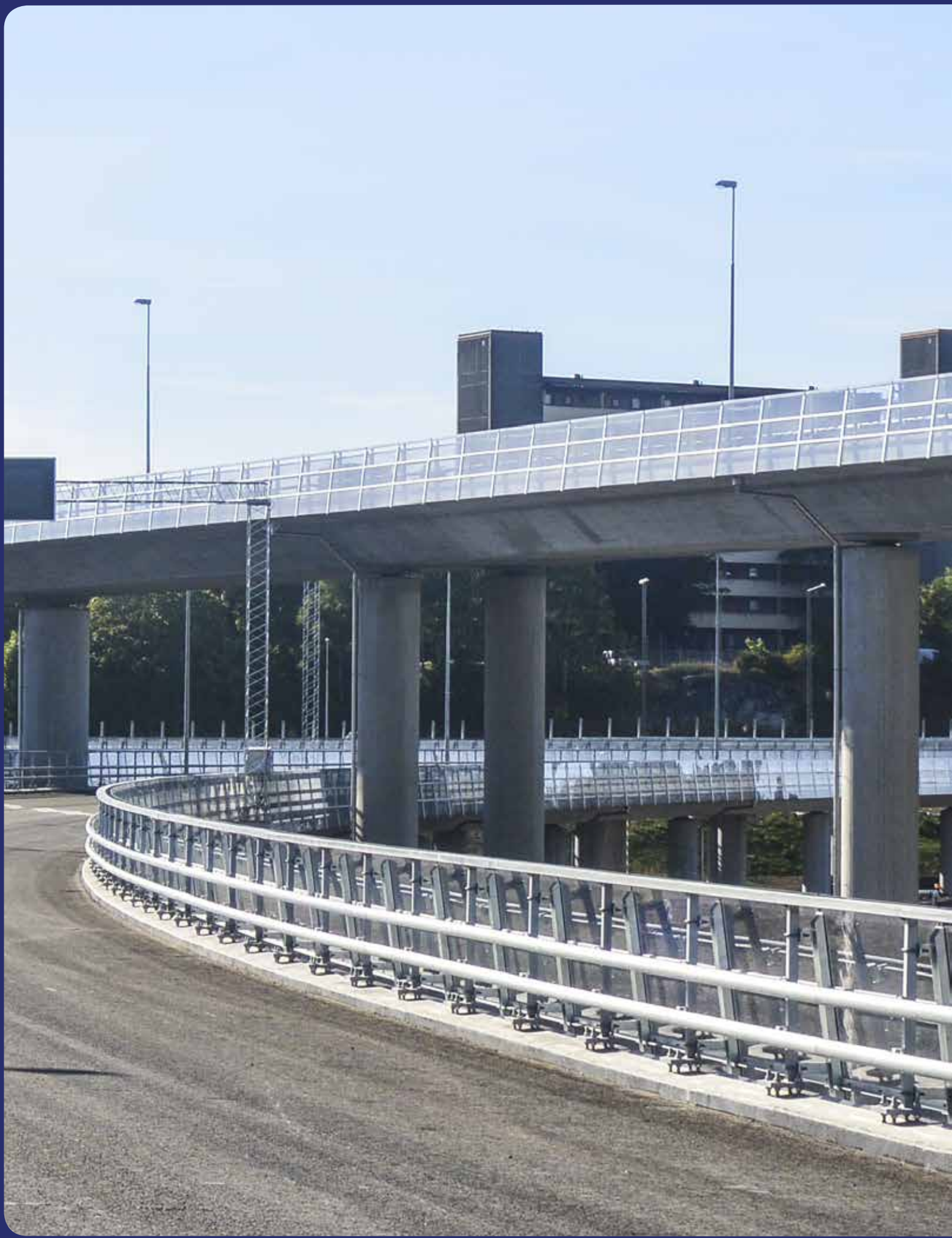
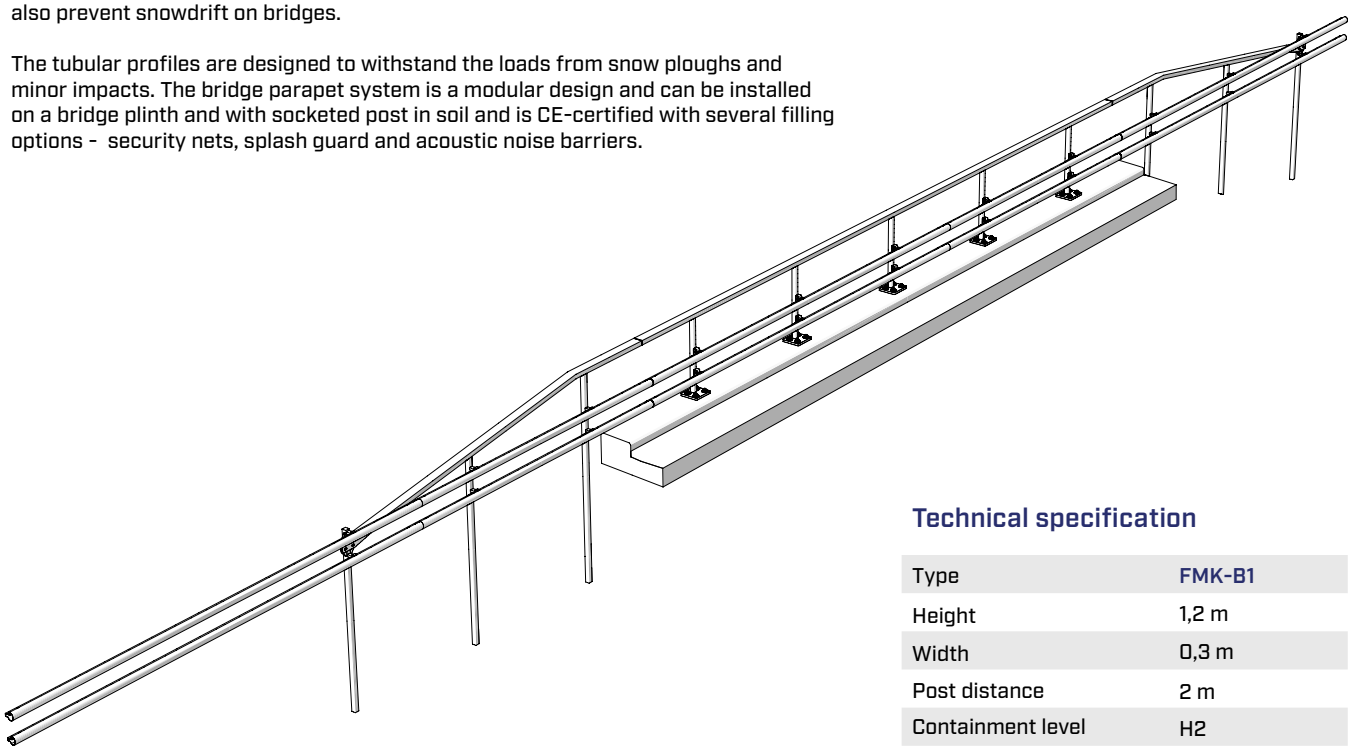


BRIDGE PARAPETS

The bridge parapet system consists of solid square shaped post, a UNP top rail and two longitudinal tubular rails of the characteristic elliptical FMK-profile.

The open design of the guardrail offers increased see-through characteristics that also prevent snowdrift on bridges.

The tubular profiles are designed to withstand the loads from snow ploughs and minor impacts. The bridge parapet system is a modular design and can be installed on a bridge plinth and with socketed post in soil and is CE-certified with several filling options - security nets, splash guard and acoustic noise barriers.

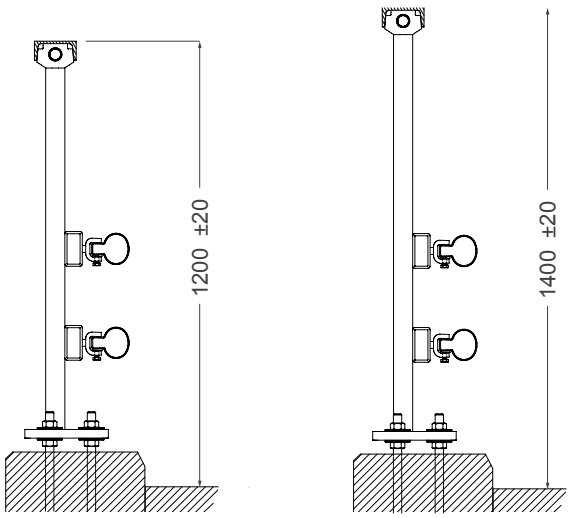


Technical specification

Type	FMK-B1
Height	1,2 m
Width	0,3 m
Post distance	2 m
Containment level	H2
Impact severity level	B
Class of working width	W3
CE-certificate	Yes

For further information, see the installation manual.

CE-certificate options in two heights, on bridge plinth and installed in soil.



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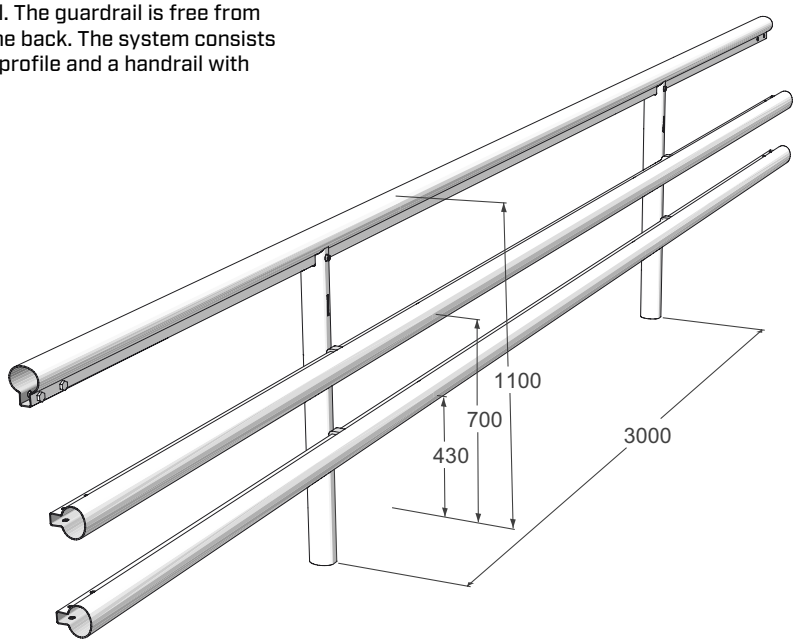
PEDESTRIAN AND BICYCLE GUARDRAILS

Pedestrian guardrails are used to prevent pedestrians and bicyclist to fall into the road or other hazardous objects. These systems are typically installed in urban areas, on bike lanes, around schools and shopping areas.

Pedestrian barrier with two longitudinal profiles

A pedestrian restraint system for sidewalks and cycle tracks used as separation between people and vehicles. The pedestrian barrier has three longitudinal FMK-profiles, of which the upper one also serves as a handrail. The guardrail is free from bolt heads and sharp edges both on traffic face and at the back. The system consists of posts, internal extension joints, two longitudinal FMK-profile and a handrail with the U-shaped protrusion positioned downwards.



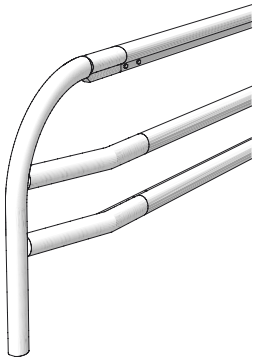
Technical specification

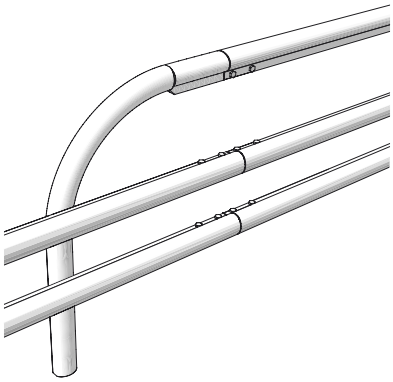
Type	FMK-GCE3-2
Height	1,1 m
Width	0,2 m
Post distance	3 m
Height to centre longitudinal rail	0,7 m (upper)

For further information,
wsee the installation manual.

Terminals

Several terminal options available. The pedestrian barrier can be terminated with a vertical post or used with a transition to a normal low height guard rail for vehicles only.





FMK B1 Bridge Parapet with acoustic noice barrier

Västberga Allé, Stockholm, Sweden

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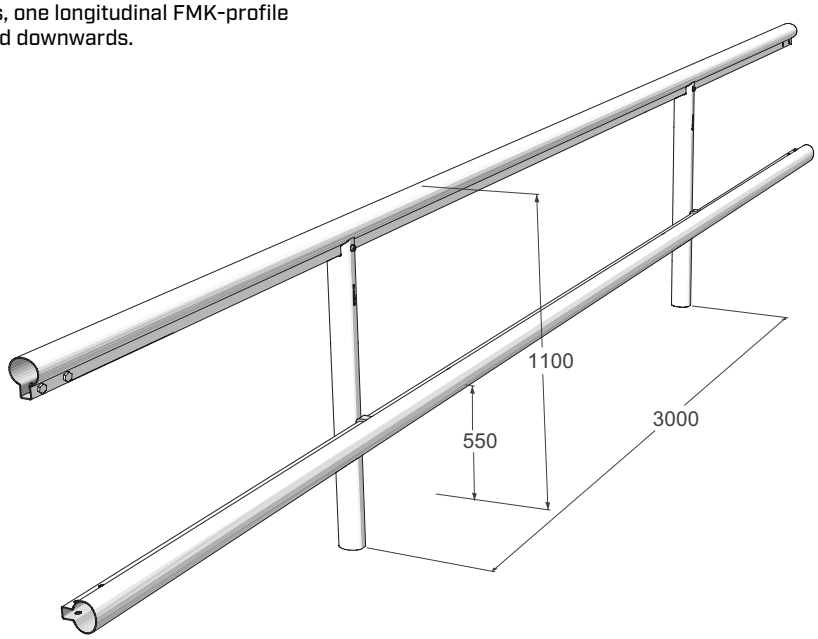
PEDESTRIAN AND BICYCLE GUARDRAILS

Pedestrian barrier with one longitudinal profile

A pedestrian restraint system for sidewalks and cycle tracks used as separation between people and vehicles. This system has two longitudinal FMK- profiles, of which the upper one also serves as a handrail. The guardrail is free both on traffic face and at the back from bolt heads and sharp edges.

The system consists of posts, internal extension joints, one longitudinal FMK-profile and a handrail with the U-shaped protrusion positioned downwards.



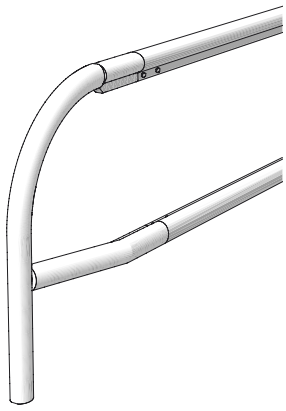
Technical specification

Type	FMK-GCE3-1
Height	1,1 m
Width	0,2 m
Post distance	3 m
Height to centre longitudinal rail	0,55 m

For further information,
see the installation manual.

Terminals

The guardrail can be terminated with a vertical post.



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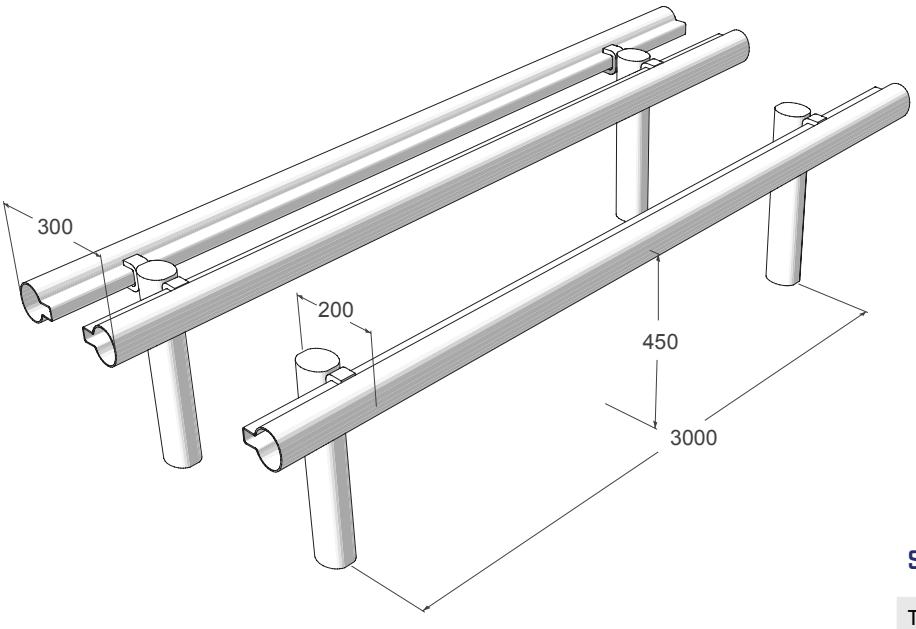
CAR PARK BARRIERS

Tubular profiles can be utilized to provide a turnkey solution for safety around car parks and industrial areas with an excellent aptitude for maintaining the architectural aspirations of your car park, building or surrounding landscape. Modular design to provide several design options, both single- and double-sided systems available.



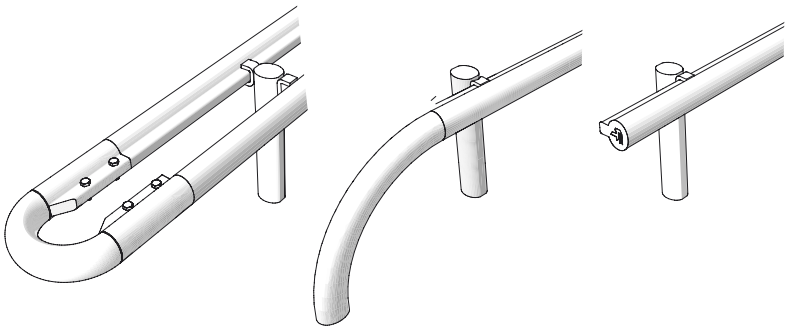
Specifications

Type	FMK-PE3	FMK-PD3
Height	0,5 m	0,5 m
Width	0,2 m	0,3 m
Post distance	3 m	3 m

For further information,
see the installation manual.

Terminals

Several terminal options available, U-bend, vertical post or end cap.



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CAR PARK BARRIERS

Posts

2-450-1 2-450-2 2-700-10 2-700-20

Tubular post options. Short post for a single longitudinal profile, single and double-sided system. Tall post for two longitudinal profiles, single and double-sided systems.

2-450-11 2-450-21 2-700-11 2-700-21

Solid square shaped post. Short post for a single longitudinal profile, single and double-sided system. Tall post for two longitudinal profiles, single and double-sided systems.

Terminals

entrance 2-450-30 entrance 2-700-30

Start element. Vertical terminal for one or two profiles.

exit 2-450-31 exit 2-70031

End element. Vertical terminal for one or two profiles.

1-300 1-300-1 2-6002

U-bend, vertical or horizontal section. End cap.

Bends

1-301 1-302

90-degree angle elements. Post on inside or post on outside.

Wall brackets

1-011 1-012 1-013 1-014

Bracket options for wall mounting, For one or two profiles, with and without spacer.

1-015 1-016 1-017 1-018

Bracket options for terminate to wall. Attachment for one or two profiles, with and without spacer

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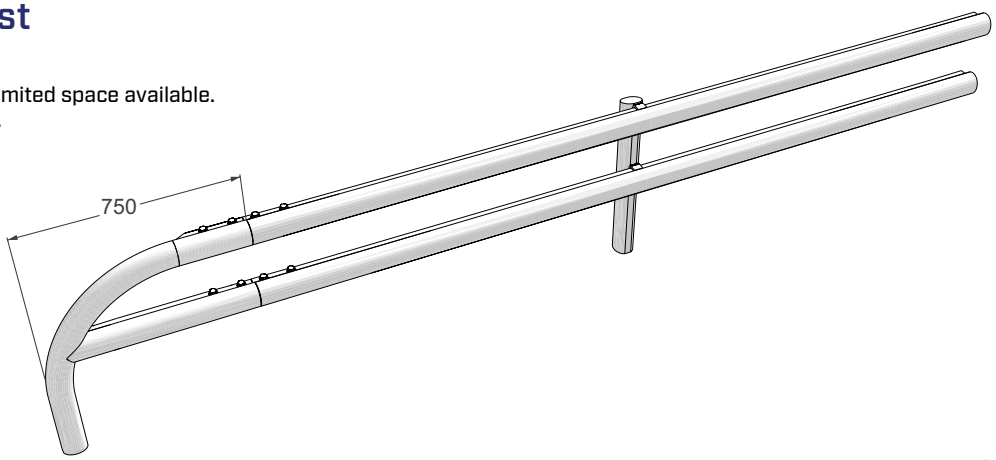
TERMINALS –TUBULAR GUARDRAIL

Several terminal options available depending on speed limit, traffic direction and ground conditions.

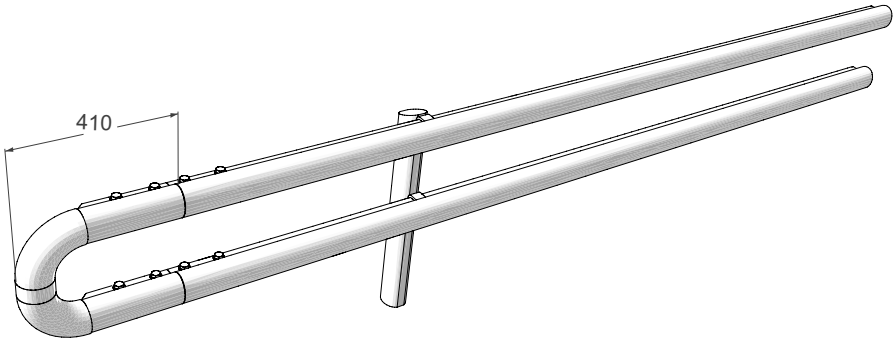
Vertical terminal post

Terminal for low speed areas with limited space available.
Vertical or angled options available.



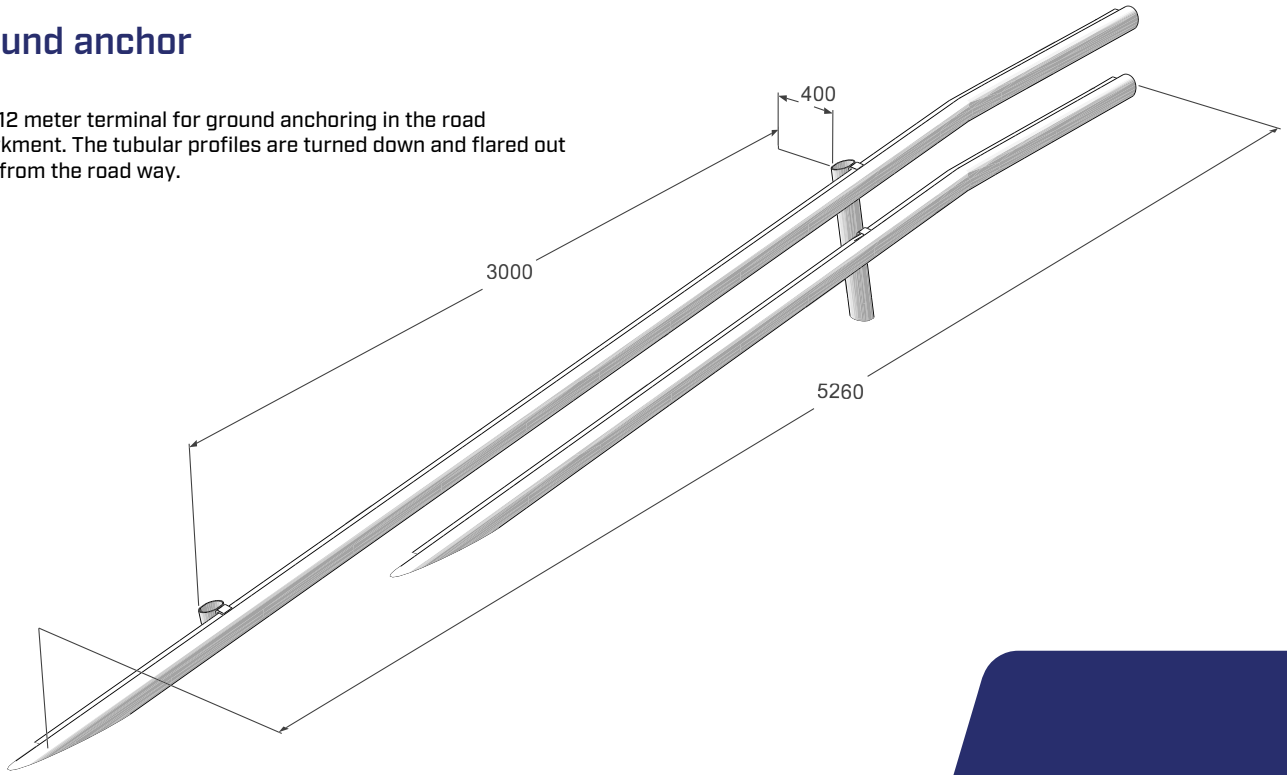
U-bend

Only for Off-Road and car park installations.



Ground anchor

6 and 12 meter terminal for ground anchoring in the road embarkment. The tubular profiles are turned down and flared out 0,4 m from the road way.



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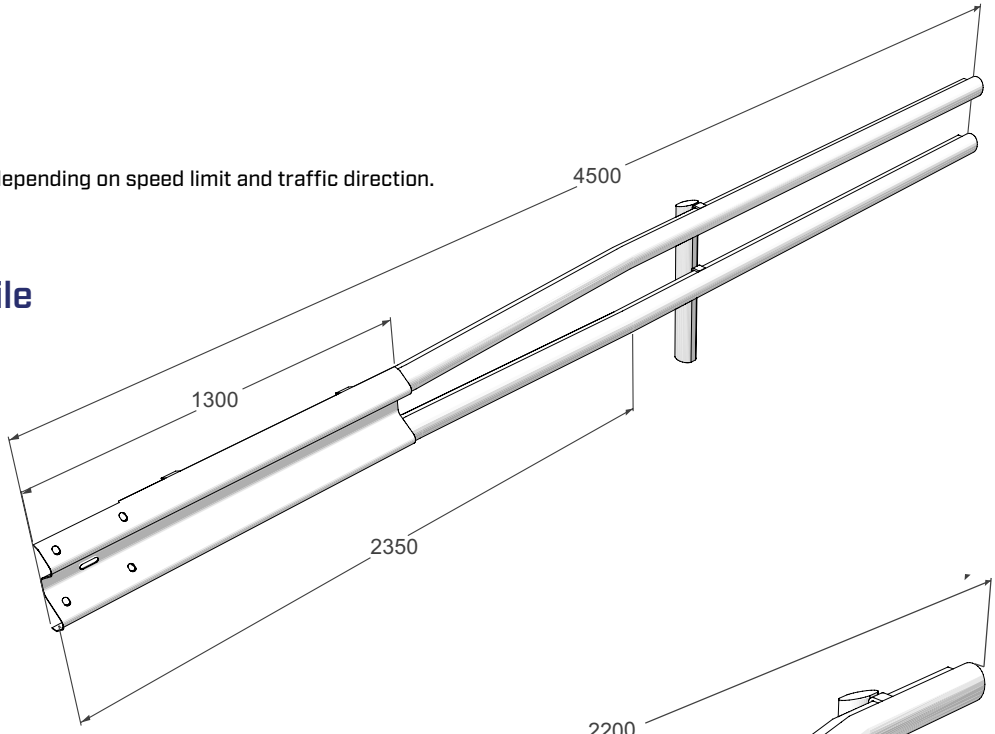
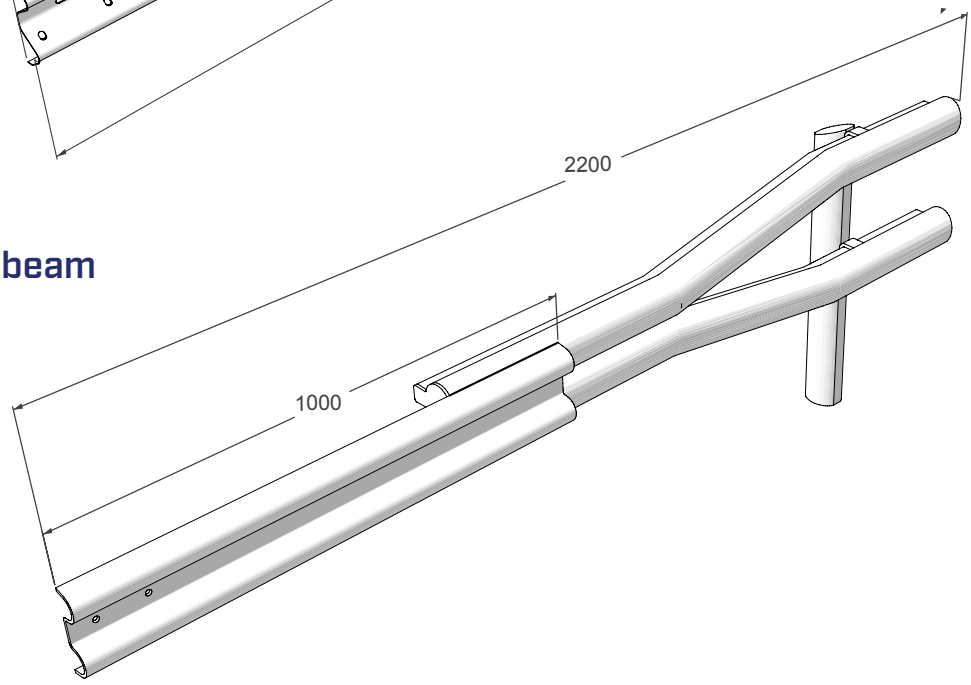
TRANSITIONS

Several transition options available depending on speed limit and traffic direction.

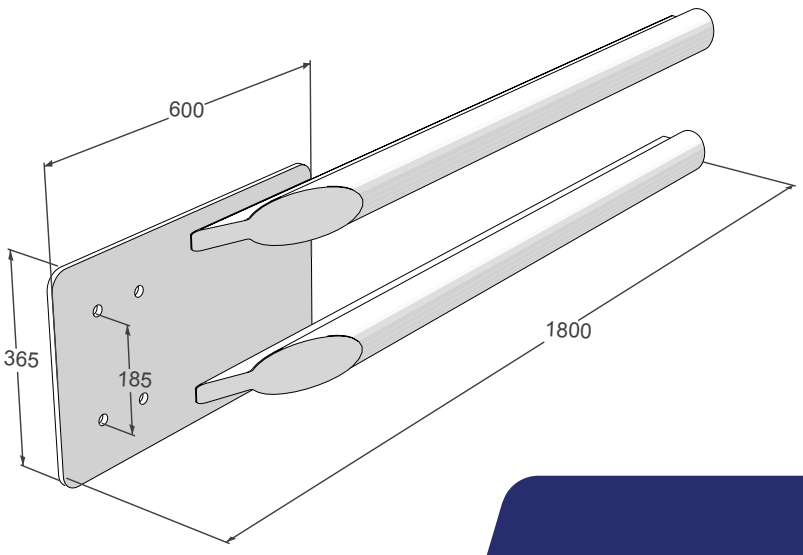
Transition to W-profile



Transition to Kohlswa beam



Connection plate



FOR THE LOVE OF LIVES™

Sweden has over 140,000 km of roads that are constantly being developed and modernized. At ATA, we are road safety experts who provide comprehensive solutions to clients who all have the same goal – saving lives.

Whether your project is to install a traffic sign in a residential area, design and execute a traffic management plan or to build a new highway, we've got the solutions. Together, we work to improve safety and create safer environments – **For the love of lives™**

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For the love of lives™

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