TRANSLATION

(1) Type Examination Certificate

(2) No. of the Type Examination Certificate: **ZP/B175/20** replaces ZP/B007/19

(3) Product: **Edge protection systems class A and B**
Type: TigaRAIL
Type: TigaRAIL SHORT
Type: TigaRAIL PLUS
Type: TigaRAIL DOOR
Type: TigaRAIL SKYLIGHT
Type: TigaRAIL SAFETY PATH
Type: TigaRAIL WALL

(4) Manufacturer: **TigaTech GmbH**

(5) Address: **Derndorferberg 2, 4501 Neuhofen/Krems, AUSTRIA**

(6) The design of this product and any acceptable variation thereto are specified in the schedule to this Type Examination Certificate.

(7) The certification body of DEKRA Testing and Certification GmbH certifies that this product complies with the fundamental requirements of the standard listed under item 8 below. The examination and test results are set out in the report PB 20-229.

(8) The requirements of the standard are assured by compliance with

DIN EN 13374:2019

(9) This Type Examination Certificate relates only to the design, examination and tests of the specified product in accordance to the standard list. Further requirements of the Directive apply to the manufacturing process and supply of this personal protective equipment. These are not covered by this certificate.

(10) This Type Test Certificate is valid until 2025-10-01.

DEKRA Testing and Certification GmbH
Bochum, 2020-10-02

signed: Kilisch
Managing director

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

Managing director

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification Body: Dinnendahlstraße 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, DTC-Certification-Body@dekra.com

(11) Appendix to

(12) **Type Examination Certificate**
ZP/B175/20

(13) 13.1 Subject and Type
Edge protection systems class A and B
Type: TigaRAIL, Type: TigaRAIL SHORT, Type: TigaRAIL PLUS, Type: TigaRAIL DOOR, Type: TigaRAIL SKYLIGHT, Type: TigaRAIL SAFETY PATH, Type: TigaRAIL WALL

13.2 Description
Edge protection systems class A and B (Table 1) are used for temporary protection of people against falling. Edge protection systems are intended for use on construction equipment with sufficient load-bearing capacity and roof pitch of max. 10° for class A and max. 30° for class B systems. The systems consist of tubes/poles, handrails, toe boards and other aluminium and steel components. Depending on the system type, the tubes/poles are height-adjustable and inclinable. To extend the systems, the bars can be connected to each other by inserting them into each other and with self-tapping screws. Specially shaped joints at the corners of the systems are used to fix the bars.

Table 1: Edge protection systems review

<table>
<tr><th>Typ</th><th>Adjustable corner bracket angle to the horizontal</th><th>Ballasting/ fastening</th><th>Max. height of the handrail</th><th>Max. distance between the tubes/poles</th></tr>
<tr><td>TigaRAIL</td><td rowspan="4">60° – 90°</td><td rowspan="4">Kunststoff- oder Betongewichte</td><td rowspan="2">1160 mm</td><td rowspan="3">2800 mm</td></tr>
<tr><td>TigaRAIL SHORT</td></tr>
<tr><td>TigaRAIL PLUS</td><td rowspan="2">1360 mm</td></tr>
<tr><td>TigaRAIL DOOR</td><td>850 mm</td></tr>
<tr><td>TigaRAIL SKYLIGHT</td><td rowspan="3">90°</td><td>Betongewichte</td><td>1100 mm</td><td rowspan="3">2800 mm</td></tr>
<tr><td>TigaRAIL SAFETY PATH</td><td>Betonplatten / Betongewichte</td><td rowspan="2">1160 mm</td></tr>
<tr><td>TigaRAIL WALL</td><td>Befestigung an der Attika / Wand</td></tr>
</table>

Type: TigaRAIL

Edge protection systems, type: TigaRAIL (Figure 1), can be mounted on flat roofs with an attic and on flat roofs without an attic. If the height of the attic is less than 150 mm or there is no attic, a toe board is placed on the system. The system's tubes/poles are height-adjustable and can be placed in the range of angles from 60° to 90° to the horizontal (Table 2). At the end of the system cantilever, 22 kg plastic or 25 kg concrete weights are placed and fastened with a screw. The required system ballasting is referred to in Table 3.

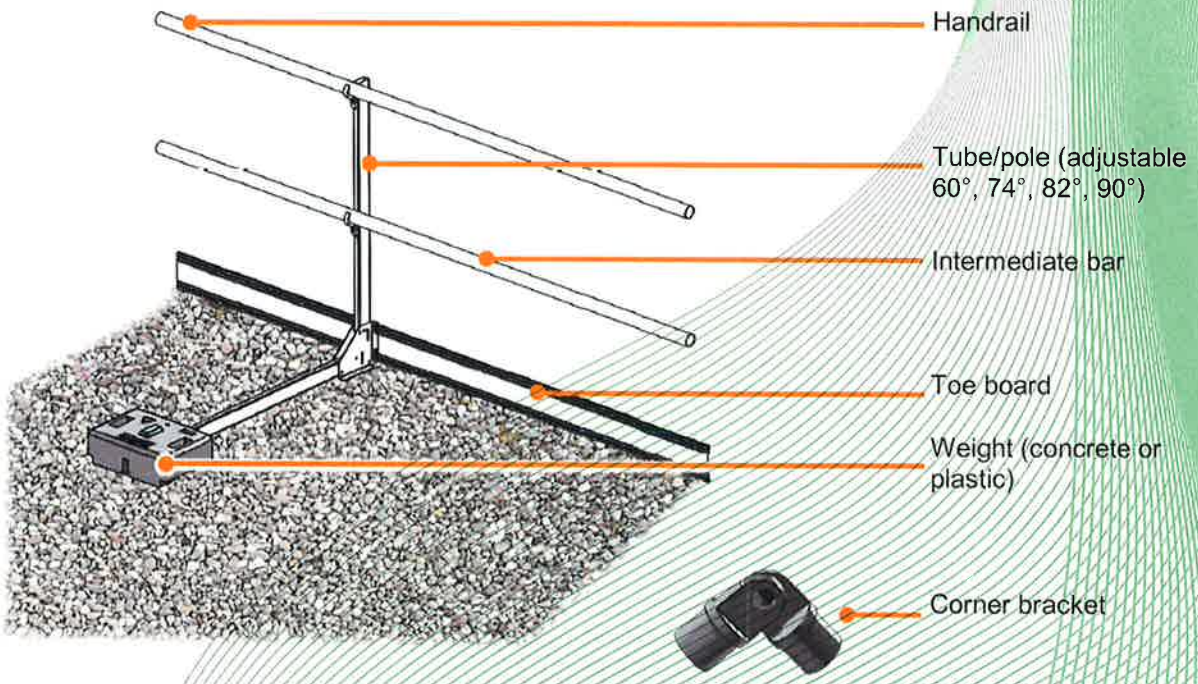
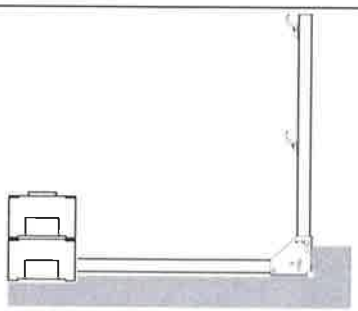
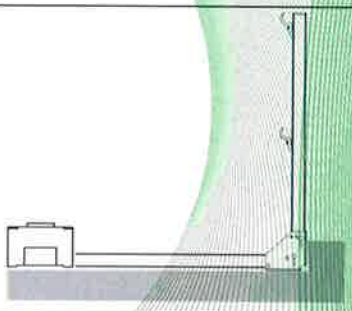
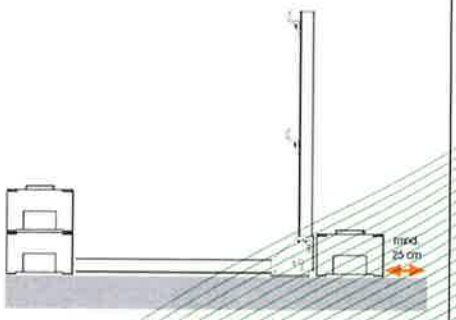
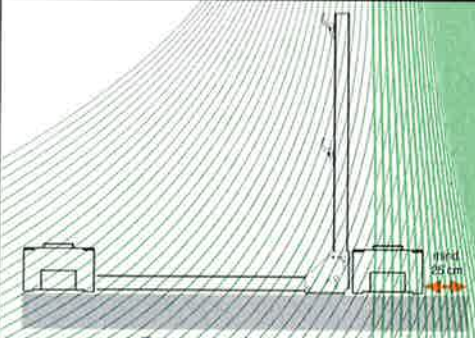
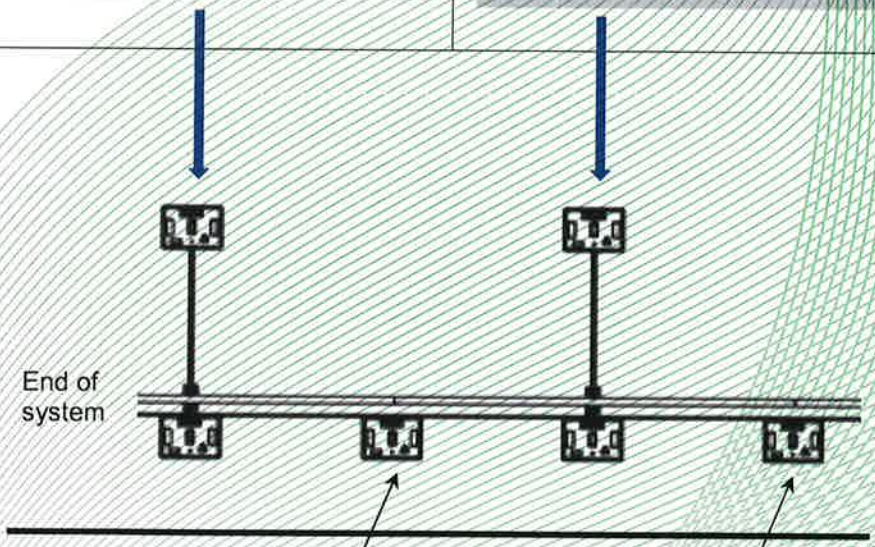


Figure 1: Edge protection system, type: TigaRAIL

Table 2: Edge protection system dimensions review, type: TigaRAIL

Type	TigaRAIL
Diameter of the handrail and intermediate bar	Ø48 mm, t: 2,2 mm
Cross section tube/pole and cantilever	60,7 x 25,4 mm
Cross section toe board	140,0 x 13,4 mm
Handrail height	1110 – 1160 mm (90°) / 1133 mm (82°) / 1097 mm (74°) / 1000 mm (60°)
Max. distance between handrail and intermediate bar	462 mm
Max. distance between intermediate bar – toe board, i. e. intermediate bar - attic	452 mm
Cantilever length	1350 mm
Max. distance between tubes/poles	2800 mm

Table 3: Edge protection system ballasting, type: TigaRAIL

Type	Wall end and free end	Movable area
TigaRAIL (with attic) **Plastic weights 22 kg**		
TigaRail (no attic) **Plastic weights 22 kg**	  	

In addition to the weight in front of each tube/pole, there is a weight in front of the toe boards in the middle, between the tubes/poles.

The minimum distance between the front edge of the weight and the edge of the slope is 250 mm.

Type	Wall end and free end	Movable area
TigaRAIL (with attic) **Concrete weights 25 kg**	The weights on the cantilever can be placed either next to each other or one in front the other or	
TigaRail (no attic) **Concrete weights 25 kg**	The weights on the cantilever can be placed either next to each other or one in front the other or min. 25 cm End of system In addition to the weight in front of each tube/pole, there is a weight in front of the toe boards in the middle, between the tubes/poles. **The minimum distance between the front edge of the weight and the edge of the slope is 250 mm.**	min. 25 cm

Type: TigaRAIL SHORT (short version)

Edge protection systems, type: TigaRAIL SHORT (Figure 2), can be mounted on flat roofs with an attic and on flat roofs without an attic. If the height of the attic is less than 150 mm or there is no attic, a toe board is placed on the system. The system tubes/poles are height-adjustable and can be placed in the range of angles from 60° to 90° to the horizontal (Table 4). At the end of the system cantilever, 22 kg plastic or 25 kg concrete weights are placed and fastened with a screw. The required system ballasting is referred to in Table 5.

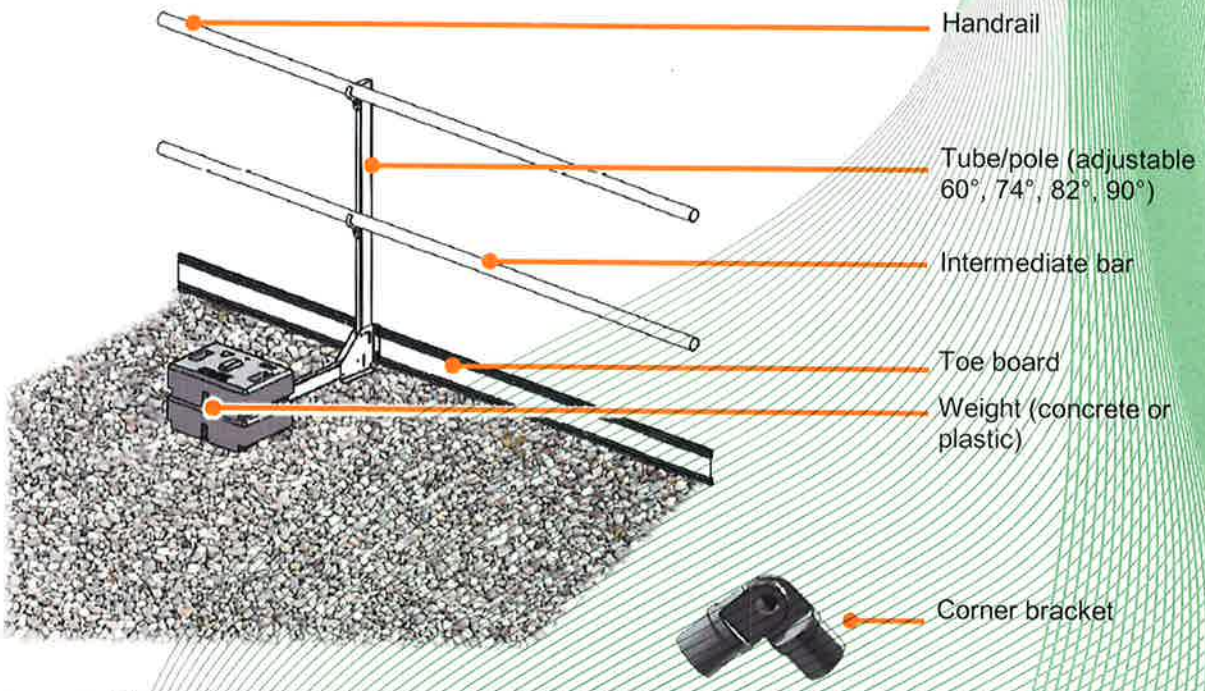
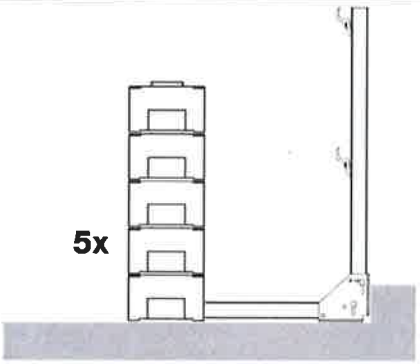
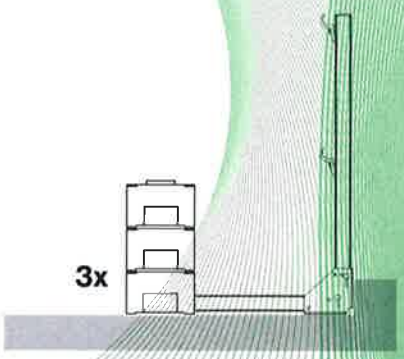
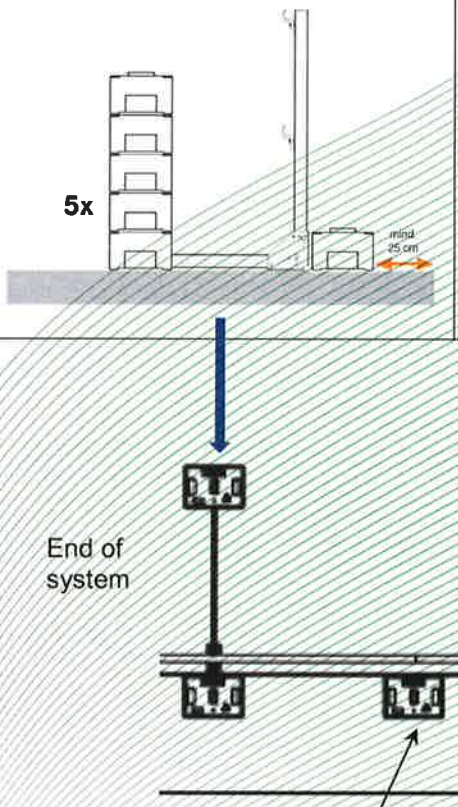
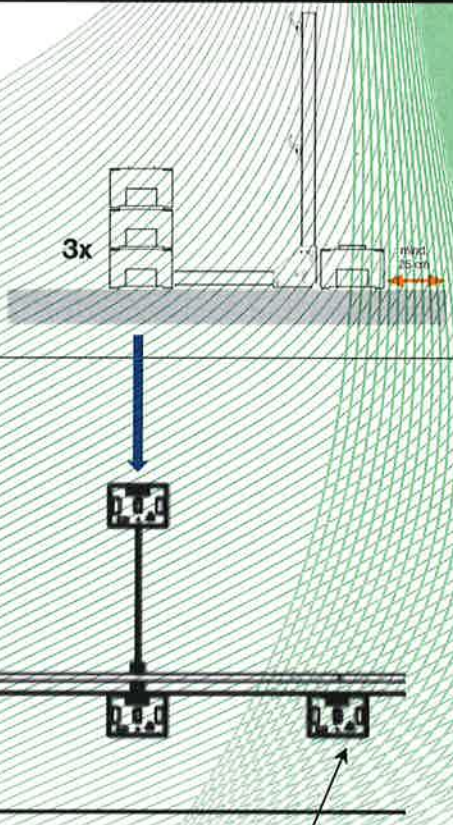


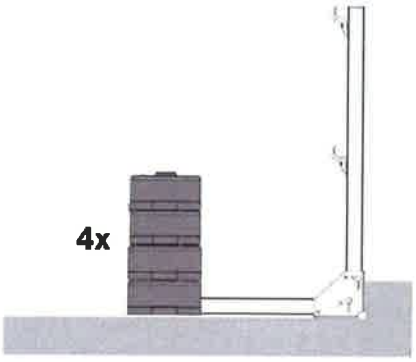
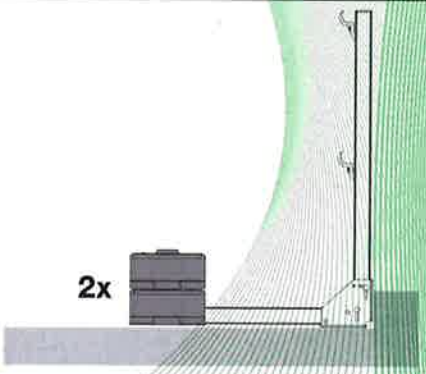
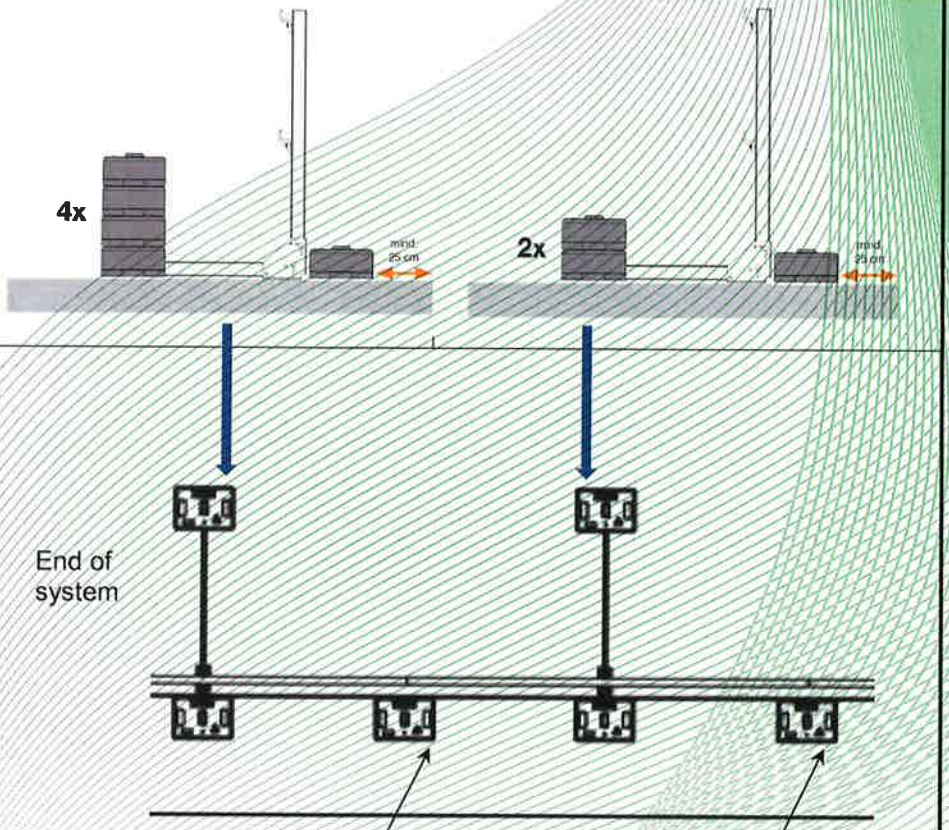
Figure 2: Edge protection system, type: TigaRAIL SHORT

Table 4: Edge protection system dimensions review, type: TigaRAIL SHORT

Type	TigaRAIL SHORT
Diameter of the handrail and intermediate bar	Ø48 mm, t: 2,2 mm
Cross section tube/pole and cantilever	60,7 x 25,4 mm
Cross section toe board	140,0 x 13,4 mm
Handrail height	1110 – 1160 mm (90°) / 1133 mm (82°) / 1097 mm (74°) / 1000 mm (60°)
Max. distance between handrail and intermediate bar	462 mm
Max. distance between intermediate bar – toe board, i. e. intermediate bar - attic	452 mm
Cantilever length	758 mm
Max. distance between tubes/poles	2800 mm

Table 5: Edge protection system ballasting, type: TigaRAIL SHORT

Type	Wall end and free end	Movable area
TigaRAIL SHORT (with attic) **Plastic weights 22 kg**		
TigaRail SHORT (no attic) **Plastic weights 22 kg**	 In addition to the weight in front of each tube/pole, there is a weight in front of the toe boards in the middle, between the tubes/poles. **The minimum distance between the front edge of the weight and the edge of the slope is 250 mm.**	

Type	Wall end and free end	Movable area
TigaRAIL SHORT (with attic) **Concrete weights 25 kg**		
Tig TigaRail SHORT (no attic) **Concrete weights 25 kg**	 In addition to the weight in front of each tube/pole, there is a weight in front of the toe boards in the middle, between the tubes/poles. **The minimum distance between the front edge of the weight and the edge of the slope is 250 mm.**	

Type: TigaRAIL PLUS

Edge protection systems, type: TigaRAIL PLUS (Figure 3), can be mounted on flat roofs with an attic and on flat roofs without an attic. If the height of the attic is less than 150 mm or there is no attic, a toe board is placed on the system. Depending on the set height of the system, it may be necessary to install a second toe board. The system tubes/poles are height-adjustable and can be placed in the range of angles from 60° to 90° to the horizontal (Table 6). At the end of the system cantilever, 22 kg plastic or 25 kg concrete weights are placed and fastened with a screw. The required system ballasting is referred to in Table 7.

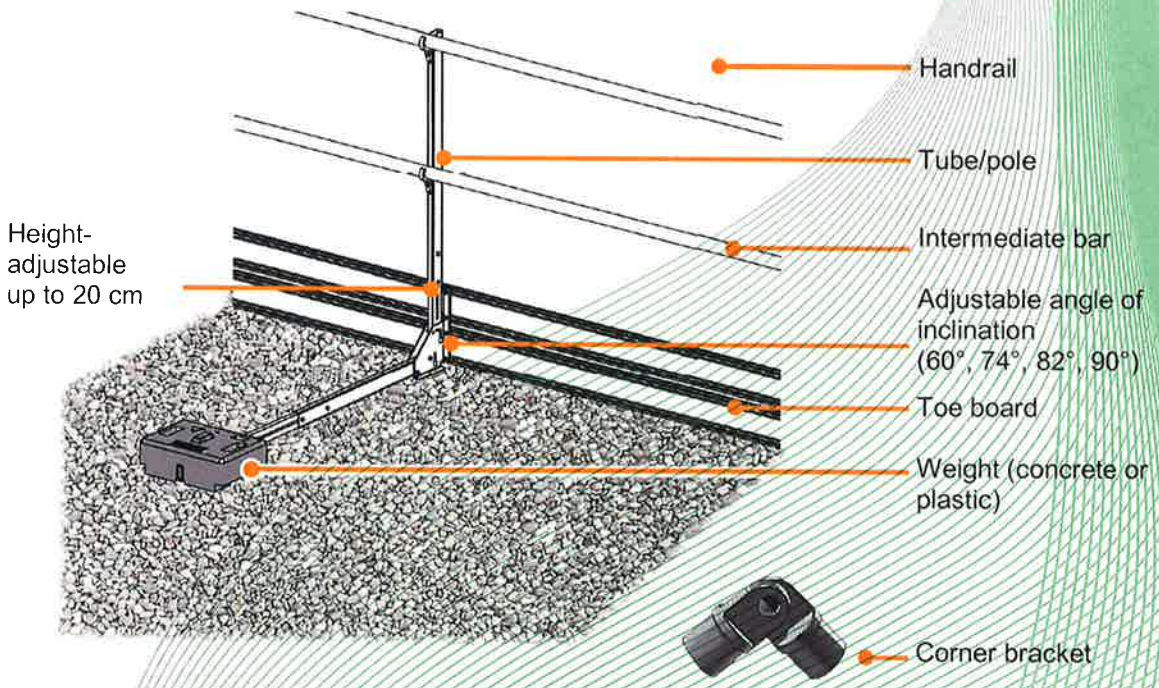
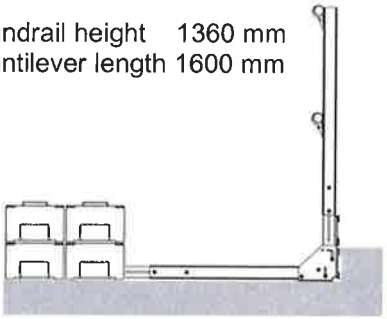
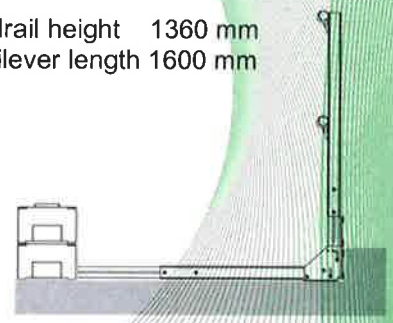
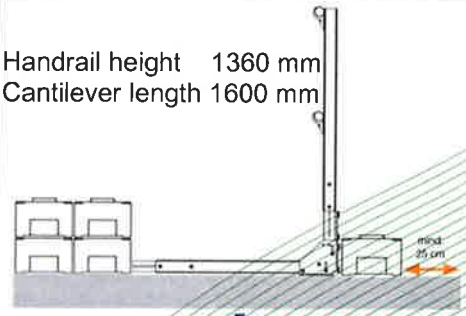
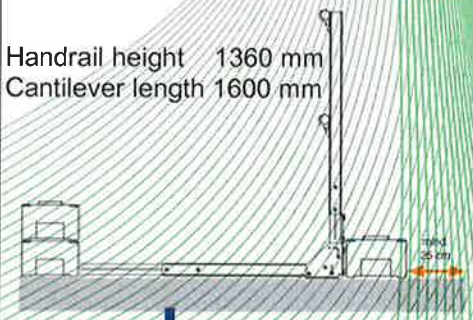
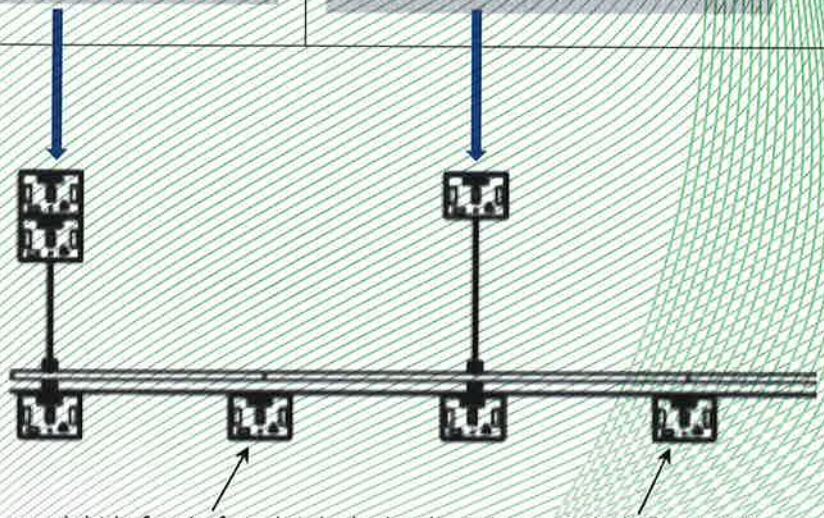


Figure 3: Edge protection system, type: TigaRAIL PLUS

Table 6: Edge protection system dimensions review, type: TigaRAIL PLUS

Type	TigaRAIL PLUS
Diameter of the handrail and intermediate bar	Ø48 mm, t: 2,2 mm
Cross section tube/pole and cantilever	60,7 x 25,4 mm
Cross section toe board	140,0 x 13,4 mm
Handrail height	1160-1360 mm (90°) / 1190-1320 mm (82°) / 1150-1280 mm (74°) / 1037-1160 mm (60°)
Max. distance between handrail and intermediate bar	470 mm
Max. distance between intermediate bar – toe board, i. e. intermediate bar - attic	470 mm
Cantilever length	1080 - 1600 mm
Max. distance between tubes/poles	2800 mm

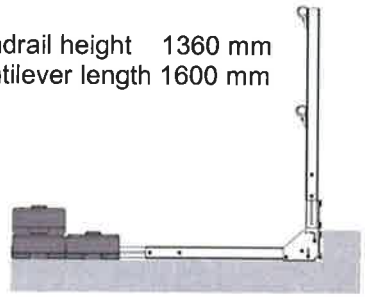
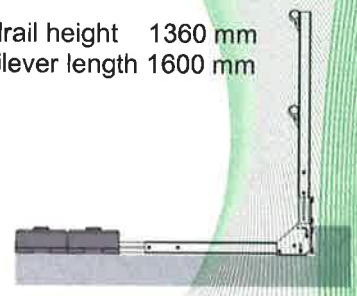
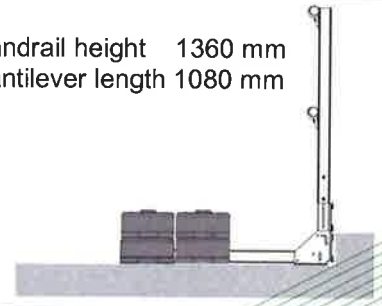
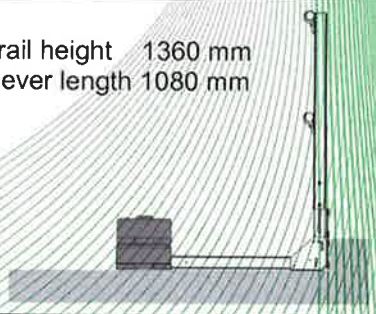
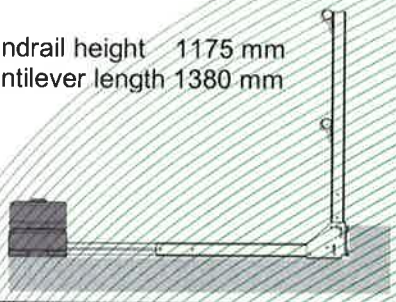
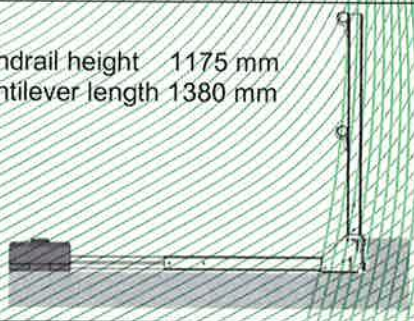
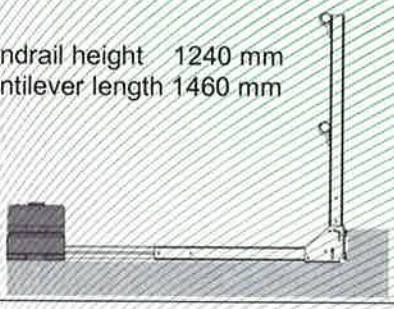
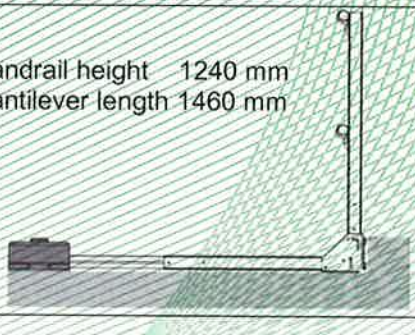
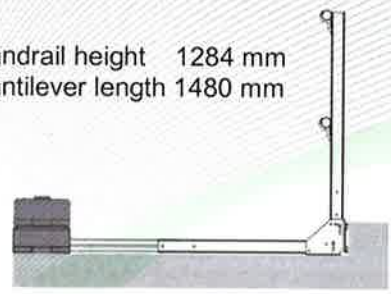
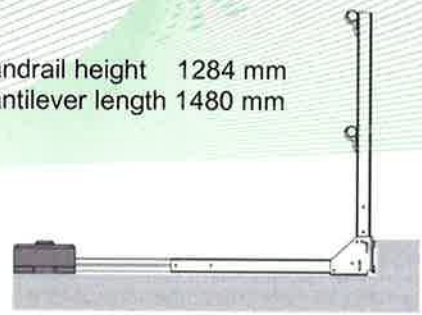
Type	Wall end and free end	Movable area
TigaRAIL PLUS (with attic) **Plastic weights 22 kg**	Handrail height 1360 mm Cantilever length 1600 mm 	Handrail height 1360 mm Cantilever length 1600 mm 
TigaRAIL PLUS (no attic) **Plastic weights 22 kg**	Handrail height 1360 mm Cantilever length 1600 mm 	Handrail height 1360 mm Cantilever length 1600 mm 



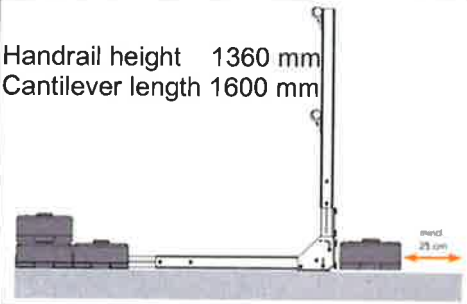
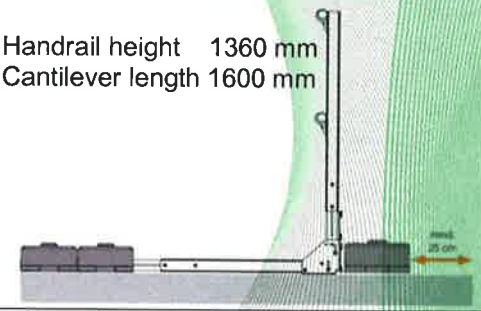
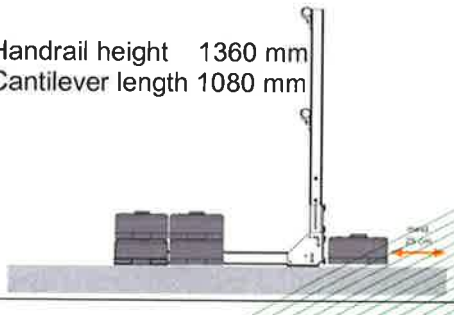
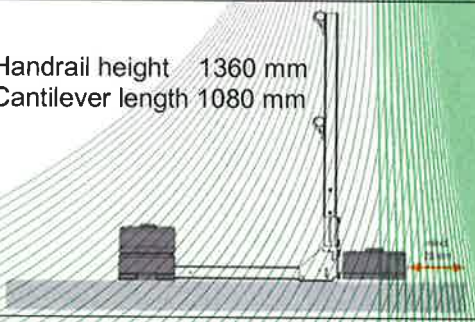
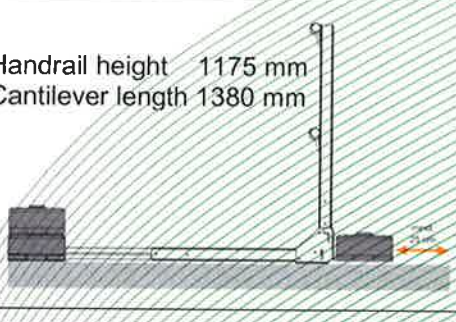
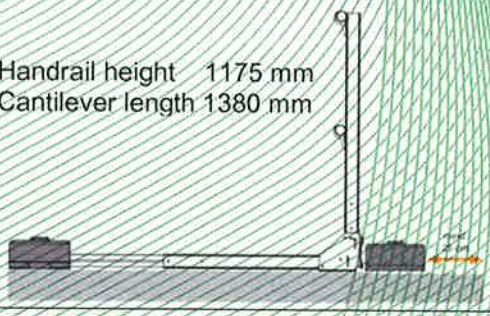
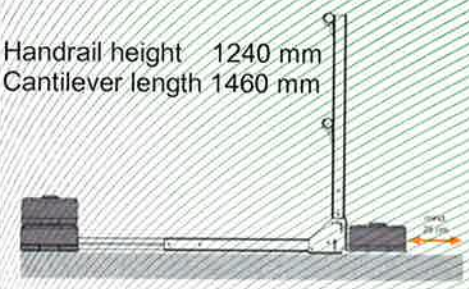
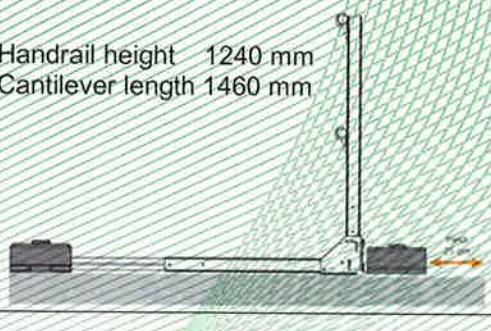
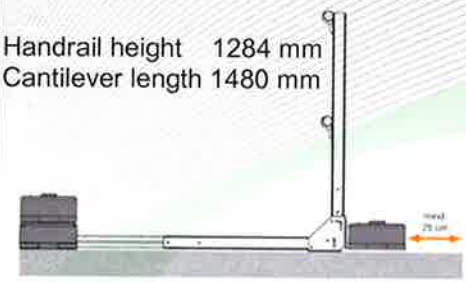
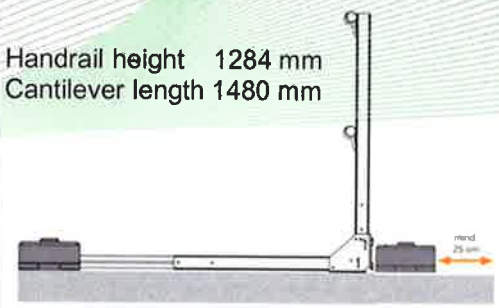
In addition to the weight in front of each tube/pole, there is a weight in front of the toe boards in the middle, between the tubes/poles. If two toe boards are mounted one above the other, there are two weights on top of each other in front of the toe boards in the middle.

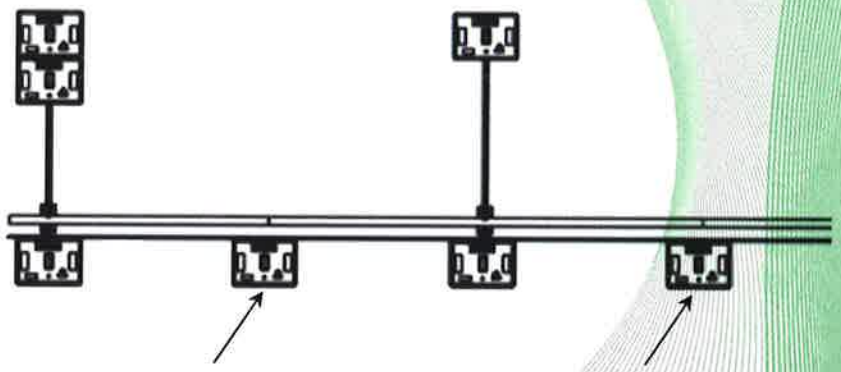
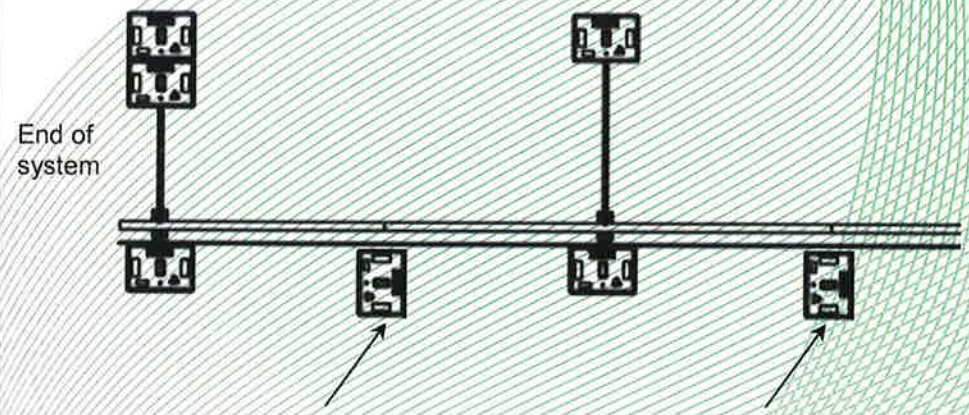
The minimum distance between the front edge of the weight and the edge of the slope is 250 mm.

TRANSLATION

Type	Wall end and free end	Movable area
TigaRAIL PLUS (with attic) **Concrete weights 25 kg**	Handrail height 1360 mm Cantilever length 1600 mm 	Handrail height 1360 mm Cantilever length 1600 mm 
	Handrail height 1360 mm Cantilever length 1080 mm 	Handrail height 1360 mm Cantilever length 1080 mm 
	Handrail height 1175 mm Cantilever length 1380 mm 	Handrail height 1175 mm Cantilever length 1380 mm 
	Handrail height 1240 mm Cantilever length 1460 mm 	Handrail height 1240 mm Cantilever length 1460 mm 
	Handrail height 1284 mm Cantilever length 1480 mm 	Handrail height 1284 mm Cantilever length 1480 mm 

TRANSLATION

Type	Wall end and free end	Movable Area
TigaRAIL PLUS (no attic) **Concrete weights 25 kg**	Handrail height 1360 mm Cantilever length 1600 mm 	Handrail height 1360 mm Cantilever length 1600 mm 
	Handrail height 1360 mm Cantilever length 1080 mm 	Handrail height 1360 mm Cantilever length 1080 mm 
	Handrail height 1175 mm Cantilever length 1380 mm 	Handrail height 1175 mm Cantilever length 1380 mm 
	Handrail height 1240 mm Cantilever length 1460 mm 	Handrail height 1240 mm Cantilever length 1460 mm 
	Handrail height 1284 mm Cantilever length 1480 mm 	Handrail height 1284 mm Cantilever length 1480 mm 

Type	System mounting with a toe board
TigaRAIL PLUS (no attic) **Concrete weights 25 kg**	 In addition to the weight in front of each tube/pole, there is a weight in front of the toe boards in the middle, between the tubes/poles. **The minimum distance between the front edge of the weight and the edge of the slope is 250 mm.**
	System mounting with two toe boards mounted on top of each other
	 If two toe boards are mounted one above the other, there are two weights on top of each other in front of the toe boards in the middle of the area. **The minimum distance between the front edge of the weight and the edge of the slope is 250 mm.**

Type: TigaRAIL DOOR

Edge protection systems, type: TigaRAIL DOOR (Figure 4), can be mounted on flat roofs with an attic and on flat roofs without an attic. If the height of the attic is less than 150 mm or there is no attic, a toe board is placed on the system. The system tubes/poles are height-adjustable and can be placed in the range of angles from 60° to 90° to the horizontal. At the end of the system cantilever, 22 kg plastic or 25 kg concrete weights are placed and fastened with a screw. Ballasting of the system is performed as a wall end or a free end (see the respective system type on which the TigaRAIL DOOR system can be mounted). A pawl that is latched to the marginal tube/pole prevents unwanted opening of the system. Table 8 summarizes the basic dimensions of the edge protection system.

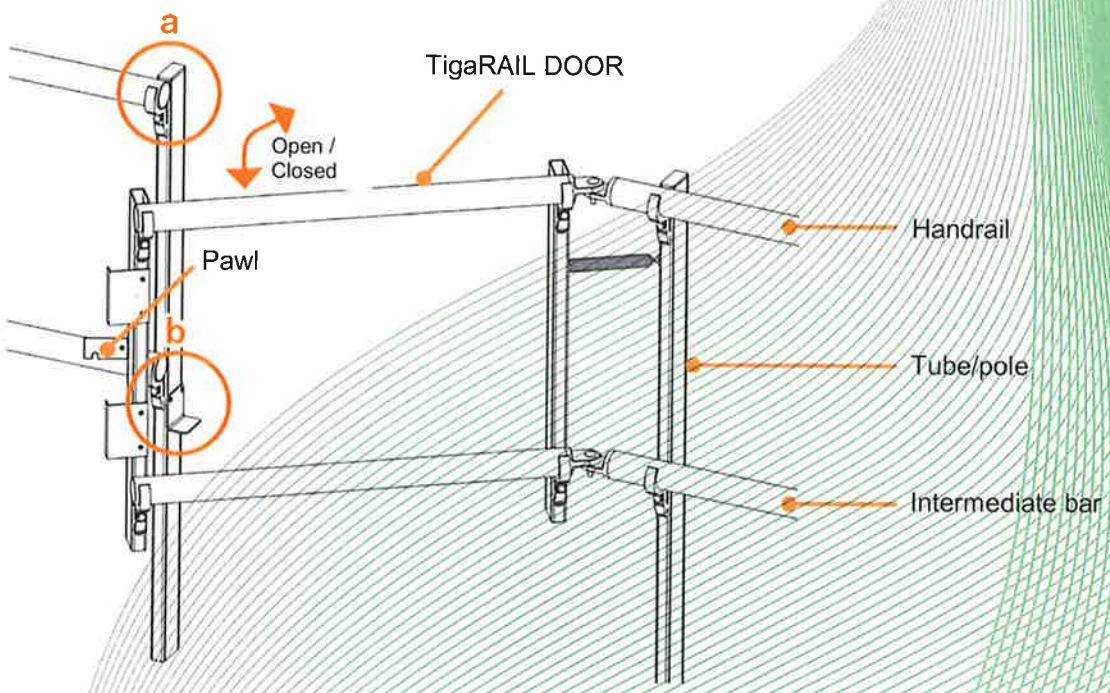


Figure 4: Edge protection system, type: TigaRAIL DOOR

Table 8: Edge protection system dimensions review, type: TigaRAIL DOOR

Type	TigaRAIL DOOR
Diameter of the handrail and intermediate bar	Ø48 mm, t: 2,2 mm
Cross section tube/pole and cantilever	60,7 x 25,4 mm
Cross section toe board	140,0 x 13,4 mm
Max. handrail height	1360 mm
Max. distance between handrail and intermediate bar	462 mm
Max. distance between intermediate bar – toe board, i. e. intermediate bar - attic	470 mm
Max. distance between tubes/poles	850 mm

Type: TigaRAIL SKYLIGHT

Edge protection systems, type: TigaRAIL SKYLIGHT (Figure 5), can be used on flat roofs with a sufficiently load-bearing skylight at least 150 mm high. The ballasting is carried out with concrete weights of 25 kg each. The weights on the top have openings into which the system's tubes/poles can be inserted. The tubes/poles are fastened with screws for concrete weights. Table 9 summarizes the basic dimensions of the edge protection system.

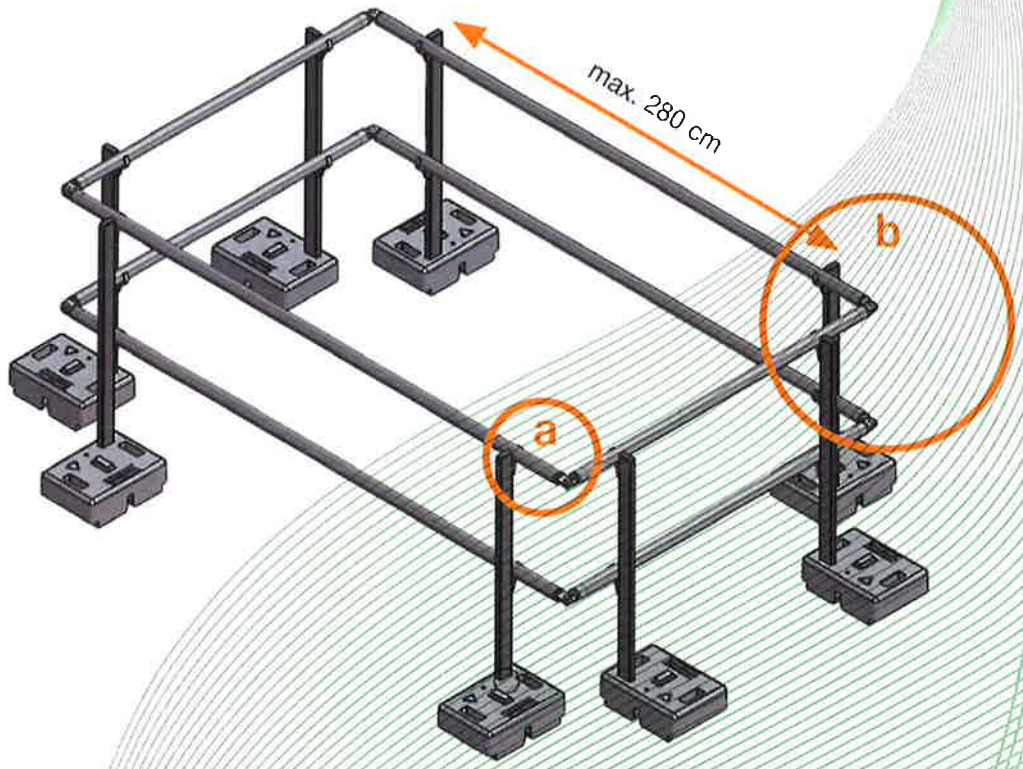


Figure 5: Edge protection system, type: TigaRAIL SKYLIGHT

Table 9: Edge protection system dimensions review, type: TigaRAIL SKYLIGHT

Type	TigaRAIL SKYLIGHT
Diameter of the handrail and intermediate bar	Ø48 mm, t: 2,2 mm
Cross section tube/pole	60,7 x 25,4 mm
Handrail height	1100 mm
Distance between handrail and intermediate bar	462 mm
Max. distance between intermediate bar - skylight	392 mm
Max. distance between tubes/poles	2800 mm

Type: TigaRAIL SAFETY PATH

Edge protection systems, type: TigaRAIL SAFETY PATH (Figure 6), can be mounted on flat roofs with an attic and on flat roofs without an attic. The system consists of two handrails placed opposite each other. The cantilevers on the system tubes/poles are interconnected by bolted corner profiles. In order to ballast the system, concrete slabs (500 x 500 x 40 mm) of 25.5 kg each are placed on the corner profiles. In front of each tube/pole there is also a concrete weight, and before the toe boards in the middle, between the tubes/poles, there are two 25 kg concrete weights on top of each other. The minimum distance between the front edge of the weight and the edge of the slope is 250 mm. The width of the system that can be walked on is 1004 mm. Two toe boards are mounted on the system. Table 10 summarizes the basic dimensions of the edge protection system.

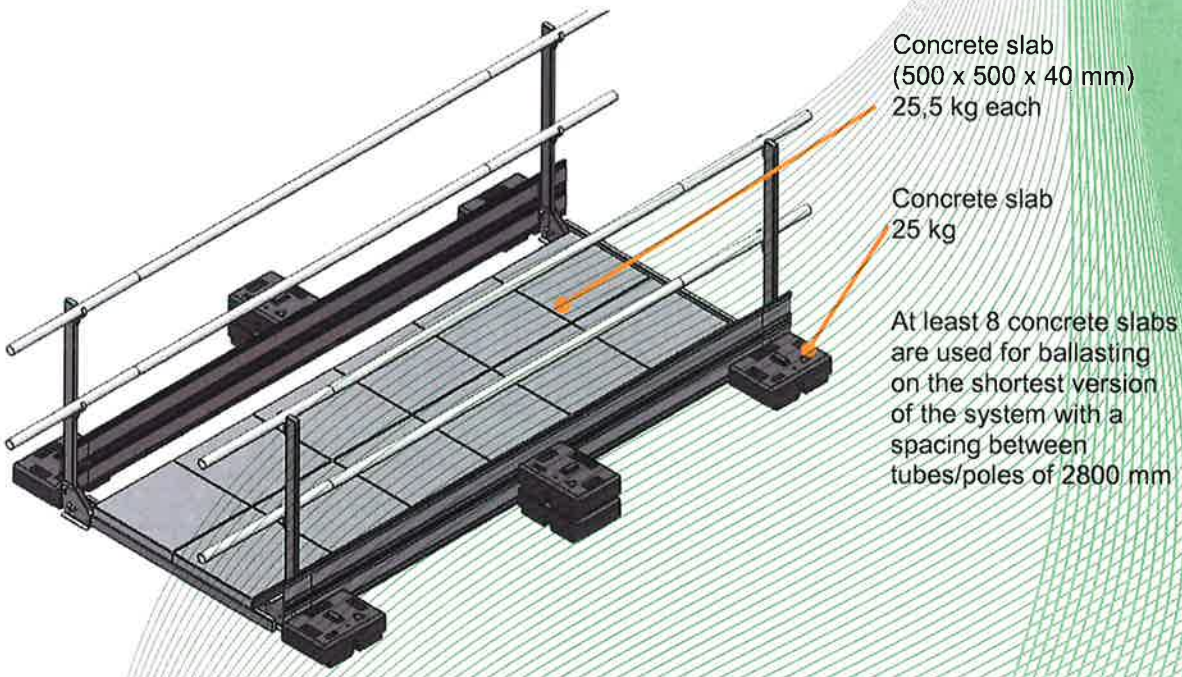


Figure 6: Edge protection system, type: TigaRAIL SAFETY PATH

Table 10: Edge protection system dimensions review, type: TigaRAIL SAFETY PATH

Type	TigaRAIL SICHERHEITSWEG
Diameter of the handrail and intermediate bar	Ø48 mm, t: 2,2 mm
Cross section tube/pole and cantilever	60,7 x 25,4 mm
Cross section toe board	140,0 x 13,4 mm
Handrail height	1160 mm
Distance between handrail and intermediate bar	462 mm
Max. distance between intermediate bar – toe board	292 mm
Max. distance between tubes/poles	2800 mm

Type: TigaRAIL WALL

Edge protection systems, type: TigaRAIL WALL (Figure 7), can be installed on flat roofs with an attic with a minimum height of 200 mm. The tubes/poles of the system are fastened with a screw via an angular wall bracket with a sufficiently load-bearing attic. As an option, system handrails and intermediate bars can be mounted via wall handle holders on walls with sufficient load-bearing capacity (Figure 8). Table 11 summarizes the basic dimensions of the edge protection system.

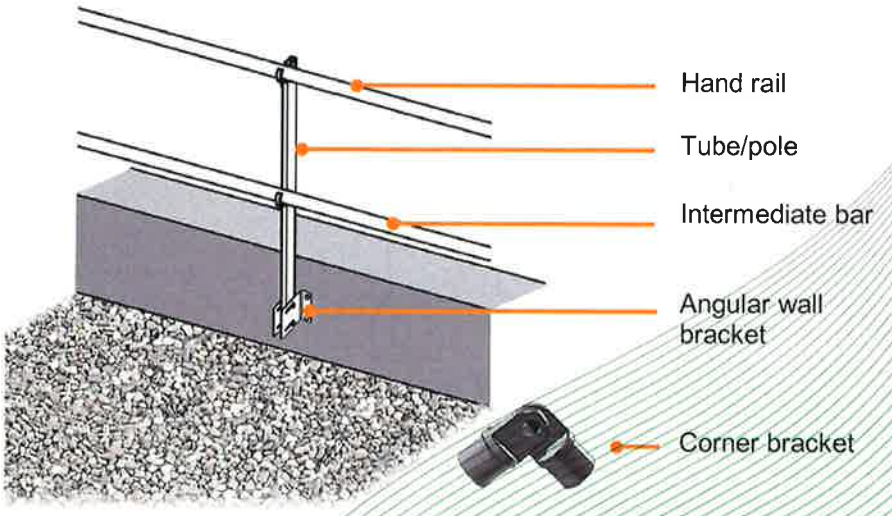


Figure 7: Edge protection system, type: TigaRAIL WALL

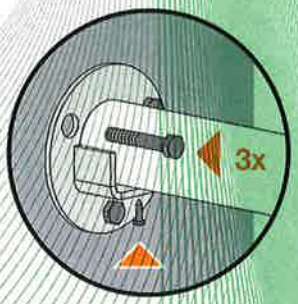


Figure 8: Handle holder

Table 11: Edge protection system dimensions review, type: TigaRAIL WALL

Type	TigaRAIL WAND
Diameter of the handrail and intermediate bar	Ø48 mm, t: 2,2 mm
Cross section tube/pole and cantilever	60,7 x 25,4 mm
Handrail height	1160 mm
Max. distance between handrail and intermediate bar	462 mm
Max. distance between intermediate bar - attic	470 mm
Max. distance between tubes/poles	2800 mm

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