PLANNING MANUAL

INTEGRA-pw

Characteristics and information for planning

Status: August 2024

projekt w
Systeme aus Stahl

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1. General information

1.1 Corrugated bulge - detachable areas

The INTEGRA-pw mats have a bulge running along the upper and lower ends. These bulges are primarily intended to reinforce the mats and can be removed if necessary. Examples are shown under 4.1 and 4.2.

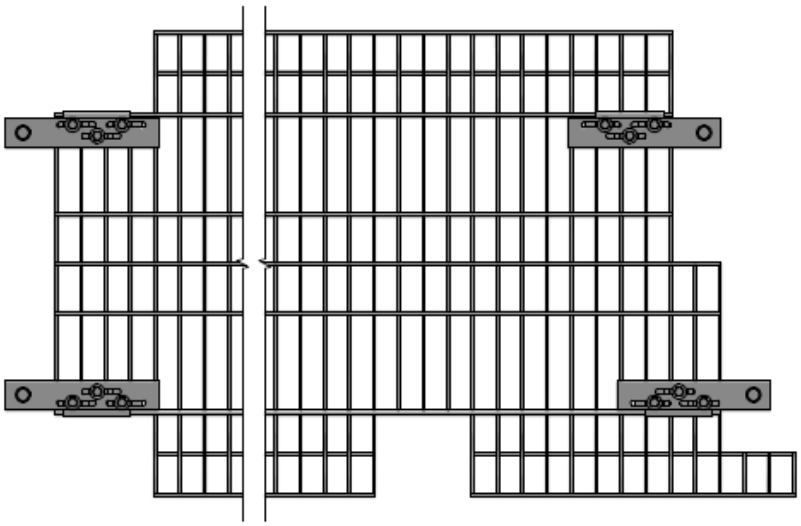


Figure 1.1.a: Detachable area on INTEGRA-pw 943

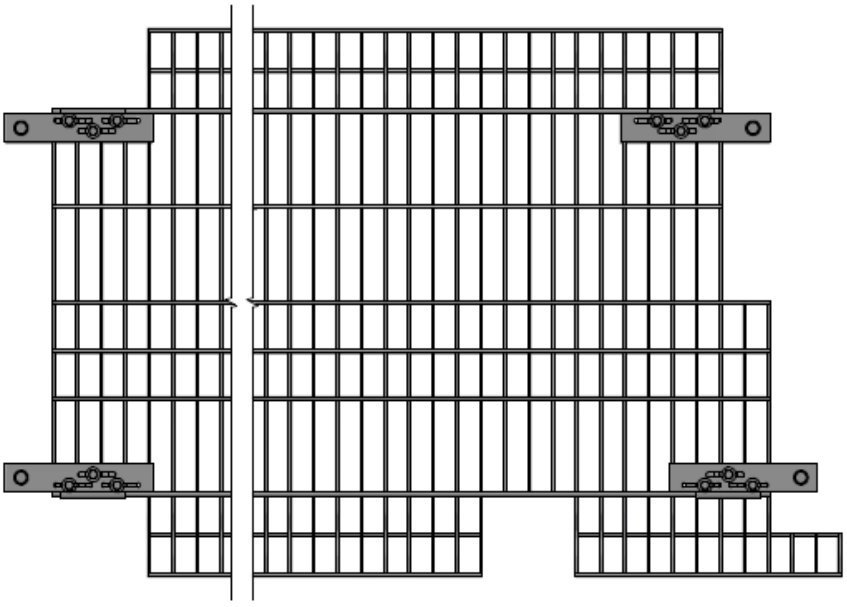


Figure 1.1.b: Detachable area on INTEGRA-pw 1143

1.2 Orientation of the bulge

Which direction does the bulges face when installed?

Structurally, it makes no difference whether the bulges faces towards or away from the direction of impact.

This can be selected based upon design requirements.

Variant 1: The bulges outwards into the space between the supports = pointing away from the parking area/ramp with the hollow part facing inwards.

Variant 2: The bulges towards the parking area/ramp with the hollow area facing outwards.

2. Technical drawings of the steel-mesh-mat

Each steel mesh mat that features any notches, stepping or other modifications that deviate from a rectangular shape must be accompanied with a cross-sectional technical drawing and position number.

If spreading the required mats across several construction sections, it is necessary to specify the quantity per section.

2.1 On-site position numbers

On-site position numbers can only consist of 6 characters. Any combination of numbers and letters can be used.

3. Determining mat width

The inside width between the steel supports, or connecting parts in the case of steel corner supports or reinforced concrete supports, is the basis for determining mat widths. The inside width is used to calculate the mat width using the formulas given in the following datasheets:

INTEGRA-pw height 943 → Datasheets _U025, _U026, _U027
INTEGRA-pw height 1143 → Datasheets _U028, _U029, _U030
Other mat heights → Upon consultation with the manufacturer

4. Graphical representation of the INTEGRA-pw mats

4.1 Bulge

For production-related reasons, all graphical representations of the INTEGRA-pw mats **must** be drawn with the bulge indentation at the back (see drawing).

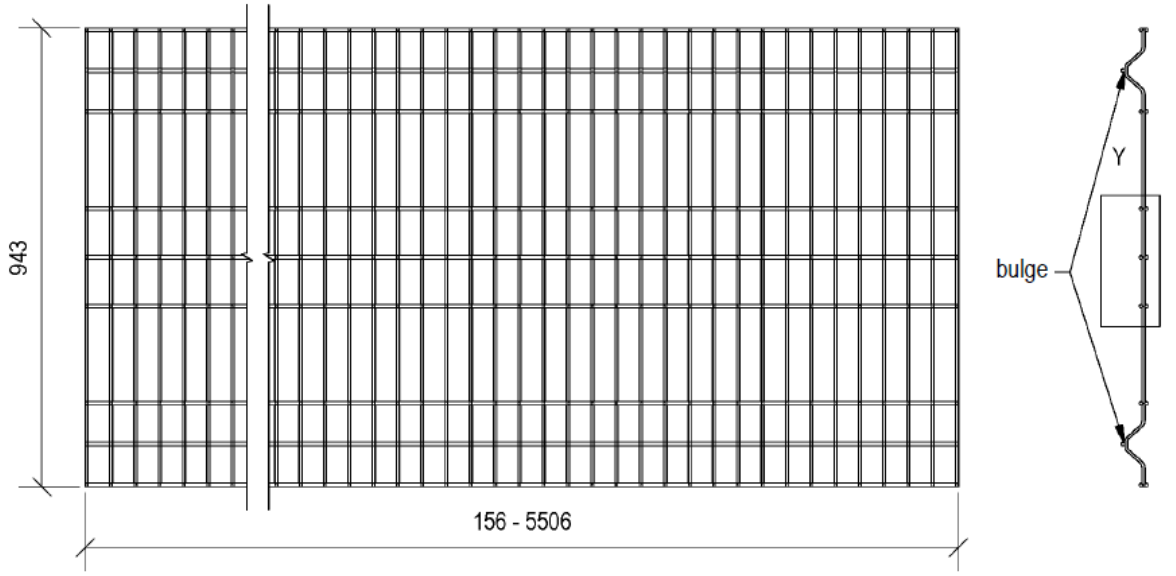


Figure 4.1.a: Graphical representation of the INTEGRA-pw 943

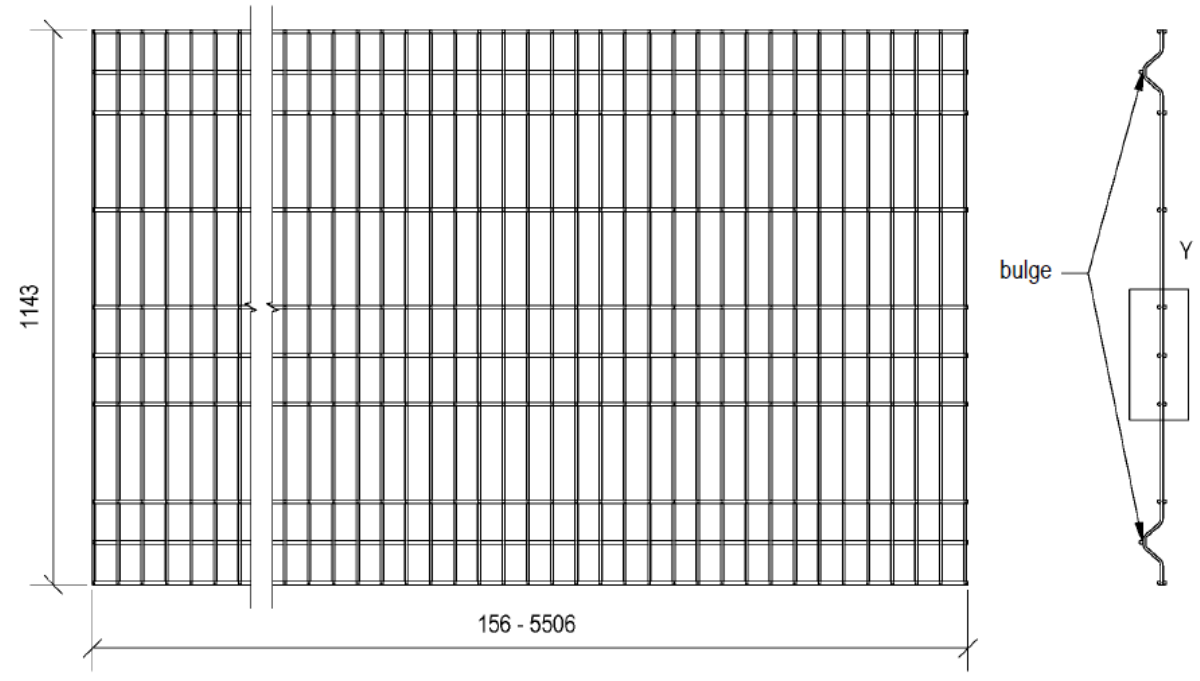


Figure 4.1.b: Graphical representation of the INTEGRA-pw 1143

4.2 Example graphical representation of an INTEGRA-pw 943 mat with cut-out.

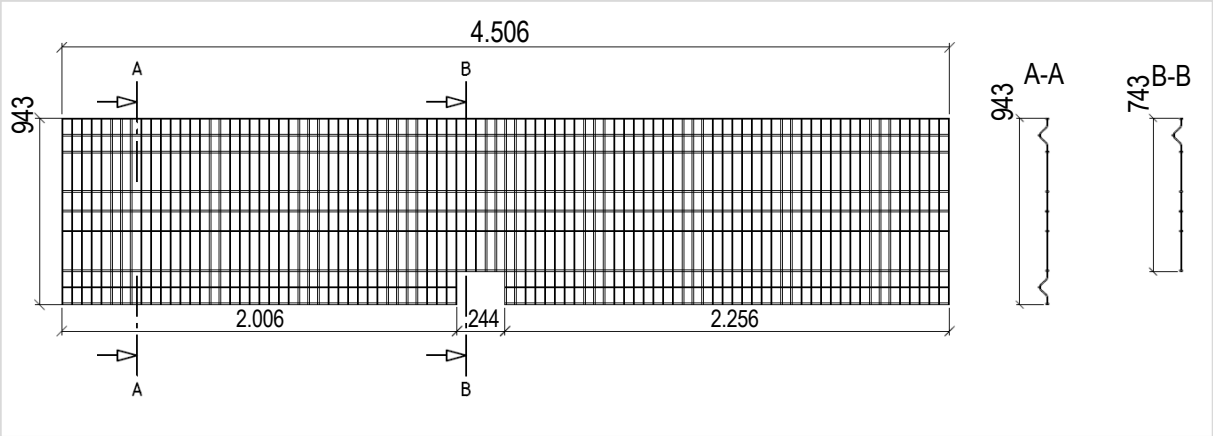


Figure 4.2: Graphical representation of the INTEGRA-pw 943 – Lower bulge partially removed

5. Definition of “left” and “right” INTEGRA-pw ramp mats

5.1 Perspective: From a position at the bottom looking up the ramp.

Installation position of INTEGRA-pw mat = bulge indentation pointing away from the ramp
Left ramp boundary → INTEGRA-pw mat = “left”
Right ramp boundary → INTEGRA-pw mat = “right”

Installation position of INTEGRA-pw mat = bulge indentation pointing towards the ramp Left ramp boundary → INTEGRA-pw mat = “right”
Right ramp boundary → INTEGRA-pw mat = “left”

5.2 Graphical representation of the INTEGRA-pw ramp mat, e.g. INTEGRA-pw 943 – Gradient 10% to 16% - "Left"

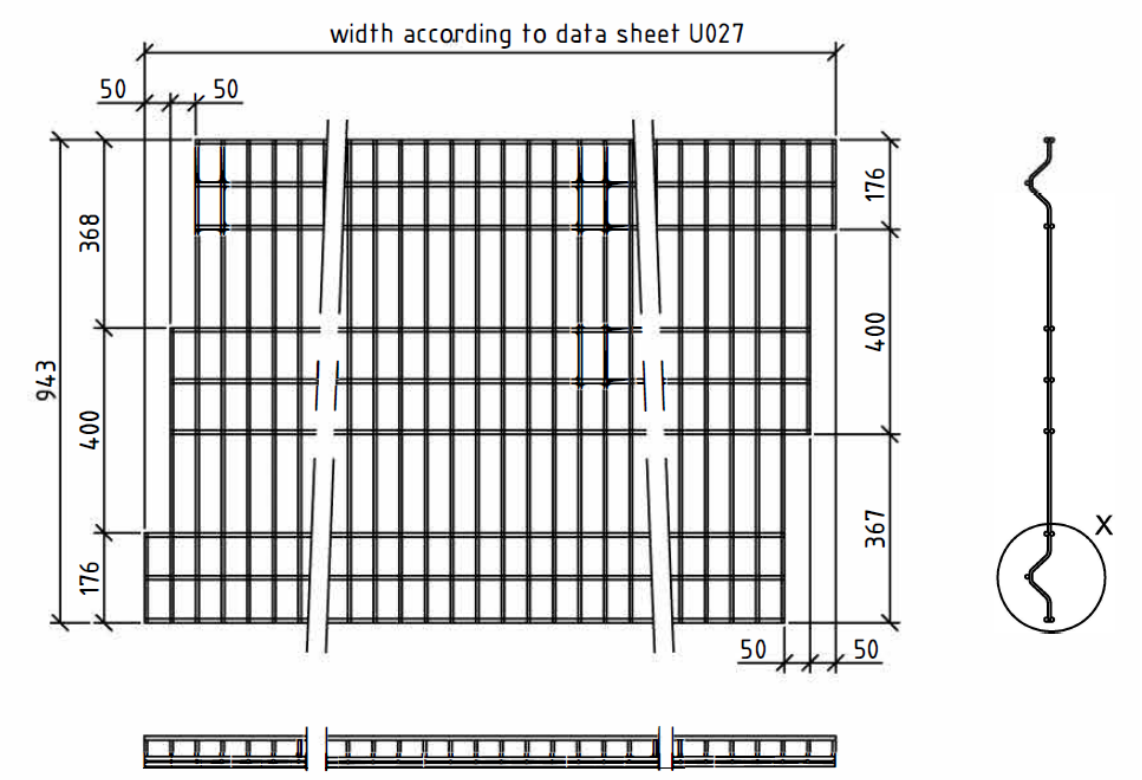


Figure 5.2: Graphical representation of the INTEGRA-pw 943 – Ramp 10% to 16% – Left

5.3 Graphical representation of the INTEGRA-pw ramp mat, e.g. INTEGRA-pw 943 – Gradient 10% to 16% "Right"

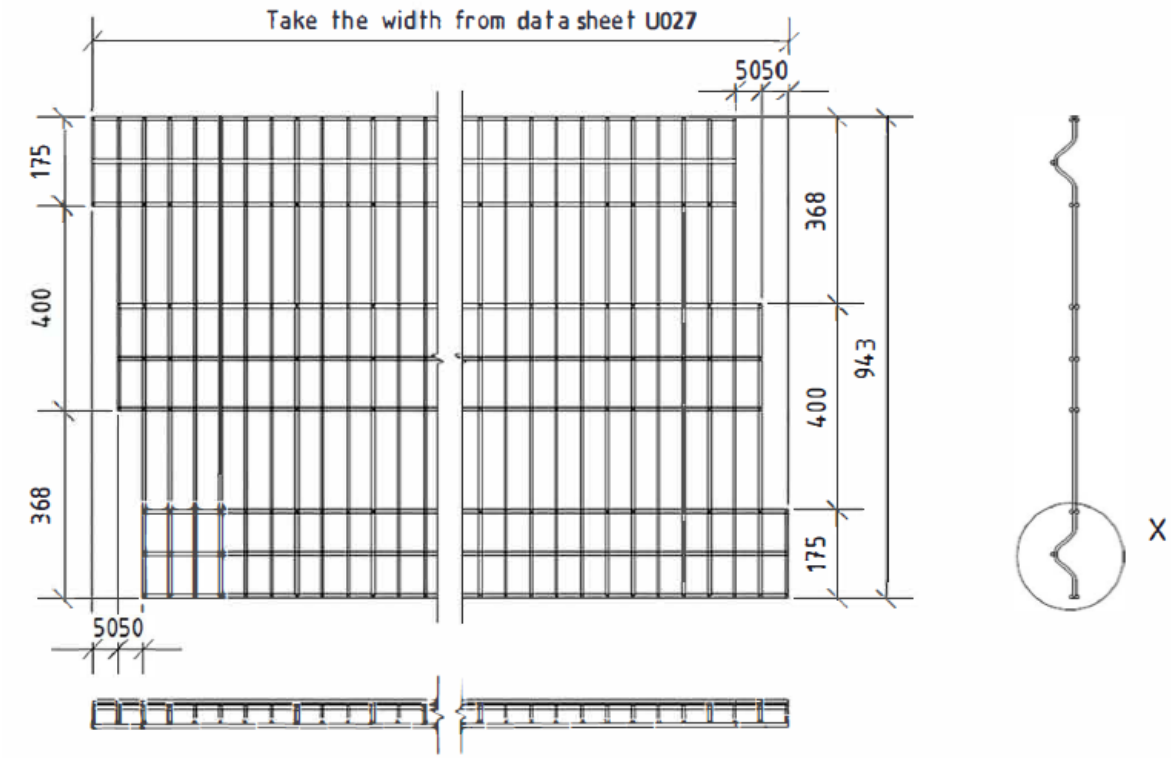


Figure 5.3: Graphical representation of the INTEGRA-pw 943 – Ramp 10% to 16% – Right

5.4 Graphical representation of the INTEGRA-pw ramp mat, e.g. INTEGRA-pw 943 - Gradient 4% to 10% "Left"

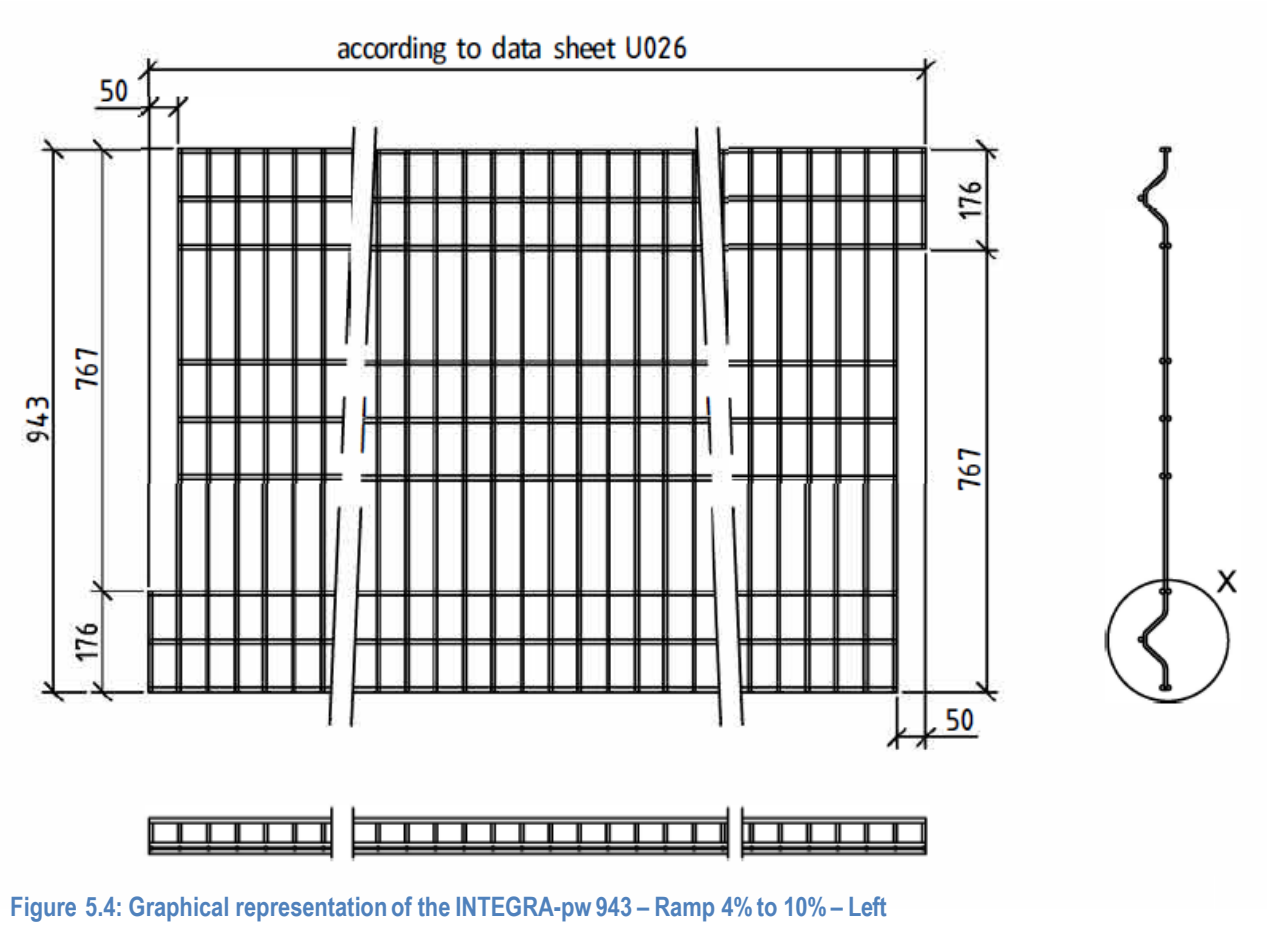


Figure 5.4: Graphical representation of the INTEGRA-pw 943 – Ramp 4% to 10% – Left

5.5 Graphical representation of the INTEGRA-pw ramp mat, e.g. INTEGRA-pw 943 - Gradient 4% bis 10% „Right“

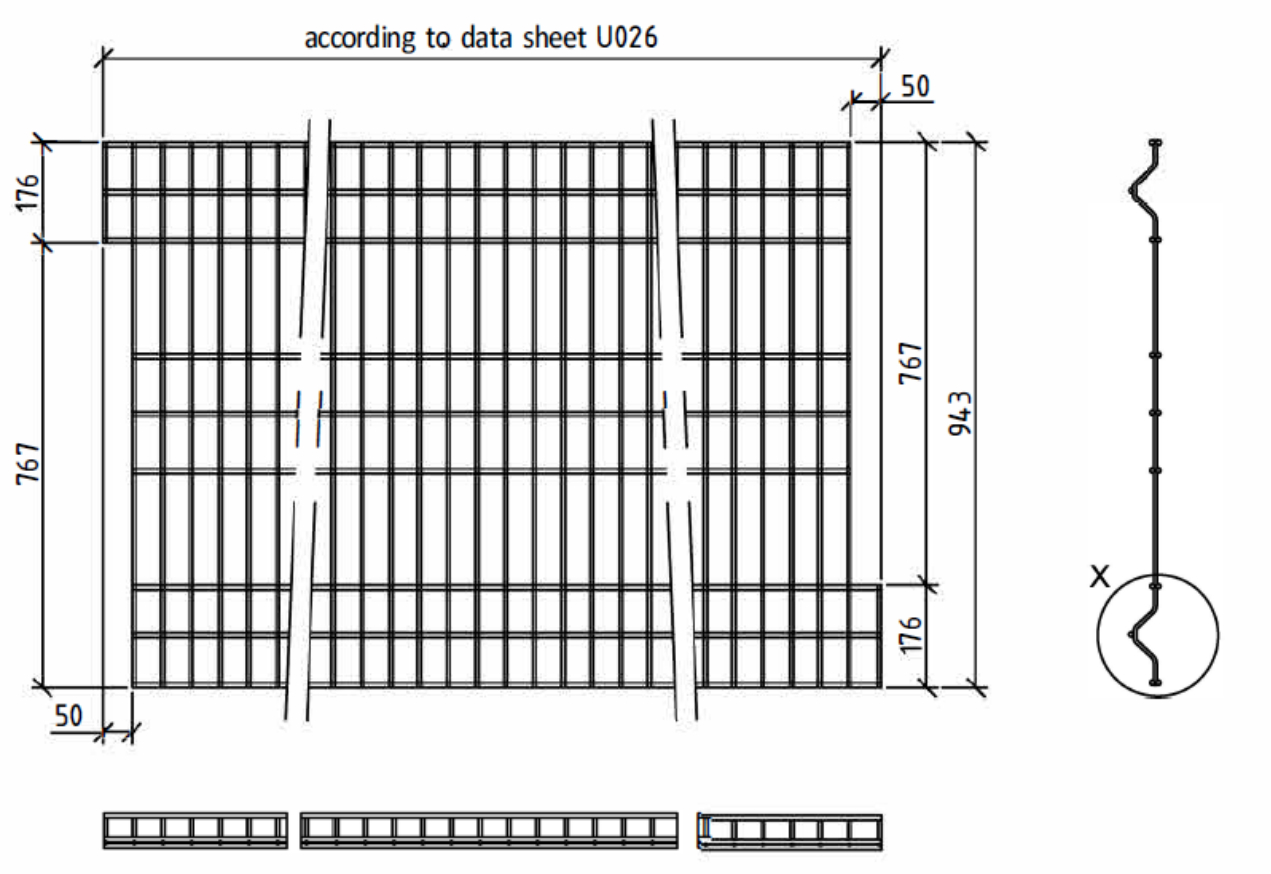


Figure 5.5: Graphical representation of the INTEGRA-pw 943 – Ramp 4% to 10% – Right

6. Length of bolts for attaching INTEGRA-pw safety barrier to steel supports provided by the customer

Length of bolts:	Flange thickness T:
M16 x 45 mm	up to 15 mm
M16 x 50 mm	16 - 20 mm
M16 x 55 mm	21 - 25 mm
M16 x 60 mm	26 - 30 mm
M16 x 65 mm	31 - 35 mm
M16 x 70 mm	36 - 40 mm

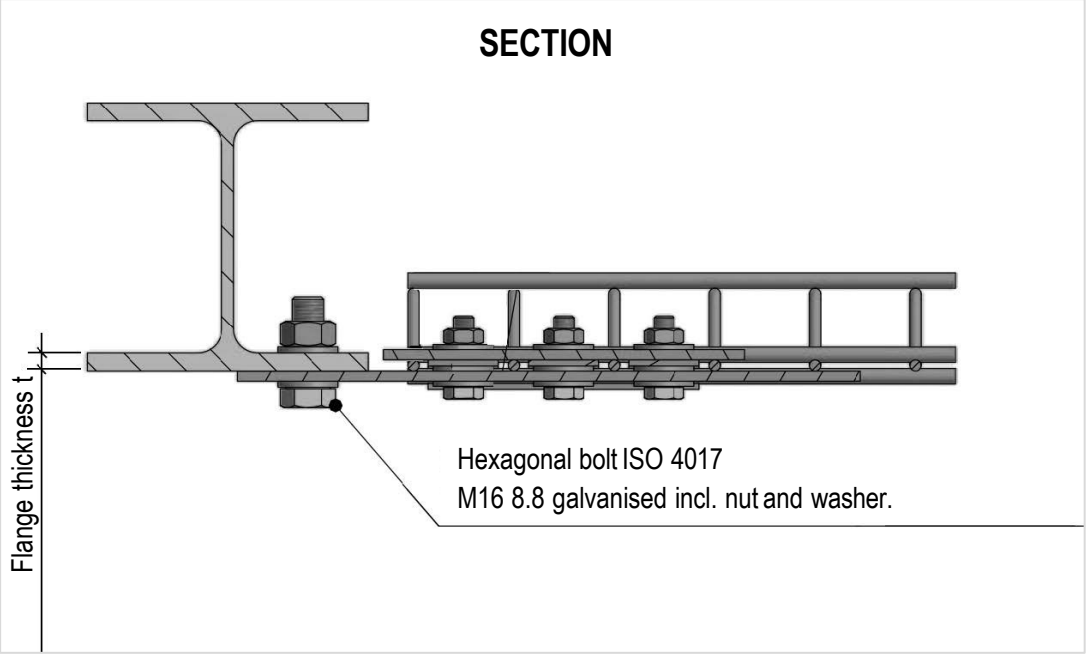
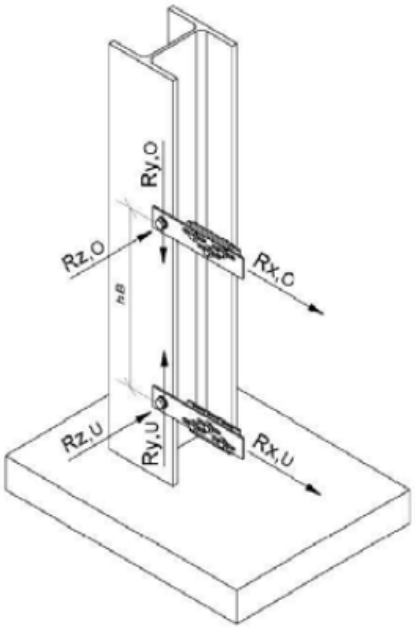


Figure 6: Attaching bolts to H-profiles

7. Connecting forces

The following connection forces must be used to calculate the on-site support structure to which the INTEGRA-pw safety barrier system is to be connected.

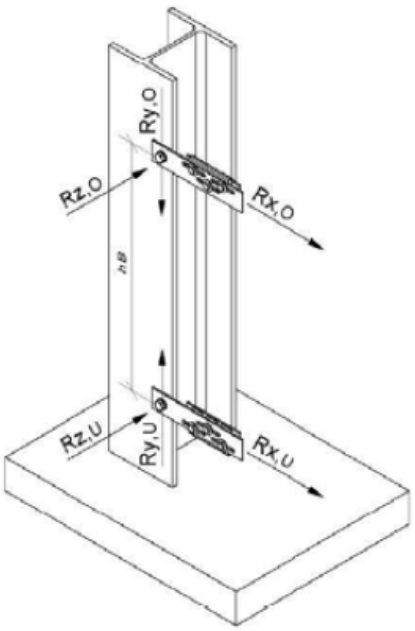
Connection forces for INTEGRA-pw 3.0 safety barrier mats - further connection forces for other mat types can be requested from the manufacturer.



INTEGRA-pw 3.0 Height 943
h_B = 532 mm

	Loading condition 1	Loading condition 2
Action	Impact on the rim	Impact in the centre
Rx o	27 kN	45 kN
Rx u		
Ry o	21 kN	10 kN
Ry u		
Rz o	20 kN	10 kN
Rz u		

The specified loads apply to mats with a span of 2.5 m to 5.5 m.



INTEGRA-pw 3.0 Height 1143
h_B = 732 mm

	Loading condition 1	Loading condition 2
Action	Impact on the rim	Impact in the centre
Rx o	30 kN	36 kN
Rx u		42 kN
Ry o	23 kN	16 kN
Ry u		
Rz o	14 kN	10 kN
Rz u	26 kN	20 kN

The specified loads apply to mats with a span of 2.5 m to 5.5 m.

Part of the horizontal support load in the longitudinal direction of the mat R_x can be transferred via a support into the mat of an adjacent field, if such a field is available. The characteristic value of the transferred force was determined in tests and is 13.6 kN per connection point. This value applies to all INTEGRA-pw 943 and INTEGRA-pw 1143 mesh types and the respective connection points.

8. Example installation positions

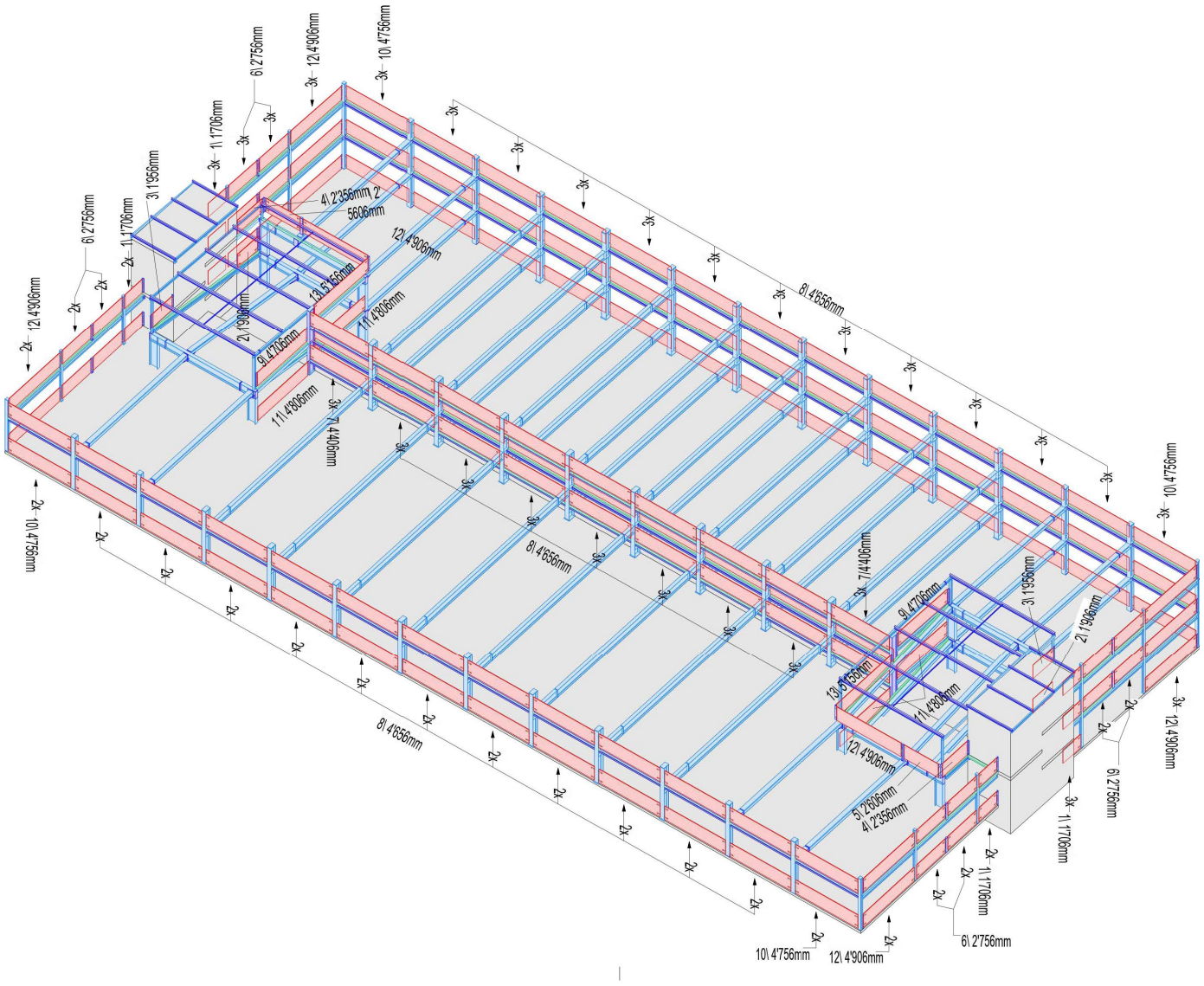


Figure 8a: Example 1 – Top view

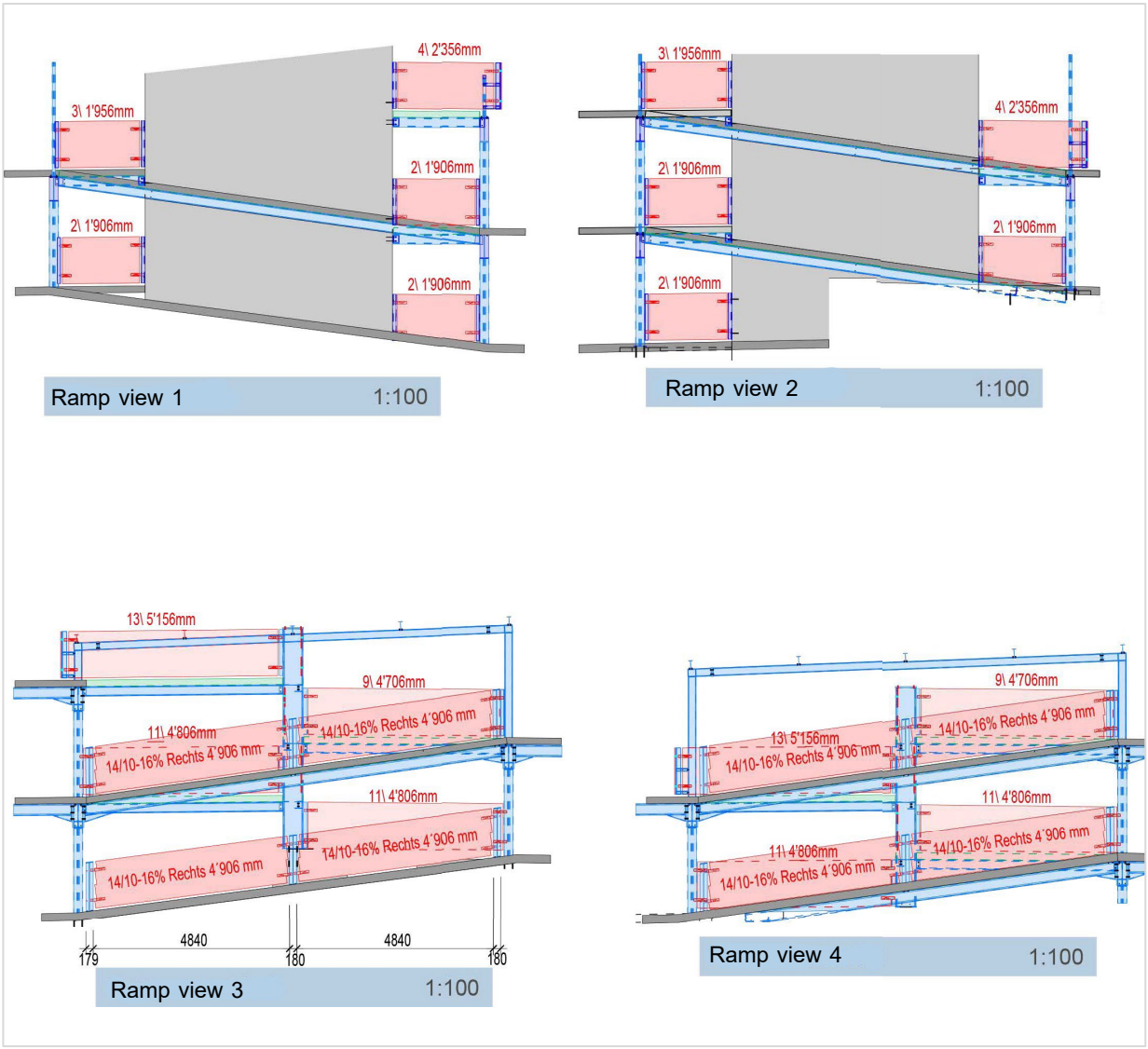


Figure 8b: Example 1 – Ramp view

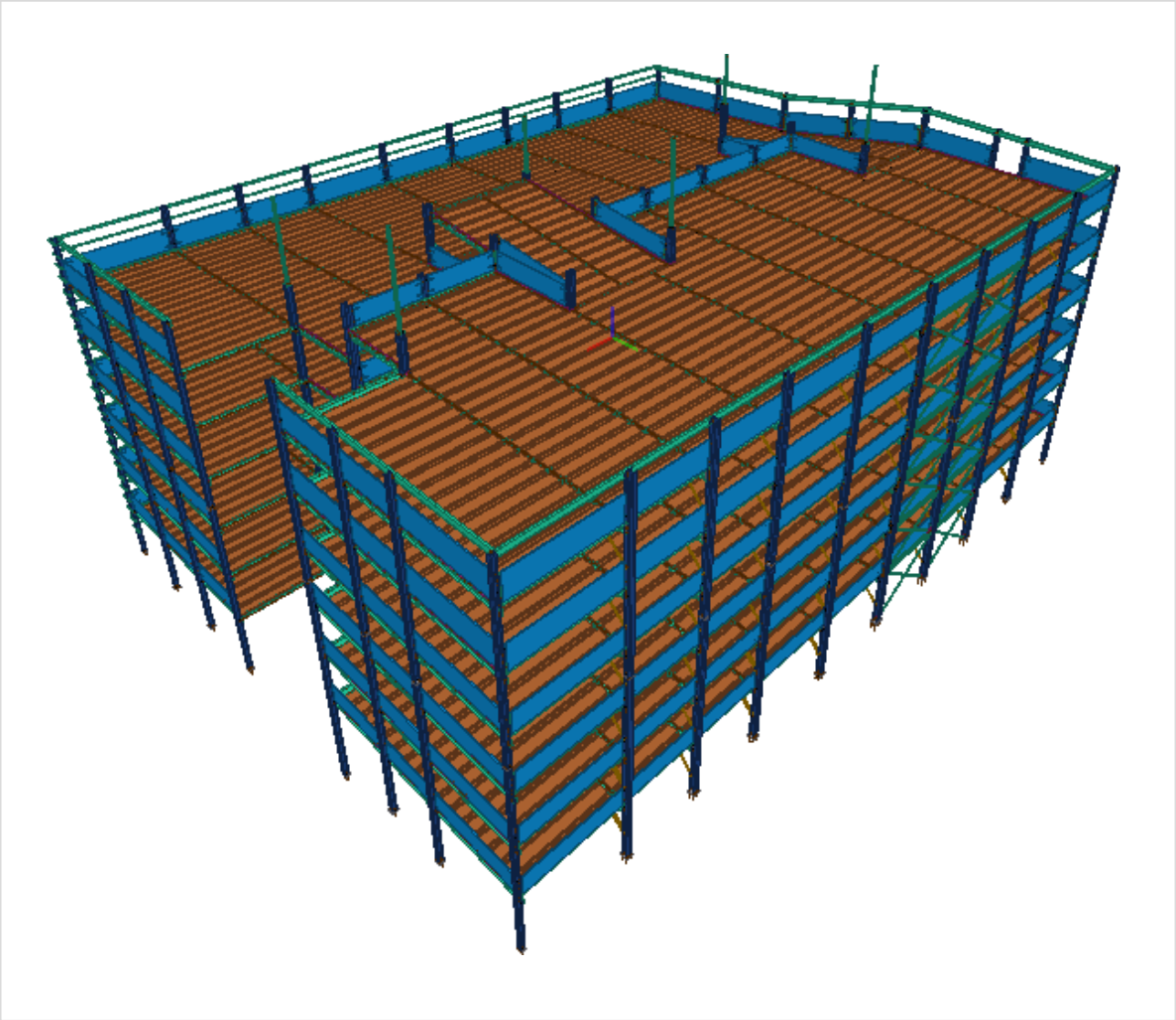


Figure 8c: Example 2

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