DOLRE
LOW STRESS
BRIDGE PARAPETS

OUTSTANDING DESIGN
LESS EFFORT, LESS REINFORCEMENT
ADAPTABLE TO YOUR NEEDS
IDEAL FOR BRIDGE UPGRADES

DESAMI
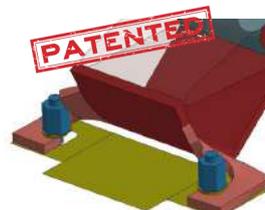
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Why DESAMI?

Thanks to its innovative fuse disconnection technology and the rigidity of its longitudinal elements, DOLRE transmits low forces to the structure.

One of the lowest force transition in the market

Meaning in existing bridges the possibility of avoiding reinforcements and in new bridges up to 60% in the reinforcements compared to most other solutions in the market.

Reduction in working times

Reduction of disruption times and investments.

No piercing option

Non-anchored kerb model doesn't pierce the concrete base meaning there is no risk damaging critical water protection or pre-stressed steel cables.
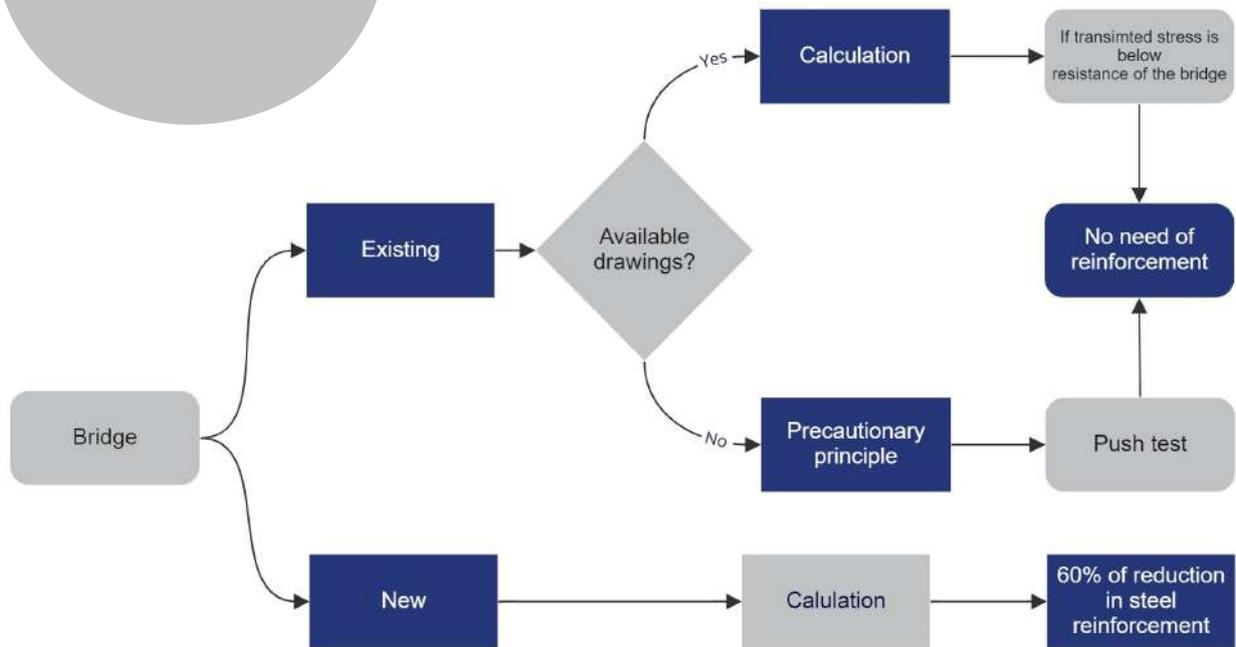
Aesthetical solution and available customization

Very aesthetical solution.

Multiple transitions available to conventional guardrails
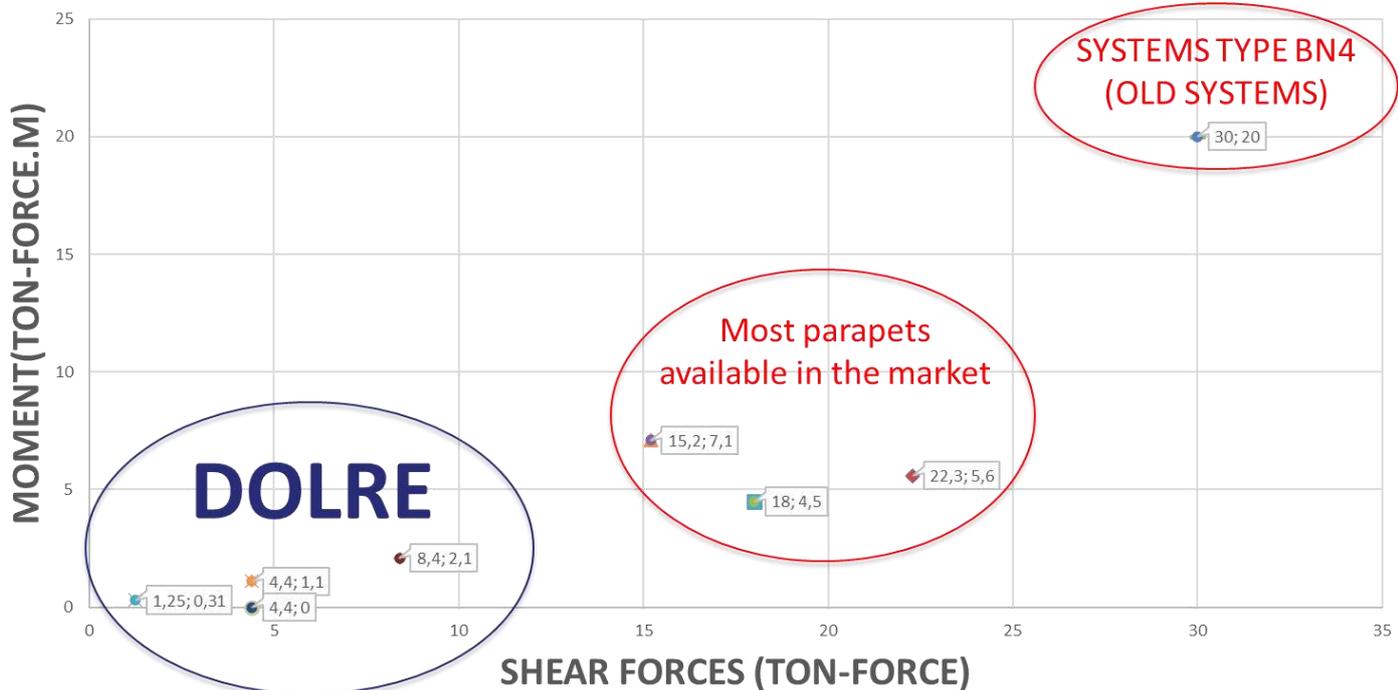
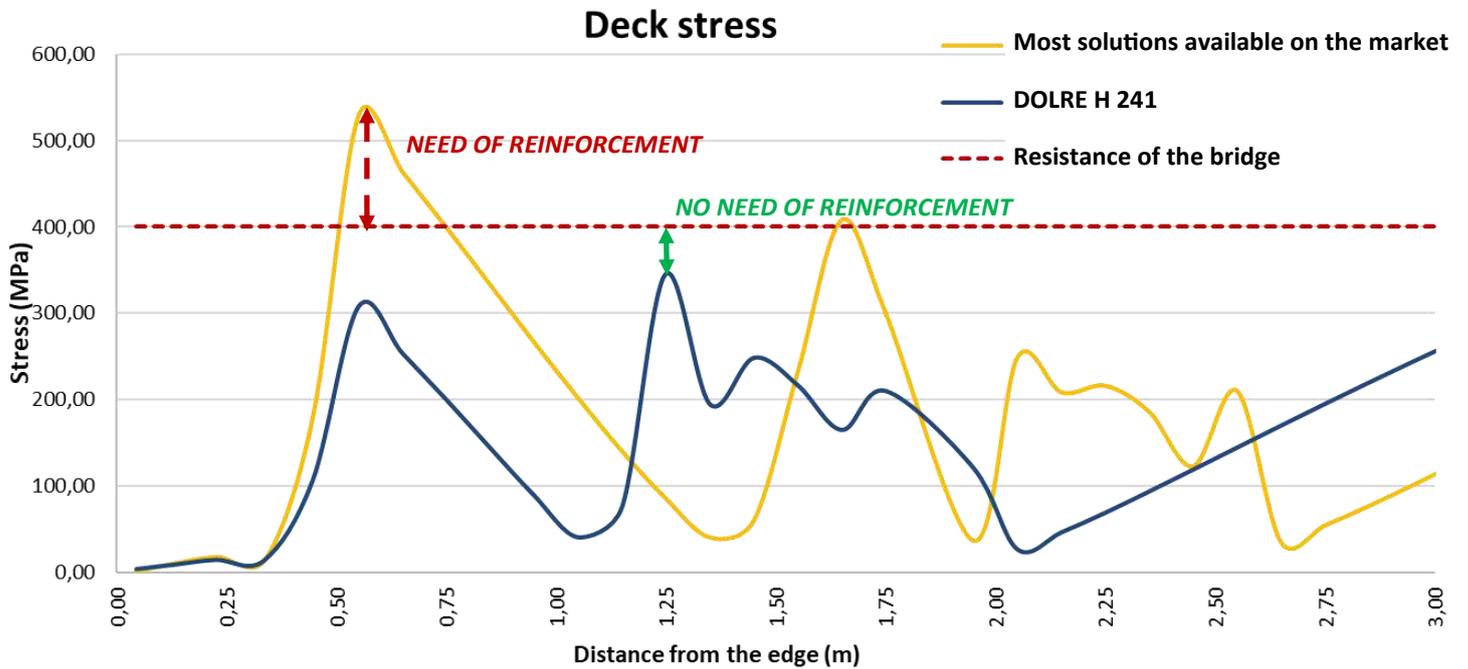**Wide range of accessories.**

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1. Design process

2. Choice of low stress system

Transmitted Forces/Post (ULS)

3. Example of calculation

Deck stress

- Most solutions available on the market
- DOLRE H 241
- Resistance of the bridge

NEED OF REINFORCEMENT

NO NEED OF REINFORCEMENT

Stress (MPa) — vertical axis: 0,00 · 100,00 · 200,00 · 300,00 · 400,00 · 500,00 · 600,00

Distance from the edge (m) — horizontal axis: 0,00 · 0,25 · 0,50 · 0,75 · 1,00 · 1,25 · 1,50 · 1,75 · 2,00 · 2,25 · 2,50 · 2,75 · 3,00

4. Installation

BEFORE

AFTER

Low stress = reduction of financial investments on the bridge

DOLRE N232

Containment Level	N1			N2	H1	H2	H3	H4a	H4b
Working width(W)	W8	W7	W6	W5		W4	**W3**	W2	W1
Vehicle Intrusion (VI)	VI8	VI7	VI6	VI5		VI4	**VI3**	VI2	VI1
Acceleration Severity index (ASI)	ASI A			**ASI B**			ASI C		

The additional features are:
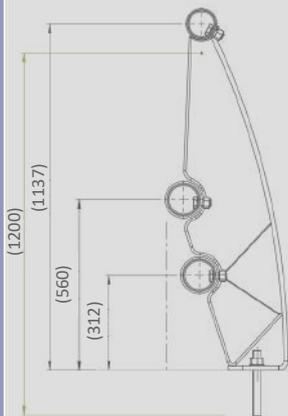
- Post span = 6m

- To ensure the pedestrian function, the overall height in relation to the concrete support = 1,20 m

- To limit the influence on the structure, the space requirement between front and rear post face = 40 cm

- For aesthetic reasons , the connections between the longitudinal elements are not visible on the 180° front panel

- In order to limit the number of sealing holes, the average number of anchors per meter of device = 0.33 pieces/m

- To limit or even avoid reinforcements, the forces transmitted by post are V=44kN ; M=11kNm
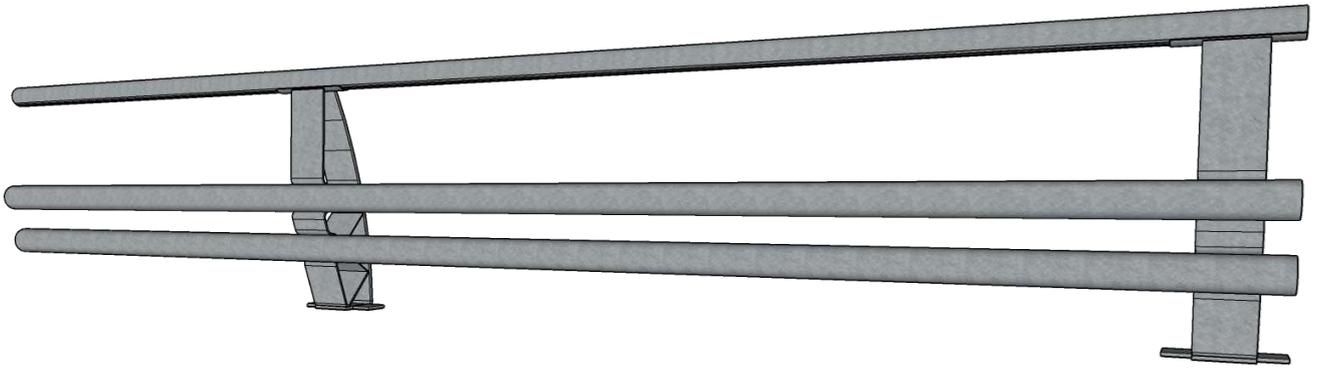
Transitions level of validation			
	2 waves beam	3 waves beam	Concrete
Real crash test			
Numerical simulation	x		
Design		x	x

Fuse system allows the reuse of anchors after an impact

Unique design for a device with aesthetical guardrail

DOLRE N246 Narrow/GCDF

Containment Level				N1			**N2**	H1	H2	H3	H4a	H4b
Working width(W)	W8	W7	W6	W5		**W4**			W3	W2	W1
Vehicle Intrusion (VI)	VI8	VI7	VI6	VI5		VI4		**VI3**	VI2	VI1
Acceleration Severity index (ASI)	**ASI A**			ASI B				ASI C		
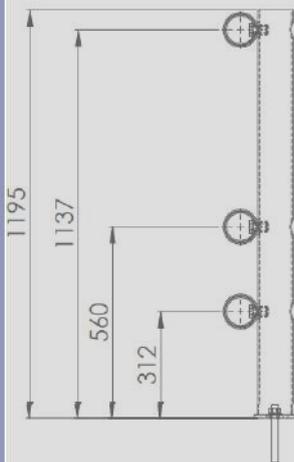
The additional features are:

- Post span = 2m

- To ensure the guardrail function, the overall height in relation to the concrete support = 1,20 m

- To limit the influence on the structure, the space requirement between front and rear post face = 20 cm, 27 cm from the bridge edge.

- Doble face pedestrian protection (DFPP).

- In order to limit the number of sealing holes, the average number of anchors per meter of device = 1 piece/m

- To limit or even avoid reinforcements, the forces transmitted by post are V=12.5kN ; M=3.1kNm

Transitions level of validation			
	2 waves beam	3 waves beam	Concrete
Real crash test			
Numerical simulation	x		
Design		x	x

Doble face pedestrian protection

Larger pedestrian Kerbs

DOLRE H241

Containment Level			N1		N2	H1	**H2**	H3	H4a	H4b
Working width(W)	W8	W7	W6	W5			**W4**	W3	W2	W1
Vehicle Intrusion (VI)	VI8	VI7	VI6	VI5		VI4		**VI3**	VI2	VI1
Acceleration Severity index (ASI)	ASI A			**ASI B**				ASI C		

The additional features are:

- Post span = 2m

- To ensure the guardrail function, the overall height in relation to the concrete support = 1,20 m

- To limit the influence on the structure, the space requirement between front and rear post face = 40 cm, 47 cm from the bridge edge.

- For aesthetic reasons , the connections between the longitudinal elements are not visible on the 180° front panel (the fixing points will only be located on the 180° rear panel)

- In order to limit the number of sealing holes, the average number of anchors per meter of device = 1 piece/m

- To limit or even avoid reinforcements, the forces transmitted by post are V=44kN ; M=11kNm

Transitions level of validation			
	2 waves beam	3 waves beam	Concrete
Real crash test			x
Numerical simulation		x	
Design	x		

Reduce cost in maintenance

Wide range of accessories and customization

DOLRE H233/NAK
(with abutment)

Containment Level				N1		N2	H1	**H2**	H3	H4a	H4b
Working width(W)	W8	W7	W6	W5			W4	**W3**	W2	W1
Vehicle Intrusion (VI)	VI8	VI7	VI6	VI5			VI4	**VI3**	VI2	VI1
Acceleration Severity index (ASI)	ASI A				**ASI B**			ASI C			

The additional features are:

- Post span = 2m

- To ensure the guardrail function, the overall height in relation to the concrete support = 1,20 m

- To limit the influence on the structure, the space requirement between front and rear post face = 40 cm, 47 cm from the bridge edge.

- No drilling in base concrete = no risk of piercing vulnerable underneath structures (water protection, pre-stressed steel reinforcement, …)

- In order to limit the number of sealing holes, the average number of anchors per meter of device = 1 piece/m

- To limit or even avoid reinforcements, the forces transmitted by post are V=44 kN ; M=11 kNm to the kerb & M=0 kNm to the deck

- Crash tested according EN1317-2 with non-anchored kerb and abutment

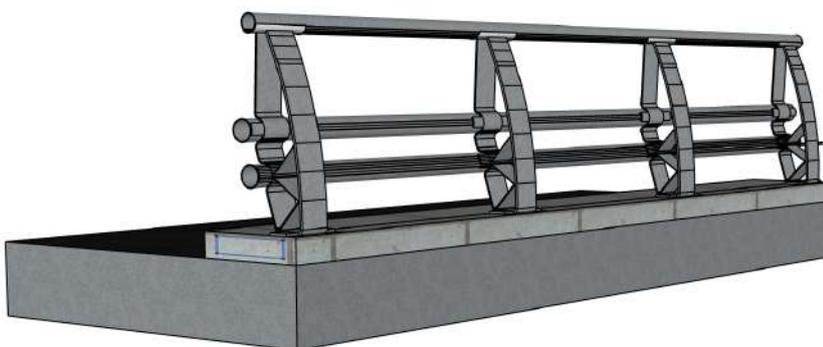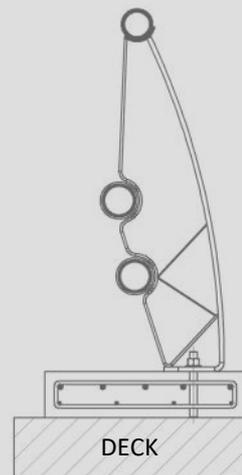www.desami.be

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H2 ACCORDING EN1317
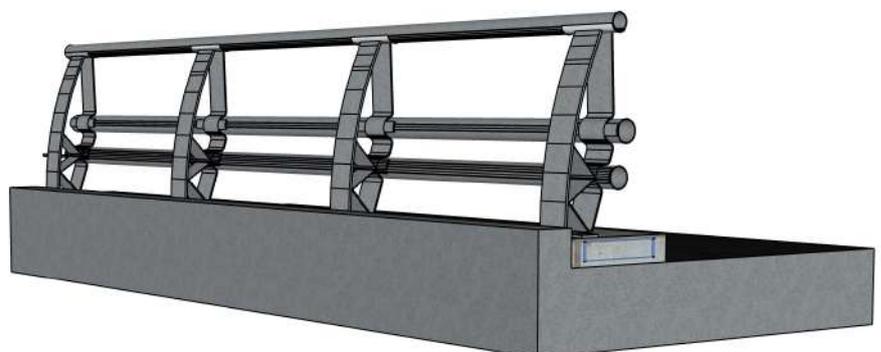
DOLRE H237/NAK
(without abutment)

Containment Level				N1		N2	H1	**H2**		H3	H4a	H4b
Working width(W)	W8	W7	W6		W5			W4	**W3**		W2	W1
Vehicle Intrusion (VI)	VI8	VI7	VI6		VI5			VI4	**VI3**		VI2	VI1
Acceleration Severity index (ASI)		ASI A				**ASI B**				ASI C		

The additional features are:

- Post span = 2m

- To ensure the guardrail function, the overall height in relation to the concrete support = 1,20 m

- To limit the influence on the structure, the space requirement between front and rear post face = 40 cm

- No drilling in base concrete = no risk of piercing vulnerable underneath structures (water protection, pre-stressed steel reinforcement, …)

- In order to limit the number of sealing holes, the average number of anchors per meter of device = 1 piece/m

- To limit or even avoid reinforcements, the forces transmitted by post are V=44 kN ; M=11 kNm.

- Crash tested according EN1317-2 with non-anchored kerb and without abutment (only additional treatment: concrete deck cleaning at 200 Bar before casting the kerb)
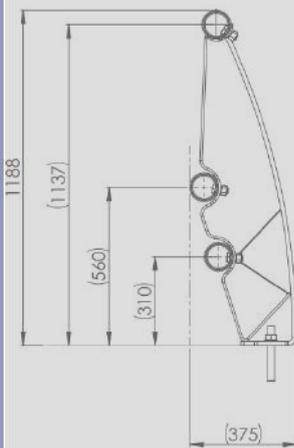
DECK

DOLRE H255

Containment Level		N1			N2	H1	**H2**	H3	H4a	H4b
Working width(W)	W8	W7	W6		**W5**		W4	W3	W2	W1
Vehicle Intrusion (VI)	VI8	VI7	VI6		**VI5**		VI4	VI3	VI2	VI1
Acceleration Severity index (ASI)		ASI A			**ASI B**			ASI C		

The additional features are:

- Post span = 2m

- To ensure the guardrail function, the overall height in relation to the concrete support = 1,20 m

- To limit the influence on the structure, the space requirement between front and rear post face = 37,5 cm, 44,5cm from the bridge edge.

- Simplified version of DOLRE H241, reduce thickness of beams and reduced quantity of screws, makes this system much lighter and easy to assemble.

- Improved stack ability .

- In order to limit the number of sealing holes, the average number of anchors per meter of device = 1 piece/m

- To limit or even avoid reinforcements, the forces transmitted by post are V=44kN; M=11kNm

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Transitions level of validation			
	2 waves beam	3 waves beam	Concrete
Real crash test			x
Numerical simulation		x	
Design	x		

Lighter structure and easier to assemble   *All models are EN1317 Crash tested*

DOLRE H464

Containment Level				N1			N2	H1	H2	H3	H4a	**H4b**
Working width(W)	W8	W7	**W6**		W5			W4		W3	W2	W1
Vehicle Intrusion (VI)	**VI9**	VI7	VI6		VI5			VI4		VI3	VI2	VI1
Acceleration Severity index (ASI)		ASI A				**ASI B**					ASI C	

The additional features are:
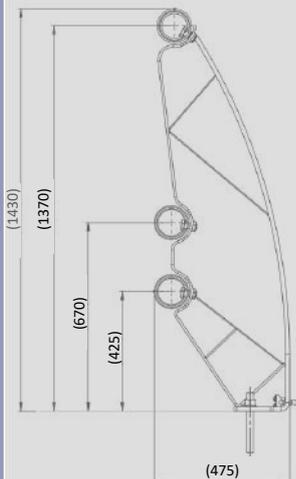
- Post span = 1,5m

- To ensure the guardrail function, the overall height in relation to the concrete support = 1,40 m

- To limit the influence on the structure, the space requirement between front and rear post face = 475 cm, 53 cm from the bridge edge.

- For aesthetic reasons , the connections between the longitudinal elements are not visible on the 180° front panel (the fixing points will only be located on the 180° rear panel)

- In order to limit the number of sealing holes, the average number of anchors per meter of device = 1.33 pieces/m

- To limit or even avoid reinforcements, the forces transmitted by post are V=84kN ; M=21kNm

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Transitions level of validation			
	2 waves beam	3 waves beam	Concrete
Real crash test			
Numerical simulation		x	
Design	x		x

Wide range of transitions

Possibility of chemical and mechanical fixation

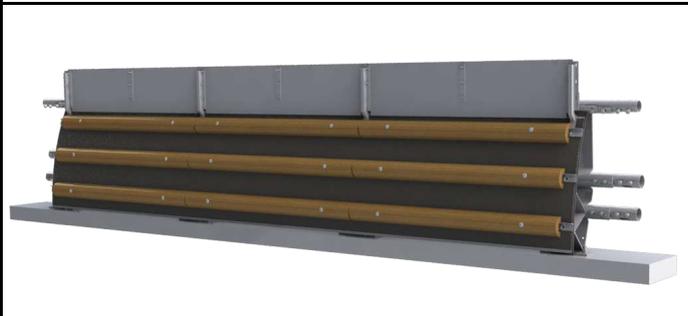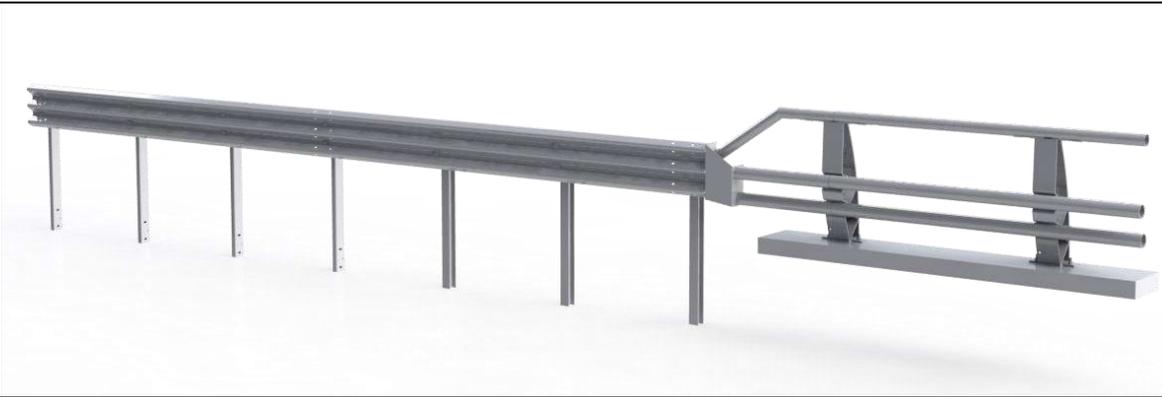|	
	Pedestrian protection
	Design pedestrian protection
	Railway protection
	Dull plate pedestrian Protection (Possible to have both sides colored or with a printed pattern)
	Chiroptera friendly extension (Possible to have both sides colored or with a printed pattern)
	Chiroptera friendly extension with dull height extension (Possible to have both sides colored or with a printed pattern)
	LED lights

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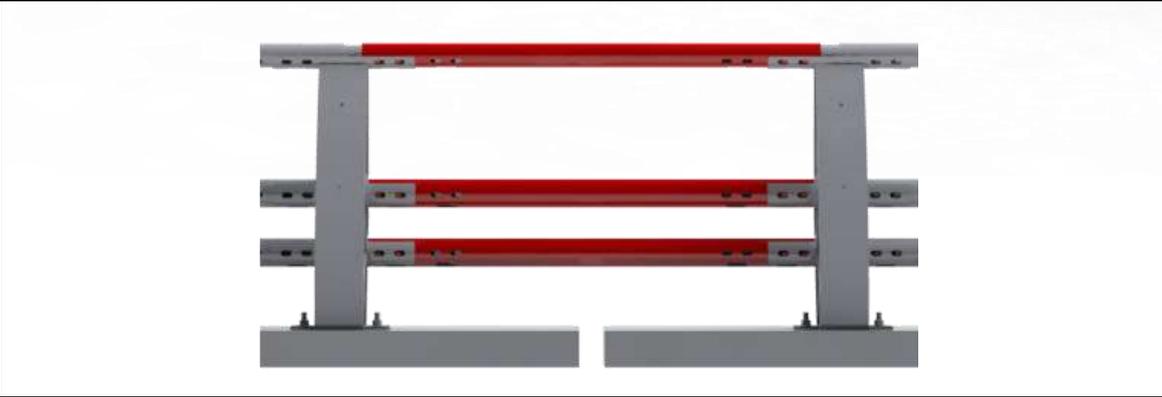| Transitions	
To 2 waves beam	
To concrete	
To 3 waves beam	
Other adaptations	
Expansion joint adaptation	
Powder coating	

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