HARDSTAFF
BARRIERS

REBLOC

PRECAST
CONCRETE BARRIER SOLUTIONS

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OUR COMPANY

Hardstaff Barriers is a multi-award winning manufacturer and supplier of protective roadside barriers and perimeter security systems.

Our roadside barriers, hostile vehicle mitigation (HVM) systems, perimeter fencing, concrete security barriers and access gates are designed for one reason: to keep people and property safe.

Our products are designed to offer the highest levels of protection and are delivered with expertise and excellence.

Hardstaff has installed safety barriers at royal weddings, state visits and across the UK's road network.

Our professional and experienced team is committed to providing an outstanding service.

OUR SERVICES

Our systems are designed to provide protection and redirect errant vehicles from hazards within or immediately adjacent to the highway.

Utilising our extensive in-house haulage and operations team capability, Hardstaff provides a complete nationwide service - from the supply to the transportation and installation of our concrete barrier product range.

This expertise, along with our reputation for innovation, development and reliability, has been instrumental in establishing and maintaining excellent customer relationships.

Our experienced team offers project design support to provide the best solution to help meet specific client needs.

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REBLOC

FOR THE LOVE OF LIVES

The UK's roads are among the safest in the world thanks to the safety measures and interventions that have been put in place to protect drivers, pedestrians and workers. We're proud of the role we play in supplying critical safety infrastructure.

What is REBLOC?

A reliable vehicle restraint system (VRS) is an essential roadside feature, protecting lives by safely redirecting errant vehicles and preventing them from breaking through the barrier upon impact.

REBLOC is a precast concrete VRS designed to provide protection on high-speed roads and motorways.

The individual elements form a high strength continuous chain of barrier that provides high containment and safely absorbs energy and impact forces.

A wide range of REBLOC products are available, with a variety of working widths, lengths, weights, configurations and capabilities, making it the ideal choice for any highway scheme.

Safety wherever you need it

Available as temporary or permanent solutions, all REBLOC safety barriers have been comprehensively tested according to European Standard EN1317 with real-life crash tests.

Each product has been awarded a containment class, which confirms the product's ability to retain specified vehicles at determined speeds and impact angles, and a working width level, which is based on the width of the barrier plus the amount of deflection that occurs when the barrier is impacted.

For information on performance classes see page 31.

Advantages of using precast concrete barriers

- ✓ Managed risks
- ✓ Off site-manufacturing
- ✓ Factory production control
- ✓ Improved project planning
- ✓ Scheme delivery
- ✓ Rapid and planned installation
- ✓ Minimal plant movement on site
- ✓ No wet trades on site
- ✓ Reduced people plant interface
- ✓ Reduced weather risks (production and installation)
- ✓ Multiple quality processes before loading and delivered to site

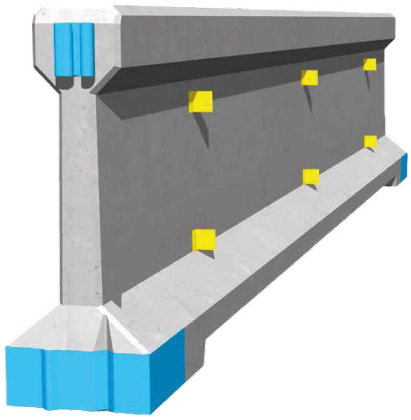
FREE-STANDING SYSTEMS

All REBLOC free-standing systems are available in different heights and containment levels and do not require any intermediate anchoring.

High containment levels with low working widths are achieved without the need for anchoring.

Features

- ✓ Modular systems with no intermediate anchors
- ✓ Fast and easy installation requiring minimal plant and labour
- ✓ Economic and efficient



REBLOC RB80SA_4

N2 W4

REBLOC RB80SA_12

N2 W3

REBLOC RB80SA_4 and RB80SA_12 are free-standing precast concrete vehicle restraint systems designed to provide protection on high-speed roads and motorways where space is limited.

Features

- **Free-standing, no anchors along the run**
- It has a width of just 300mm, making it ideal for narrow roads
- Integrated rubber pads available to protect the road surface
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users
- **W1 anchored option available. See page 16.**

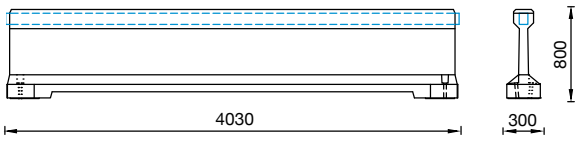
RB80SA_4 Specifications

- Weight: 1010kg
- Dimensions(mm): 4030 x 300 x 800
- Minimum installation: 92.7m

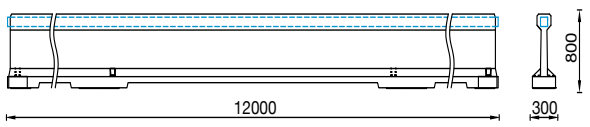
RB80SA_12 Specifications

- Weight: 3000kg
- Dimensions(mm): 12000 x 300 x 800

REBLOC RB80SA_4 dimensions in mm



REBLOC RB80SA_12 dimensions in mm



REBLOC
RB80_8

H1 W4 N2 W3

REBLOC RB80_8 is a free-standing precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

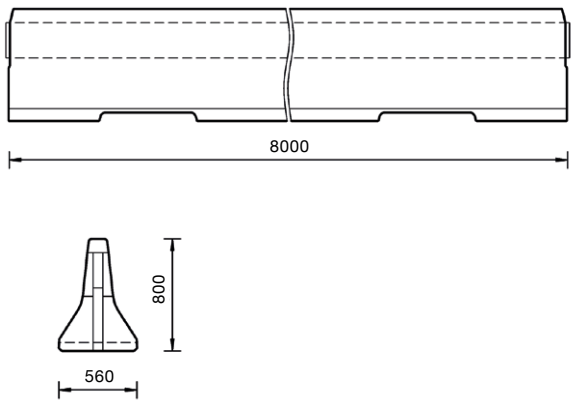
Features

- Free-standing
- Different fields of application
- Speedy and easy installation, relocation and removal
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

- Weight: 4000kg
- Dimensions(mm): 8000 x 560 x 800
- Minimum installation: 112m

REBLOC RB80_8 dimensions in mm



REBLOC
RB80H_8

H2 W5 H1 W4

REBLOC RB80H_8 is a free-standing precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

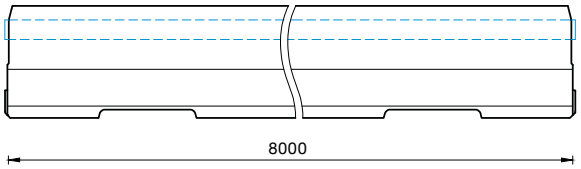
Features

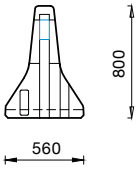
- ✓ Free-standing
- ✓ Anti-vandalism
- ✓ No loose parts
- ✓ Temporary or permanent solution
- ✓ Protects workforce and other road users

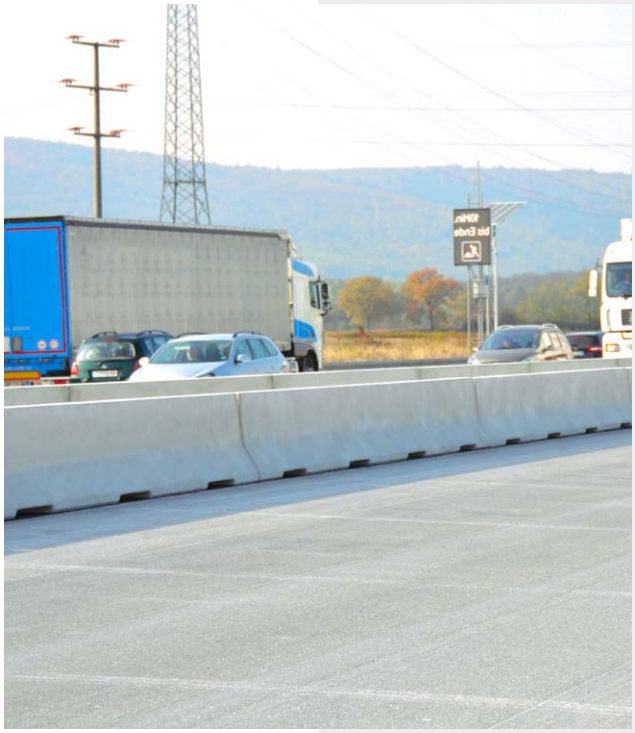
Specifications

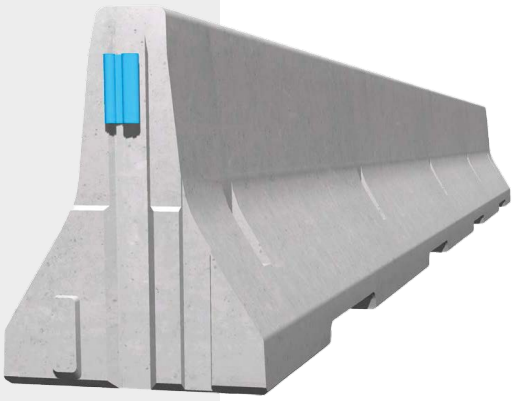
- » Weight: 4000kg
- » Dimensions(mm): 8000 x 560 x 800
- » Minimum installation: 80m

REBLOC RB80H_8 dimensions in mm









REBLOC
RB80XAS_8

H2 W5

REBLOC RB80XAS_8 is a free-standing precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

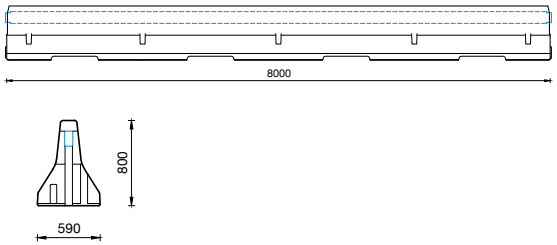
Features

- Free-standing
- Barrier can be pinned into asphalt, concrete or compacted soil with no additional foundation required
- Universal coupling design is quick and easy to install
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users
- Anchored option also available. See page 18.

Specifications

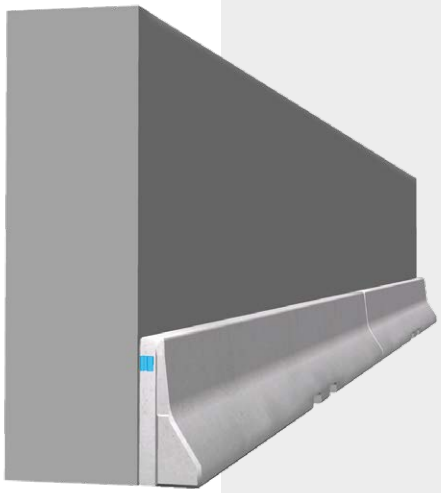
- Weight: 4800kg
- Dimensions(mm): 8000 x 590 x 800
- Minimum installation: 80m

REBLOC RB80XAS_8 dimensions in mm



REBLOC
RB80XW_8

H2 W1



The REBLOC RB80XW_8 is a free-standing precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways, for the application along vertical tunnel walls.

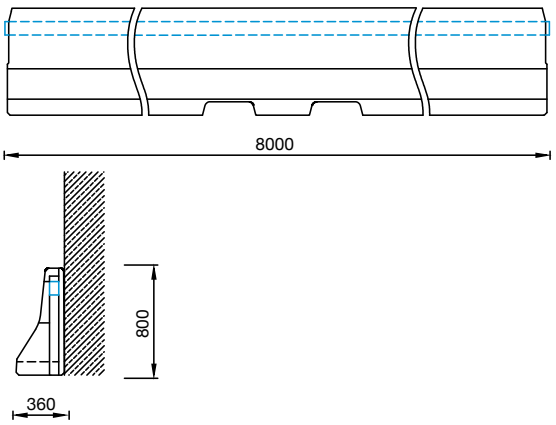
Features

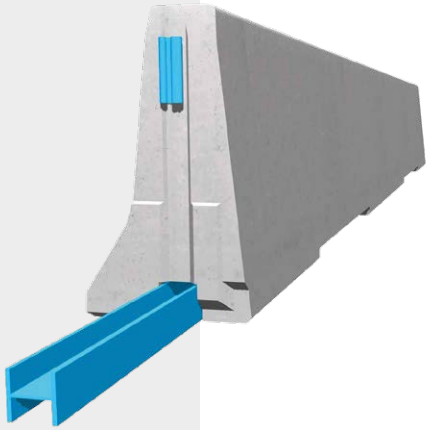
- Free-standing
- Thanks to its asymmetric shape, it can be positioned seamlessly along existing tunnel walls
- Due to the low system width, valuable space is maintained and sufficient width of traffic lanes is ensured
- No anchorage necessary - free-standing system
- Low working width of W1
- Quick installation reduces duration of construction site
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

- Weight: 3400kg
- Dimensions(mm): 8000 x 360 x 800
- Minimum installation: 32m

REBLOC RB80XW_8 dimensions in mm





REBLOC
RB100SFS_8

H2 W4

The REBLOC RB100SFS_8 is a free-standing precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

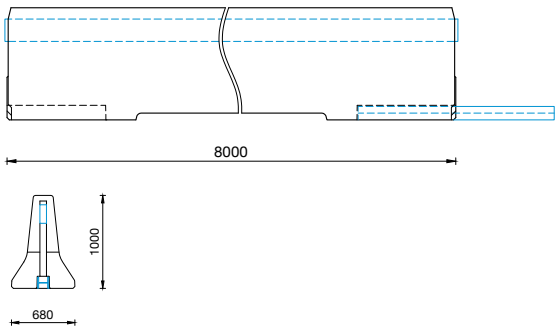
Features

- Free-standing
- High containment level (H2) with low system movement
- Ideal for use on bridge constructions
- Minimal collision forces transferred to the bridge deck due to the barrier being free-standing
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

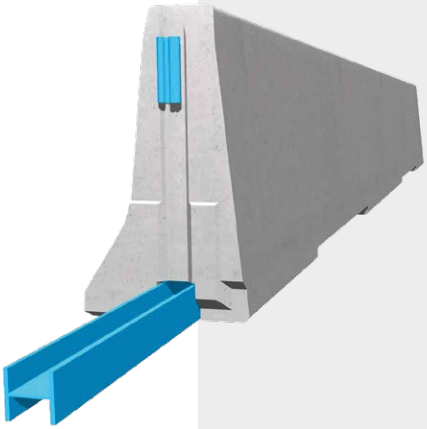
- Weight: 6750kg
- Dimensions(mm): 8000 x 680 x 1000
- Minimum installation: 96m

REBLOC RB100SFS_8 dimensions in mm



REBLOC **RB100SFP_8**

H2 W3



REBLOC **RB100SF_8**

H2 W3

The REBLOC RB100SFP_8 and RB100SF_8 are free-standing precast concrete vehicle restraint systems designed to provide protection on high-speed roads and motorways.

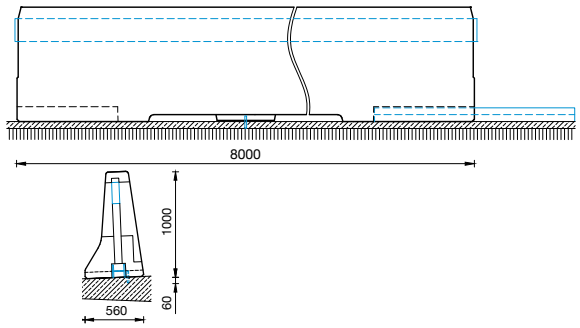
Features

- Free-standing
- High containment level (H2) with low system movement
- Ideal for use on bridge constructions
- Minimal collision forces transferred to the bridge deck due to the barrier being free-standing
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

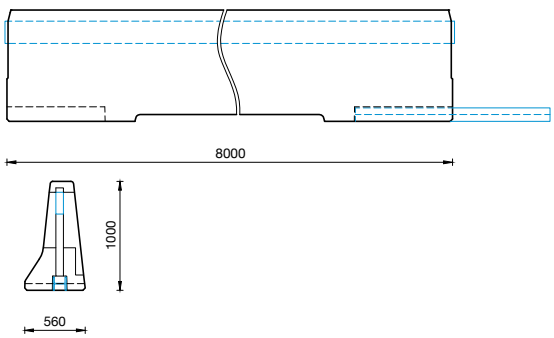
RB100SFP_8 & RB100SF_8 Specifications

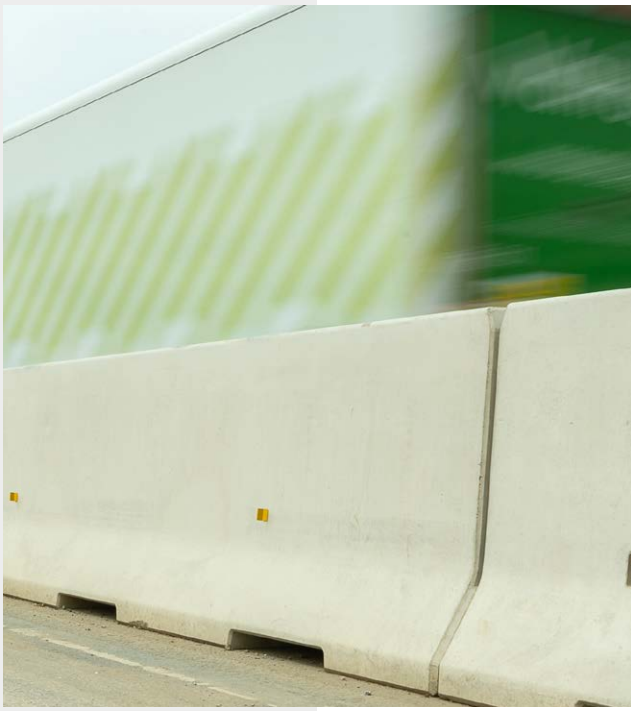
- Weight: 6000kg
- Dimensions(mm): 8000 x 560 x 1000
- Minimum installation: 96m

REBLOC RB100SFP_8 dimensions in mm



REBLOC RB100SF_8 dimensions in mm





REBLOC
RB140SFS_5.5

H4a W4

The REBLOC RB140SFS_5.5 is a free-standing precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

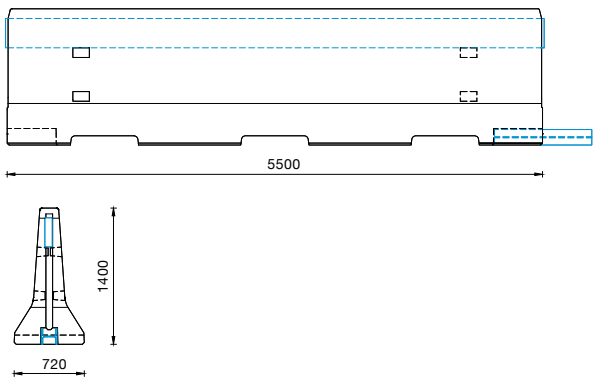
Features

- Free-standing
- Provides the highest containment level (H4a) and even restrains the impact of a 30-tonne lorry travelling at 65 km/h
- The height of this system offers effective glare protection
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

- Weight: 6000kg
- Dimensions(mm): 5500 x 720 x 1400
- Minimum installation: 88m

REBLOC RB140SFS_5.5 dimensions in mm



REBLOC
NOISE BARRIER
NBL100X /200-450_5

H2 W4

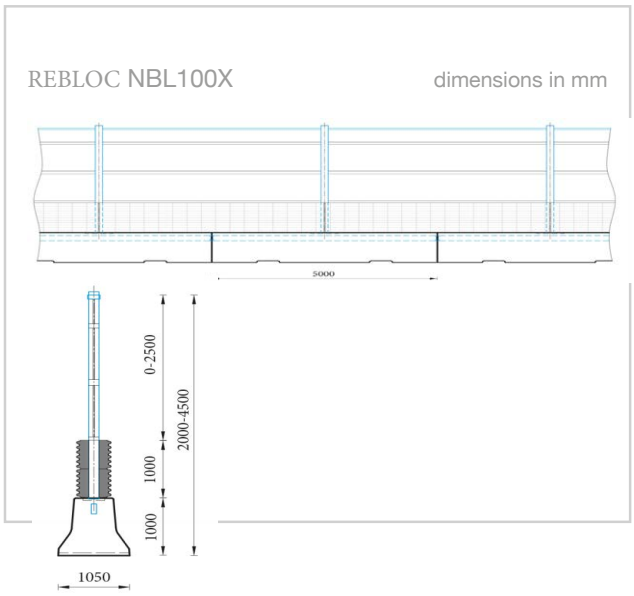
The REBLOC NBL100X/200-450_5 is a free-standing precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

Features

- Free-standing
- Combined product achieves safety and sound insulation in one
- Two in one product
- Product can be quickly and easily installed
- Various heights are available
- Wide variety of colours, designs and materials are available for customised layout options
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

- Weight: 8000kg
- Dimensions(mm): 5000 x 1050 x 1000
- Minimum installation: 65m



ANCHORED SYSTEMS

REBLOC anchored barriers can be used as single-sided and double-sided systems for the central reserve and along the verge.

The system is installed on concrete, asphalt or compacted subsoil and no additional foundation.

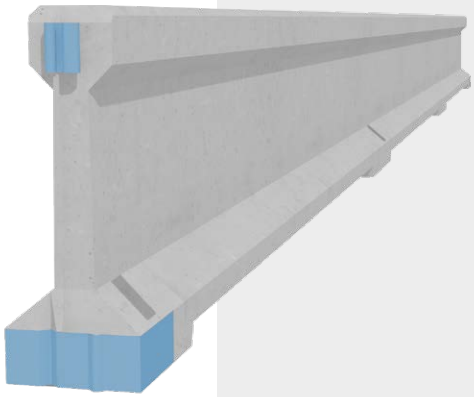
A high level of safety is ensured by the anchor pins, which allow minimal movement of the system.

Features

- ✓ Very cost efficient systems due to direct installation on compacted soil, asphalt or concrete
- ✓ Easy and quick installation of anchor pins
- ✓ Single-sided installation for limited space

REBLOC
RB80SA_12

N2 W1



The REBLOC RB80SA_12 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways where space is limited.

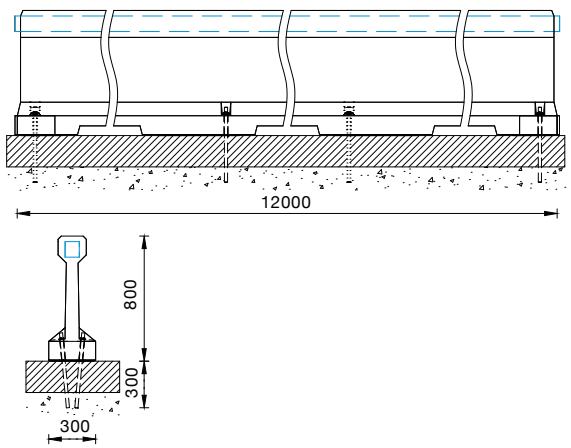
Features

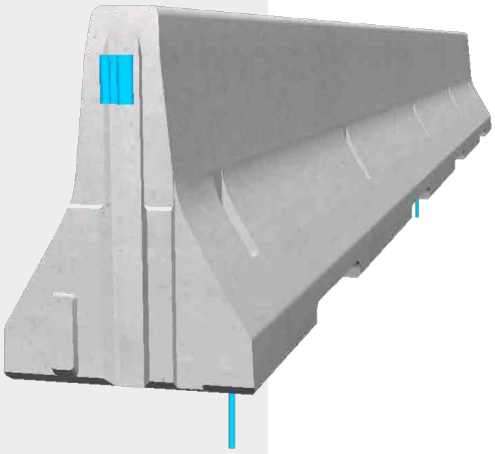
- Each element is anchored with just four pins so the system can be easily installed, relocated or removed
- It has a width of just 300mm, making it ideal for narrow roads
- Elastomer pads are available for low surface pressure and protection of the road surface
- Can be used as single-sided and double-sided system for the central reserve, or for protection along the verge
- Cost-efficient system due to installation anchored in asphalt
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

- Weight: 3000kg
- Dimensions(mm): 12000 x 300 x 800
- Minimum installation: 120m

REBLOC RB80SA_12 dimensions in mm





REBLOC RB80XA_8_3P

H2 W2

REBLOC RB80XA_8_3A

H2 W2

REBLOC RB80XA_8_6P

H2 W2

REBLOC RB80XA_8_6A

H2 W2

The REBLOC RB80XA_8_3P, RB80XA_8_3A, RB80XA_8_6P and RB80XA_8_6A are anchored precast concrete vehicle restraint systems designed to provide protection on high-speed roads and motorways.

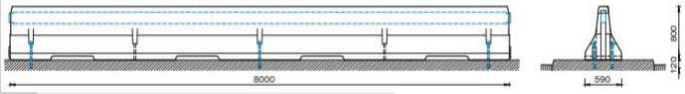
Features

- ✓ Barrier can be pinned into asphalt or anchored into concrete
- ✓ Universal coupling design is quick and easy to install
- ✓ Can be used as single-sided and double-sided systems for the central reserve, or for protection along the verge
- ✓ Anti-vandalism
- ✓ No loose parts
- ✓ Temporary or permanent solution
- ✓ Protects workforce and other road users

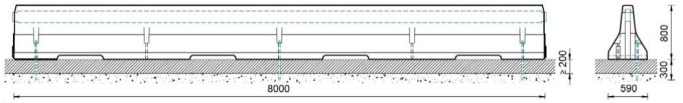
Specifications

- » Weight: 4800kg
- » Dimensions(mm): 8000 x 590 x 800

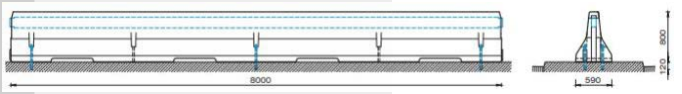
REBLOC RB80XA_8_3A dimensions in mm



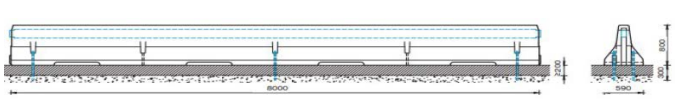
REBLOC RB80XA_8_3P dimensions in mm



REBLOC RB80XA_8_6A dimensions in mm

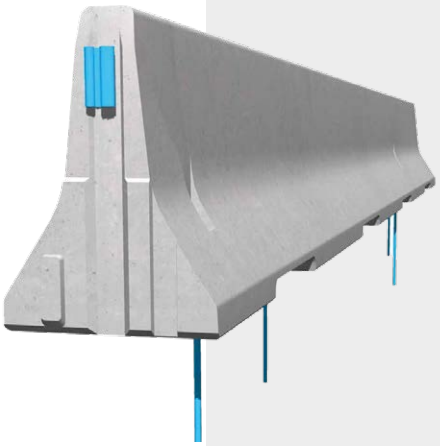


REBLOC RB80XA_8_6P dimensions in mm



REBLOC
RB80AS_8

H2 W3



The REBLOC 80AS_8 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

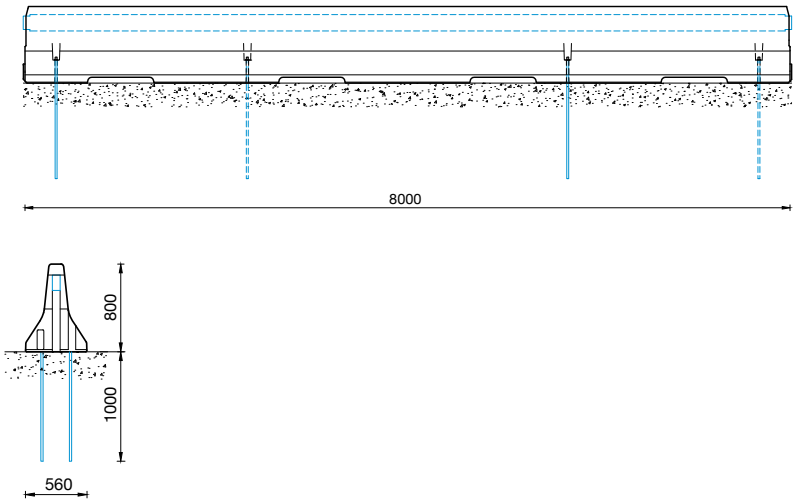
Features

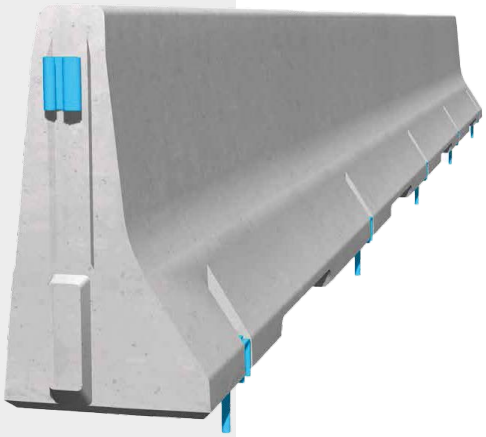
- ✓ Can be used as single-sided and double-sided system for the central reserve, or for protection along the verge
- ✓ Cost-efficient system due to installation on compacted soil
- ✓ Anti-vandalism
- ✓ No loose parts
- ✓ Temporary or permanent solution
- ✓ Protects workforce and other road users

Specifications

- » Weight: 4000kg
- » Dimensions(mm): 8000 x 560 x 800
- » Minimum installation: 64m

REBLOC RB80AS_8 dimensions in mm





REBLOC
RB80A_8

H2 W1

The REBLOC RB80A_8 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways, ideal for the edge of bridges and for the protection of bridge piers.

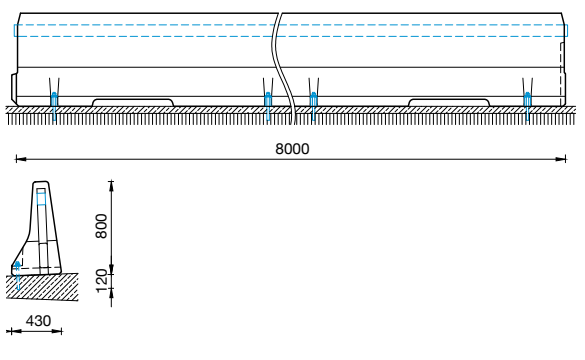
Features

- With a minimum working width, this system is ideal for the edge of bridges and for the protection of bridge piers
- Anchoring depth of only 120mm prevents damage to bridge waterproofing and avoids buried cables
- No system movement with slim construction
- Application on outermost edge of bridge possible
- Can be used as single-sided and double-sided system for the central reserve, or for protection along the verge
- Cost-efficient system due to installation anchored in concrete
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

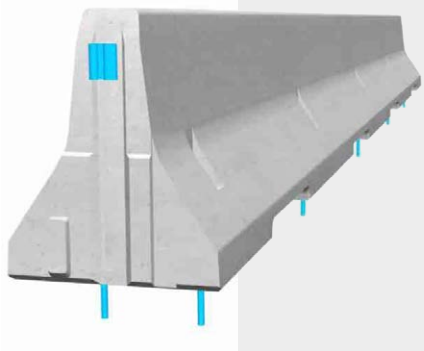
- Weight: 3700kg
- Dimensions(mm): 8000 x 430 x 800
- Minimum installation: 56m

REBLOC RB80A_8 dimensions in mm



REBLOC
RB80XA_8_10A

H2 W1



The REBLOC RB80XA_8_10A is an anchored precast concrete vehicle restraint systems designed to provide protection on high-speed roads and motorways.

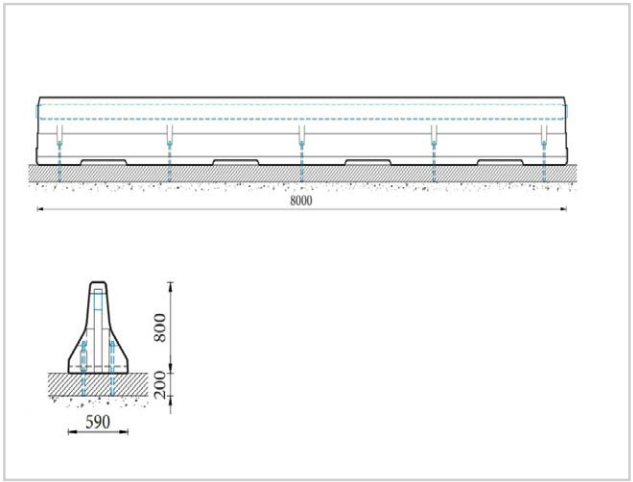
Features

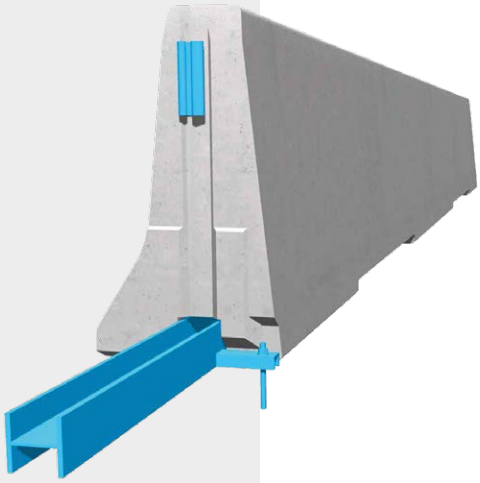
- Barrier can be anchored into asphalt or concrete
- Universal coupling design is quick and easy to install
- Can be used as single-sided and double-sided systems for the central reserve, or for protection along the verge
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Foundations also available.

Specifications

- Weight: 4800kg
- Dimensions(mm): 8000 x 590 x 800
- Minimum installation: 32m





REBLOC
RB100SFA_8

H4b W4

The REBLOC 100SFA_8 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways, ideal for new bridge structures as well as for the refurbishment of existing bridges.

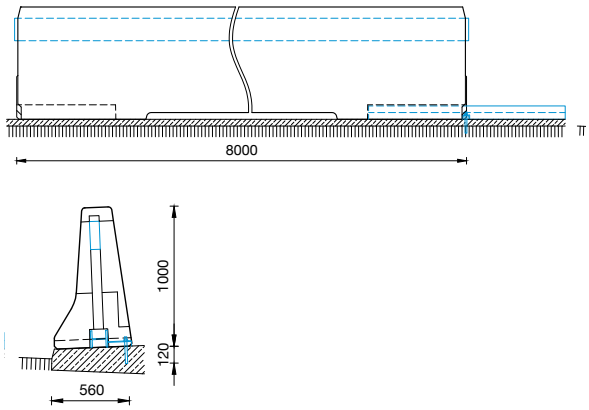
Features

- The highest containment level H4b offers the best possible protection and even restrains the impact of a 38-tonne lorry travelling at 65 km/h
- Minimal collision forces transferred into the structure due to the barrier being free-standing
- Can be used as single-sided and double-sided system for the central reserve, or for protection along the verge
- Cost-efficient system due to anchored in concrete or asphalt
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

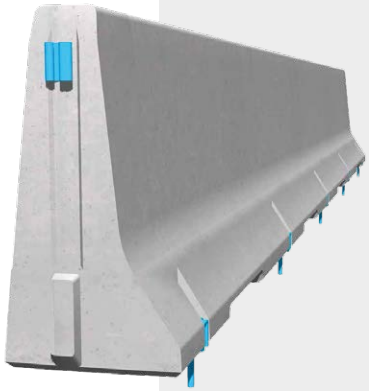
- Weight: 6000kg
- Dimensions(mm): 8000 x 560 x 1000
- Minimum installation: 96m

REBLOC RB100SFA_8 dimensions in mm



REBLOC
RB100A_8

H2 W1



The REBLOC RB100A_8 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways, ideal for the edge of bridges and for the protection of bridge piers.

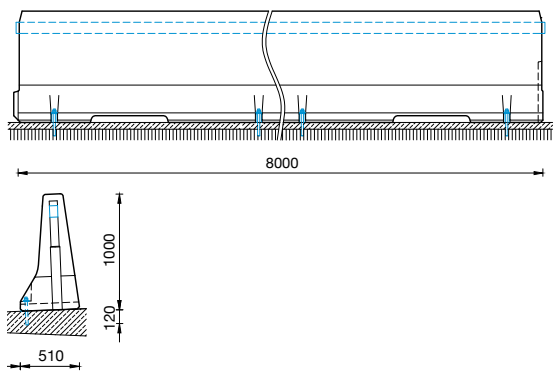
Features

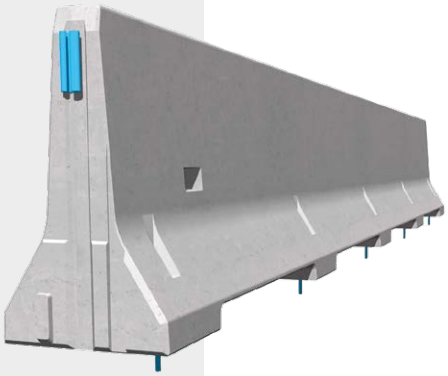
- With a minimum working width, this system is ideal for the edge of bridges and for the protection of bridge piers
- Anchoring depth of only 120mm prevents damage to bridge waterproofing and avoids buried cables
- No system movement with slim construction
- Application on outermost edge of bridge possible
- Can be used as single-sided and double-sided system for the central reserve, or for protection along the verge
- Cost-efficient system due to installation anchored in concrete
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

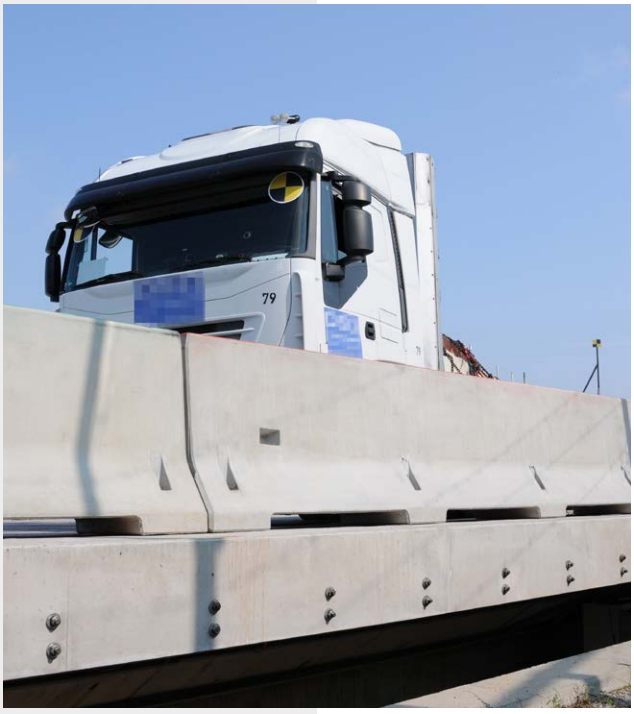
Specifications

- Weight: 5600kg
- Dimensions(mm): 8000 x 510 x 1000
- Minimum installation: 56m

REBLOC RB100A_8 dimensions in mm







REBLOC
RB120A_7.5

H4b W2

The REBLOC RB120A_7.5 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways, ideal for the edge of bridges and for the protection of bridge piers.

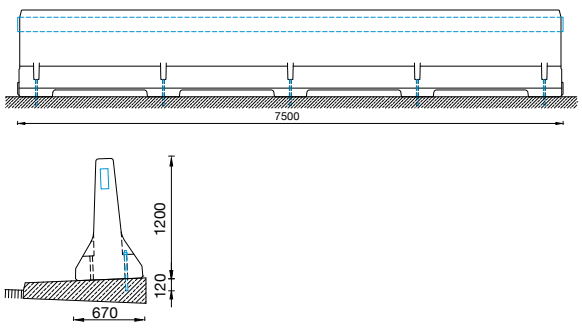
Features

- Minimal working width
- Anchoring depth only 120mm in order to protect the bridge sealing
- Minimal system movement and slim construction
- Application on outermost edge of bridge possible
- Can be used as single-sided and double-sided system for the central reserve, or for protection along the verge
- Cost-efficient system due to installation anchored in concrete
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

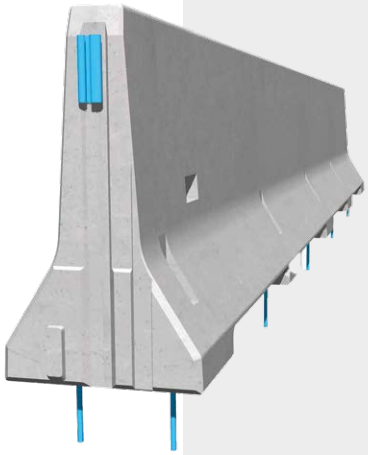
- Weight: 6000kg
- Dimensions(mm): 7500 x 670 x 1200
- Minimum installation: 75m

REBLOC RB120A_7.5 dimensions in mm



REBLOC
RB120AS_7.5

H4b W2



The REBLOC RB120AS_7.5 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways.

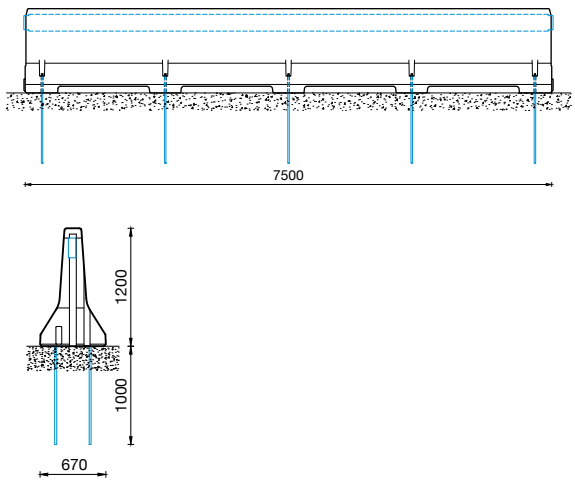
Features

- The highest containment level H4b offers the best possible protection and even restrains the impact of a 38-tonne lorry travelling at 65 km/h
- Low system movement with high safety level
- Effective glare protection due to system height of 1200mm
- Can be used as single-sided and double-sided system for the central reserve, or for protection along the verge
- Cost-efficient system due to installation on compacted soil
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

Specifications

- Weight: 6000kg
- Dimensions(mm): 7500 x 670 x 1200
- Minimum installation: 82.5m

REBLOC RB120AS_7.5 dimensions in mm



REBLOC
RB185A_4_5A

H4a W1

The REBLOC RB185 is an anchored precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways, ideal for the protection of bridge piers.

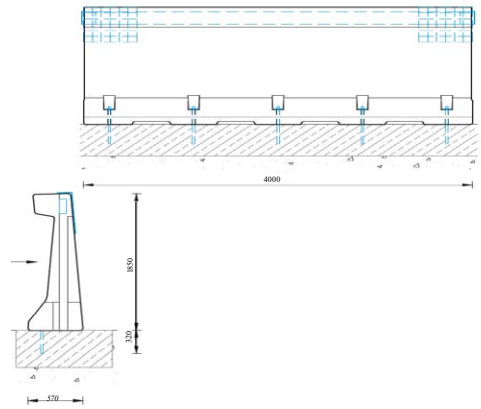
Features

- No system movement with slim construction
- Very high containment
- Application on outermost edge of bridge possible
- Cost-efficient system due to installation anchored in concrete
- No loose parts

Specifications

- Weight: 5700kg
- Dimensions(mm): 4000 x 570 x 1850
- Minimum installation: 44m (11 Elements)

REBLOC RB185 dimensions in mm



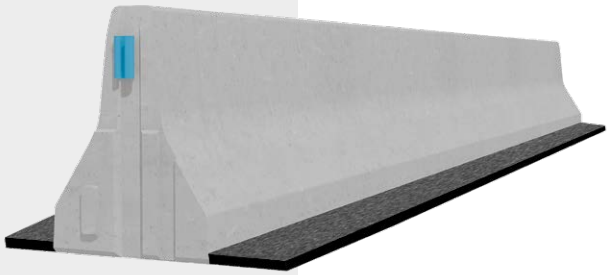
EMBEDDED SYSTEMS

The REBLOC embedded systems can be used where a high containment level is needed within a narrow space.

The systems are available with or without drainage openings.

Features

- ✓ Minimal embedment in asphalt or concrete
- ✓ Optimal usage for limited space due to slim construction
- ✓ No system movement



REBLOC **RB84XEA.3_8**

REBLOC **RB84XEAL_8**

H2 W1

The REBLOC RB84XEA.3_8 and the REBLOC RB84XEAL_8 are embedded precast concrete vehicle restraint systems designed to provide protection on high-speed roads and motorways where space is limited.

Features

- ✓ Can be embedded into just 40mm of asphalt or concrete
- ✓ Slim construction, making it ideal for narrow roads
- ✓ Drainage option available
- ✓ The minimum installation is only 40 metres
- ✓ Anti-vandalism
- ✓ No loose parts
- ✓ Temporary or permanent solution
- ✓ Protects workforce and other road users

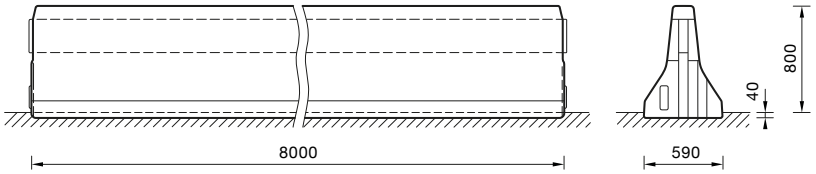
RB84XEA.3_8 Specifications

- » Weight: 4800kg
- » Dimensions(mm): 8000 x 590 x 840
- » Minimum installation: 32m

RB84XEAL_8 Specifications

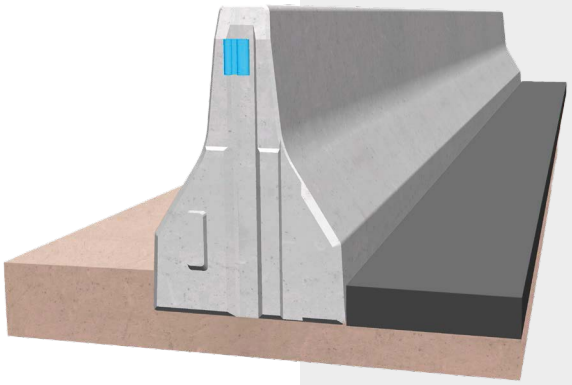
- » Weight: 4800kg
- » Dimensions(mm): 8000 x 590 x 840
- » Minimum installation: 40m

REBLOC RB84XEA.3_8 dimensions in mm



REBLOC
RB92XES_8

H2 W2



The REBLOC RB92XES_8 is an embedded precast concrete vehicle restraint system designed to provide protection on high-speed roads and motorways where space is limited.

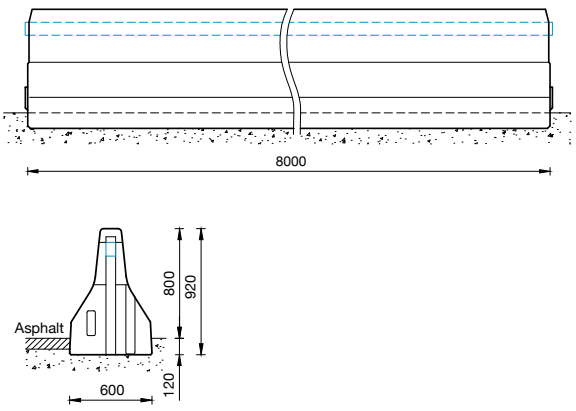
Features

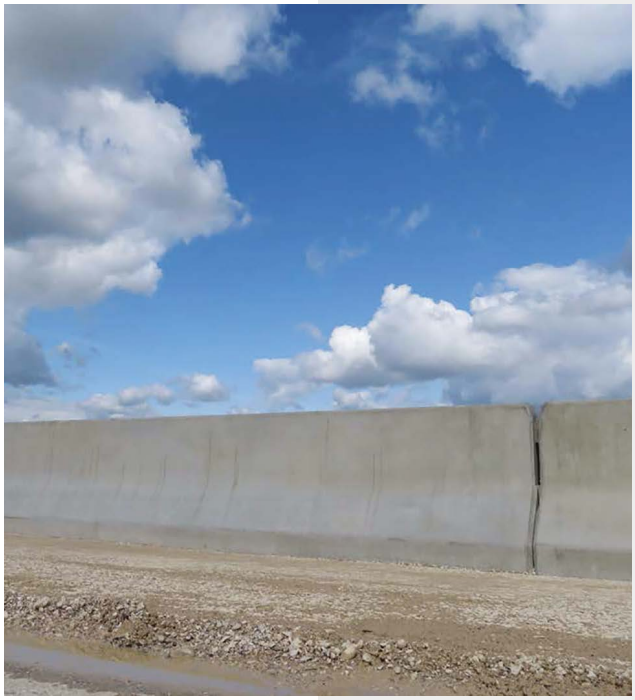
- Only 120mm embedment in compacted soil
- High breakthrough prevention due to high containment H2 with low working width W2
- Usage in central reserve or along the verge
- Anti-vandalism
- No loose parts
- Temporary or permanent solution
- Protects workforce and other road users

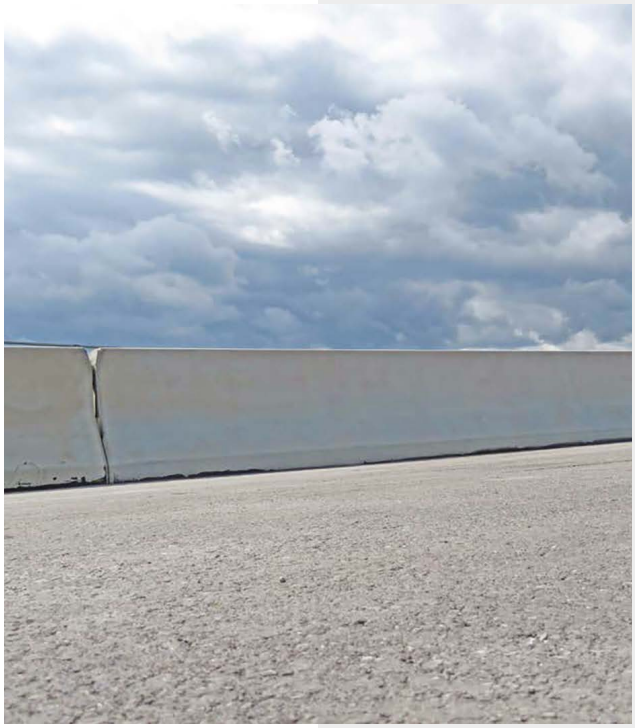
Specifications

- Weight: 4800kg
- Dimensions(mm): 8000 x 600 x 920
- Minimum installation: 56m

REBLOC RB92XES_8 dimensions in mm







COUPLINGS & SPECIAL ELEMENTS

The REBLOC integrated innovative coupling system connects the individual elements to form a continuous and strong chain, which safely dissipates the energy created in a collision and prevents vehicles from breaking through the barrier.

Safety and practicality are substantially increased because the REBLOC system does not contain any loose parts.

The Benefits

- ✓ The symmetrical couplings enable you to install the elements from any side
- ✓ The profile of the concrete barriers reduces the impact severity, which in turn controls the behaviour of the vehicle and protects the passengers
- ✓ Once installed, the system is immediately ready for use
- ✓ This significant advantage has positive effects on the construction time and the project overall.
- ✓ Individual elements can easily be inserted or removed from the continuous element chain for repair, maintenance and structural alteration works

Special Elements

Safety does not stop with the last REBLOC concrete barrier. Customised elements are available for connecting to existing systems and for many special applications.

REBLOC offers engineered elements to provide solutions for the most challenging installation conditions. These include transition elements, terminal elements, bifurcations, light column elements and many more.

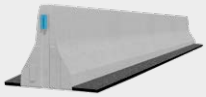
PRODUCT NAME GUIDANCE

All of the REBLOC products have been carefully named to reflect the system so that they can be easily and quickly identified. The product name includes the height, length, installation description and product specification.

REBLOC Product	Height in CM	Instillation / product description		Length in M	Product Specification		Containment level / Working width
REBLOC	80	A		8			H2/W1
REFENCE	50	A	Anchored	2	A	Asymmetric	e.g.: T3/W2 H1/W4
NB Noise Barrier	60	AS	Anchored Soil	4	B	Bifurcation	
	80	BF	BackFilled	4.5	C	Countersunk	
	84	BFS	BackFilled Symmetric	5	EDSP	Einfache DistanzSchutzPlanke	
	85	H	Heavy	6	EG	Emergency Gate	
	92	L	Light	7.5	EXC	EXpansion joint element Coupling	
	100	S	Slim	8	EXM	EXpansion joint element Mechanically	
	110	SA(Q)	Slim Anchored	12	G	Gantry	
	120	SF	Shear Force		N	Normal Elements	
	140	SFA	Shear Force Anchor		LC	Light Column	
	185	SFP	Shear Force Pin		S	Steel transition element	
		SFS	Shear Force Symmetric		T	Terminal element	
		X	eXtra profile		TS	Traffic Sign element	
		XH	eXtra profile Heavy				
		XA	eXtra profile Anchored				
		XAS	eXtra profile Anchored Soil				
		XEAL	eXtra profile Embedded Asphalt Light				
		XES	eXtra profile Embedded Soil				
		XW	eXtra profile Wall				

Permanent Systems

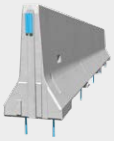
Free-standing



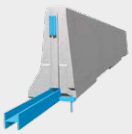
Embedded

Backfilled

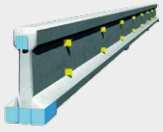
Anchored Soil



Anchored



Free-standing with position securing



Temporary Systems

Transitions

Integrated Noise Barrier

SYSTEMS OVERVIEW

The tables below include all REBLOC product codes and the containment/working width classes that apply to them:

Standard Systems:

Containment level \ Working width	W1	W2	W3	W4	W5	W6
H4b		120AS _7.5** 120A _7.5* 185A.1_4_5a		100SFA _8*	100SF _8 100SFS _8 100SFSA _8 120 _7.5	100 _8 110 _8
H4a	185A_4_5a			140SFS _5.5		
H3					100L _8 100 _8 NB100XH/300 _8	100H _2 100H _3 100H _4
H2	80A_8* 80XA_8_10A** 80XW_8 100A_8* 84XEAL_8** 84XEA.3_8** 80XAU_8_5A	80XA _8_3A* | 80XA _8_6A** 80XA _8_3P** | 80XA _8_6P** 80XAS _8_10P** 92XES _8**	80AS _8** 80XAS _8_4P** 100SFP _8* 100SF _8	80X _8 80XAS _8 100SFS _8 100SFSA _8 NB100/300 _8 NBL100X/200-450 _5	80H _8 85BF _8** 100 _2 | 100 _3 100 _4 | 100 _8 100L _6 110L _8	
H1				80S_12 80SAQ_12 80SA _6 80 _8 | 80H _8	80L _8 REFENCE 80H _8+124.02	
N2	80SA_6** 80SA_12** 80SAQ_12**		80SA_12 80SAQ_12 80 _8 | 80H _8 80H _8LCS 80XA _8 80XAS _8 84XEAL _8 84XEA.3 _8	60H _12 80SA _4 80SA _6 80S_12 80L _4		
N1						
T3	50H _12 85BF _8	50 _12 50H _4 REFENCE 50H _12+104.01 60 _6 60 _12 60H _12 80SA _4 80SA _6 80S _12 80SAQ _12 80X _8 80XAS _8 85BFS _8	REFENCE 50H _12+124.01	50H _EG12		
T2						
T1	50 _12 | 50H _12 60 _12 80XAS _8 85BF(S) _8					

* Bridge Systems | ** Systems with anchorage/backfilling (no free standing installation)

Legend:
Containment level: The given containment level also meets the test conditions of a lower level (except that N1 and N2 do not include T3 and H1, ..., H4b do not include N2).
Classes of working width levels: The given working width also meets the following higher working width levels.

PERFORMANCE CLASSES

REBLOC systems are thoroughly tested in accordance with EN1317 and are CE certified. Each product has been awarded a containment class and a working width level. This table explains what the performance classes mean:

Containment levels, vehicle impact test criteria

Containment level	Acceptance test	Impact speed(km/h)	Impact angle (°)	Total vehicle mass (kg)	Kinetic energy (kJ)
T1	TB21	80	8	1.300	6,2
T2	TB22	80	15	1.300	21,5
T3	TB21	80	8	1.300	-
	TB41	70	8	10.000	36,6
N1	TB31	80	20	1.500	43,3
N2	TB32	110	20	1.500	81,9
	TB11	100	20	900	-
H1	TB42	70	15	10.000	126,6
	TB11	100	20	900	-
H2	TB51	70	20	13.000	287,5
	TB11	100	20	900	-
H3	TB61	80	20	16.000	462,1
	TB11	100	20	900	-
H4a	TB71	65	20	30.000	572,0
	TB11	100	20	900	-
H4b	TB81	65	20	38.000	724,6
	TB11	100	20	900	-

Vehicle Intrusion

Containment level	Acceptance test
VI1	$VI_n \leq 0.6$
VI2	$VI_n \leq 0.8$
VI3	$VI_n \leq 1.0$
VI4	$VI_n \leq 1.3$
VI5	$VI_n \leq 1.7$
VI6	$VI_n \leq 2.1$
VI7	$VI_n \leq 2.5$
VI8	$VI_n \leq 3.5$
VI9	$VI_n \leq 3.5$

Impact severity levels

Impact severity level	Index values	
A	ASI ≤ 1,0	and THIV ≤ 33km/h
B	ASI ≤ 1,4	
C	ASI ≤ 1,9	

Levels of working width

Containment level	Acceptance test
W1	$W_n \leq 0,6$
W2	$W_n \leq 0,8$
W3	$W_n \leq 1,0$
W4	$W_n \leq 1,3$
W5	$W_n \leq 1,7$
W6	$W_n \leq 2,1$

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