

SAFETY & IMPACT PROTECTION BARRIERS

Beams > Posts > Corners > Ends > Handrail



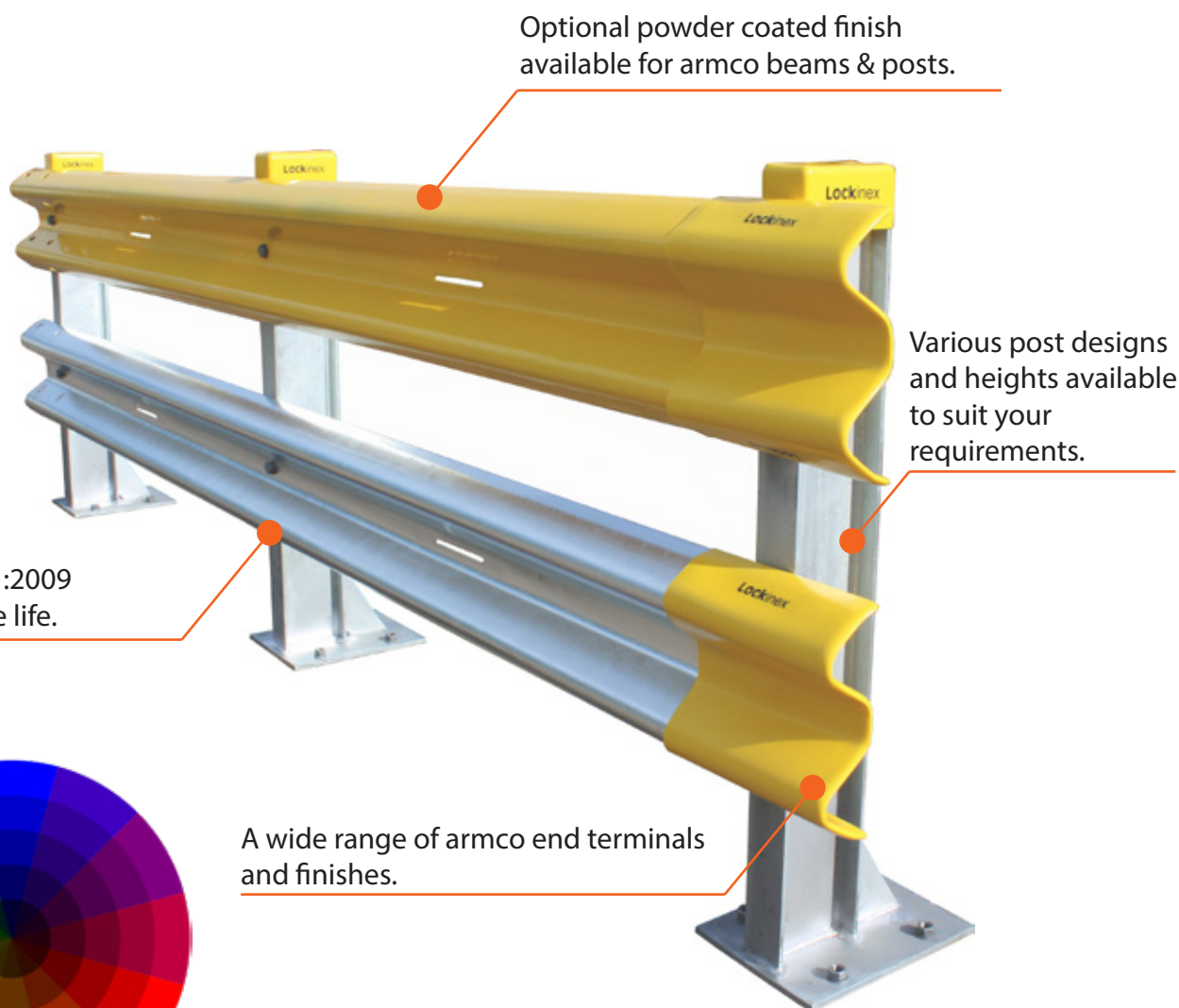
Revision #	Revision Date
# 0	18/01/2023

Armco Barrier

Armco crash barrier is ideal for off highway applications such as traffic segregation, protection of pedestrians & protection of buildings/assets from moving vehicles such as cars, forklifts and commercial vehicles. Frequent applications include car parks, factories, warehouses, loading bays and much more.

The Lockinex armco range consists of various beams, posts, caps, end terminals, corners, handrail attachments and relevant fixing and holding down bolts.

All components are galvanised to BS EN ISO 1461:2009 which ensures corrosion resistance and provides a long service life.



*Powder coating is available in a range of RAL colours. Materials to be powder coated go through Phosphate pre-treatment ensuring superior powder coating adhesion and maximum service life.

Handrail Attachments

Lockinex armco handrail attachments offer a pedestrian friendly handrail solution which can simply be bolted onto the pre-holed armco posts. The system is designed to utilise 42.4mm diameter handrail tube to allow a comfortable grip with a finished height of 1100mm which is industry standard. Simple bolt on design and easy slide in handrail, which is tightened with pre-installed grub screws in the top balls, allow rapid install on site with a high quality finish.

Handrail attachment components are galvanised to BS EN ISO 1461:2009 which ensures corrosion resistance and provides a long service life. Powder coating to a choice of RAL colours is available for all handrail attachment products.



Pedestrian friendly rolled end available.

Top balls with integrated grub screws for easy handrail install.

42.4mm diameter handrail tube for comfortable grip with 1100mm finished height.

Simple bolt on handrail design.
Pre-holed armco posts for rapid install.



*Powder coating is available in a range of RAL colours. Materials to be powder coated go through Phosphate pre-treatment ensuring superior powder coating adhesion and maximum service life.

A Wall of Steel

Provides the ultimate protection for pedestrians & high value assets from hazards in and about the workplace and in public areas. The completely closed wall ensures that penetration from objects such as forks on forklifts, pallet trucks, manoeuvring vehicles, loose goods/products etc. is prevented. Utilisation of heavy duty posts (bolt down or concrete in) with 3mm thick triple peak sections of armco beam and heavy duty kickplate/toeboard gives a high protection structure.

All components are galvanised to BS EN ISO 1461:2009 which ensures corrosion resistance and provides a long service life.



*Powder coating is available in a range of RAL colours. Materials to be powder coated go through Phosphate pre-treatment ensuring superior powder coating adhesion and maximum service life.

Posts for "W" & "Box Beam" Armco

Heavy Duty RSJ Section Post with gusset.

Item =VB74 - (x= Height) 330mm-Wheel Stop/Fork Lift

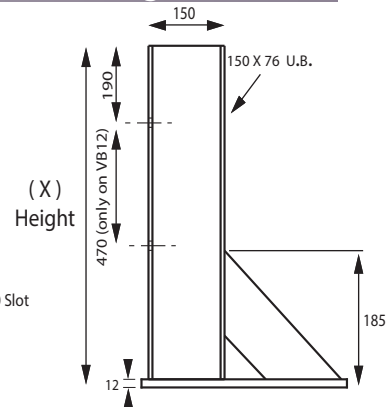
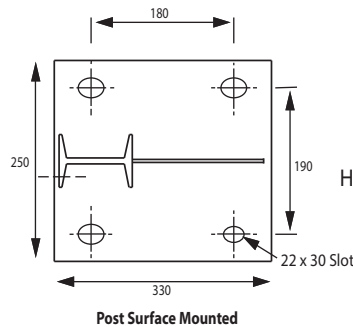
Item =VB09 - (x= Height) 610mm-Car Bumper Height/Fork Lift

Item =VB10 - (x= Height) 760mm-Commercial Vehicle/Fork Lift

Item =VB12 - (x= Height) 1100mm-Commercial Vehicle/Fork Lift- Double Height Armco



VB28
Optional
Rubber Safety
Caps



The vehicle types noted against each item above, are for general guidance as to their application. An example is the VB74-Low Level, this is commonly used with crash barrier as a heavy duty "Wheel Stop".

The VB12-1100mm is used not only to erect a crash barrier, but the extra height & Double Armco provides a visual demarcation to Heavy Goods Vehicles.

Requires 1 x VB50 Bolt, Nut & Washers to make the connection to the barrier.

Requires 4 x M20 fixings to the base/Substrate.

See page headed "Fixings & Fastenings for Armco Barrier" for further details.

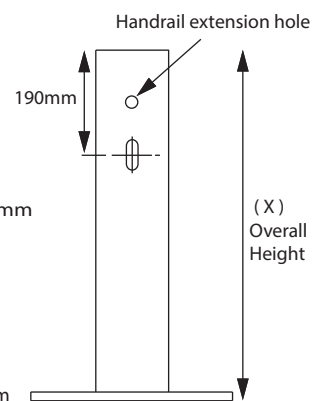
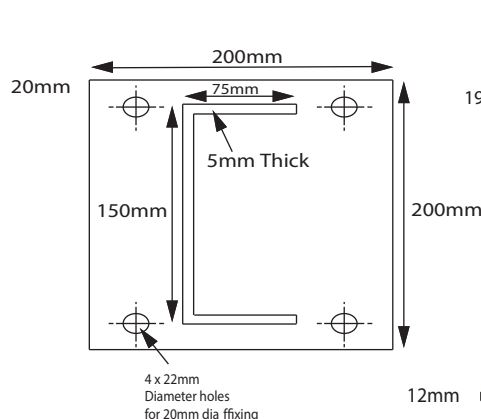
Heavy Duty "C" Section Post.

Item =VB20 - (x= Height) 610mm-Car Bumper Height/Fork Lift

Item =VB21 - (x= Height) 760mm-Commercial Vehicle/Fork Lift



VB28
Optional
Rubber Safety
Caps



The vehicle types noted against each item above, are for general guidance as to their application.

Requires 1 x VB50 Bolt, Nut & Washers to make the connection to the barrier.

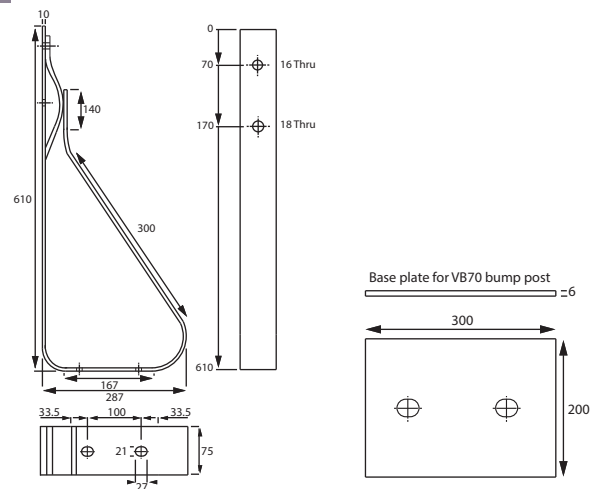
Requires 4 x M20 fixings to the base/Substrate.

See page headed "Fixings & Fastenings for Armco Barrier" for further details.

Posts for "W" & "Box Beam" Armco

Heavy Duty Bump Post

Item =VB70- (x= Height) 610mm-Car Bumper Height



A Robust "Bump Post" which allows for low impact, with a degree of deflection. The vehicle types noted against each item above, are for general guidance as to their application.

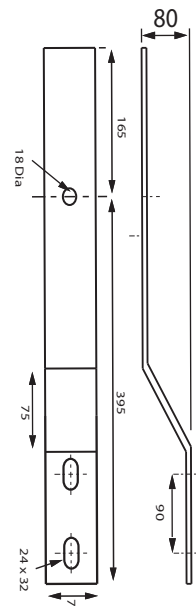
Requires 1 x VB50 Bolt, Nut & Washers to make the connection to the barrier.

Requires 2 x M20 fixings to the base/Substrate.

See page headed "Fixings & Fastenings for Armco Barrier" for further details.

Wall mounted Bump Post

Item =VB72- Car /Commercial Vehicle/Fork Lift- Wall mounted Bump Post



The vehicle types noted against each item above, are for general guidance as to their application.

Requires 1 x VB50 Bolt, Nut & Washers to make the connection to the barrier.

Requires 2 x M20 fixings to the base/Substrate.

See page headed "Fixings & Fastenings for Armco Barrier" for further details.

Posts for "W" & "Box Beam" Armco

Heavy Duty RSJ Section Post- Concrete in type.

Item =VB11 - (x= Length) 1200mm-Car /Commercial Vehicle/Fork Lift

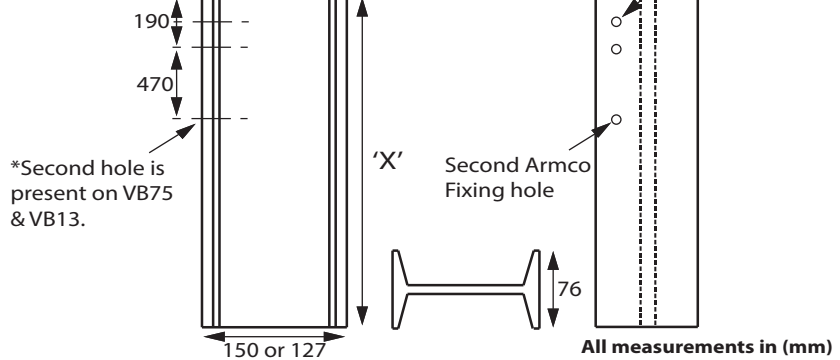
Item =VB75 - (x= Length) 1500mm-Car/Commercial Vehicle Fork Lift- Double Armco

Item =VB13 - (x= Length) 2000mm-Car/Commercial Vehicle/Fork Lift- Double Armco

Item =VB Bespoke - (x= Length) Bespoke- Call with details



VB28
Optional
Rubber Safety
Caps



The vehicle types noted against each item above, are for general guidance as to their application.

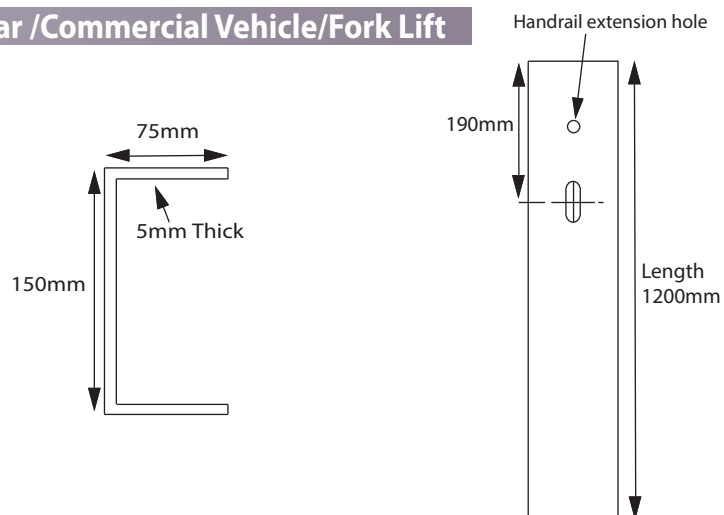
Bespoke posts or extra holes punched in standard stock items can be accommodated, please send details for pricing and availability.

Heavy Duty "C" Section Post- Concrete in type.

Item =VB22- (x= Length) 1200mm-Car /Commercial Vehicle/Fork Lift



VB28
Optional
Rubber Safety
Caps



The vehicle types noted against each item above, are for general guidance as to their application.

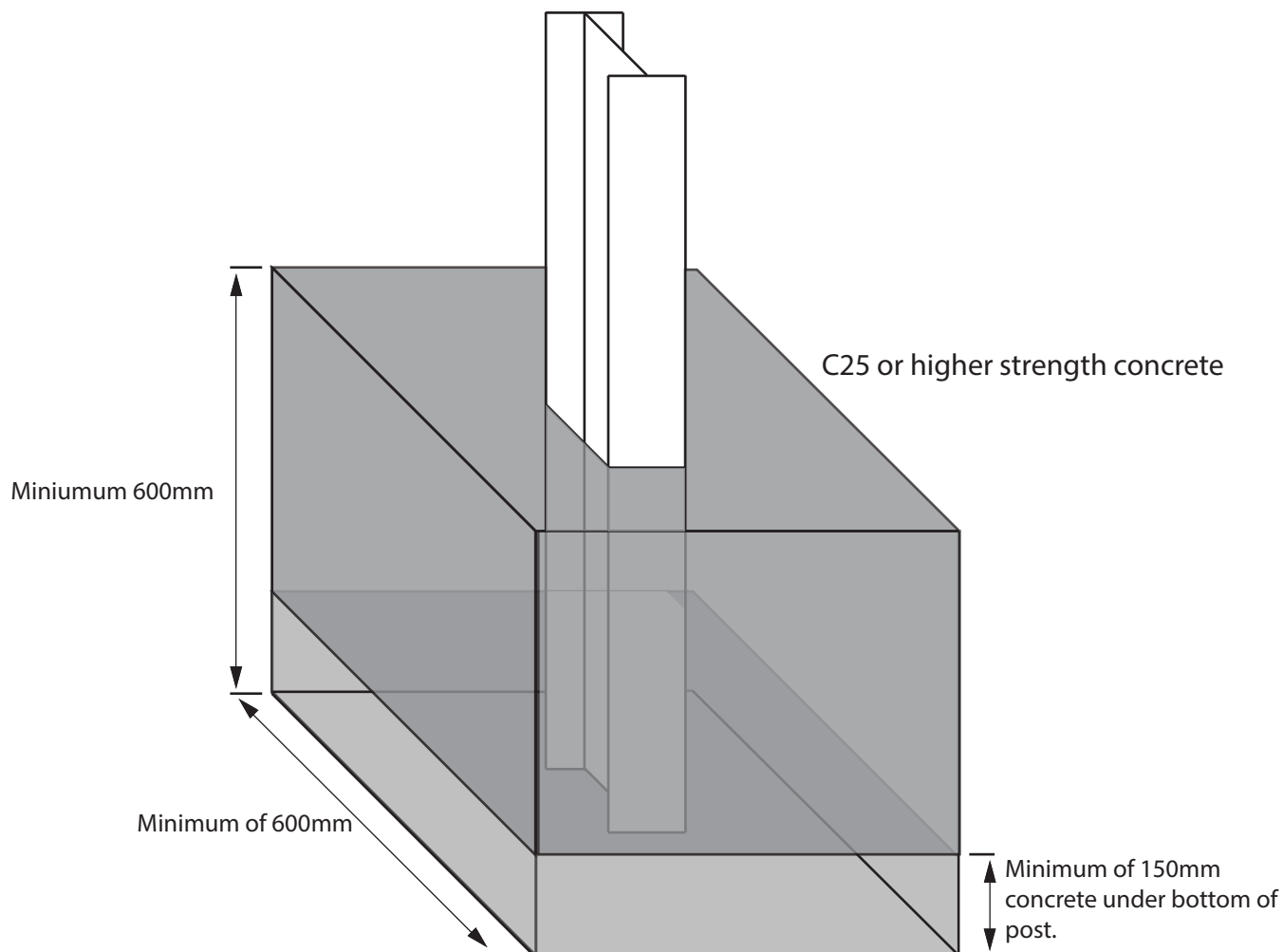
Foundation details for concrete in type posts

Foundation details for both RSJ and C style concrete in type posts.

Foundation details are suggested subject to compact soil conditions.

Should soil be loose and therefore unfit for the suggested foundation, larger foundations may need to be designed.

Seek advice from your local structural engineer.



Corners & Terminals for “W” Section Armco

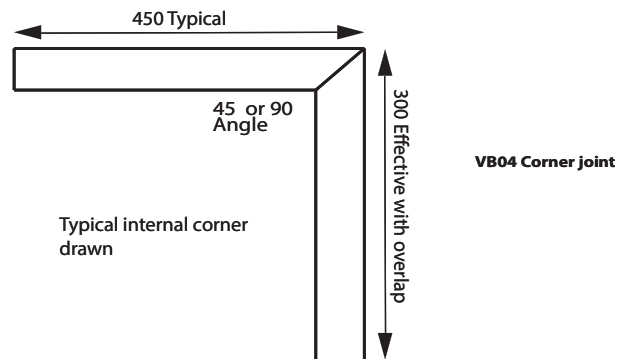
Internal & External Corners

Item =VB04 - External

Item =VB04 - Internal



External Corner pictured, viewed from Traffic Side.



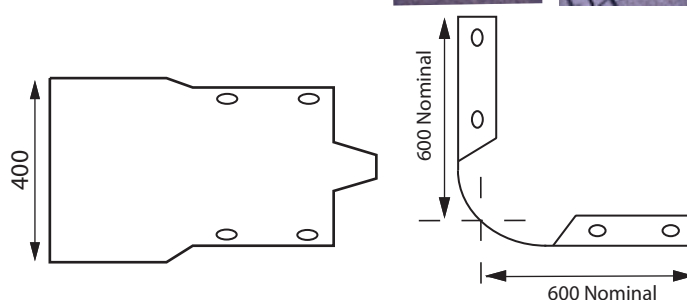
Ninety degree welded corner. External or Internal.
External Pictured - Viewed from traffic side.
16 x VB35 Bolts, Nuts & Washers are required to fix onto the Armco Barrier.
See page headed “Fixings & Fastenings for Armco Barrier” for further details

Internal & External Corners “W” Section Armco

Item =VB04 - Flexy



External Corner pictured, viewed from Traffic Side.



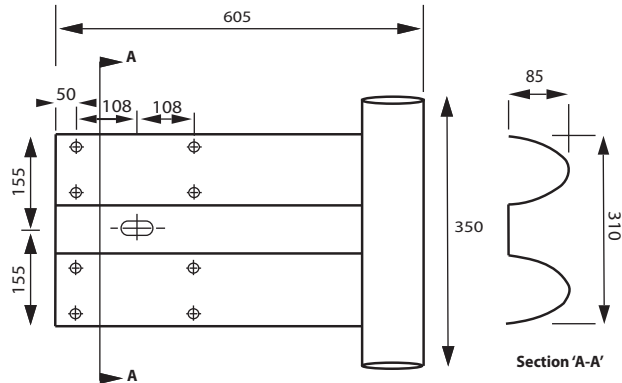
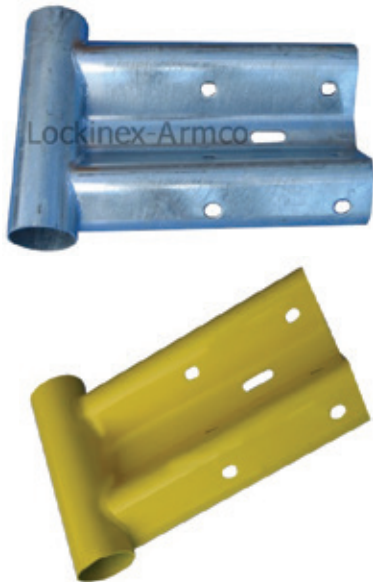
Ninety degree Flexy Corner.
A completely reversible flexy corner.
Can be used as an external (As pictured left) or formed to create an internal corner or a “Barrelled” end connecting two Armco beams which are back to back. (See Pictures above). Note, some distortion at the point of bend may occur when the item is being used/shaped to the extremes of angles.
8 x VB35 Bolts, Nuts & Washers are required to fix onto the Armco Barrier.
See page headed “Fixings & Fastenings for Armco Barrier” for further details



Corners & Terminals for "W" Section Armco

Termination of "W" Section Armco

Item =VB15 - Armco End Terminal

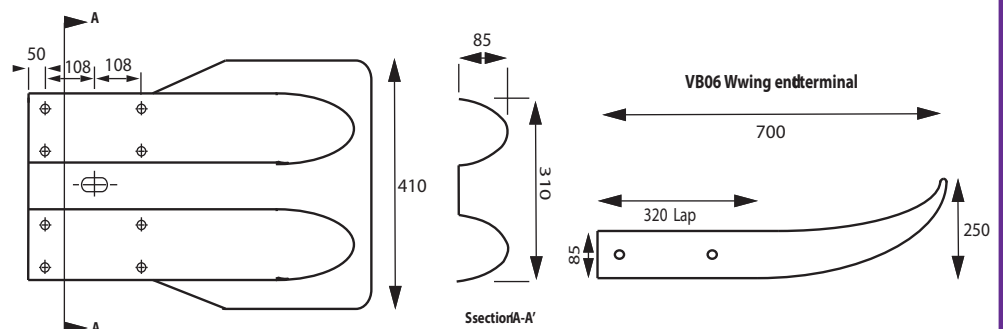


VB31 Soft Rubber Cap

Galvansied Steel End Terminal with a Vertical Tubular end. Not as aggressive as the VB06-Wing End. Considered "Pedestrian Friendly". Soft Rubber Yellow ends are available & can be fixed onto the top & bottom of the vertical tubular end, for added safety and demarcation. 8 x VB35 Bolts, Nuts & Washers are required to fix onto the Armco Barrier. See page headed "Fixings & Fastenings for Armco Barrier" for further details

Termination of "W" Section Armco

Item =VB06 - Armco Wing End Terminal

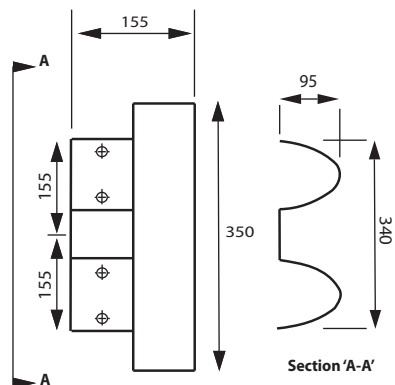


"Fish Tail" or "Wing" Galvanised Steel End Terminal. Fixed to the end of an Armco Barrier, or a corner piece. 8 x VB35 Bolts, Nuts & Washers are required to fix onto the Armco Barrier. See page headed "Fixings & Fastenings for Armco Barrier" for further details

Corners & Terminals for “W” Section Armco

Termination of “W” Section Armco

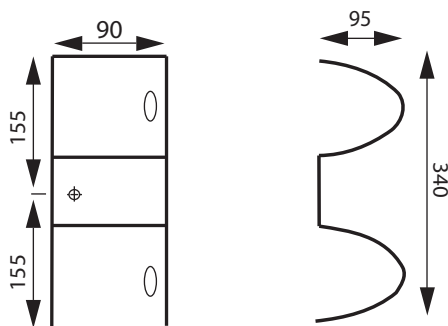
Item =VB109Y - Armco End Terminal



High visibility yellow durable plastic end terminal with a vertical tubular end and built in reflectors. Not as aggressive as the VB06-Wing End. Considered “Pedestrian Friendly” and a more vehicle friendly option than steel end terminals. Slots over the end of the armco beam. 4 x VB35 Bolts, Nuts & Washers are required to fix onto the Armco Barrier. See page headed “Fixings & Fastenings for Armco Barrier” for further details.

Termination of “W” Section Armco

Item =VB101Y - Armco End Terminal



High visibility yellow durable plastic end terminal with built in reflectors. Not as aggressive as the VB06-Wing End. Slots over the end of the armco beam. 1 x M10 Bolt, Nut & Washer is provided

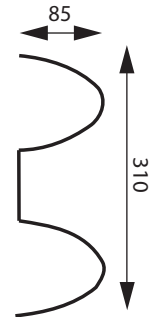
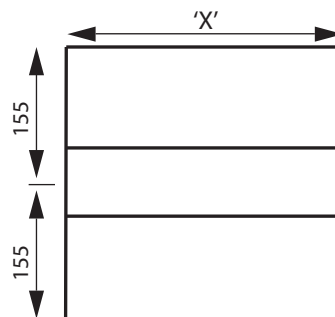
Corners & Terminals for “W” Section Armco

Termination of “W” Section Armco

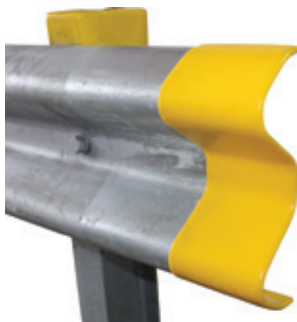
Item =VB08 - Soft Rubber End Sleeve



'X' = 305 for VB08
'X' = 130 for VB08 budget



Item =VB08 Budget - Soft Rubber End Sleeve

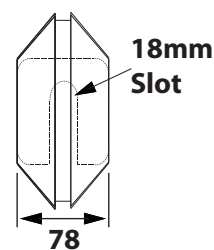
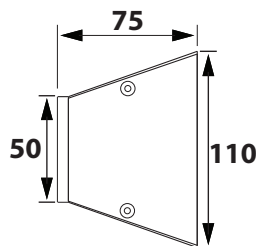
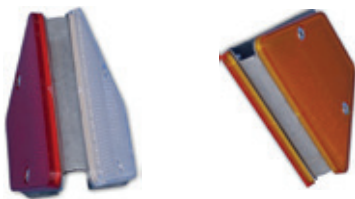


A bright yellow slide on rubber end sleeve that provides a highly visible “soft” termination to W section Armco. Ideal where pedestrians are present at walk through points in the Armco barrier. Easily replaced if damaged.

Reflectors for “Box Beam” & “W” Armco

Item =VB90 - Red/White Reflector

Item =VB92 - Orange/Orange Reflector



Reflectors form an important part of crash barrier installations. They provide a clear demarcation/barrier in low light levels. Installed utilising the existing post bolt. If being installed where a post is not present, order 1 x VB35 Bolt Nut & Washer. See page headed “Fixings & Fastenings for Armco Barrier” for further details

Straight Lengths & Radiused "W" Section Armco

"W" Section Armco Barrier- Heavy Duty 3mm Thick Commercial - Stock Lengths

Item =VC01 - (X)=3.5mtr Length

Effective coverage = 3.2mtr allowing for the overlapping joint.

Item =VC02 - (X)=1.8mtr Length

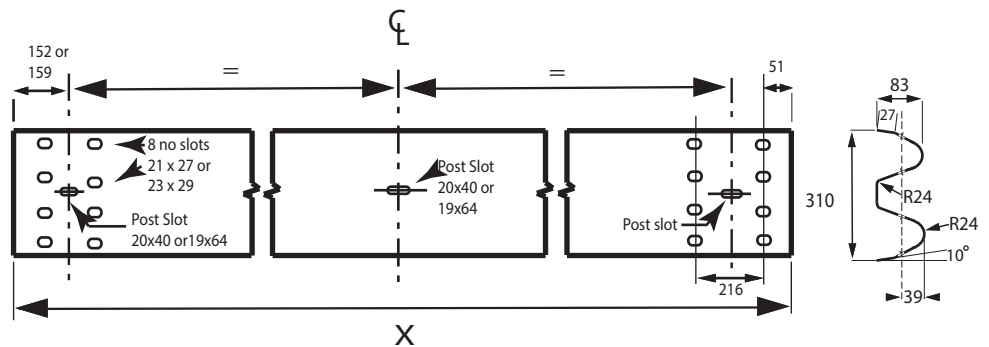
Effective coverage = 1.5mtr allowing for the overlapping joint.

Item =VC03 - (X)=1.0mtr Length

Effective coverage = 0.7mtr allowing for the overlapping joint.



3mm Thick Heavy Duty



Armco barrier is supplied with a galvanised finish as standard. Powder can be applied to any standard RAL Colour.

Most common is RAL 1023- Yellow with the addition of Black stripes.

Other combinations can be applied such as White with Black stripes.

(Overlap joint is 300mm onto an adjacent beam or terminal)

requires 8 x VB35 Bolts, Nuts & Washers -Order separately

See page headed "Fixings & Fastenings for Armco Barrier" for further details

Item =VC500-Lite



2mm Thick Light Duty

Dimensionally the same as VC01 above, but just 2mm thick. Offers a light weight, cost effective alternative to the 3mm thick beam. Not as strong as 3mm thick, so consider using 3mm thick beam where forklifts, commercial vehicles etc. are present or to protect high value assets. Hot dip galvanised finish with powder coating available in your choice of RAL colour. Overlap joint is 300mm onto an adjacent beam or terminal requires 8 x VB35 Bolts, Nuts & Washers -Order separately

See page headed "Fixings & Fastenings for Armco Barrier" for further details

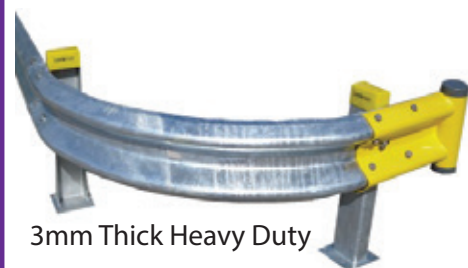
"W" Section Armco Barrier-Stock Radiused Sections

Item =VB-Radiused- 1160mm

Stock item - Convex.

Item =VB-Radiused- 2320mm

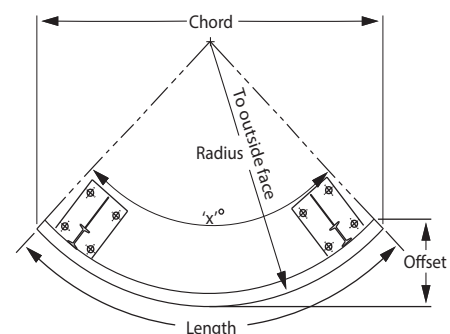
Stock item - Convex.



3mm Thick Heavy Duty

Stock items		
	VB-Radiused convex-1160mm	VB-Radiused convex-2320mm
Chord	1970mm	3327mm
Offset	450mm	736mm
Length	2430mm	3657mm
Radius	1160mm	2320mm
'x'°	100°	90°

All dimensions are nominal



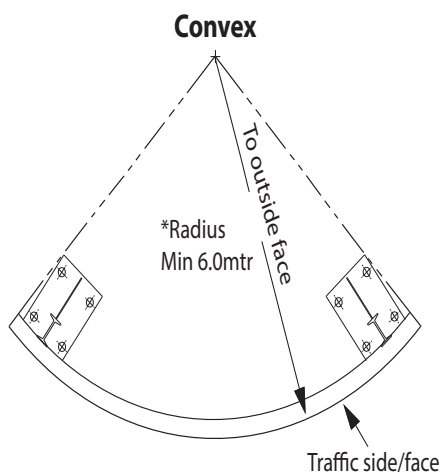
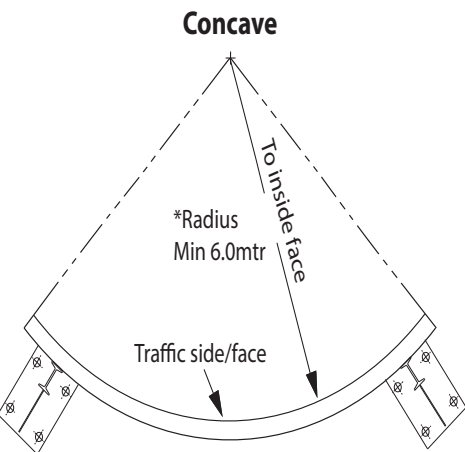
Two Stock Radii beams are manufactured with specialised tooling.

For other radii see "Bespoke Radiused Armco"

for details on how to order alternative dimensions.

Radiused "W" Section Armco

"W" Section Armco Barrier & Open Box Beam Barrier-Bespoke Radiused Sections
("W" Section "Plus1" Armco Barrier is not available radiused)



Made to order

Please specify the radius required and if barrier is to be concave or convex.

Bespoke radiused barrier can ONLY be manufactured using 3.5mtr barrier lengths.

Whether barrier is concave or convex the radius dimension must be given to the traffic side/face of the barrier (see diagram).

We are only able to provide bespoke Radiused Armco with a *minimum* 6mtr Radius.

Quantity	Radius -Mtr (Min 6.0mtr)	
		(Please circle) Concave Convex

6mtr up to 12mtr Radius, Curve is in 0.50mtr increments.
Over 12 mtr Radius, Curve is in 1.0mtr increments.

Quantity	Radius -Mtr (Min 6.0mtr)	
		(Please circle) Concave Convex

6mtr up to 12mtr Radius, Curve is in 0.50mtr increments.
Over 12 mtr Radius, Curve is in 1.0mtr increments.

Quantity	Radius -Mtr (Min 6.0mtr)	
		(Please circle) Concave Convex

6mtr up to 12mtr Radius, Curve is in 0.50mtr increments.
Over 12 mtr Radius, Curve is in 1.0mtr increments.

Please note - For Radii larger than 49 Mtr. Use straight lengths of W Section Armco

"W" Section Armco - Coloured Options

"W" Section Coloured banding details

Armco Barrier is available in
Hi Vis Yellow with Black Stripes.

Other combinations can be applied
such as White with Black Stripes



VC01 - 3.5mtr actual length
Traffic Side Viewed



VC02 - 1.8mtr actual length
Traffic Side Viewed



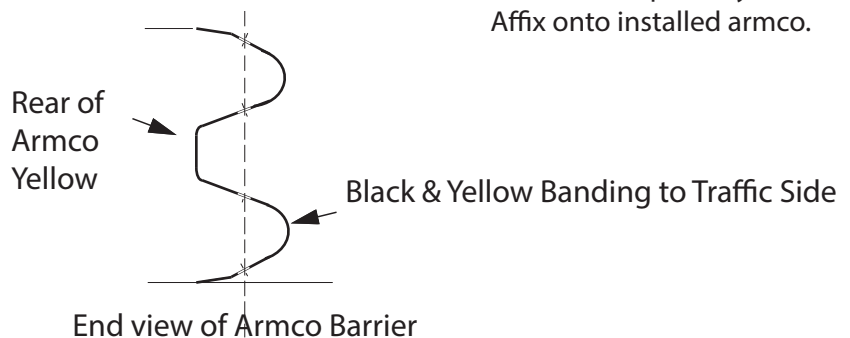
Armco Barrier & components are
available in any standard RAL Colour.



VC03 - 1.0mtr actual length
Traffic Side Viewed



Banding03
300 x 450mm Black
Gloss Self adhesive.
Order seperately.
Affix onto installed armco.



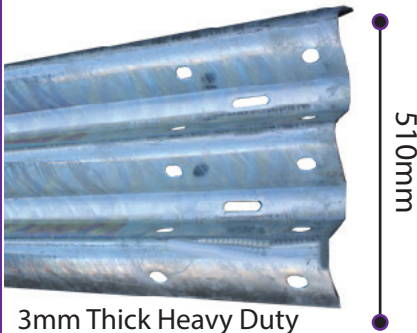
"W" Section "Plus 1" - Armco

W Section Plus 1 adds an extra lap over, for added strength & safety.

Posts of 610mm and taller are holed to accept the connection of the "Plus 1" Armco.

Twin rails can be mounted on taller posts.

Item =VC05-1800mm



3mm Thick Heavy Duty

W Section Plus 1 adds an extra lap over, for added strength & safety. 1800mm long, giving an effect coverage of 1500mm

(This allows for the 300mm over lapping joint)

Requires 12 VB35 Grade 8.8 Bolts, Nuts & Washers - Please order these separately.

Item =VB40-Wing End Terminal



3mm Thick Heavy Duty

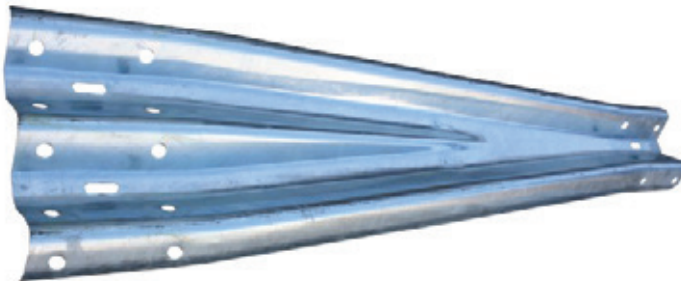
W Section Plus 1 adds an extra lap over, for added strength & safety.

760mm long, giving an effect coverage of 460mm

(This allows for the 300mm over lapping joint)

Requires 12 VB35 Grade 8.8 Bolts, Nuts & Washers - Please order these separately.

Item =VC30-2320mm



3mm Thick Heavy Duty

W Section Plus 1 Reducing to Standard W Section.

2320m long, giving an effect coverage of 2020mm

(This allows for the 300mm over lapping joint)

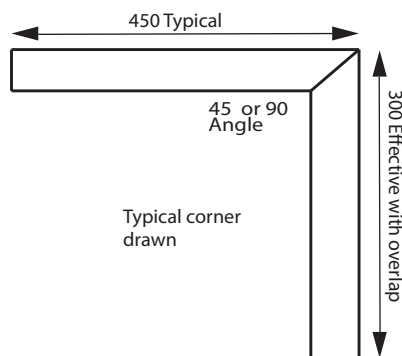
Requires 12 VB35 Grade 8.8 Bolts, Nuts & Washers Please order these separately.

Accepts Standard W section end terminals on the reduced end.

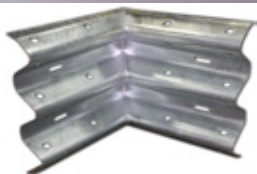
Item =VB44 - External



3mm Thick Heavy Duty



Item =VB45 - Internal



3mm Thick Heavy Duty

Ninety degree welded corner. External or Internal.

External Pictured - Viewed from traffic side.

16 x VB35 Bolts, Nuts & Washers are required to fix onto the Armco Barrier.

See page headed "Fixings & Fastenings for Armco Barrier" for further details

Box Beam Armco & Components

"Box Beam" Armco Barrier.

Item =VB01-2400mm



3mm Thick Heavy Duty

"Open Box Beam" is of a Trapezoidal design. Exceptionally strong with a slim profile.

"Box Beam" Armco Barrier.

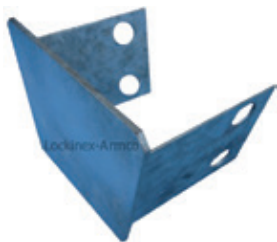
Item =VB03-Box Beam Joint Plates



Joint plates for Box Beam Armco. 12 x VB35 Joint bolts are required to complete the connection (Order separately).
See page headed "Fixings & Fastenings for Armco Barrier" for further details

"Box Beam" Armco Barrier.

Item =VB14A-Box Beam End Cap



End Cap for Box Beam Armco. 4 x VB35 Joint bolts are required (Order separately).
Installed utilising the existing post bolt.
See page headed "Fixings & Fastenings for Armco Barrier" for further details

"Box Beam" Armco Barrier.

Item =VB07-Post Clip



This item slides into the open back edge of the Box Beam Armco. Once in position the supporting post can be attached. Tightening of the connection bolt pulls all three items together making a structural connection.

Fixings & Fastenings For Armco Barrier

Item =VB35- M16 x 35mm Galvanised Bolt, Nut & Washers

Item =VB50- M16 x 50mm Galvanised Bolt, Nut & Washers



These 8.8 Grade Structural Bolts are clearly marked with the Lockinex Brand. The VB35 (35mm long) are used for all of the overlap structural joints and for the attachment of corners and end terminals. (Quantities for each connection vary across the barrier types, please see barrier details for guidance.)

The VB50 (50mm long) are used for the connection of the post to the barrier. (Only 1 is required per post, for either barrier type-Order separately).

“Throughbolt” fixing bolts

Item =F-M20 x 160mm - Heavy Duty Throughbolts-For Concrete

Zinc plated



Galvanised

Fixing down bolts/Studs are an important aspect of your installation. Lockinex recommend a minimum fixing diameter of 20mm for all Armco post Installations.

Threaded Studs for use with chemical Resin systems

Item =F-M20 x 260mm Stud, Nut & Washer



Galvanised

20mm diameter 260mm long Stud complete with Nut & Washer- Galvanised. For use with a chemical resin system.

“Trouser” Shims

Item =TS-52210075 - 5mm Thick, 22mm Slot, 100mm Long, 75mm Wide

Item =TS-525100100 - 5mm Thick, 25mm Slot, 100mm Long, 100mm Wide

Item =TS-102210075 - 10mm Thick, 22mm Slot, 100mm Long, 75mm Wide

Item =TS-1025100100 -10mm Thick, 22mm Slot, 100mm Long, 100mm Wide



Lockinex manufacture a range of high quality Galvanised shims. Most commonly used with our Armco Barrier are included here. Many other sizes are available, visit the “lockinex” web site for the full range.

Handrail Components for Box Beam & "W" Section Armco

Utilising Lockinex Standard range of products, handrail attachments can be made to the Crash Barrier posts.

**Item =VB77 - Ball Post for handrail. Fixes in the Web of RSJ & C Section post
Works with 610mm & 760mm high posts.**



Handrail extension post. Easily affixed to the Armco Barrier post with pre-punched holes, ready to accept the connection bolts. Handrail tube (Shown separately) is slid through the top ball to construct a handrail along the run of the Crash Barrier with an 1100mm finish height.

Item =T7-Galvanised Handrail Tube in 6.0mtr & 3.0 mtr lengths



Item =T7-Rolled End Galvanised Handrail Tube- 1700mm Long



Item =A06/7-Galvanised Elbow Handrail Connector



Item =A09/7-Galvanised In-Line Handrail Connector



Lockinex manufacture & stock a large range of "key" clamps.
To view the complete range please visit www.lockinex.com

Guidelines & Recommendations for Post installation

Post Spacings/Installation.

Bolt Down Posts & Concrete in Posts

For a low level of general protection.

General protection is deemed to be the protection of ;

Walls, Fencing, Trees etc.

In areas such as Office car parks, Store car parks (Not Multi Storey)

Impact by cars in a restricted speed a environment of max 10mph.

Space posts at 3.2 mtr maximum

Use 20mm dia fixing down mechanical bolts or Chemical Resin with 20mm studs.

If concreting in, local site conditions will dictate the type and size of the foundation required.

Generally use grade C25 Concrete, minimum 600mm square x 900mm deep.

For a medium level of protection.

Medium protection is deemed to be the protection of ;

Walls, Fencing, Trees, Building Perimeter, High walls, Valuable plant & Equipment, Personnel.

In areas such as Office Car Parks, Store Car Parks,(Not Multi Storey), Industrial Sites, Warehouses,

Pedestrian Walkways. In a restricted speed a environment of max 10mph.

Space posts at 1.6 mtr maximum

Use 20mm dia fixing down mechanical bolts or Chemical Resin with 20mm studs.

If concreting in, local site conditions will dictate the type and size of the foundation required.

Generally use C25 Concrete minimum 600mm square x 900mm deep.

For a high level of protection.

For applications that are deemed critical, such as High to Low level drops , Multi storey Car parks etc. consideration must be given to the application by way of design calculations and current legislation.

Lockinex are able to provide data calculation sheets for these type of installations, please contact the company for further advice.

Note-Whilst Lockinex Armco Barrier is manufactured to meet European, UK & American highway standards (With minor differences across some European countries) it's application is not promoted for "Highway" use, as this requires further design & testing criteria.

These guidelines & recommendations are published without warranty.

Where required , further investigations taking into account local conditions, type of traffic and expected loading requirements should be made prior to ordering and installing material.

Maintenance & Design/Manufacturing information

Maintenance

A maintenance program should be agreed once the installation has been completed.

Generally, due to the material make up of the product, and with it's galvanised finish, maintenance is very low.

However, due to it's application, it may suffer impacts of varying degree.

Therefore, in situations where a protected structure or the passage of pedestrians is present, visual inspections should be made. (These will vary with the amount of "Traffic" passing the barrier system).

Special attention should be given to the anchoring bolts, which, after a serious impact, may require removing and re-seating.

General slight damage and small deflections in the barrier may be forgiven.
More serious deflection/damage should be investigated and if deemed too severe, components should be removed and replaced.

Replacement components are readily available from Lockinex UK Ltd.

Design

Design of the Armco *Barrier* is to UK , European & USA Specifications (With minor differences in some European Countries).

Lockinex UK Ltd promote the use of their Armco products for "Non Highway" or "Off Road" Applications, Such as Car Parks, Warehouses, Loading Bays, Service Roads, Perimeter Barriers Etc.

Note-Whilst Lockinex Armco Barrier is manufactured to meet European, UK & American highway standards (With minor differences across some European countries) it's application is not promoted for "Highway" use, as this requires further design & testing criteria.

Manufacturing

Material grade to BS EN 10025 S275

Galvanised to BS EN 1461:2009