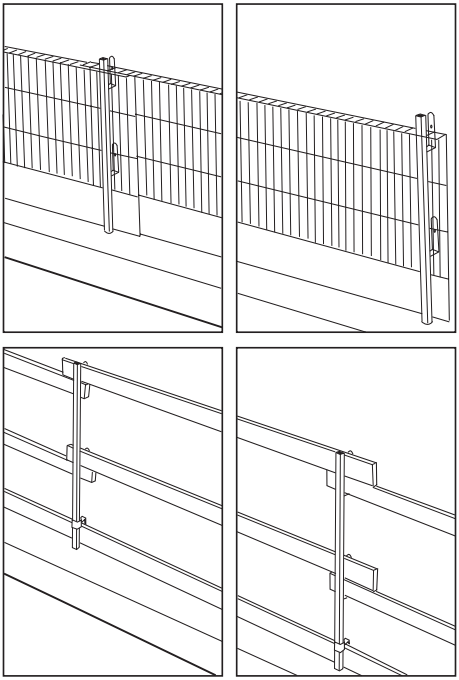
USER GUIDE



System Description
SMB System S
Temporary edge protection

Honeywell
COMBISAFE®

CONTENTS

SAFETY INSTRUCTIONS

WARNING!

Always check products and equipment before use.

Never use damaged or rusty materials as this can affect safety.

WARNING!

Edge protection that is combined or interlinked with products other than Combisafe is not recommended.

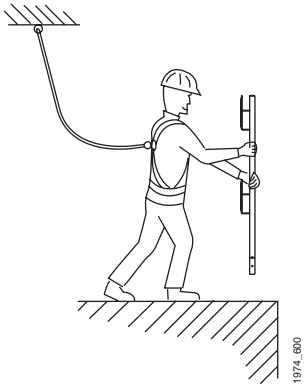
Combisafe product liability only applies to combinations of Combisafe products that have been assembled in accordance with the Combisafe TI-sheets and System Description.

WARNING!

If the edge protection is subject to a load that is too great, e.g.a fall, the guardrail must be inspected by a competent person before being taken into service again. Contact Combisafe in the event of uncertainty.

WARNING!

Always use personal fall arrest equipment where there is a risk of falling. This also applies to work from a hydraulic lift platform.



IMPORTANT

Combisafe edge protection products must always be used together with the applicable system description and the TI-sheet for each product.

Always carry out an assessment and produce a method statement for the installation of the Combisafe system.

To ensure safety in the workplace, always consider:

- plan the fall protection at an early stage.
- many fall accidents occur from a low height.
- arrange suitable and safe access to the workplace.
- close off the area below and around the assembly site so that persons are not injured by falling tools or materials.
- keep order around the assembly site.
- only use safety products that have been inspected for safety.
- use tools intended for the work to be performed.
- tighten screws properly and check that hooks lock correctly.

GENERAL

Combisafe edge protection products conform to the requirements set out in the European standard EN 13374.

APPLICATION AREA

Combisafe edge protection products are intended for use as temporary fall protection.

The products must not be used to:

- protect the general public,
- absorb impact from vehicles,

or

- prevent the collapse of large quantities of, e.g., materials or snow.

HANDLING PRODUCTS

Combisafe edge protection products are designed for ease of use and individual products weigh less than 20 kg, however there are a few exceptions.

Refer to national directives concerning the handling of materials.

TRACEABILITY

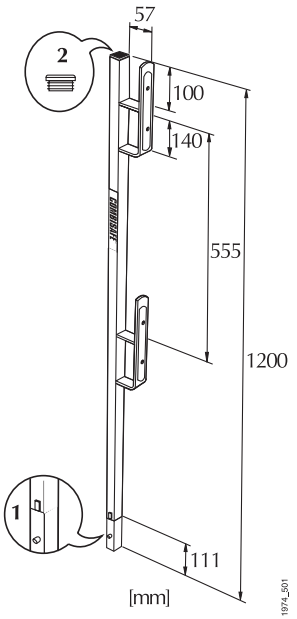
Most Combisafe products are marked with a batch number for inspection and traceability.

The batch number consists of a letter and four digits and refers to the place and date, year and week, of manufacture for the product. 0345 signifies that the product was manufactured in 2003 week 45. The number is generally located close to the Quiclox hole on the Safety Posts and attachments.

DATA

SAFETY POST 1102

1102 Registered design
System.....SMB System S
Weight.....3.5 kg
Surface finish....Hot-dip galvanized
Conforms to EN 13374 class A, B, C

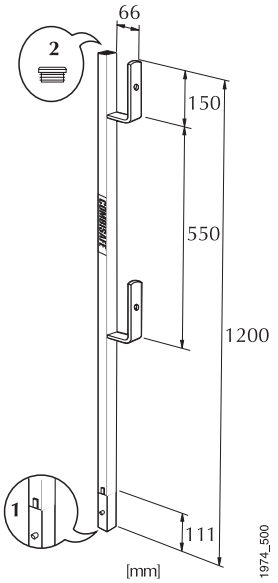


Spare parts list

Item	Part no.	Information
1	1132	Quiclox
2	100211	PVC

SAFETY POST 2000

System.....SMB System S
Weight.....3.6 kg
Surface finish...Hot-dip galvanized
Conforms to EN 13374 class A, B, C



Spare parts list

Item	Part no.	Information
1	1132	Quiclox
2	100211	PVC

SAFETY POST 1107

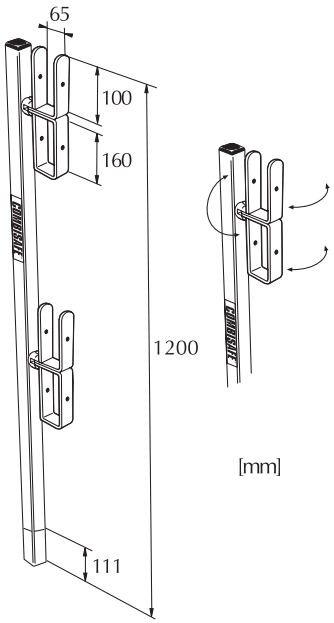
1107 Patented

System.....SMB System S

Weight.....5.2 kg

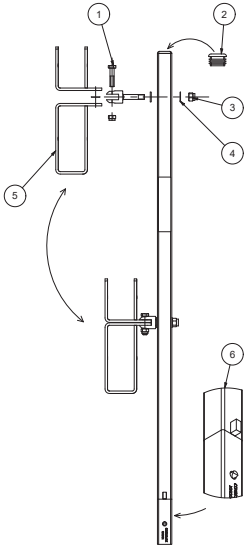
Surface finish....Hot-dip galvanized

Conforms to EN 13374 class A



Spare parts list

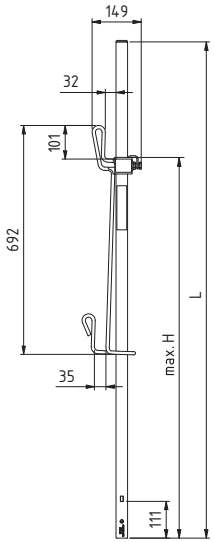
Item	Part no.	Information
1	100138	Electrogalvanized
2	100211	PVC
3	100025	Electrogalvanized
4	100097	Electrogalvanized
5	10152	Hot-dip galvanized
6	1132	Quiclox



ADJUSTABLE SAFETY POST 1140/1142

System.....SMB System S
Weight.....3.5/6.2 kg
Surface finish....Hot-dip galvanized
Conforms to EN 13374 class A, B, C

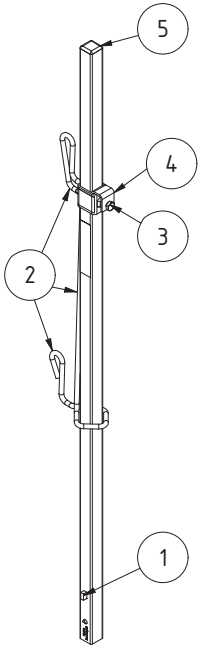
Safety Post no.	L	H
1140	1.5 m	1.4 m
1142	1.8 m	1.38 m



Spare parts list

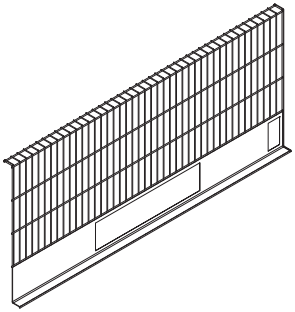
Item	Part no.	Information
1	1132	Quiclox
2	3223	SMB Holder
3	100175	M12 Hex Screw*
4	10520	Clamp*
5	100211	Plastic Plug

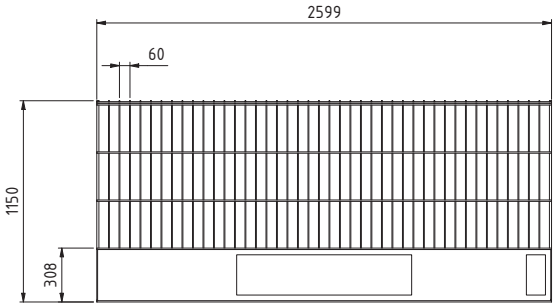
*included in item 2



STEEL MESH BARRIER MK II 3203

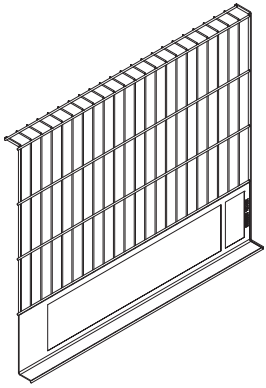
System.....SMB System
Weight.....19.4 kg
Surface finish.....Powder coated
Conforms to EN 13374 class A, B, C

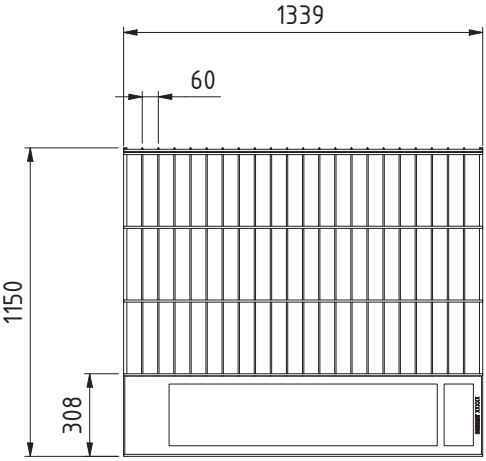




STEEL MESH BARRIER 1.3 M MK II 3204

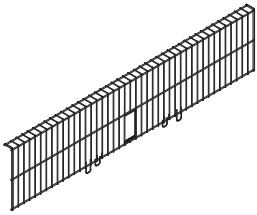
System.....SMB System
Weight.....10.5 kg
Surface finish.....Powder coated
Conforms to EN 13374 class A, B, C

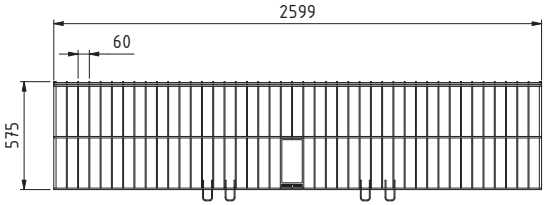




STEEL MESH BARRIER MAKE-UP 2.6 M MK II 3217

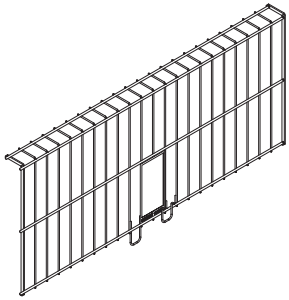
System.....SMB System
Weight.....9.3 kg
Surface finish.....Powder coated
Conforms to EN 13374 class A, B

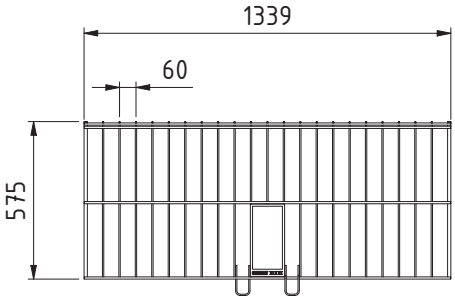




STEEL MESH BARRIER MAKE-UP 1.3 M MK II 3218

System.....SMB System
Weight.....5 kg
Surface finish.....Powder coated
Conforms to EN 13374 class A, B





STEEL MESH BARRIER LIGHTWEIGHT CLASS ABC 2.6M 3240/3240Z

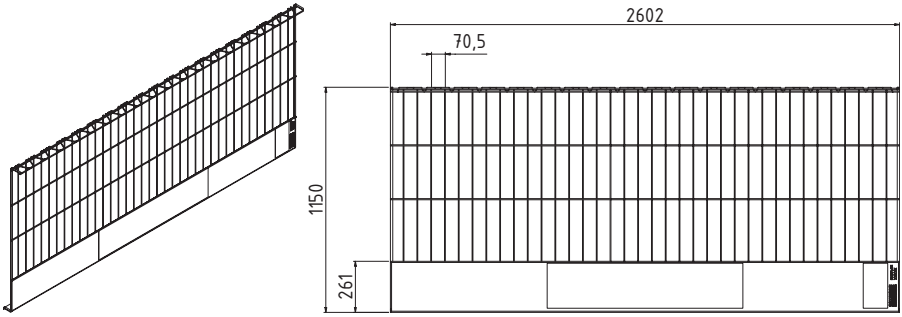
Registered design

System.....SMB System

Weight.....14.2 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A, B, C



STEEL MESH BARRIER LIGHTWEIGHT CLASS ABC 1.5 M 3241/3241Z

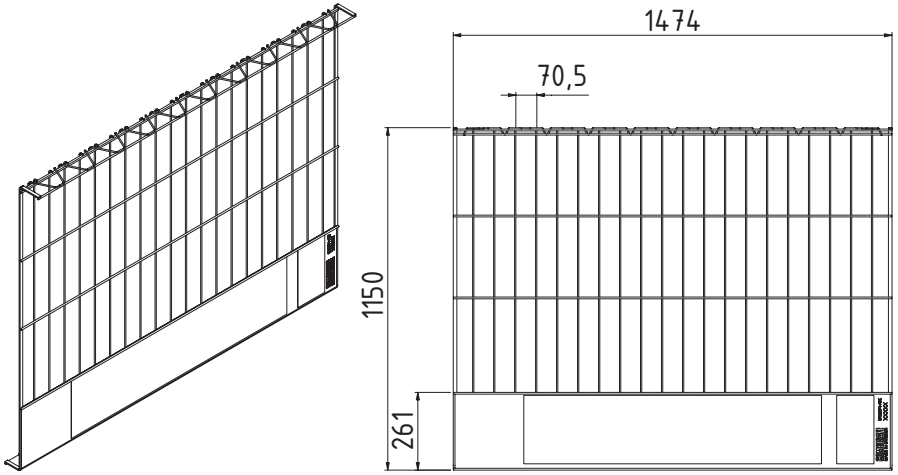
Registered design

System.....SMB System

Weight.....8.7 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A, B, C



STEEL MESH BARRIER LIGHTWEIGHT CLASS ABC 1.8 M 3242/3242Z

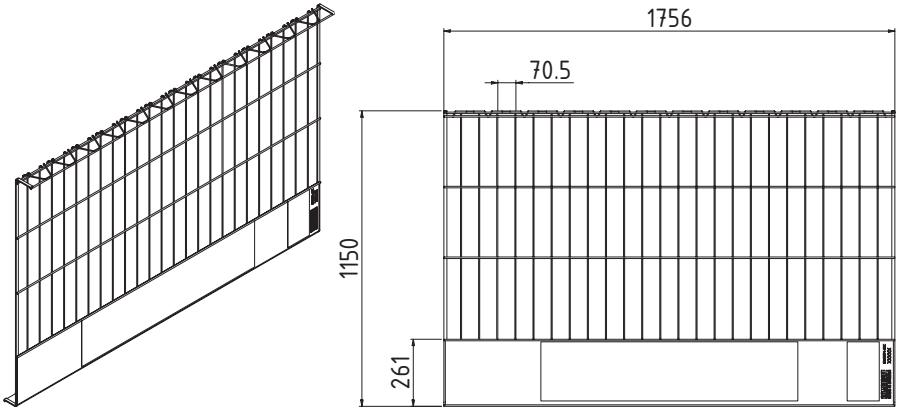
Registered design

System..... SMB System

Weight..... 10 kg

Surface finish..... Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A, B, C



STEEL MESH BARRIER LIGHTWEIGHT CLASS A 2.6 M 3245/3245Z

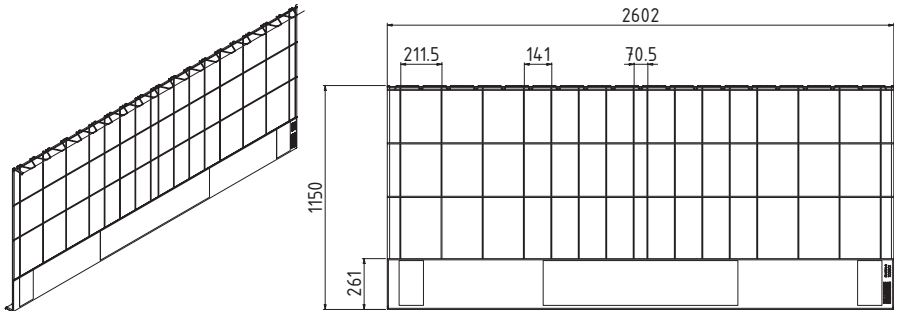
Registered design

System..... SMB System

Weight..... 12.2 kg

Surface finish..... Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A



STEEL MESH BARRIER LIGHTWEIGHT CLASS A 1.5 M 3246/3246Z

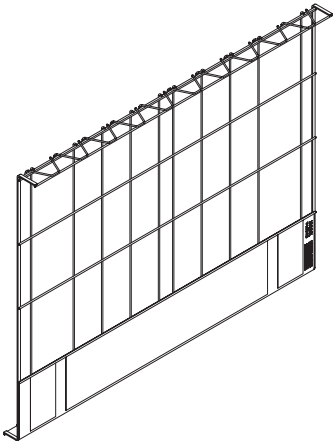
Registered design

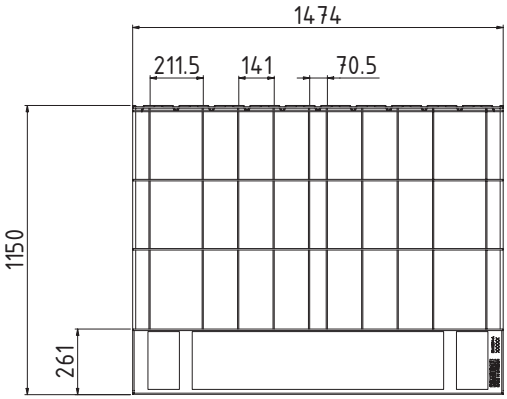
System.....SMB System

Weight.....7.8 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A





STEEL MESH BARRIER LIGHTWEIGHT CLASS A 2.0 M 3247/3247Z

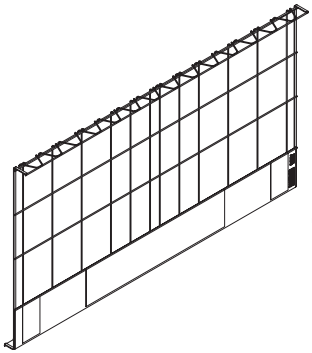
Registered design

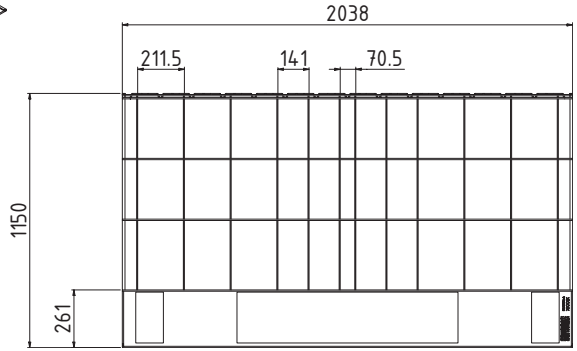
System.....SMB System

Weight.....10.1 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A





STEEL MESH BARRIER LIGHTWEIGHT CLASS A 0.9 M 3248/3248Z

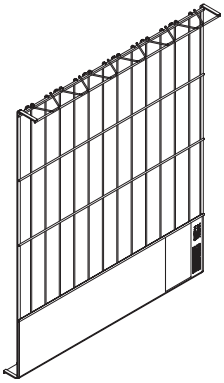
Registered design

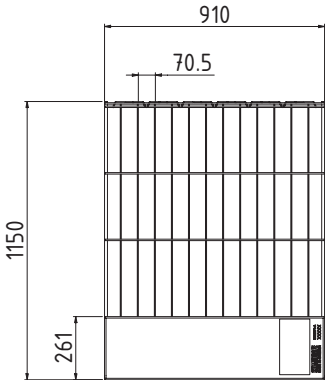
System.....SMB System

Weight.....5.7 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A





STEEL MESH BARRIER LIGHTWEIGHT CLASS A 0.5 M 3249/3249Z

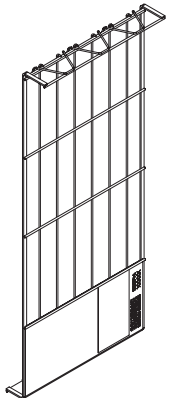
Registered design

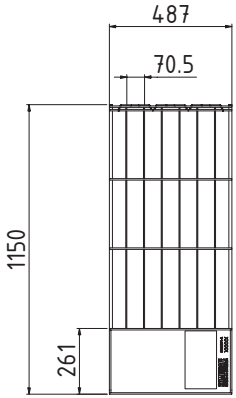
System.....SMB System

Weight.....3.6 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A





STEEL MESH BARRIER LIGHTWEIGHT MAKE-UP 2.6 M 3260/3260Z

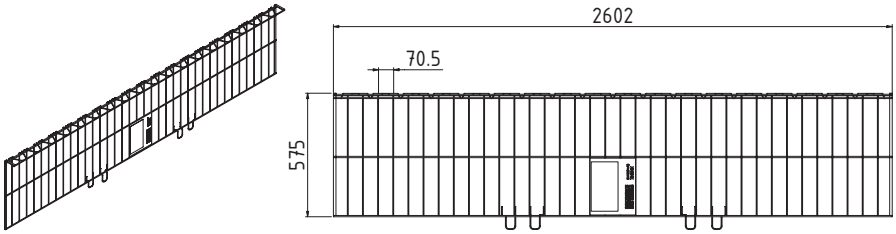
Registered design

System.....SMB System

Weight.....7 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A, B



STEEL MESH BARRIER LIGHTWEIGHT MAKE-UP 1.5 M 3261/3261Z

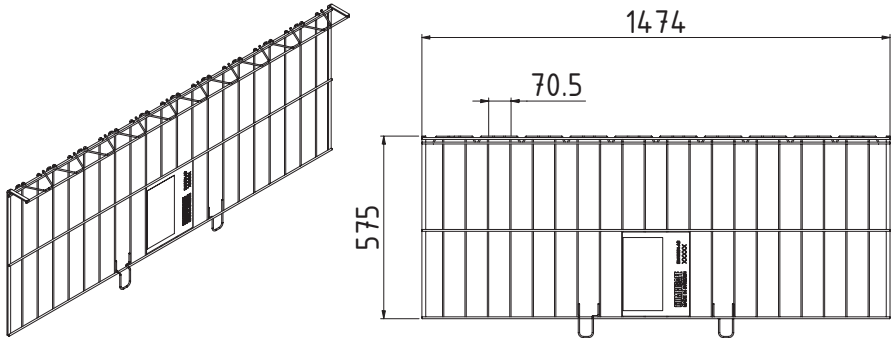
Registered design

System.....SMB System

Weight.....4.4 kg

Surface finish.....Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A, B



STEEL MESH DEBRIS BARRIER LIGHTWEIGHT 2.6 M 3266/3266Z

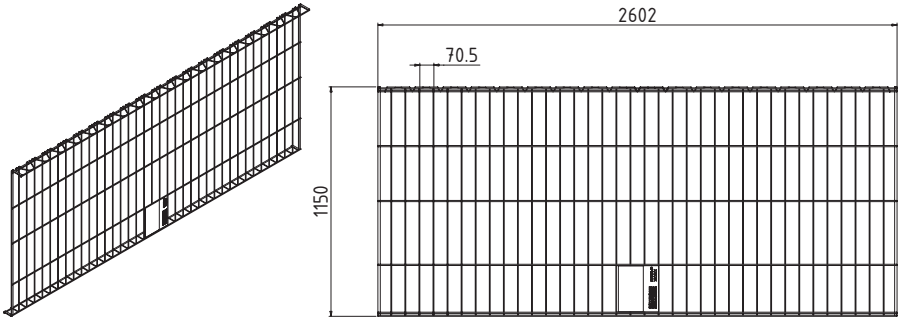
Registered design

System..... SMB System

Weight..... 11.7 kg

Surface finish..... Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A, B



STEEL MESH DEBRIS BARRIER LIGHTWEIGHT 1.5 M 3267/3267Z

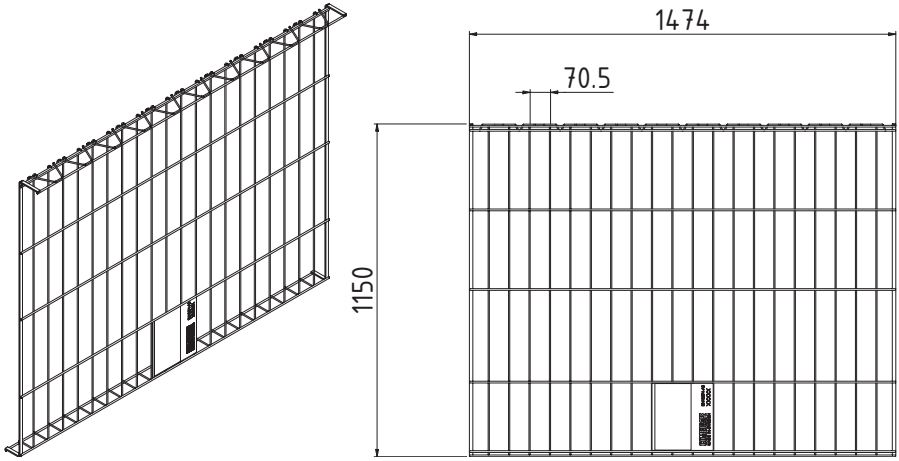
Registered design

System..... SMB System

Weight..... 7.3 kg

Surface finish..... Powder coated/Zinc-plated and powder coated

Conforms to EN 13374 class A, B



STEEL MESH BARRIER STAIR 3226

Registered design

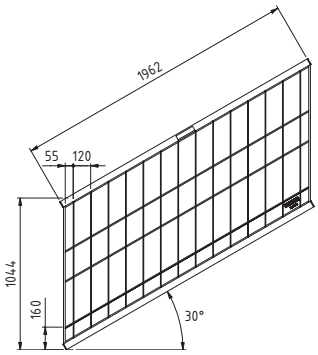
System..... SMB System

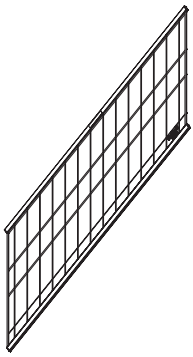
Weight..... 14.1 kg

Surface finish..... Powder coated

Designed for staircase slopes of 30° but also works within +/- 5°

Conforms to EN 13374 class A





TOEBOARD HOLDER MK II 1111

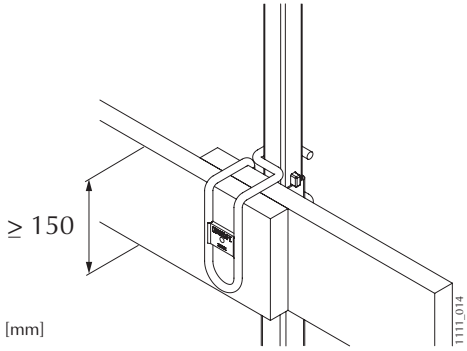
Registered design

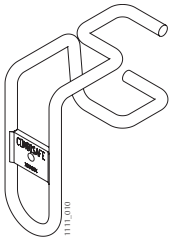
System..... SMB System S

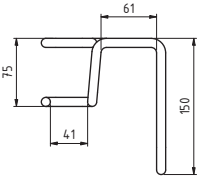
Weight..... 0.5 kg

Surface finish..... Hot-dip galvanized

Conforms to EN 13374 class A





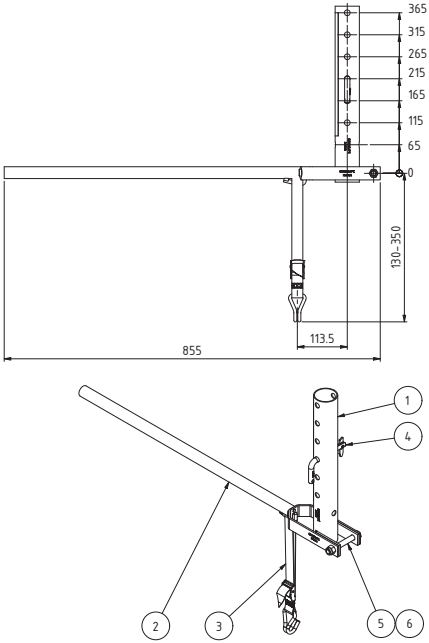


STEEL MESH BARRIER ADJUSTER 3224

System ..... SMB System
Weight ..... 2.6 kg
Surface finish ..... Hot-dip galvanized

Spare parts list

Item	Part no.	Information
1	10525	
2	10526	
3	10527	Fastening strap with hook
4	10528	
5	100200	
6	100025	



STEEL MESH BARRIER HINGE 3225

Registered design

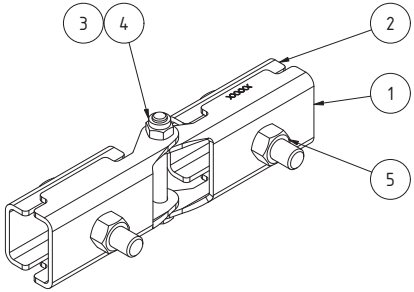
System ..... SMB System

Weight ..... 0.7 kg

Surface finish ..... Electro galvanized

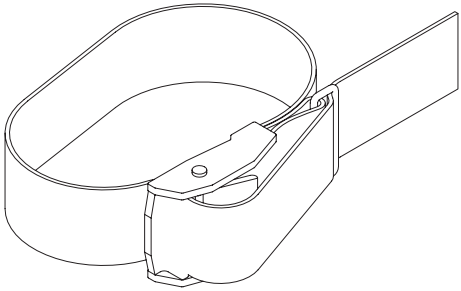
Spare parts list

Item	Part no.	Information
1	10534	
2	10536	
3	100206	
4	100126	
5	100090	



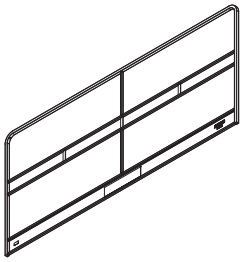
COMBISTRAP 100335

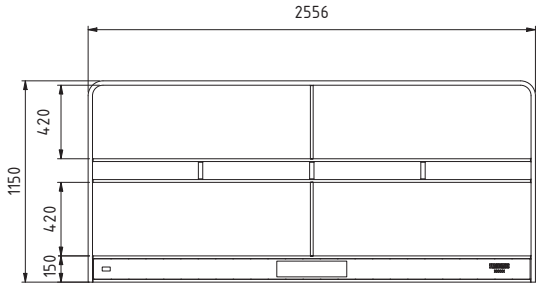
System.....SMB System
Length.....400 mm



FRAMED RAIL BARRIER 3350/3350G

Registered design
System.....SMB System
Weight.....17.0 kg
Surface finish.....Hot-dip Galvanized/Powder coated
Conforms to EN 13374 class A





FRAMED RAIL BARRIER 1.3M 3351/3351G

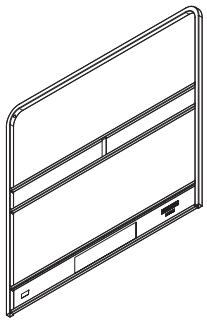
Registered design

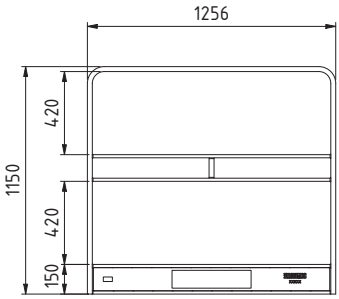
System.....SMB System

Weight.....9.0 kg

Surface finish.....Hot-dip Galvanized/Powder coated

Conforms to EN 13374 class A





FRAMED MESH BARRIER 3360/3360G

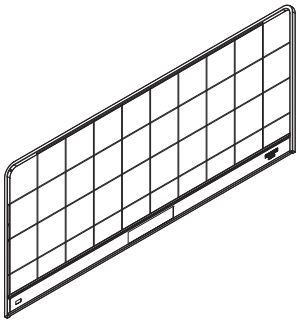
Registered design

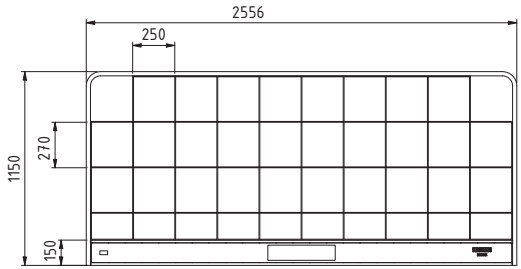
System.....SMB System

Weight.....16.0 kg

Surface finish.....Hot-dip Galvanized/Powder coated

Conforms to EN 13374 class A





FRAMED MESH BARRIER 1.3M 3361/3361G

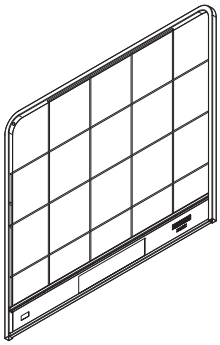
Registered design

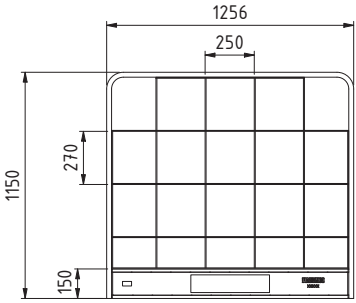
System ..... SMB System

Weight ..... 9.0 kg

Surface finish ..... Hot-dip Galvanized/Powder coated

Conforms to EN 13374 class A





EXTENSION HOLDER 1150

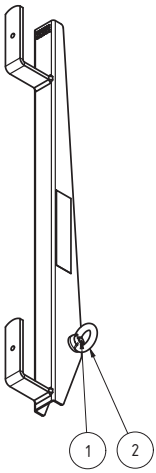
Registered design

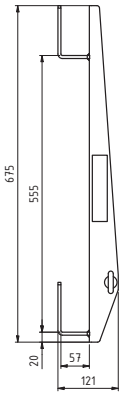
System ..... SMB System S

Weight ..... 1.9 kg

Surface finish ..... Hot-dip Galvanized

Conforms to EN 13374 class A





Spare parts list

Item	Part no.	Information
1	100487	
2	100712	Eye Nut

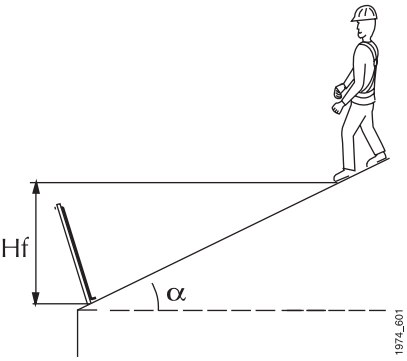
HANDLING

SELECTION AND DIMENSIONING

CLASSIFICATION

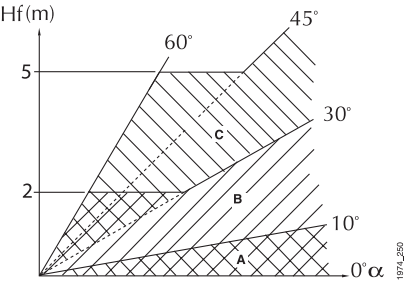
Temporary edge protection is specified in EN 13374 into three different classes, depending on the application and the likely load.

- Class A refers to a static load corresponding to a person leaning against/holding the edge protection or walking/stumbling against the protection.
- Class B refers to a static and low dynamic load corresponding to a person leaning against/holding the edge protection or walking/stumbling against it or falling against the protection down a sloping surface.
- Class C refers to a high dynamic load corresponding to a person falling down a steeply sloping surface



Each Class is recommended for use with a range of roof slopes and potential fall heights.

- Class A recommended for a working surface with a slope of α, that is 0 – 10°.
- Class B recommended for a working surface with a slope of α, that is 0 – 30°, or up to 60°, if the fall height, Hf, does not exceed 2.0 m.
- Class C recommended for a working surface with a slope of α, that is 30 – 45°, or up to 60°, if the fall height, Hf, does not exceed 5.0 m.



Select products taking the needs of the workplace into consideration. Some products can be used in several classes, but the conditions for their usage then vary.

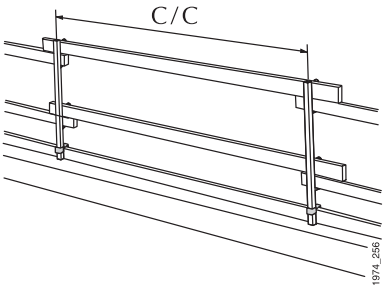
DISTANCE BETWEEN SAFETY POSTS

TIMBER GUARDRAILS

- Timber guardrails may only be used on class A edge protection.
- The minimum timber guardrails quality is C24.

Max. c/c spacing between Safety Posts is:

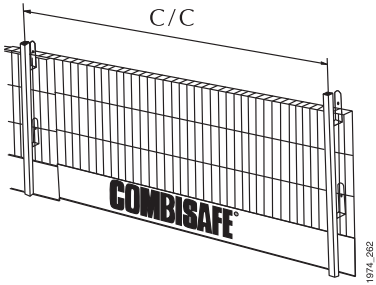
- 2.4 m for timber guardrails of 45x95 mm.
- 2.0 m for timber guardrails of 30x150 mm.



STEEL MESH BARRIER

Max. c/c spacing between Safety Posts is:

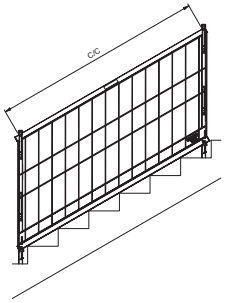
- 2.4 m for Steel Mesh Barrier in class A and B.
- 1.2 m for Steel Mesh Barrier in class C.



STEEL MESH BARRIER STAIR

Max. c/c spacing between Safety Posts is:

- 1.9 m for Steel Mesh Barrier Stair.



FRAMED RAIL BARRIER

Max. c/c spacing between Safety Posts is:

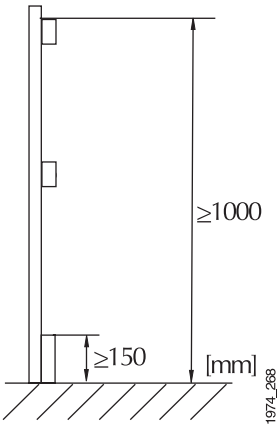
- 2.4 m

FRAMED MESH BARRIER

Max. c/c spacing between Safety Posts is:

- 2.4 m

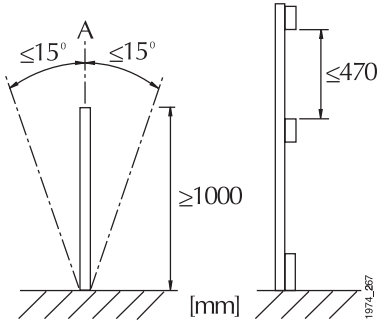
DESIGN OF TEMPORARY EDGE PROTECTION



EN 13374 sets the following requirements for Classes A, B, and C, edge protection:

- Edge protection must be at least 1.0 m high, measured perpendicular to the working surface.
- Principal (top) and intermediate guardrails or other means of intermediate protection must be provided.
- The distance between the uppermost part of the toeboard and the working surface shall be at least 150 mm, at any point, measured perpendicular to the working surface. The toeboard shall be designed to avoid gaps between it and the working surface. If there are gaps, a sphere with a diameter of 20 mm shall not pass through them. For other situations for example where the working surface is not flat, any gaps should be maintained as small as practicable.
- Safety nets used as edge protection must conform to EN 1263-1.

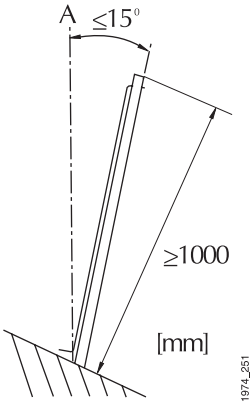
CLASS A DESIGN



- The edge protection may not deviate from the vertical line A by more than 15°.
- The edge protection openings may not be more than 470 mm in one direction, when intermediate guardrails are used.
- The edge protection openings may not be more than 250 mm in one direction, when there is no intermediate guardrail.

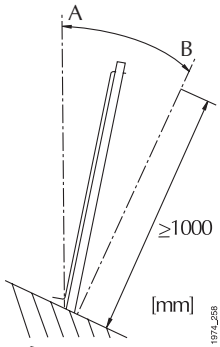
CLASS B DESIGN

- The edge protection may not deviate from the vertical by more than 15° outwards or inwards.
- The edge protection openings may not be more than 250 mm in one direction.



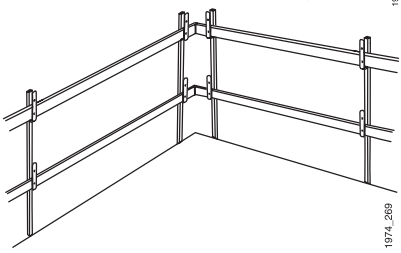
CLASS C DESIGN

- The edge protection must be between the vertical line A and perpendicular to the working surface B.
- The edge protection openings may not be more than 100 mm in one direction.



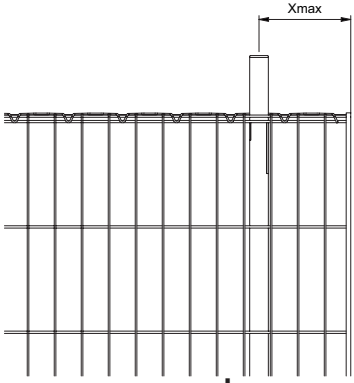
CORNERS

The attachments are designed to resist loads in one primary direction. For this reason, Combisafe always recommends the use of two Safety Posts in the corners, one in each direction.

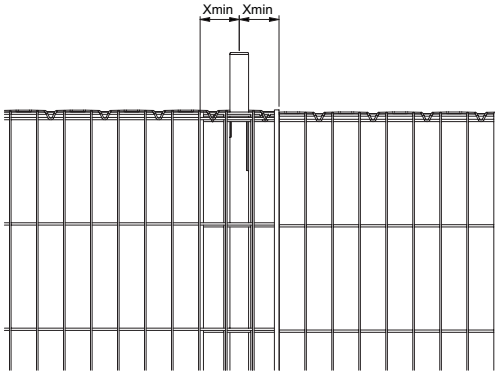


OVERREACH

The maximum permitted overreach of the SMB or FRB is max. 250 mm. For products 1221, the maximum permitted overreach is 200 mm. This presupposes that the guardrail or Steel Mesh Barrier or Framed Barrier is connected to the Safety Post. Barrier must be secured for uplift if used with overreach more than 150 mm. For product 1726 Class B and C, overreach of 250 mm is allowed if placed towards a solid structure, or two barriers against each other.



overreach



overlap

WIND LOAD

Maximum wind load

The edge protection system can withstand a peak wind velocity pressure of 600 N/m^2. This is equivalent to a peak wind velocity of approximately 32 m/s.

WARNING!

Should the wind speed exceed this amount then the arrangement may need to be recalculated to determine its fitness for purpose. Adjustments may need to be made to the arrangement following calculations.

Maximum working wind conditions

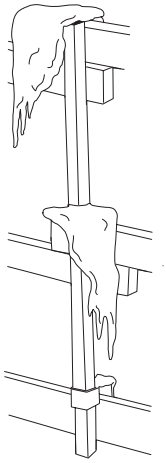
The edge protection systems can withstand a peak wind velocity pressure of 200 N/m2 under working conditions. This is equivalent to a peak wind velocity of approximately 18 m/s.

WARNING!

Should you increase the effective area of the edge protection, for example by using scaffold sheeting or plywood, the load at a given wind strength will increase. Never make changes without first checking that the permitted load on the whole system is not exceeded.

Ice and snow

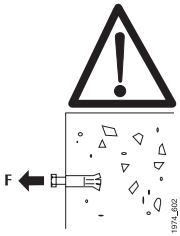
The temporary edge protection system is not designed for exposure to static or dynamic loads resulting from ice and snow. Always keep edge protection free from ice and snow.



ASSEMBLY

FASTENING

Methods to secure the attachments to the building structure, refer to relevant TI sheets. Loads in TI sheets are design loads, including the partial safety factor γ F = 1,5.



IMPORTANT

Evaluate all forces affecting the fixings and the building structure.

FASTENERS

Always follow the manufacturer's instructions for the selection and installation of all fixings and anchors.

NOTE

It is important to take into consideration concrete or timber quality, and the distance to edges between fixings etc. aspects that might affect strength.

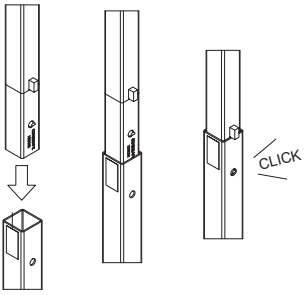
SAFETY POSTS

General

1. Insert the Safety Post in the attachment with the guardrail holders facing inwards.

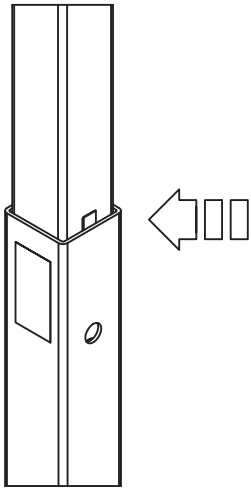
2. Push the Safety Post down into the attachment, Quiclox automatically locks in the hole on the attachment.

- The Safety Post can be set lower by pressing in the Quiclox-button and pushing the post down.
- When using Cast-In Sleeves, the length of the Sleeve must be set so that the Safety Post or the Safety Post Extender is inserted at least 100 mm into the concrete.
- The Plastic Plug in the bottom of the Cast-In Sleeve reduces the insertion depth and must be taken into consideration when calculating the sleeve length.
- When inserted in Pre-Cast Attachments, check that the Safety Post or the Safety Post Extender is inserted at least 100 mm into the attachment metal sleeve, unless stated otherwise in product specific information.



WARNING!

Safety post extenders 1242/1245 are to be used only in combination with the short safety post 1102 or 2000. Several extenders must not be combined. If Safety Post Extender 1242/1245 is used, always contact Combisafe Engineering Service to verify maximum allowed load will not be exceeded.

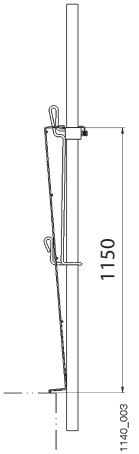


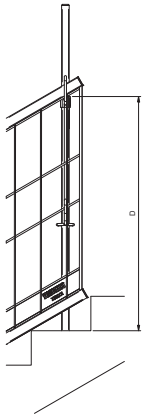
ADJUSTABLE SAFETY POST 1140/1142

Steel Mesh Barrier

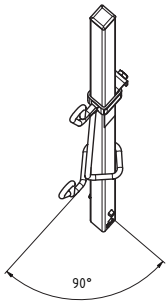
1. Set the Steel Mesh Barrier Holder at a suitable height. The top edge of the Sleeve should be 1150 mm above the lower edge of the Steel Mesh Barrier.

The distance (D) varies between the Sleeve and the lower section of the Steel Mesh Barrier of Steel Mesh Barrier Stair depending on the slope of the staircase and where on the step the Safety Post is positioned.

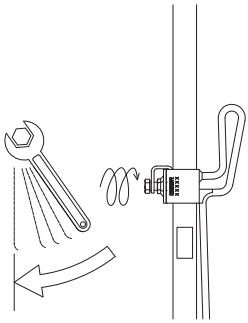




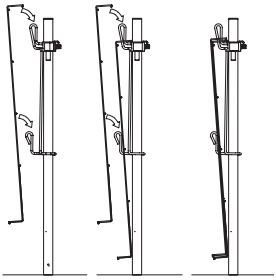
2. The hooks on the Steel Mesh Barrier Holder are to be at right angles to the Quiclox.



3. Tighten the Steel Mesh Barrier Holder's lock screw to minimum 50 Nm.

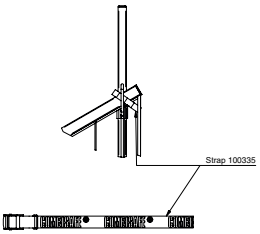


4. Fit the Steel Mesh Barrier on the Steel Mesh Barrier Holder by hooking the mesh in the top eye on the Steel Mesh Barrier Holder and the middle horizontal rod on the Steel Mesh Barrier over the lower hook on the Steel Mesh Barrier Holder.



On Steel Mesh Barrier Stair the handrail is placed above the upper eye on the Steel Mesh Barrier Holder. The distance, D, is ideally adjusted so that the handrail rests on the upper eye. The third wire is placed above the lower eye on the Steel Mesh Barrier Holder. The third wire does not always rest against the lower Steel Mesh Barrier Holder, depending on the slope of the staircase, but it should always be behind it . A vertical wire, or a flat steel bar at the ends of the Steel Mesh Barrier Stair. will act as a stop along the direction of the stairs.

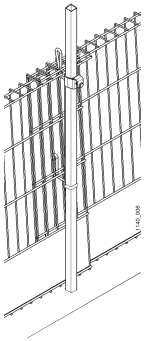
5. Plan the overlap. If one or more of the Steel Mesh Barriers will need to be removed, for example to permit delivery of materials, these barriers should be fitted last with the overlaps on top at both ends.

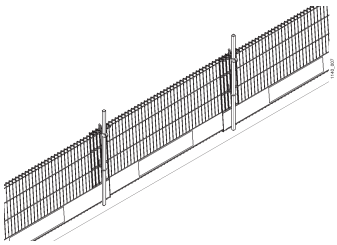


6. Join the Steel Mesh Barriers by overlapping them on the Steel Mesh Barrier Holder.

Allow at least 100 mm overlap on each end of the Steel Mesh Barriers. The Steel Mesh Barriers can be overlapped more to give a shorter c/c distance.

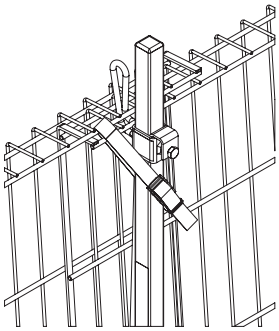
It may be useful to use the Combistrap, 100335, to minimise the play that can result between the upper eye on the Steel Mesh Barrier Holder and handrail and between the lower eye on the Steel Mesh Barrier Holder and the third wire.



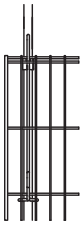


Important

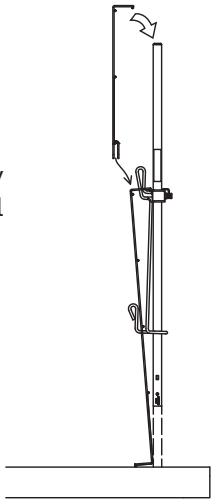
Steel Mesh Barriers must be secured to the Steel Mesh Barrier Holders when installing for Class B requirements. This is achieved using the Combistrap, 100335.



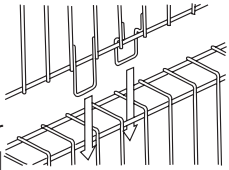
For class C minimum overreach/overlap needs to be two meshes for SMB and one mesh for SMB Lightweight.



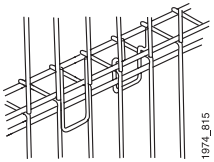
Steel Mesh Barrier Make-Up 3217&3218

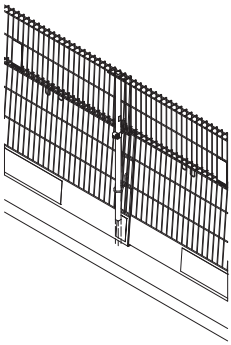


1. Set the Steel Mesh Barrier Make-Up over the Safety Post by hooking the cranked top section of the Steel Mesh Barrier over the top of the Safety Post.



2. Using the guide lugs, press the Steel Mesh Barrier Make-Up down onto the top wire to grip inside and outside the lower Steel Mesh Barrier.





3. Joining and overlapping is carried out as indicated earlier in Adjustable Safety Post 1140, 1142 paragraphs 2 and 3.

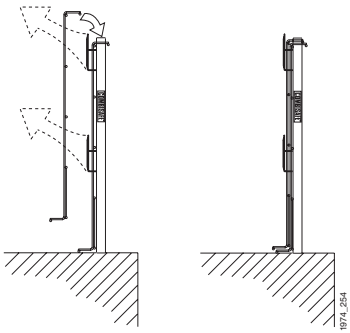
SAFETY POST 1102/2000

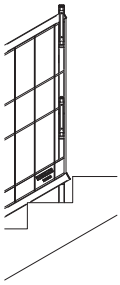
Steel Mesh Barrier

1. Set the Steel Mesh Barrier on to the Safety Post by positioning the cranked top section of the Steel Mesh Barrier over the top of the Safety Post and at the same time hooking it on to the brackets.

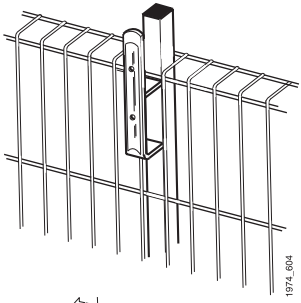
On Steel Mesh Barrier Stair the handrail is placed above the upper bracket. The third wire is placed above the lower bracket. It is not always certain that the handrail or third wire rests against the bracket due to the slope of the staircase and the position of the Safety Posts, but it should always be behind it. A vertical wire, or a flat steel bar at the ends of the Steel Mesh Barrier Stair will act as a stop along the direction of the stairs.

It may be useful to use the Combistrap, 100335, to minimise the play that can result between the upper bracket and handrail and between the lower bracket and the third wire.

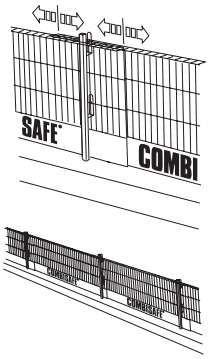




2. Check that the horizontal wires on the Steel Mesh Barrier are fitted in the Safety Post brackets.



3. Plan the overlap. If one or more of the Steel Mesh Barriers will need to be removed, for example to permit delivery of materials, these barriers should be fitted last with the overlaps on top at both ends.



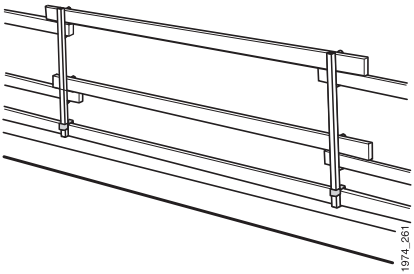
4. Join the Steel Mesh Barriers by overlapping them on the Safety Posts. Also, adjust the length of the Steel Mesh Barrier in the same way. Join the Steel Mesh Barrier Stairs by overlapping them, next to each other, in the bracket.

Timber guardrails

1. Select the correct size and quality for the timber guardrail. Check that the distance between the Safety Posts is correct. *See Distance between Safety Posts, page 14.*
2. Place the timber guardrails in the Safety Post brackets.

   This can be done in two ways for Safety Posts 1102 and 1107:

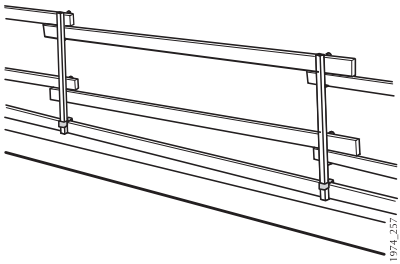
   I. Position the guardrails in either the upper or lower position in the other end of the brackets. Position the guardrail in the same position in the same bracket on the adjacent Safety Post. The edge protection will then be alternating high and low.



WARNING!

Never place the guardrail in the upper position on the top bracket and in the lower position on the lowermost bracket. The space between guardrails will then be too great.

   II. Place the guardrail in the lower bracket position on the first post, and then into the higher bracket position on the adjacent post. This is the most efficient method to construct an edge protection system. The edge protection also has a higher average height.

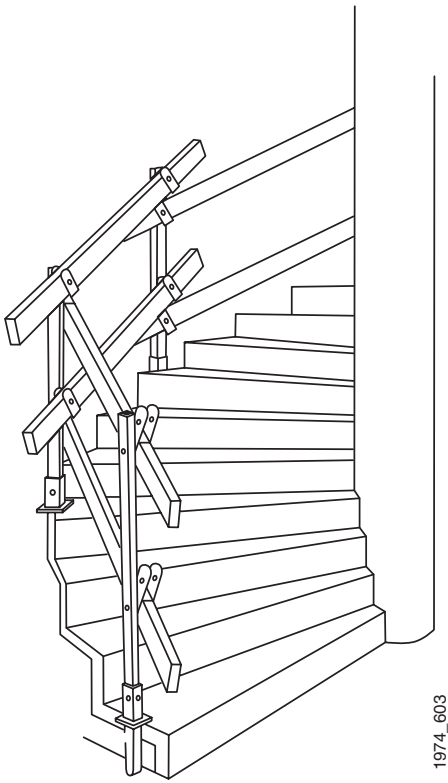


3. Nail or screw the guardrails to the brackets. Do this in such a way that allows the guardrails to be easily removed.

FLEXI SAFETY POST 1107

The Flexi Safety Post 1107 can only be used together with timber guardrails.

The brackets can be rotated in two planes to suit the required slope and to match curved edges, e. g. spiral staircases.



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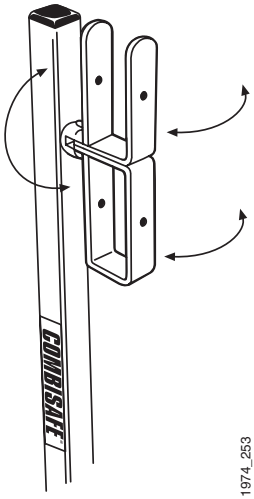

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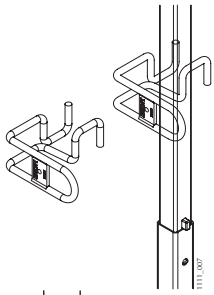
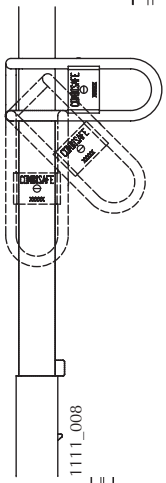
TOEBOARD HOLDER MK II 1111

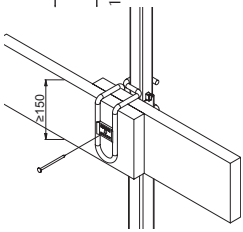
1. Hold the Toeboard Holder Perpendicular to the Safety Post and push in onto the Safety Post. Turn the Toeboard Holder 90 degrees so it is parallel with the Safety Post. The Toeboard Holder can be placed with the bracket facing either downwards, which is normal, or upwards.

- Position the Toeboard Holder with the bracket facing downwards so the toeboard rests against the working surface.
- Position the Toeboard Holder with the bracket facing upwards to support the toeboard.

2. Place the toeboards in the Toeboard Holders and secure using nails or screws. Do this in such a way that allows the toeboards to be removed easily. Some toeboard sizes can be joined with an overlap in the Toeboard Holder. If this is not possible, join with the overlap away from the Toeboard Holder.







WARNING!

Remember that the toeboard must be at least 150 mm high and fixed to holder by nails and/or screws.

STEEL MESH BARRIER ADJUSTER 3224

Lifting

1. Position the Steel Mesh Barrier Adjuster on the Safety Post. Insert the locking pin in an appropriate hole to give a working height for the lever.

2. Hook the hook into the eye on the Steel Mesh Barrier Holder and tighten the strap so that the lever points downwards in a suitable position to lift from.

3. Hold the lever on the Steel Mesh Barrier Adjuster with one hand and loosen the screw to the Steel Mesh Barrier Holder with your other hand. Only loosen the screw approximately 1 turn so that the Steel Mesh Barrier just becomes loose. Lift the lever so that Steel Mesh Barrier is raised to the required position.

Note

The maximum lift height is at least 20 cm for each lift. Make an additional lift if the Steel Mesh Barrier needs to be raised further.

WARNING!

Always hold the lever when the Steel Mesh Barrier Holder screw is loosened.

4. When the Steel Mesh Barrier is raised, tighten the screw on the Steel Mesh Barrier Holder again, still with one hand on the lever. Tighten the screw to minimum 50 Nm.

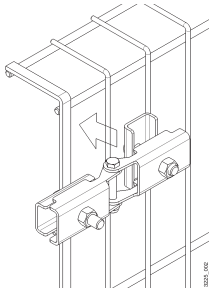
5. Continue to lift the Steel Mesh Barriers in sequence, starting at one end and moving on to the next section.

Lowering

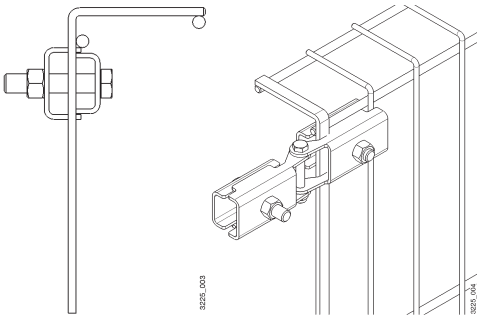
Lower the Steel Mesh Barrier using the same method, starting with the lever in the raised position and then lowering the Steel Mesh Barrier.

STEEL MESH BARRIER HINGE 3225

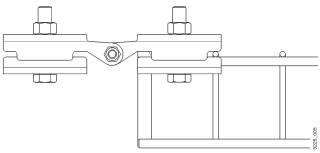
1. Fit the Steel Mesh Barrier Hinge at the top of a Steel Mesh Barrier, as high as possible. Loosen the bolt and turn the clasp 90 degrees and push it through the opening in the mesh.



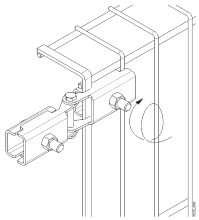
2. Turn the clasp back and tighten it in, checking that the U-section on the clasp aligns of the flanges on the Steel Mesh Barrier Hinge base's U-section.



3. Check that the raised surface on the Steel Mesh Barrier Hinge is positioned in between the vertical rods.

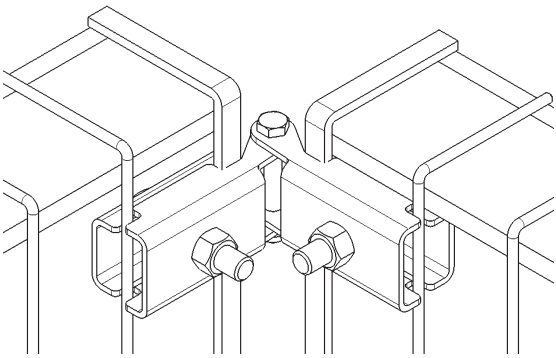


4. Tighten the nut.



5. Join the Steel Mesh Barriers by fitting the other clamp on the Steel Mesh Barrier Hinge in the same way on to the end of the other Steel Mesh Barrier.

Note that the return on the bottom of the second Steel Mesh Barrier will need to sit on top of the return on the first.



6. Fit the other Steel Mesh Barrier Hinge between the mesh just above the toeboard.

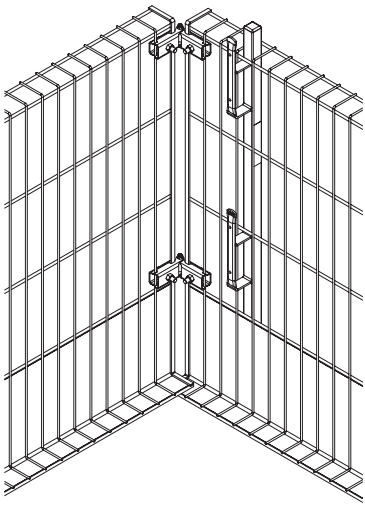
WARNING!

The Steel Mesh Barrier Hinge can be placed in the middle of a Steel Mesh Barrier, not just at the end.

For Steel Mesh Barrier Lightweight Hinge can be used only at its ends.

The Steel Mesh Barrier Hinge can also be used to link together the Steel Mesh Barrier Stair at its ends.

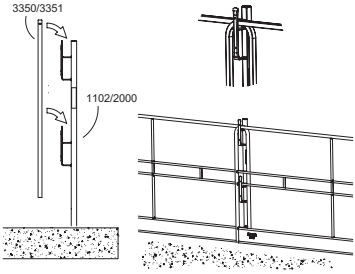
The connection of the mesh in a corner can in some situations replace a Safety Post so that only one Safety Post is needed in the corner, check with Combisafe under which circumstances this is allowed.



FRAMED BARRIERS

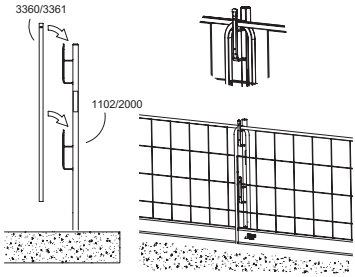
1. Set the Framed Barrier on to the Safety Post by positioning the top section of the Framed Barrier in the top brackets of the Post and at the same time hooking the intermediate rail or mesh in to the lower brackets.

It may be useful to use the Combistrap, 100335, to minimise the possibility of uplift. Tighten Compistrap around the upper bracket and handrail.



2. Check that the mesh and/or rails of the Framed Barrier are fitted in all Safety Post brackets.

3. Plan the overlap. If one or more of the Framed Barriers will need to be removed, for example to allow delivery of materials, these barriers should be fitted last with the overlaps towards the working area on both ends.



4. Join the Framed Barriers by overlapping them on the Safety Posts.

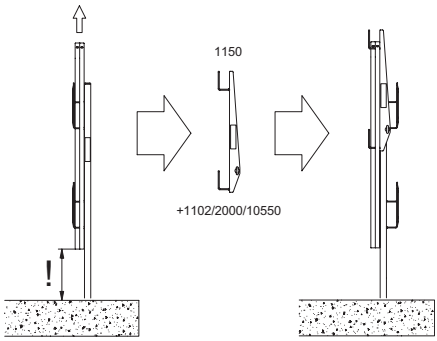
Also, adjust the length of the Framed Barrier in the same way.

EXTENSION HOLDER 1150

1. Extension holder is designed to work with Ports 1102, 2000 and 10550.

2. Set the Extension Holder at a suitable height. Horizontal bottom part of the top hook of 1150 should be 1125 mm above the lower edge of the Framed Barrier.

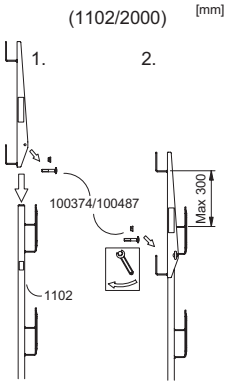
3. Tighten the Extension Holder's lock screw to minimum 50 Nm.

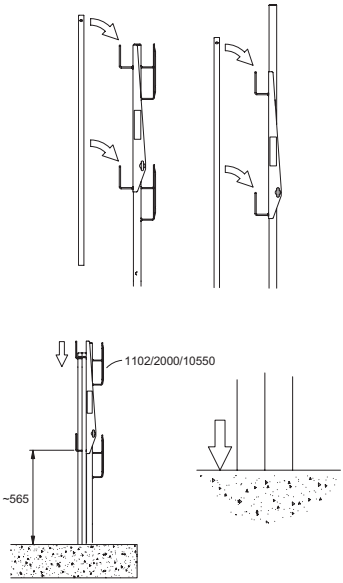


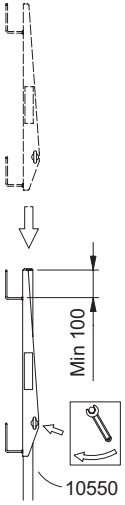
WARNING!

Maximum extension for Posts 1102 and 2000 is 300mm.

Minimal distance between top Bracket of Extension Holder and top of Post 10550 is 100mm







CHECKING

The installer should continuously check the edge protection during assembly.

A final inspection must be made once assembly is finished, prior to hand over, as follows:

Edge protection checklist

Check that the edge protection system complies with the requirements of EN 13374 by checking the following:

- the selection of the edge protection corresponds with the required class.
- timber guardrails are made using timber in the right quality class and dimensions.
- maximum c/c spacing is not exceeded.
- the height of the edge protection is at least 1.0 m.
- principal and intermediate guardrails/intermediate protection are used when a Steel Mesh Barrier or Framed Barrier is not used.
- toeboards with a height of at least 150 mm are used.
- guardrails and toeboards are secured using nails or screws.
- openings in the edge protection do not exceed the requirements.
- attachments are correctly anchored to the building structure.
- Safety Posts are anchored securely into the attachments.
- the edge protection is not subjected to excessive wind loads.

INSPECTION

Damage report

Edge protection, for example through damage or missing sections, must be reported at once to the site manager for immediate action.

Regular inspection

The edge protection must be inspected regularly while in use. Ideally inspections can be made during normal safety rounds.

DISMANTLING

The installation procedure should be performed in the reverse order when dismantling.

1. Remove the guardrails or the Steel Mesh Barrier or Framed Barrier. Pack the Steel Mesh Barrier or Framed Barrier according to next pages.

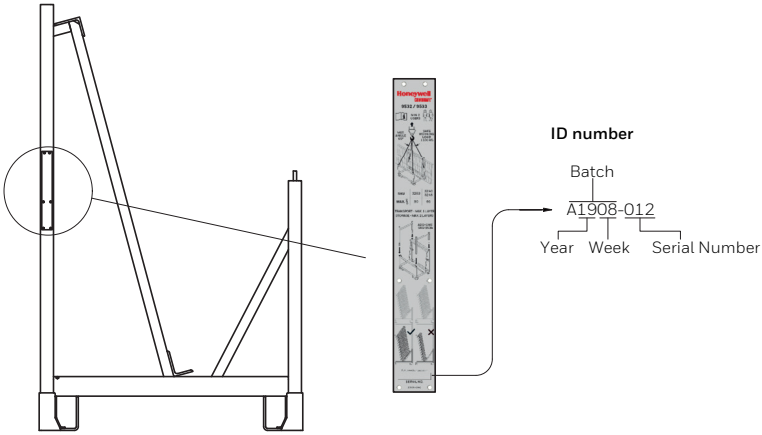
2. Remove the Safety Post from the attachments by pressing in the button on the Quiclox.

3. Remove the attachments from the building structure.

PACKING STEEL MESH BARRIER

The Barrier Boxes 9530, 9532 and 9533 are suitable to pack the Steel Mesh Barrier and Steel Mesh Barrier Lightweight.

Always read the User Instruction before use. Combisafe accepts no liability for items that have been altered.



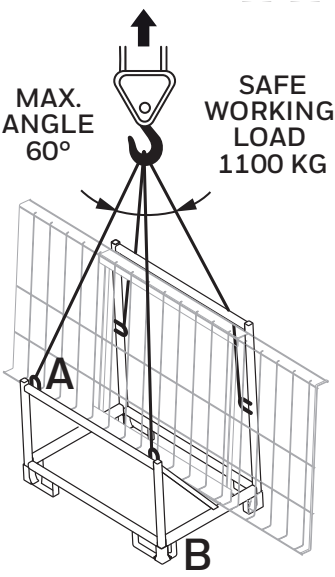
Use

- Use the Barrier box for its intended purpose only, don't stack or load anything other than Combisafe Steel Mesh Barriers or Combisafe Steel Mesh Barrier Lightweight.
- For maximum number of barriers per box refer to the table below. Never load barriers higher than described in the chapter "Stacking barriers in the box".
- Load box with maximum 50 Make-Ups and only in the ways presented in the chapter "Stacking barrier Make-Ups in the box".
- Secure barriers or Make-Ups in box from sliding or overturning.
- Don't move or lift the box by hand.
- Use at least two straps around box and barriers with minimal static load performance of 500 kg during any transportation of the box.

Steel Mesh Barrier	Steel Mesh Barier Lightweight
Max 50 pcs	Max 60 pcs

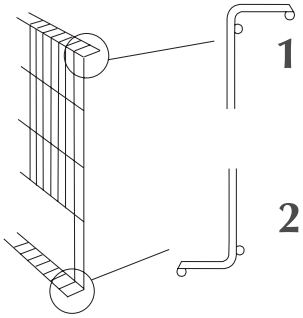
Lifting by crane

- Use a suitable 4-legged lifting chain or lifting slings with permissible load (SWL) min. 1100 kg.
- Safe working load for 9530 is 1020kg, for 9532 is 1100kg
- The maximum lift angle between diagonally opposite parts is 60°.
- Fasten the chain hooks into the lift loops (A) in the corners of the box.
- When lifting with a sling, attach the sling around the box through the feet (B) so that the sling does not slide together.
- Avoid sudden stops or accelerations when lifting or lowering a loaded box.



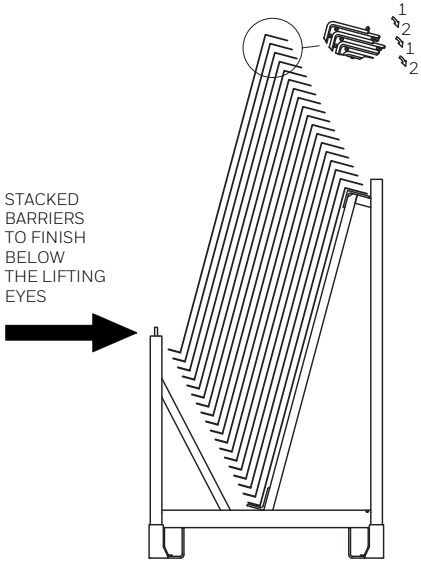
Lifting with forks

- The box can be lifted from all sides with forks.
- When lifted from long side, preferably insert forklift forks inside the feet (2) windows to gain more stability during transportation, make sure that forks are pushed in enough, so the box supports on both sides.
- When lifting from short side, make sure that the barriers are not in the way. Place forks centered on box and make sure that forks are pushed in enough, so the box supports on both sides.



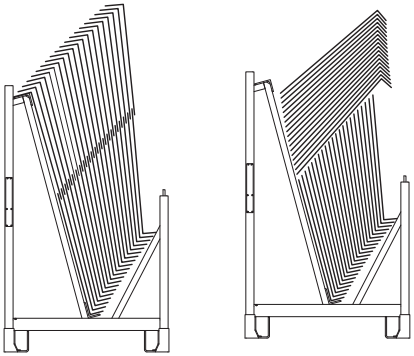
Stacking barriers in the box

- It is important to stack the barriers correctly in the box. Otherwise the barrier stack will become too high and unstable.
- Place every second barrier in opposite direction, i.e. every second barrier with the toeboard upwards.
- Make sure that the barriers are centered in the box to avoid overturning.
- It is recommended for frequent loading and unloading of barriers into the boxes to be carried out by two persons or to use lifting equipment.
- Stacked barriers must finish below the lifting eyes.
- Refer to current Health and Safety regulations applicable to country of use to ensure compliance.



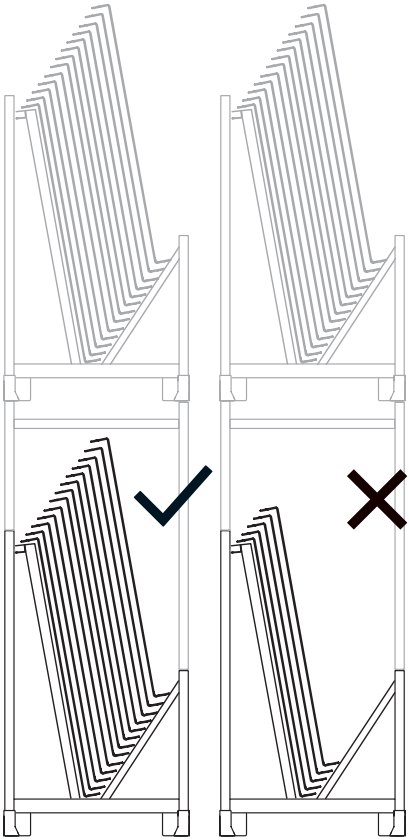
Stacking barrier Make-Ups in the box

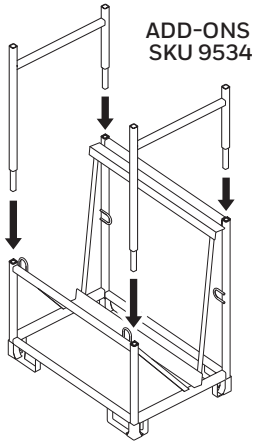
- It is important to stack the Make-Ups correctly in the box. Otherwise the stack will become too high and unstable.
- For stacking barrier Make-Ups, use one of two recommended configurations, see figure below.
- Make sure that the Make-Ups are centered in the box to avoid overturning.

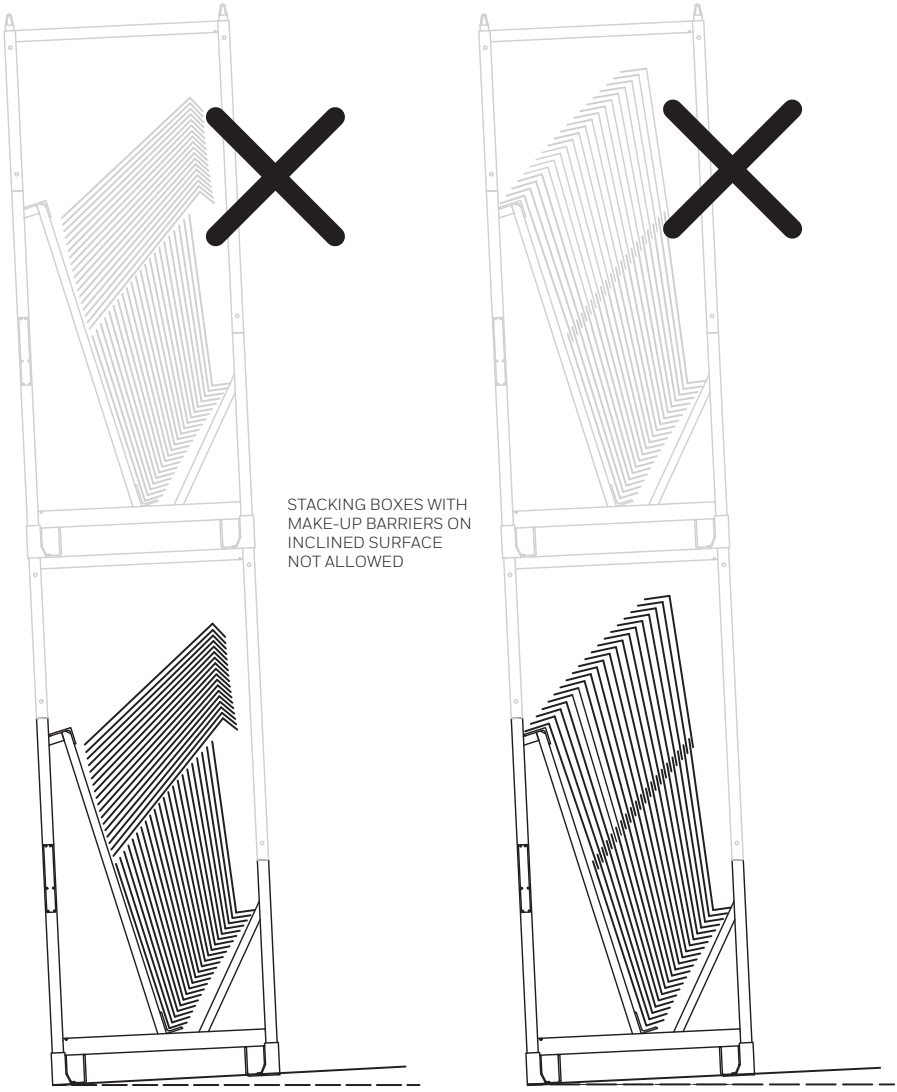


Stacking barrier boxes

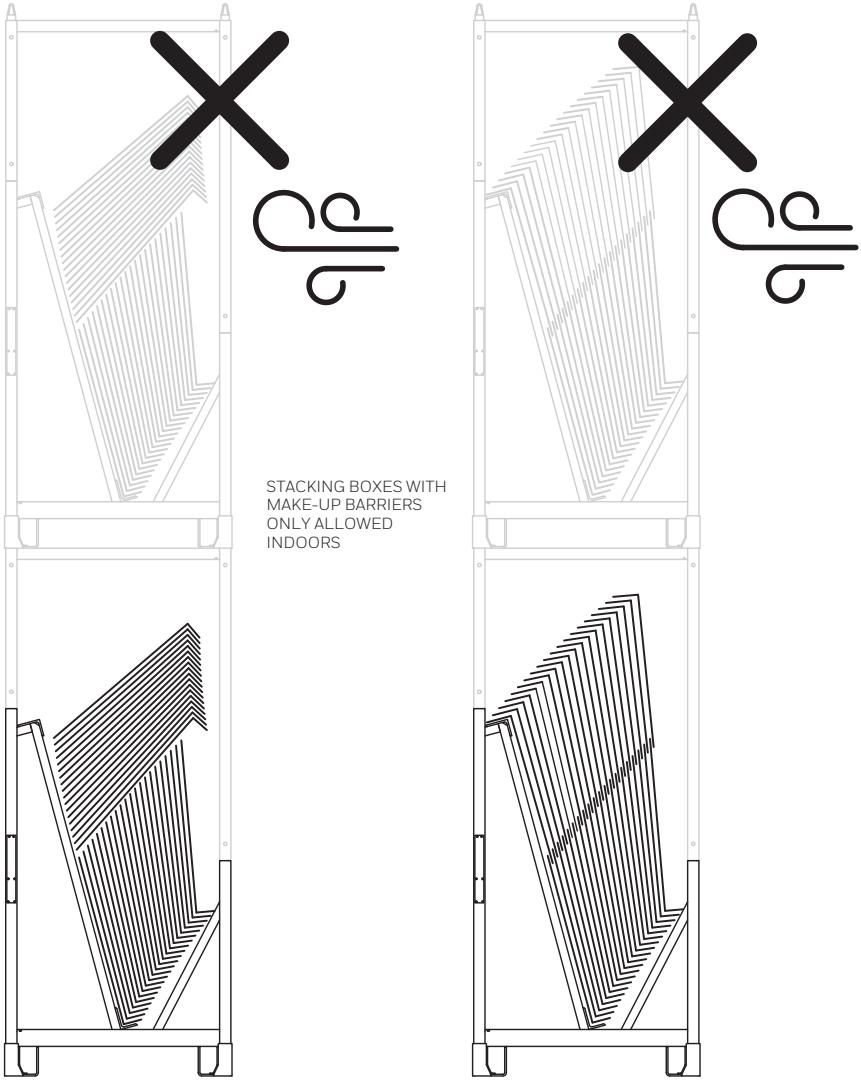
- Stacking is allowed only for storage, not for transportation and only for 9532/9533.
- Install Add-ons 9534 to stack the barrier boxes.
- Stack maximum of two boxes on top of each other. Bottom barrier box must be always full of barriers.
- Stacking of two empty barrier boxes is allowed.
- Ensure that the boxes are sitting on an even, horizontal and stable surface; make sure there are no obstacles under the feet of the box.
- Ensure that the feet and upper part of add-ons are not bent or damaged and that they fasten correctly, so that the boxes do not slide.
- The box is not intended to withstand impact from any object.
- Wind speed and inclination limitation for barrier box stacking:
  - For inclination of the surface 0%-2% max wind speed 15 m/s
  - For inclination of the surface 2%-5% max wind speed 13 m/s
  - Stacking of the boxes on a surface with inclination greater than 5% and under wind speed higher than 15m/s is not allowed







STACKING BOXES WITH
MAKE-UP BARRIERS ON
INCLINED SURFACE
NOT ALLOWED



STACKING BOXES WITH MAKE-UP BARRIERS ONLY ALLOWED INDOORS

Safety precaution

Before every use

- Always check the Barrier Boxes for any signs of damage or visible deformation.
- Don't use boxes that don't pass checks according to the following checklist:

Checklist

- ❑ Crack free and notch-free welds
- ❑ No deformation
- ❑ No visible corrosion
- ❑ No noticeable damage
- ❑ Visible Combisafe marking and ID number
- ❑ No deformed or damaged lifting eyes
- ❑ No sharp edges

Annual inspection

It is recommended that the box is inspected at least once a year by a trained competent person unless stated otherwise in country of use.

Storage

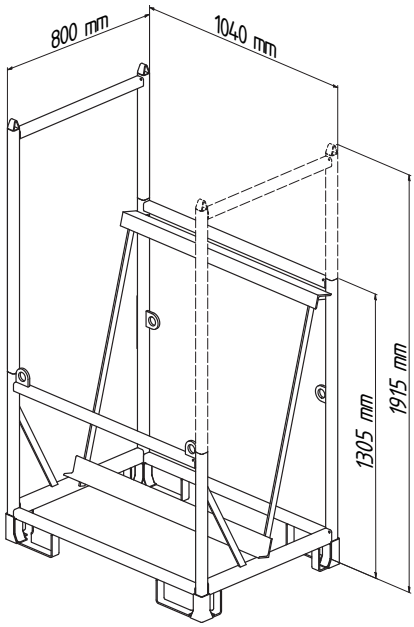
Store the Barrier Box in a dry and well-ventilated place, protected from the weather and from all corrosive substances.

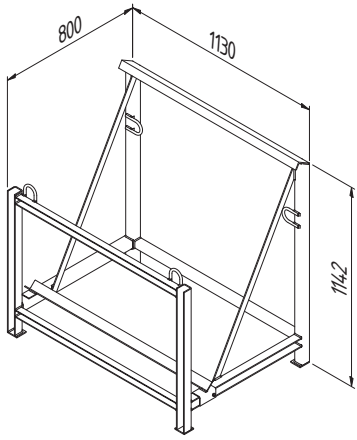
Repairs

May only be carried out by the manufacturer.

Scrapping

When the Barrier Boxes have failed their safety inspection, they may be used as scrap steel and can be recycled as raw material.

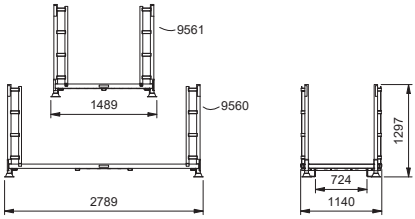




PACKING FRAMED BARRIERS

The Barrier Box, 9560, is suitable for packing the full length Framed Barriers. For short Framed Barriers the Barrier Box 9561 can be used.

Always read the instruction manual before use - Combisafe accepts no liability for items that has been altered

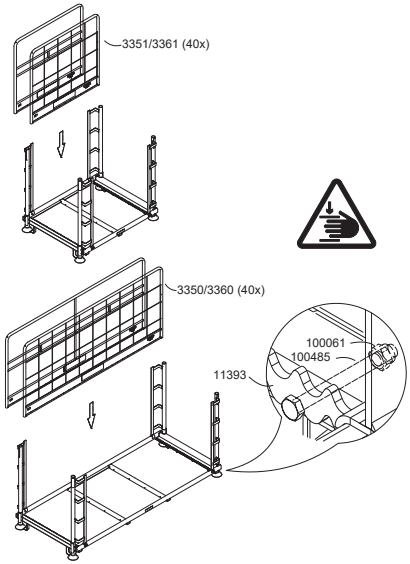


Use

Only use the Barrier Box for its intended purpose. Don't load anything other than Combisafe Framed Barriers No. 3351/3361 or 3350/3360.

Load box with maximum 40 Barriers.

Secure barriers in box from sliding or overturning. Use strap around box and barriers.

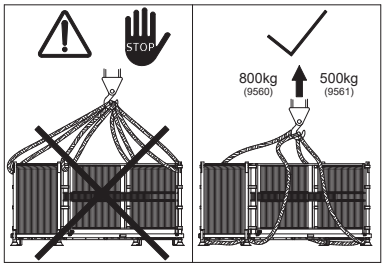


Lifting by crane

Use suitable lifting slings with permissible loadability (SWL) above 800 kg.

Max chain spread angle 60°.

Lift only with slings under the bottom frame, through the foot brackets.



Lifting with forks

The box can be lifted from all sides with forks.

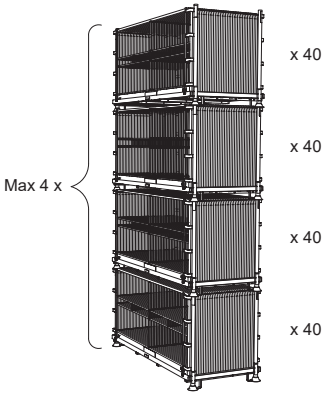
Place forks centered on box and make sure that forks are pushed in enough so the box is supported on both sides.

Stacking barriers in the box

It's important to stack the barriers correctly in the box. Otherwise the barrier stack will become unstable.

The barriers weighted up to 17 kg can be handled by one person, but it is recommended for frequent loading and unloading to be carried out by two persons or to use lifting equipment. Don't move or lift box by hand.

Refer to current Health and safety regulations applicable to country of use to ensure compliance.



Safety precaution

Before every use

Always check the barrier boxes for any sign of damage or visible deformation.

Don't use boxes that don't pass checks according to the following checklist:

- ❑ Crack free and notch free welds
- ❑ Deformation
- ❑ Corrosion
- ❑ Damage
- ❑ Wearing
- ❑ Visible Combisafe label and ID number
- ❑ Deformed or damaged lifting eyes
- ❑ No sharp edges

If in doubt, consult Combisafe!

Annual inspection

It is recommended that the box is inspected at least once a year by a trained person unless stated otherwise in country of use.

Storage

Store the Barrier Box in a dry and well ventilated place, protected from the weather and from all corrosive substances.

Repairs

May only be carried out by the manufacturer.

Scrapping

When the Barrier boxes have failed their safety inspection, they may be used as scrap steel and can be recycled as raw material

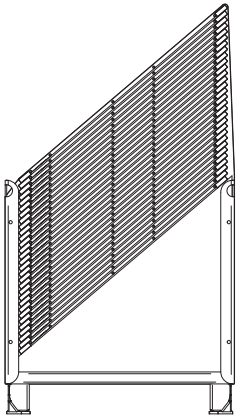
PACKING STEEL MESH BARRIER STAIR

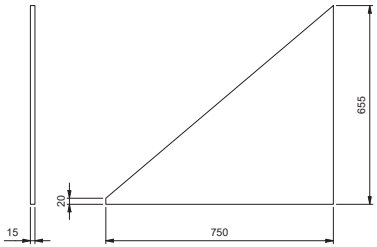
The Multibox, 9540, with two sawn wooden boards is suitable to pack the Steel Mesh Barrier Stair. Maximum number of Steel Mesh Barrier Stair that can be packed in the Multibox is 30 barriers.

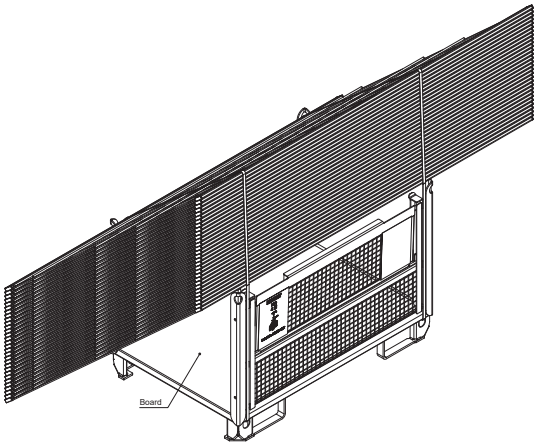
The wooden boards are in the shape of a triangle. Choose 15 mm boards. See the image for suitable sawing dimensions.

Remove the ends of the Multibox and place the wooden boards against the angled end posts. Now pack the Steel Mesh Barrier Stair so that the lower edge of the Steel Mesh Barrier Stair is supported by both end posts along one side of the Multibox. Preferably choose the side without the side hatch, you can then store material in the space under the Steel Mesh Barrier Stair after packing. See the images.

Secure the package with two steel bands.







MAINTENANCE

SAFETY CHECKS

A safety check should be made on all products before being used again. The check is ideally made after use, before the products are placed in the stores. The safety check must be carried out by qualified personnel. Combisafe recommends that the safety check is only to be carried out by persons trained by Combisafe.

Check that:

- no parts are cut or joined.
- no parts are bent to excess or in any other way deformed.
- no new drill holes have been made.
- no corrosion has occurred that can affect strength.
- no visible cracks have occurred in welds or the material.
- parts fit together. Use a gauge.

RECONDITIONING

Products rejected during safety checks can be reconditioned. Reconditioning must be carried out by qualified personnel. Combisafe recommends that reconditioning is only to be carried out by persons trained by Combisafe.

Recondition according to the following guidelines:

- only cold processing is permitted.
- clean the parts.
- replace damaged parts that cannot be reconditioned.
- scrap parts that after straightening show signs of fracture or that do not reach a satisfactory condition after reconditioning.

SCRAPPING

Products identified during the safety checks and which have not been possible to recondition should be discarded and destroyed so that they cannot be used.

Most Combisafe products are manufactured of steel and can be scrapped as steel in their entirety. There are some exceptions. Check with Combisafe in the event of uncertainty.

STORAGE

Store Combisafe products in a dry, ventilated area protected from environmental effects, e. g. weather and corrosive substances.

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