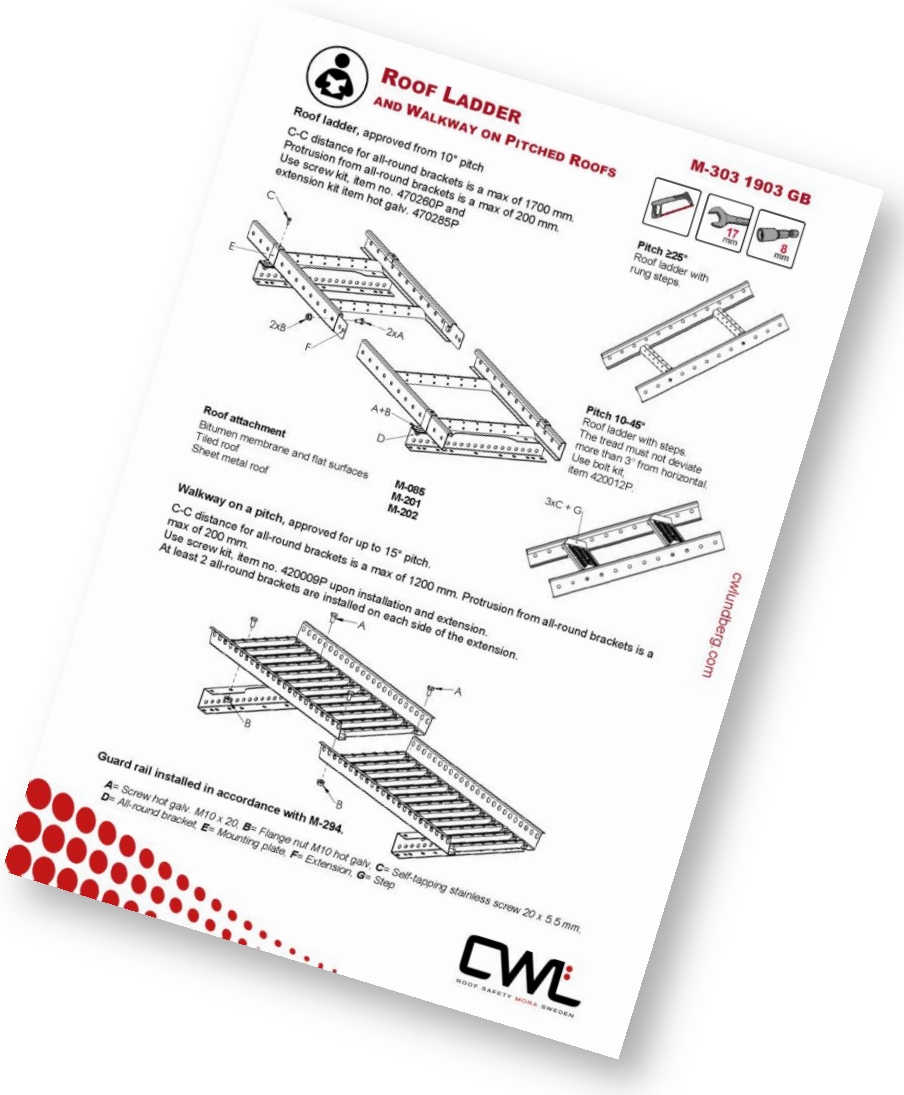
Installation instructions



ROOF SAFETY MORA SWEDEN

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Rail for roof hatches, Chimney strip
Rail for roof hatches and roof windows M-251
Rail for board and felt roofs M-236
Chimney strip SB-02

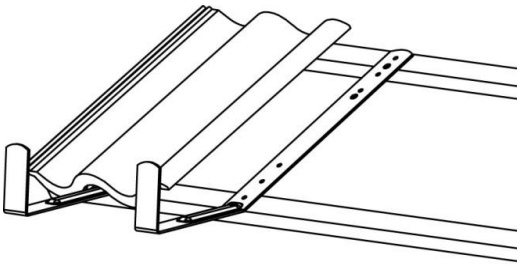
Installation instructions arranged by numerical order. Item registry as an appendix afterwards.

SLIPGUARD

FOR GROUND LADDER AT ROOF FOOT

M-001 1804 GB

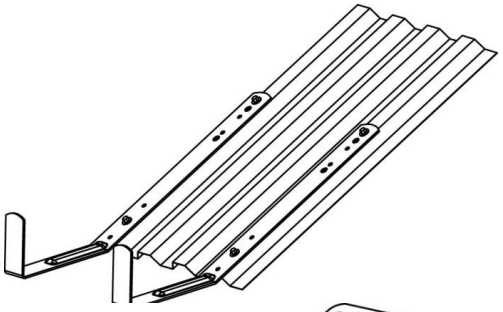
The slipguard must be adjusted to the width of the movable ladder and be installed at the side of the roof ladder.



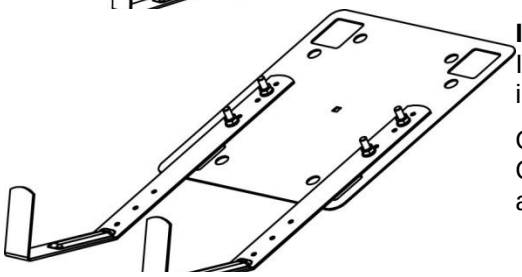
Installation on roofs with roof tiles
Check the batten where the slip guard is to be installed; the batten must be at least 22 x 36 mm, undamaged and secured according to the applicable instructions.

The slipguard is attached with 4 stainless steel screws 35 x 4.8 mm, 2 in each bracket.

The slipguard can also be installed directly onto the tongue-in-groove underlay.

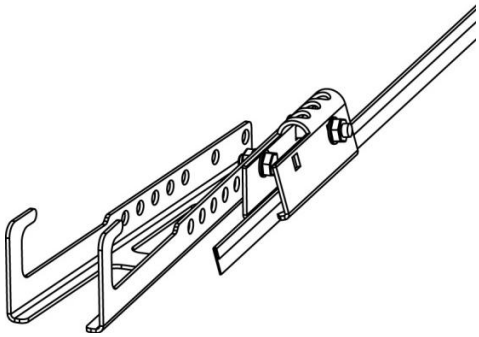


Installation on Profiled Sheet Metal Roofs
Install the slipguard at the profile tops with 4 stainless steel building screws with washers 22 x 6.3 mm, 2 in each bracket.
Screw with a low torque for an optimal thread formation.



Installation on Flat Roofs
Install the mounting plate according to the appropriate installation instruction.

On **bitumen-based membranes** according to **M-082**.
On **PVC, ECB/FPO-based membranes** according to **M-076**.



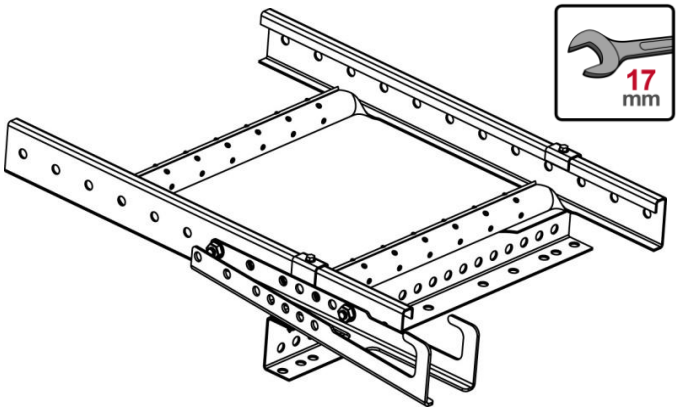
Installation on folded roof and pre-fabricated panel roof
Place the mount over the standing seam and check to see that the mount tabs pinch on under the edge of the seam.

Adjust the slipguard so that the ground ladder rests against the roof gutter or roof foot.

Tighten to a torque of min 20 Nm.

Installation on roof ladder/walkway on a pitched roof
Adjust the slipguard against the roof ladder so the ground ladder rests against the roof gutter or roof foot.

Attach in the lowermost holes with a least 2 pcs M10 x 20 with flange nuts.



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ROOF SAFETY MORA SWEDEN

ROOF STEP

ON TILED ROOFS

M-034 1807 GB

Roof step for installation on tiled roofs. Suitable for roofs with 25 or 50 mm battens.

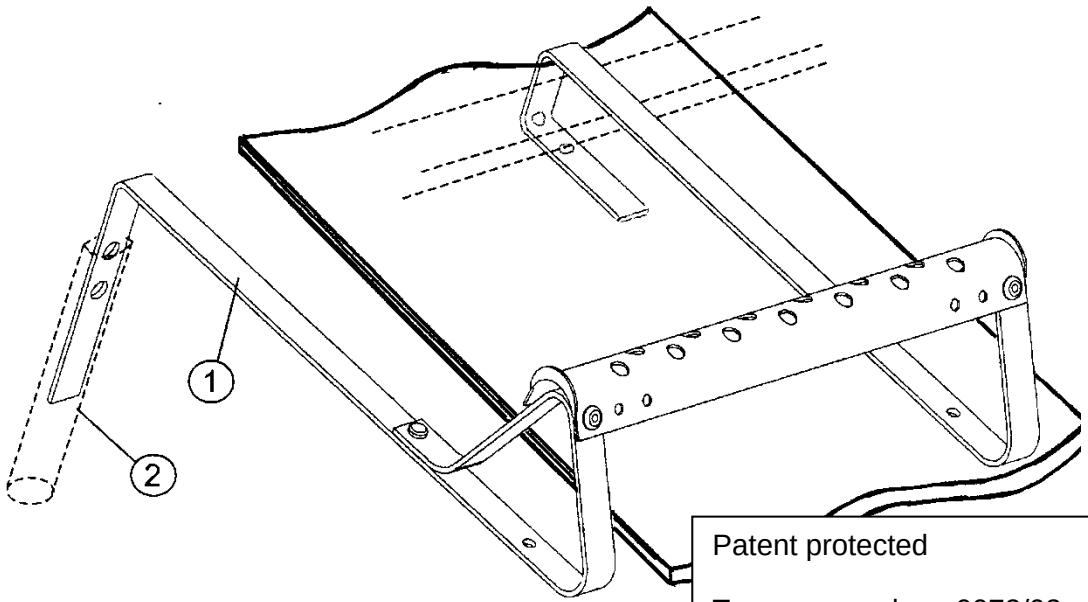
Roof steps may be used on houses with a maximum façade height of 4 metres and a maximum pitch of 45º. Roof steps must only be installed one directly over the other. Min. distance to the extension or end on batten is 1000 mm. Roof steps must not be installed on battens measuring less than 22 x 36 mm. The batten must not have wanes or have weakening knots, lowest sort V. The underlay shall have been applied in accordance with the roofing tile manufacturer's instructions.

A. The sides of the roof step (1) are adjusted to the roof tile and the given batten dimensions with the help of a metal-bending tool (2). The bending shall be done right in front of the appropriate hole and only be done one side at a time.

B. Place the lower row of tiles, hook the roof step in place over the batten so that the sides of the roof step rest in the valleys of the roofing tile.

C. Place the next row of tiles; install the rest of the roof steps as indicated above.

D. Slipguard protection for securing movable ladders is installed along the side of the roof steps.



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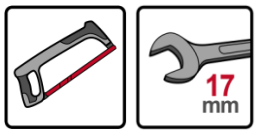
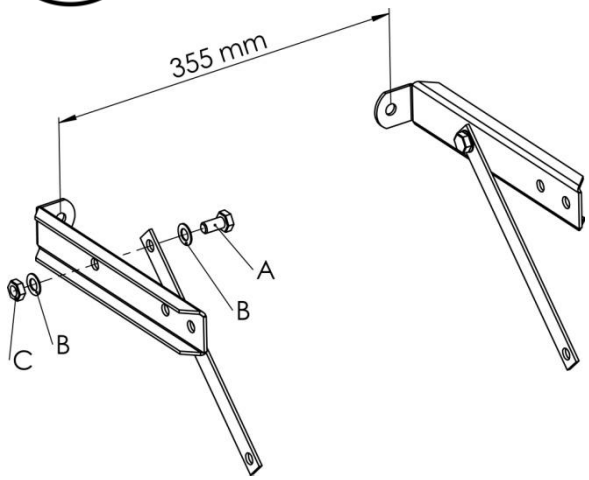
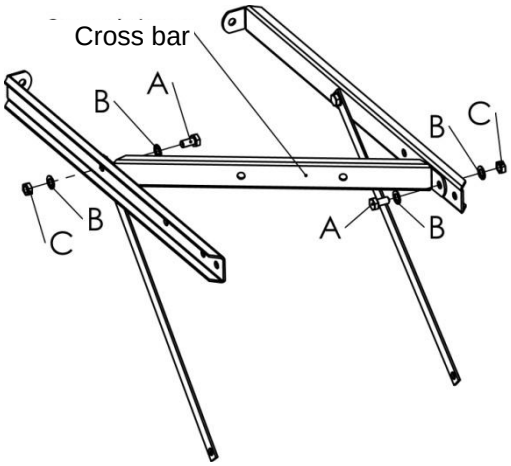
ROOF SAFETY MORA SWEDEN

FAÇADE LADDER

M-074 1903 GB







Install the uppermost pair of brackets as close to the roof foot as possible. Use whatever fasteners the specific conditions of the façade demand.

When installing on façades made of sheet metal or wood, a mounting plate can be used; see Installation Instruction **M-130**.

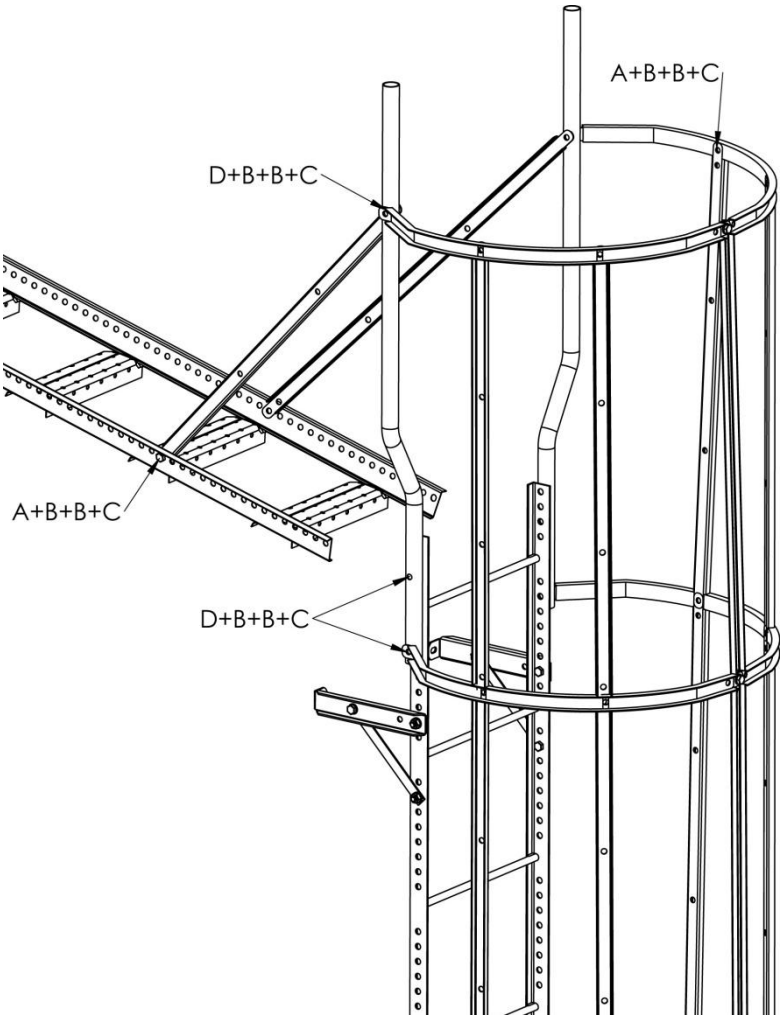
On brackets measuring 600 mm or more, oblique cross bars must be installed.

Install the ladder onto the uppermost pair of brackets, the uppermost rung shall be approx. 30 cm above the gutter or edge of the roof.

Ladders can be extended with extension kit 470011P.

Install the other brackets with a maximum C-distance of 2400 mm.

- Handrail shall be fastened to the roof using a bracing kit or other permanently installed access device.



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When cutting products, the cut surfaces must be coated in rust-proof paint.

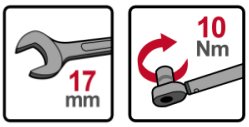
***A**= Screw hot galv M10 x 20, **B**= Washer hot galv 10,5 mm, **C**= Nut hot galv M10, **D**= Screw hot galv M8 x 50*

ROOF SAFETY MORA SWEDEN

MOUNTING PLATE

ON PVC, ECB/FPO-BASED MEMBRANE

M-076 1903 GB

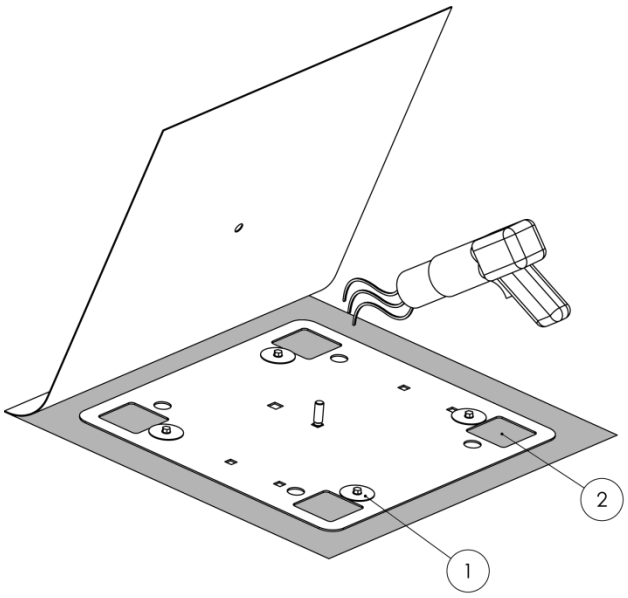


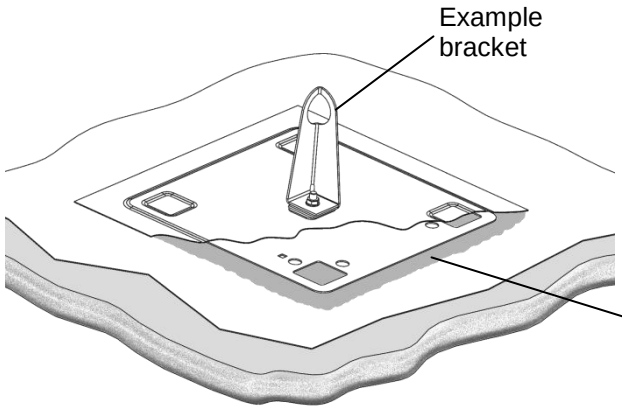
Mounting of wire system according to **M-279.**

Mounting plate 400 x 400 mm for installation of roof safety devices on roofs with PVC, ECB/FPO-based waterproofing membranes min 1.2 mm.

The waterproofing membrane must be tested in accordance with EN 13956 and satisfy the following requirements:

Tensile strength:	min 500 N/50 mm	EN 12311-2
Tear resistance:	min 110 N	EN 12310-2
Shear strength at extension:	min 450 N/50 mm	EN 12317-2
Peel adhesion at extension:	min 150 N/50 mm	EN 12316-2





Mounting plate installed on membrane

Attach the carriage bolt in the intended hole in the mounting plate and place the mounting plate in the desired location.

Please note: ***Mounting plates on membrane roofs shall always be mounted with 4 mounts for the following products:***

- ***Walkways, on pitches of more than 18°***
- ***End brackets for wire systems***
- ***Protective rail 1.1 m on walkways and roof ladders***
- ***Protective rail 1.1 m on low-leaning roof with membrane***

Mounts (1) shall be of the same kind as used when laying the roofing felt. These are attached to load-bearing structures through the mounting holes in every corner.

Other products do not need a mount to load-bearing structures.

Cut a piece of membrane measuring 500 x 500 mm. Make a hole for the carriage bolt in the cut piece.

Weld the cut piece in the four **attachment points** (2) and 50 mm **around the entire mounting plate**.

Please note! Carefully check for a proper adhesion between the welded surfaces.

Attach the bracket with nut M10 A2 washer and EPDM according to the directions for each product.

Slipguard for loose ladder **M-001** Brackets, all-round brackets and anchor loops for smooth roofs **M-085**, Walkway **M-203,** Snow fence, Ridge and roof foot rail **M-204**, Roof ladder **M-205** and **M-303,** Snow stopper tube **M-224**, Guardrail 1.1m for bitumen membrane roofs **M-236**, Rail roof hatch and skylight **M-251,** Solar panel bracket for flat roofs **M-277.**

Recommended tightening torque 10 Nm.

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ROOF SAFETY MORA SWEDEN

INSTALLATION INSTRUCTIONS

M-081 1510 GB

COMBI ROOF STEP FOR TILED ROOFS

Combi roof step for installation on tiled roofs
Fits all Swedish-made roofing tiles with 25 or 50 mm battens

Roof steps may be used on houses with a maximum façade height of 4 metres and a maximum roof pitch of 45º. Roof steps may only be installed in a straight line, one above the other. The width of the roof ladder can be adjusted between 220 and 300 mm in order to fit the roof tile valleys.

Minimum distance to the extension or end section on the batten, 1000 mm.

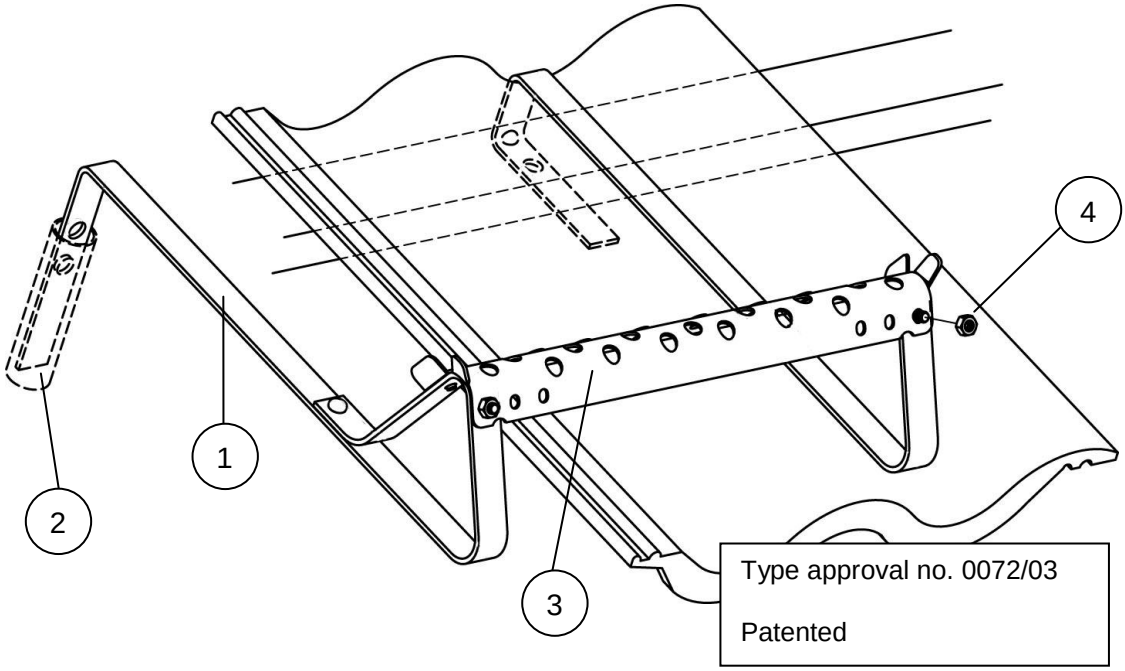
Roof steps must not be installed on battens measuring less than 22 x 36 mm. The batten must not have dull edges or any knots in the wood compromising its strength. Minimum quality: type V. The sub-roofing shall be laid out according to the directions given by the roof tile supplier.

A. The sides of the roof step ① are adjusted to the appropriate batten dimensions with the help of a bending tool ②. The bend is made in the middle of the appropriate hole and must only be made once per side.

B. Lay the lower row of tiles in place and place the sides of the roof step into the valleys of the roof tile.

C. Attach the tread ③ to the hole ④ using 2 pcs A2 stringer bolts, M6 x 12 mm, with nuts. The stringer bolt is attached from the inside. The width of the step is adjustable, thus allowing it to fit the valleys of the roof tiles.

D. Lay the next row of tiles as you install the rest of the roof tiles, as above. The slipguards for the securing of moveable ladders are to be installed on the side of the roof step.



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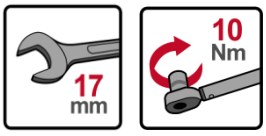
ROOF SAFETY MORA SWEDEN

MOUNTING PLATE

ON BITUMEN-BASED MEMBRANE

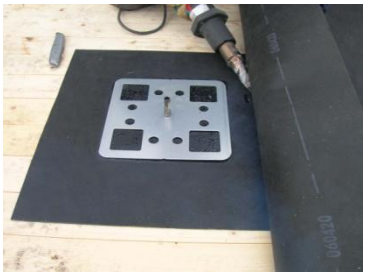
M-082 1903 GB



Mounting plate 400 x 400 mm welded, without mechanical bracket, for installation of roof safety on bitumen-based waterproofing membrane.

The waterproofing membrane must be tested in accordance with EN 13707:2004 + A2:2009 and satisfy the following requirements:

Tensile strength:	min 300 N/50 mm	EN 12311-1
Tear resistance:	min 150 N	EN 12310-1
Screw durability in extensions:	min 500 N/50 mm	EN 12317-1
Tear durability in extensions:	min 125 N/50 mm	EN 12316-1



Mounting plate installed under membrane

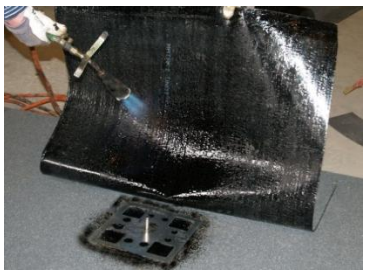
Cut a piece of the membrane measuring 500 x 500 mm.
(when renovating a roof, the mounting plate can be welded between existing membranes and new membranes. In that case, no extra cut of membrane measuring 500 x 500 mm is used).

Attach the carriage bolt in the intended hole in the mounting plate and **weld the mounting plate** in the middle of the cut piece of membrane.

Attach the protective cover onto the carriage bolt.
Make a hole for the carriage bolt in the overlying membrane.
Completely weld the membrane over the mounting plate.

Carefully check for a proper adhesion between the welded surfaces.

Remove the protective cover after welding.



Mounting plate installed on the membrane

Attach the carriage bolt in the intended hole in the mounting plate and **weld the mounting plate** in the desired location.

Cut a piece of membrane 800 x 1200 mm, 880 x 1100 mm, or else 1000 x 1000 mm.

Attach the protective cover onto the carriage bolt.
Make a hole for the carriage bolt in the cut piece of membrane.
Completely weld the piece of membrane over the mounting plate.

Carefully check for a proper adhesion between the welded surfaces.

Remove the protective cover after welding.

Attach the bracket with nut M10 A2 washer and EPDM according to the directions for each product.

Slipguard for loose ladder **M-001** Brackets, all-round brackets and anchor loops for flat roofs **M-085**, Walkway **M-203**, Snow fence, Ridge and roof foot rail **M-204**, Roof ladder **M-205** and **M-303**, Snow stopper tube **M-224**, Guardrail 1.1 m for flat, low-pitch roofs **M-236**, Rail 0.5 m around roof hatch and skylight **M-251**, Solar panel bracket for flat roofs **M-277.** CWL Safety System flat roofs **M-269,** CWL Safety System brackets, flat roofs **M-284,** Wire corners 15° – 90° **M-291**.

Recommended tightening torque 10 Nm.

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ROOF SAFETY MORA SWEDEN

MOUNTS
AND ANCHOR POINTS FOR FLAT ROOFS

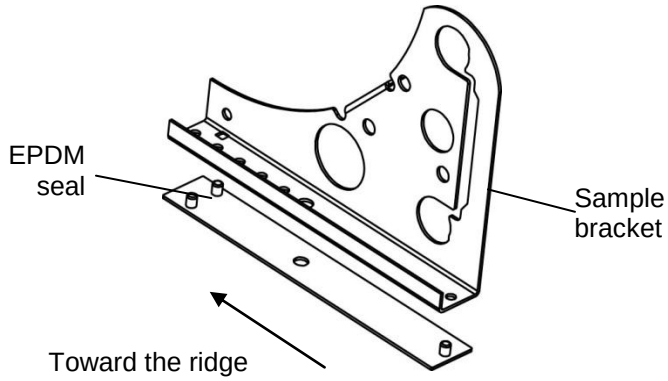
Bracket, flat roof

Installed with EPDM seal, M10 nut and washer.

Snow fence, ridge and roof foot rail **M-204.**

Walkway, *pitch >18°* **M-203.**

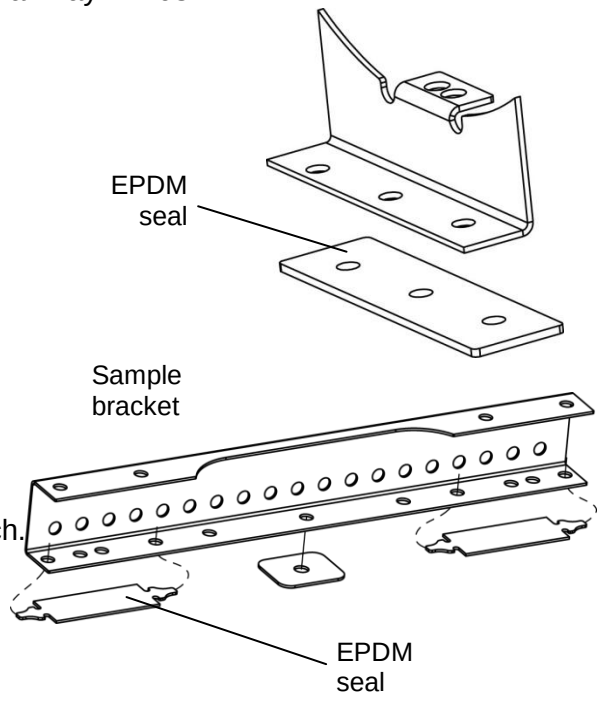
Rail, roof hatch **M-251.**



Bracket, walkway Pitch < 18°

Installed with EPDM seal, M10 nut and washer.

Walkway **M-203.**



Bracket, roof ladder, flat roof

For installation of roof ladders and roof bridges on a pitch.
Installed with EPDM seal, M10 nut and washer.

Installation instruction **M-205** and **M-303**.

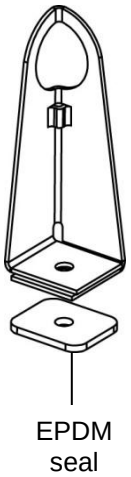
Anchor point for personal fall protection equipment

The anchor point can be installed in different directions.
Installed with EPDM seal, M10 nut and washer.

On low-pitch roofs, ≤6°, the anchor points can be installed at a maximum c-c distance of 5 metres, 4-6 metres from the roof edge. These roofs are to have extra anchor points at each corner of the roof approx. 2 metres from each roof edge. *This arrangement requires the use of double anchor lines with at least 5 metres. Preferably, a wire or rail system should be used.*

On pitches of 6° - 25° extra anchor points must be installed in the corners of the roof 2 metres from each roof corner.

The anchor point is only intended for the attachment of 1 person equipped with personal fall protection.



Installation on bitumen-based membrane shall be done in accordance with **M-082.**

Installation on roofs with PVC, ECB/FPO-based membrane shall be done in accordance with **M-076.**

Installation on shingle roofs with roof underlays of tongue-in-groove board min 17 mm shall be done in accordance with **M-132.**

Installation with expandable screw, safety expanders or chemical anchors in concrete must be done in accordance with instructions provider from the supplier of such a bracket. Screw dimension M10 stainless steel. The mount shall be rated for a minimum tensile load of 10 kN and a minimum transverse load of 10 kN.

Tighten to a torque of 10 Nm.

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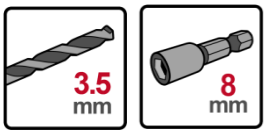
MOUNTINGS

OTHER SHEET METAL SPECIFICATIONS



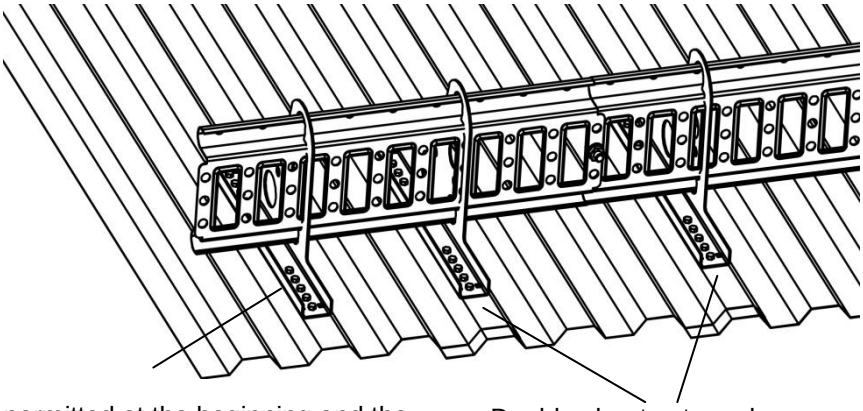
Bracket/step mount walkway / roof ridge / roof foot for installation on CMP steel 0.4 mm or aluminium sheet metal min 0.4 mm.

At least 3 brackets per continuous length. Max C-distance between brackets: 1000 mm.

The brackets/step brackets shall be installed over the extension where two metal sheets overlap. At the starting and ending edges, the brackets may be installed on a single layer of roofing sheet.

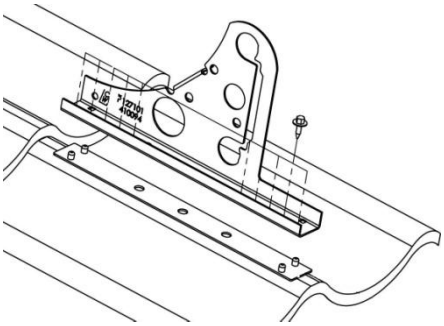
Install the bracket on top of the profile with EPDM and 10 tapping screws A2 22 x 6.3 mm with washers. Attach step brackets according to **M-202. Pre-drill at the overlap with a 3.5 mm drill bit. Screw with a low torque for an optimal thread formation in the steel plate. Make sure that both sheets have been tightened in place.**

Install according to the installation instructions for the product in question. Snow fence, Ridge and roof foot rail **M-204**, Walkway **M-203**, Roof ladder **M-205 and M-303,** Rail for roof hatch and skylight **M-251**



Single sheet metal permitted at the beginning and the end, as well as for a centre-installed bracket for a walkway. Max. distance to nearest bracket: 500 mm.

Double sheets at overlaps.

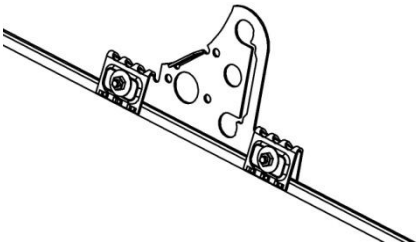


Roof safety with CMP bracket on aluminium plate, min 0.8 mm

Install the bracket on the top of the profile with EPDM and 10 stainless steel construction screws A2 22 x 6.3 mm nuts.

Screw with a low torque for an optimal thread formation in the steel plate.

At the starting and ending edges, 3 CMP brackets must be installed with a maximum C-C distance of 600 mm, elsewhere the maximum is 1200 mm.



At the starting and ending edges, 3 brackets must be installed with a maximum C-C distance of 600 mm, elsewhere the maximum is 1200 mm.

Fold-mount on double-folded copper sheet roofs min 0.6 mm, zinc sheet roofs min 0.7 mm or aluminium sheet roof min 0.7 mm and welded stainless steel plate min 0.4 mm.

Install the fold-mount down over the standing seam so that the tabs end up underneath the edge of fold.

When installing on copper sheet roofs, EPDM seals must be installed between the fold-mount and the copper plate.

Tighten the screws to a minimum torque of 40 Nm.

Installation on single-seam steel plate min 0.6 mm

When installing on single-folded steel plate, the plate, staples and underlay must be undamaged and ***inspected by a professional inspector in the field of roofing sheet metal.***

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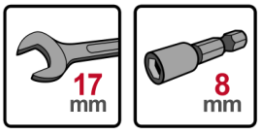
Mounting Plate
For Façade Ladder

M-130 1804 GB



Installation of façade ladder with mounting plate on façades made of steel plate min 0.4 mm.

Install the bracket at the mounting plate with 1 pc carriage bolt A2 M10 x 32 mm with nut and washer.

Screw the mounting plate against the façade with 6 pc self-tapping screws with sealing washers A2 18 x 6 mm.

Screw with a low torque for an optimal thread formation in the steel plate.

The screws should be distributed evenly over the mounting plate.

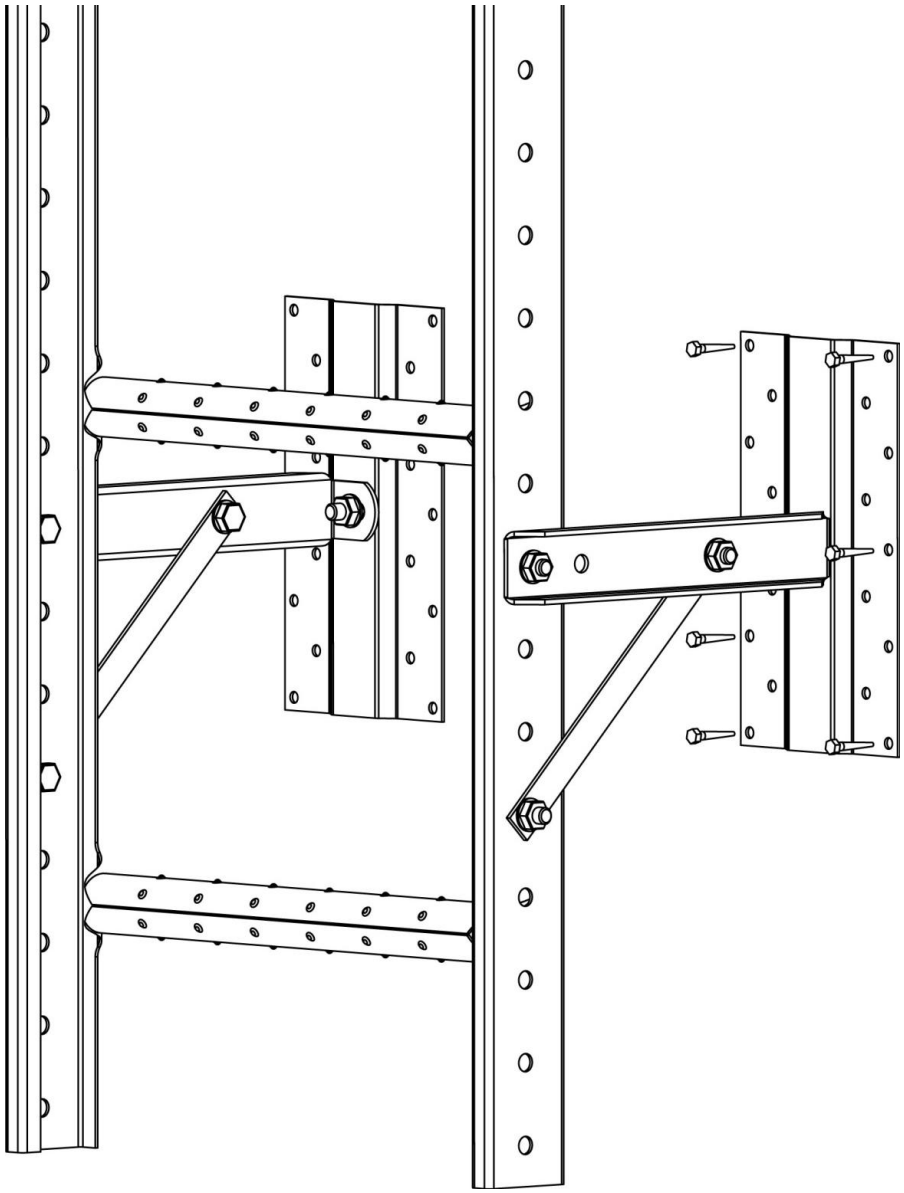
Installation of façade ladder with mounting plate on façades made of wood.

Install the bracket at the mounting plate with 1 pc carriage bolt A2 M10 x 32 mm with nut and washer.

Screw the mounting plate against the façade with 6 pc screws A2 35 x 5 mm.

The screws should be distributed evenly over the mounting plate.

Installation of façade ladder as specified in installation instruction **M-074/M-302.**



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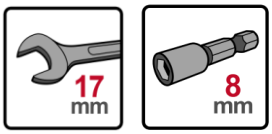
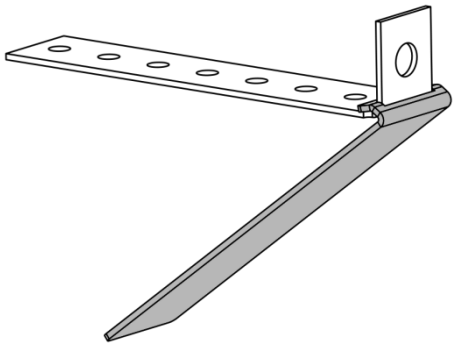
Extension Rail

For bracket roof ladder/ walkway in direction of pitch

M-131 1804 GB

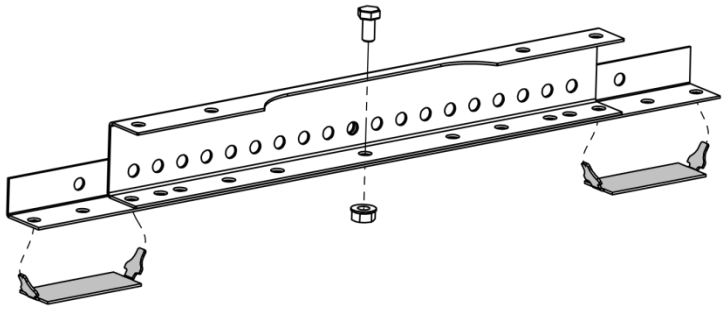


Extension rail for installation of bracket for roof ladder/walkway in direction of pitch on sheet metal roofs with C-C distance between profile tops 550 - 560 mm.

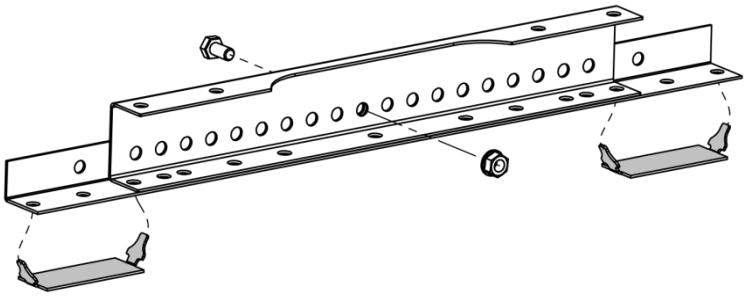


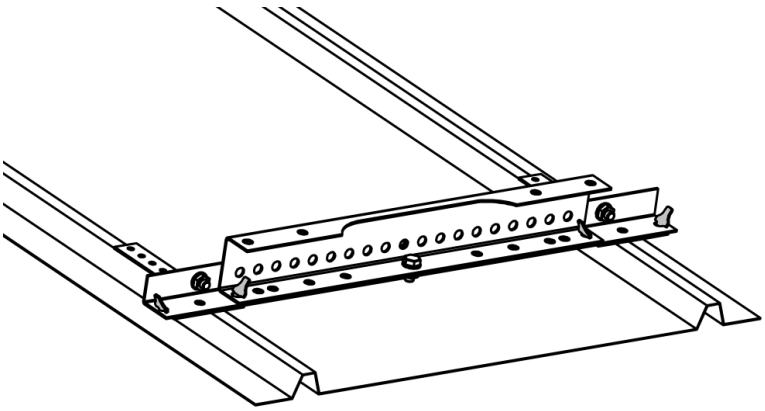
Sample bracket

Install the EPDM seal on the mount.



Install the extension rail with EPDM seals on the bracket with 1 screw hot galv. M10 x 20 with flange nut. (Install according to any of these designs)





2 mounts with EPDM seals are installed on the ends of the support rails and are screwed in place on the profile tops using 14 self-tapping screws with sealing washers A2 18 x 6 mm.

Screw with a low torque for an optimal thread formation in the steel plate.

Installation of roof ladder as specified in installation instruction **M-205** and **M-303.**

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MOUNTING PLATE

M-132 1807 GB

SHINGLE-COVERED ROOFS SUB-ROOFING MADE OF TONGUE-AND-GROOVE BOARD MIN 17 MM

General installation on the roof:

Cut a waterproof membrane* min 700 x 500 mm.

Heat the surface where the foot plate is to be placed. Put the carriage bolt in place and fully weld the foot plate in the middle of the cut waterproof membrane.

Screw the foot plate in place with 8 wood screws

Screw the waterproof membrane in place using 8 screws with washers intended for the installation of waterproof membranes.

Cut a waterproof membrane* min 500 x 300 mm. Install the protective cover on the carriage bolt.

Make a hole for the bolt and fully weld the waterproof membrane* over the foot plate.

Install the shingle roof according to the manufacturer's instructions.

The shingle platform must be welded or glued over the mount.

Install the bracket according to **M-085.**

Recommended tightening torque 10 Nm.

Installation at the roof foot:

Cut a waterproof membrane* min 700 x 500 mm.

Place the mounting plate approximately 50 mm from the lower edge of the waterproofing membrane.

Fully weld and screw the foot plate as for the general installation.

Screw the waterproof membrane in place using 8 screws with washers intended for the installation of waterproof membranes.

Install the protective cover, make a hole for the screw and fully weld the waterproofing membrane* over the foot plate and the underlying waterproofing membrane.

Install the shingle roof according to the manufacturer's instructions.

The shingle platform must be welded or glued over the mount.

Install the bracket according to **M-085.**

Recommended tightening torque 10 Nm.

*** The waterproofing membrane shall be tested in accordance with EN 13707:2004+A2:2009 and satisfy the following requirements:**

Tensile strength:	min 300 N/50 mm	EN 12311-1
Tear resistance:	min 150 N/50 mm	EN 12310-1
Shear resistance	min 500 N/50 mm	EN 12317-1
Peel resistance	min 125 N/50 mm	EN 12316-1

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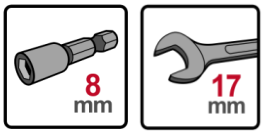
ROOF SAFETY MORA SWEDEN

MOUNTING PLATE

SLATE ROOF

M-133 1903 GB

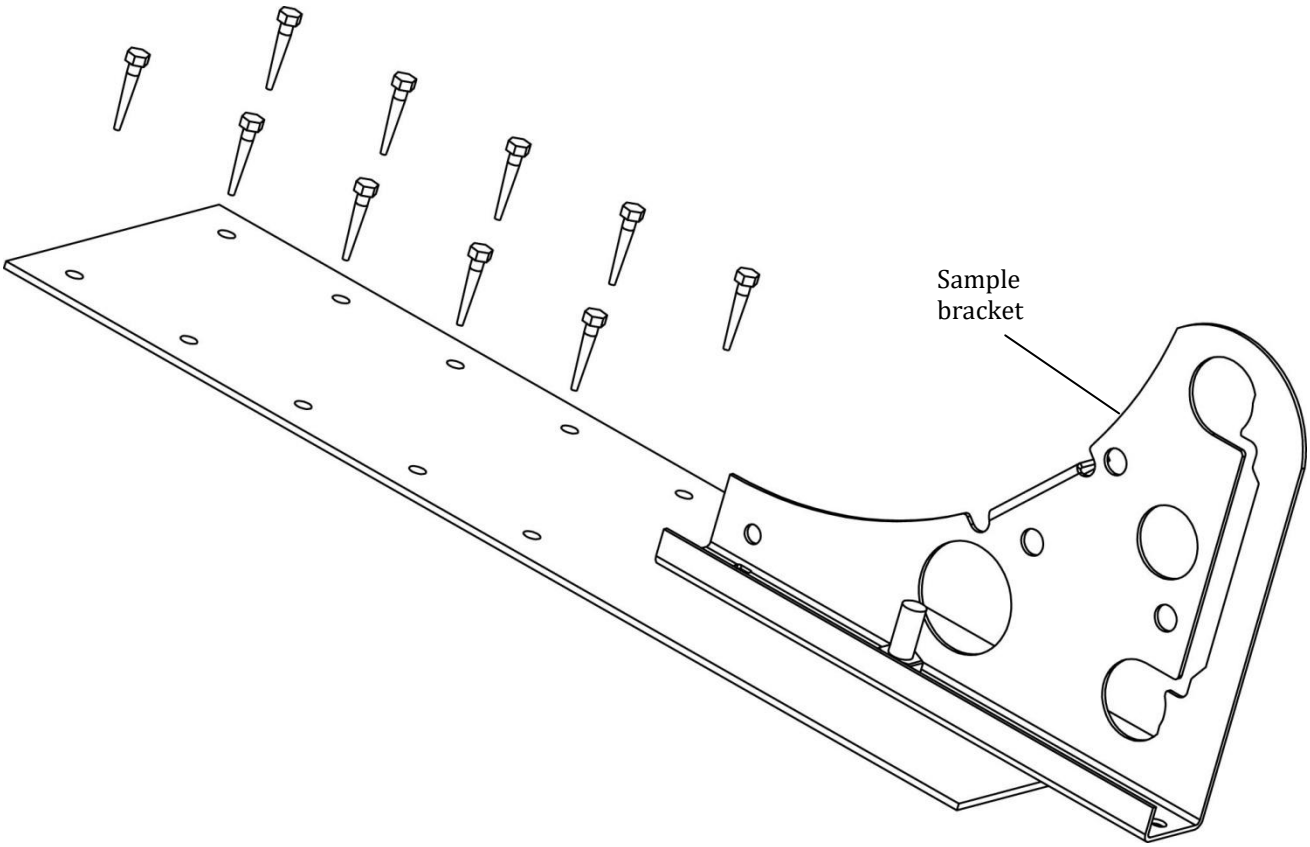


Roof safety device installed with mounting plate on slate roof

The mounting plate takes the place of one slate roofing tile, and is installed on the roof underlay using ten 35 x 5 mm stainless steel screws. Use bolt kit 410017P.

The roof safety device is then installed onto the mounting plate as directed in a separate installation instruction.

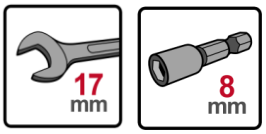
Avalanche guard, Roof ridge and roof foot rail **M-204**, Catwalk **M-203**, Roof ladder **M-205/M-303**, Roof hatch guardrail **M-206**.

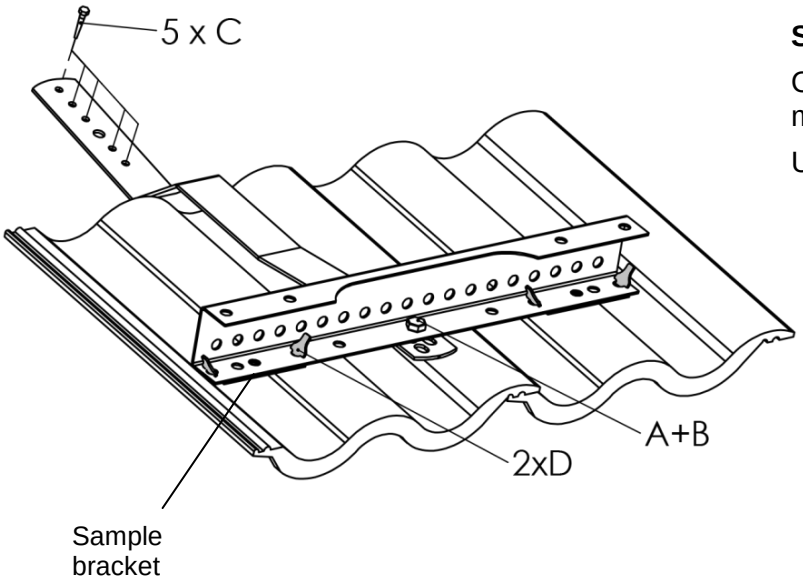


ROOF SAFETY MORA SWEDEN

MOUNTINGS

ROOF LADDER ON TILE-COVERED ROOF

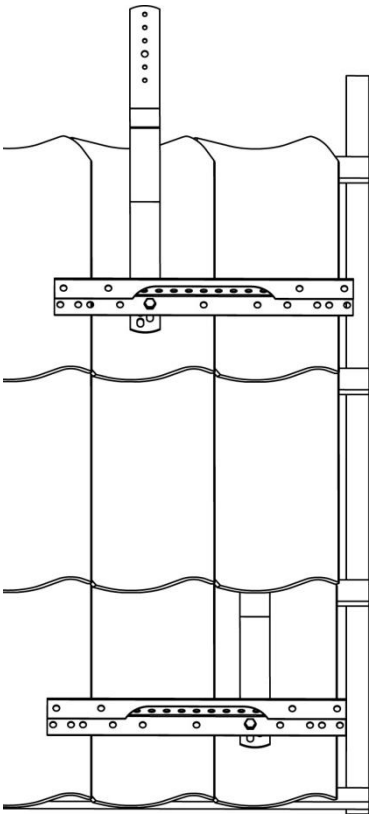




Strip bracket for roof underlay

On roofs made of tongue-in-grove board min 17 mm or plywood min 12 mm

Use screw kit, item no. 470211P.



Installation on 1-bulge roofing tiles

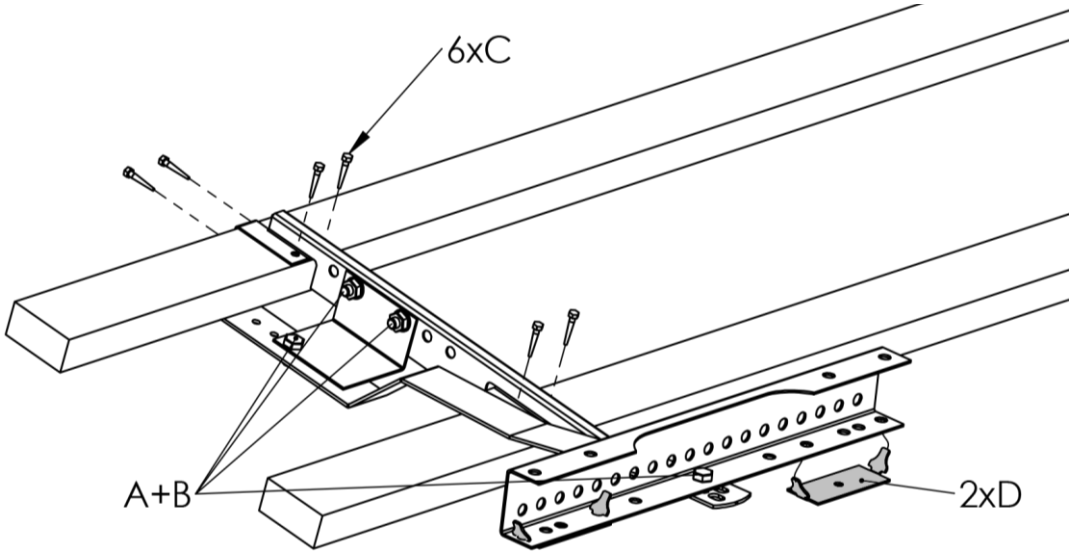
The bracket must rest on 3 profile tops.

The strip brackets are installed in an alternating right-left pattern on the bracket.

Batten bracket, simplified roof underlay

Batten min 40 x 70 mm.

Use adapter kit, item no. 470212P and extension kit item 410166P.



***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Stainless steel wood screws 35 x 5 mm, **D**= EPDM*

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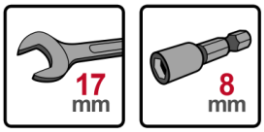
MOUNTINGS

ROOF LADDER ON SHEET METAL ROOF

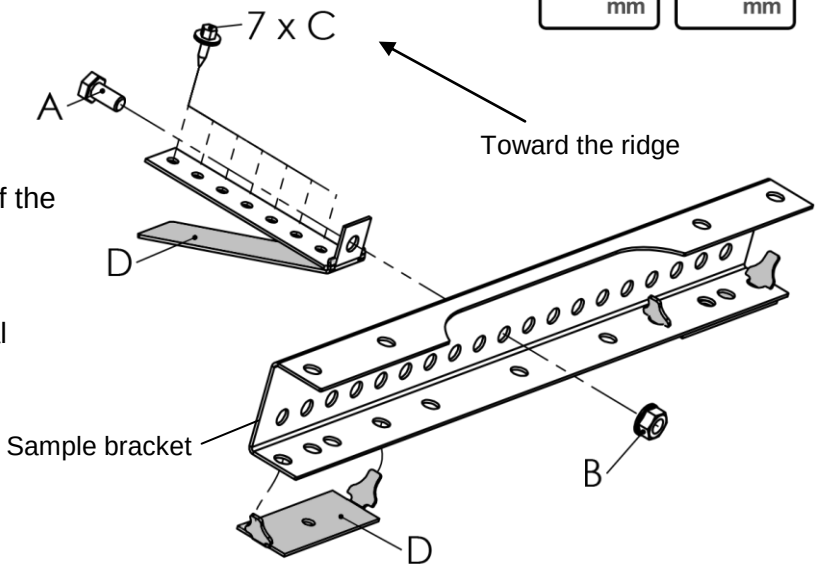


Mount for sheet metal roof

Steel sheet metal min 0.5 mm.
Aluminium sheet metal min 0.8 mm.

The mounting is installed on the top of the profile.
Use mounting kit, item 410130P.

Screw with a low torque for an optimal thread formation in the steel plate.

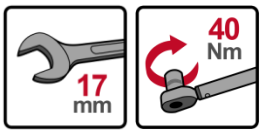


Sheet metal roof with C-distance profile tops 221 - 450 mm:
Install mounting on two profile tops per all-round bracket.

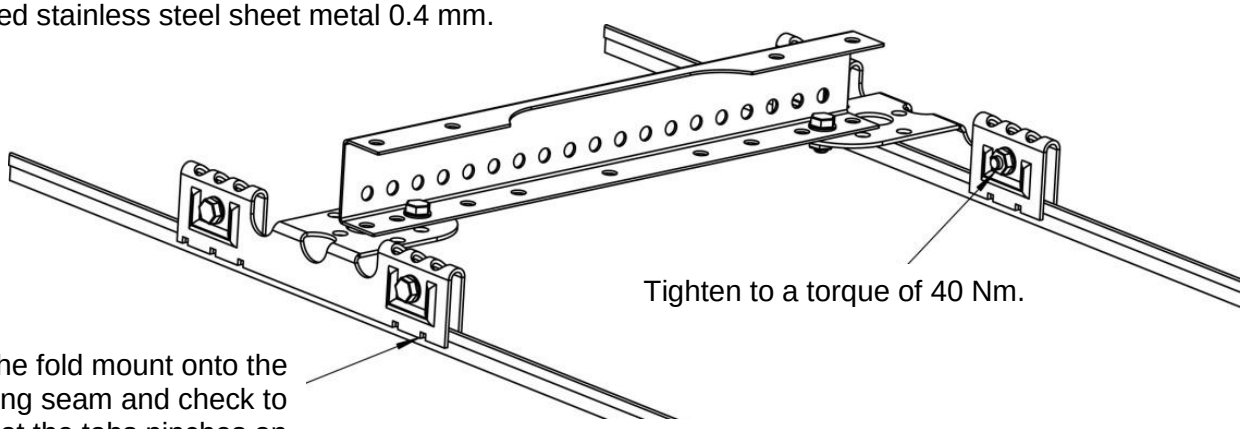
Sheet metal roof with C-distance profile tops 550 - 560 mm:
See installation instruction **M-131**.

For other qualities of sheet metal, refer to Installation Instruction M-124.

Fold mount for double and single-folded sheet metal roofs and pre-fabricated panel roofs



Steel sheet metal and copper sheet metal min 0.6 mm.
Zinc sheet metal min 0.7 mm
Aluminium sheet metal min 0.7 mm.
Welded stainless steel sheet metal 0.4 mm.



Tighten to a torque of 40 Nm.

Install the fold mount onto the standing seam and check to see that the tabs pinches on under the edge of the seam.

***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Stainless steel building screws with washer 19 x 6.3 mm, **D**= EPDM seal*

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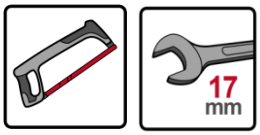
WALKWAY

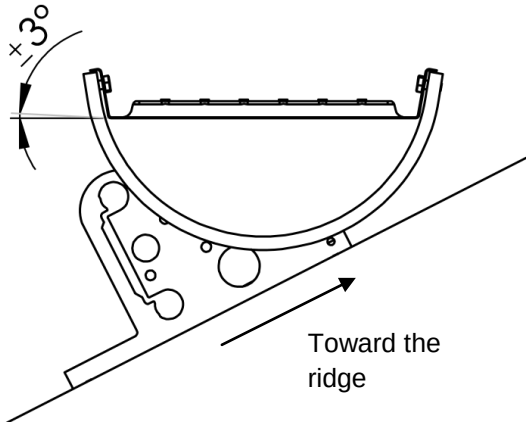
M-203 1804 GB



Walkway

Max c-c distance, brackets 1200 mm.
Protrusion max 200 mm from outer brackets.

The walking surface may deviate a of max 3° from the horizontal plane in the direction of the roof and a max of 15° in the direction of the walkway.

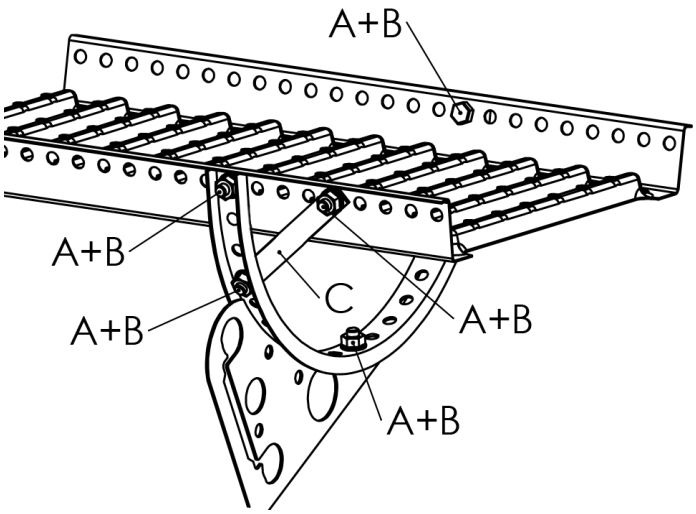


Roof attachment

Bitumen membrane and flat surfaces	**M-085**
Slate plate	**M-133**
Sheet metal roof	**M-222**
Tiled roof	**M-223**
Sedum roof with risers	**M-229**
Folded flat roofs with diagonal folds	**M-235**

Diagonal strut (C) are mounted on short walkways with 2 brackets with 3 or more brackets, no diagonal struts are necessary.

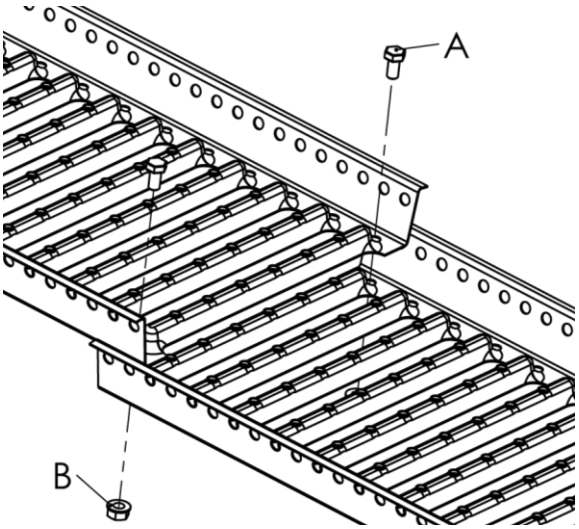
Use screw kit, item no. 420009P.



Walkway extension

At least 2 brackets are installed on each side of the extension.

Use screw kit, item no. 420009P.



Guard rail installed in accordance with M-294.

***A** = Screw, hot galv. M10 x 20, **B**= Flange nut, hot galv. M10 , **C** = Diagonal strut*

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Snow Fence,
Ridge and roof foot rail

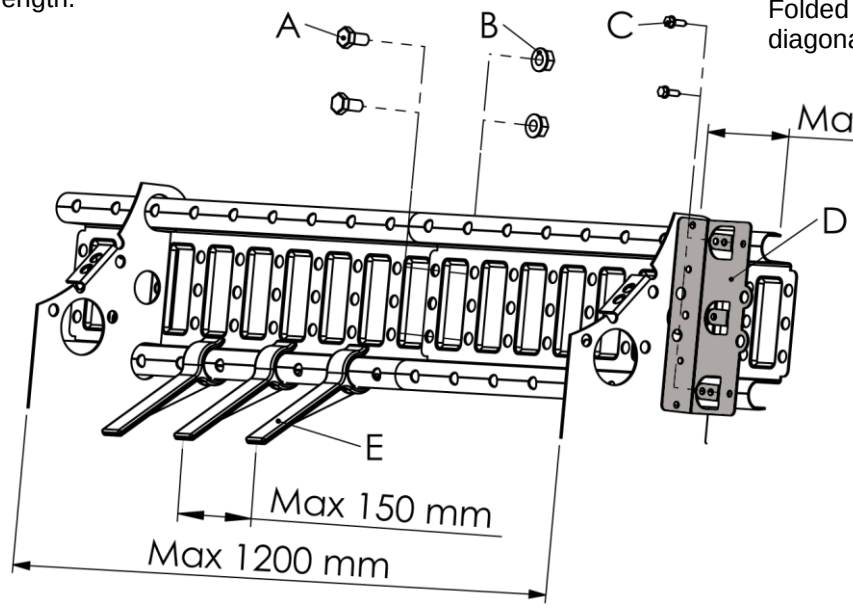
M-204 1807 GB

Snow fence profiled sheet metal

Slide the snow fence through the brackets. Max protrusion from the outermost bracket 200 mm.

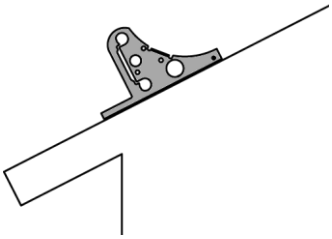
Extension shall be made with a screw (2 x A) and flange nut (2 x B).

Locking plates are installed with screw (2 x C) on the outside of the outermost brackets in each continuous length.



Roof mount

Smooth roof	**M-085**
Slate roof	**M-133**
Sheet metal roof	**M-222**
Tiles roof	**M-223**
Sedum roof with risers	**M-229**
Folded sheet metal roof with diagonal seams	**M-235**



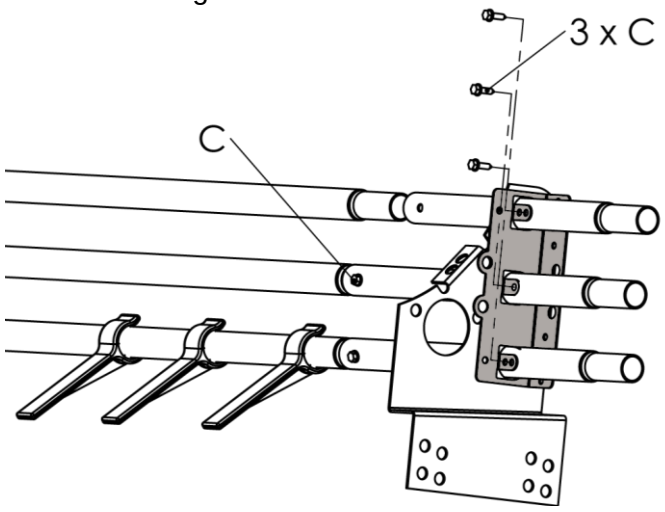
Install the lower snow fence as far down on the roof as possible.

Snow fence with three tubes

Max protrusion from the outermost bracket 200 mm.

Extension of the fence tubes is to be done with inserts and self-tapping screw (C).

Locking plates are installed with screws (3 x C) on the outside of the outermost brackets in each continuous length.

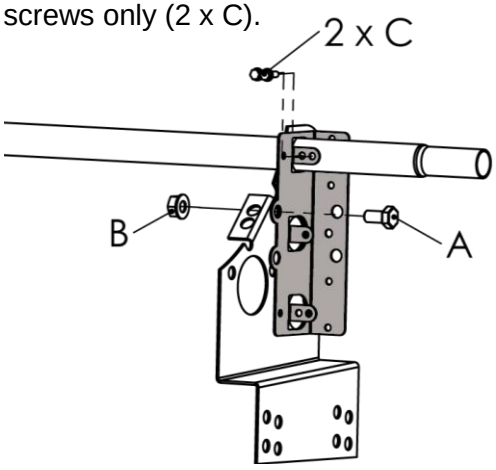


Ridge and roof foot rail with one tube

Max protrusion from the outermost bracket 200 mm.

At one end of the fence, the locking plate is attached with a screw (A), flange nut (B) and screw (2 x C).

At the other end of the fence, the other locking plate is attached on the outside of the outermost bracket on the tube using screws only (2 x C).



***A**= Screw, hot galv. M10 x 20, **B**= Flange nut M10, **C**= Self-tapping stainless steel screw 20 x 5.5 mm, **D**= Locking plate, **E**= Ice-stop*

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ROOF SAFETY MORA SWEDEN

ROOF LADDER

M-205 1903 GB

Roof ladder

C-C distance for the all-round bracket for the mount on the roof is max 1500 mm. Maximum protrusion from all-round brackets is 150 mm. Use bolt kit, item no. 420009P and extension kit, item 470018P (hot galvanised).

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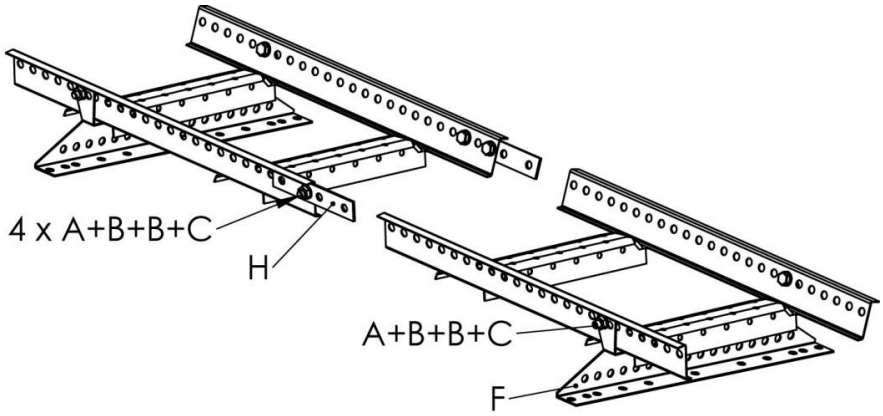
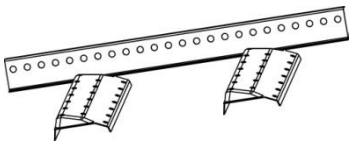
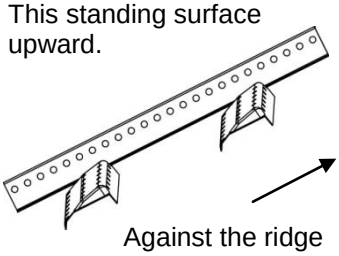


Roof pitch from 8 to 33°
This standing surface upward.



Against the ridge

Roof pitch > 33°
This standing surface upward.

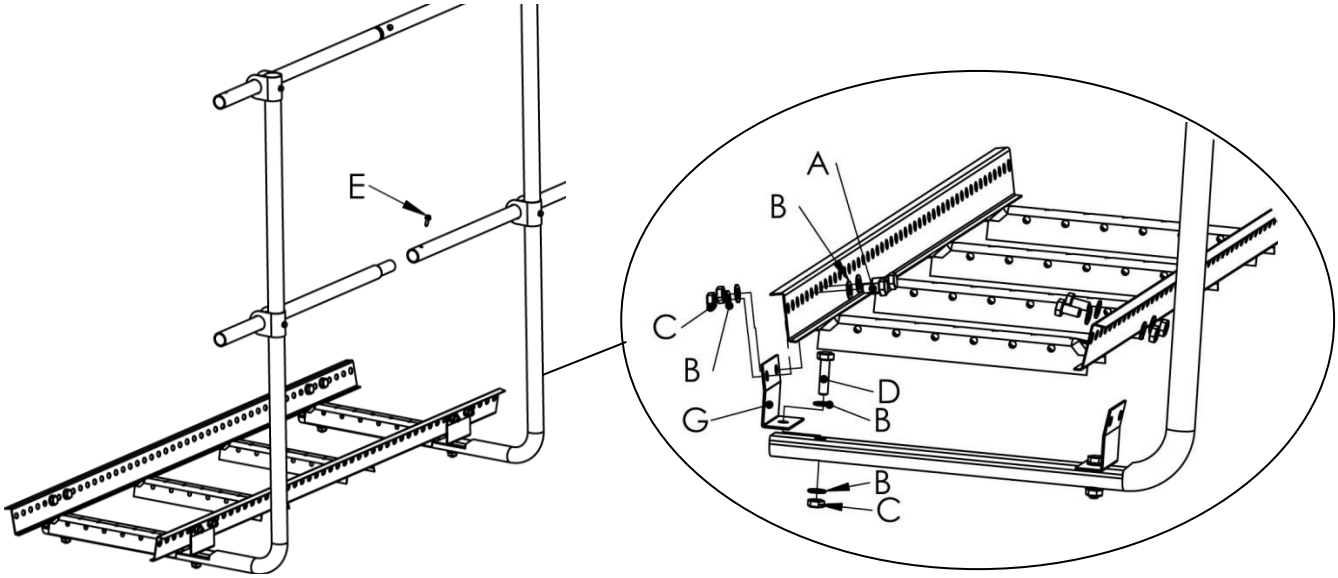


Against the ridge

Rail for roof ladder

Rail posts are installed at a maximum of 100 mm from the bracket. Two self-tapping screws(E) are installed on the rail tubes at the first and last posts per continuous length.

Use adapter kit, item no. 470200P in hot galvanised steel and extension kit, item no. 420012P for rail tube.



__A__=Screw hot galv. M10 x 20, __B__=Washer hot galv. 10.5 mm, __C__=Nut hot galv. M10, __D__=Screw hot galv. M10 x 35, __E__=Self-tapping stainless steel screws 20 x 5.5 mm, __F__= All-round bracket, __G__= Adapter kit, __H__= Extension,

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ROOF STEP WITH EPDM-SEAL

FOR PROFILED SHEET METAL ROOFS

M-213 1807 GB

Roof steps for installation on steel plate roofs min 0.4 mm or aluminium plate roofs min 0.6 mm with a maximum centre-to-centre distance of 280 mm between profile tops.

Roof steps may be used on houses with a max. facade height of 4 m and a roof pitch of 45°.

The roof step has two walking surfaces in order to suit different pitches; for pitches greater than 33°, the shorter standing surface should be turned upward.

Roof steps must only be installed in a straight line, one directly above the other.

Screw into place using a low torque for optimal thread formation in the sheet metal.

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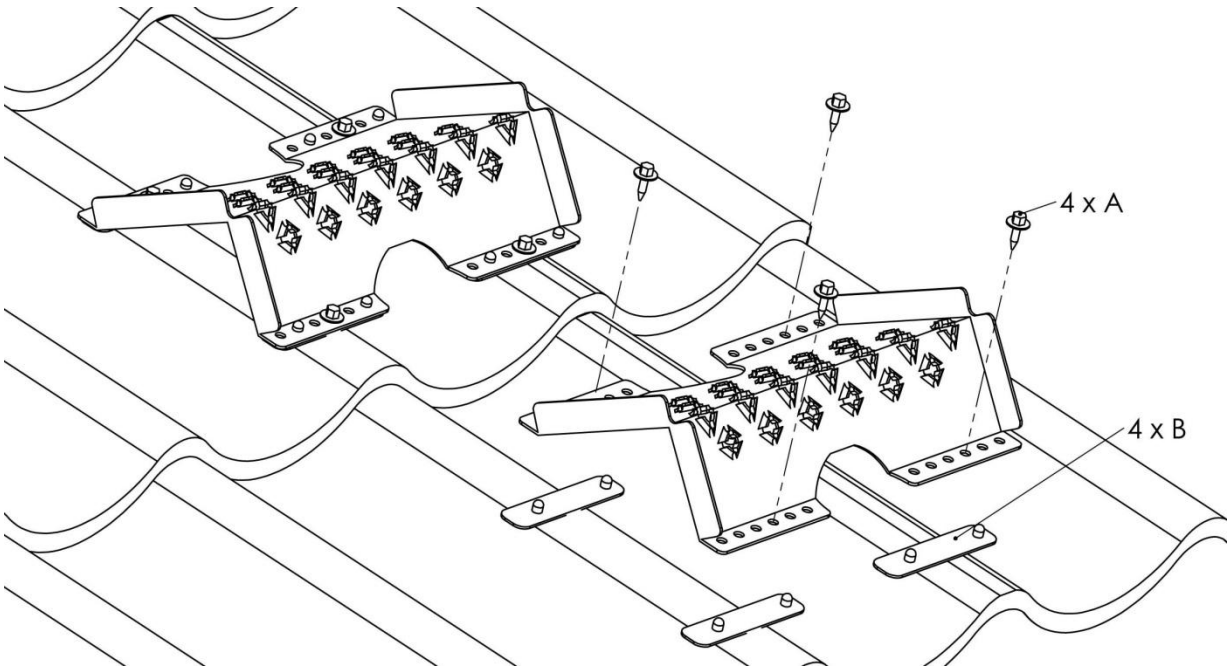

***A**= Stainless steel plate screw with washer 19 x 6.3 mm, **B**= EPDM seal*

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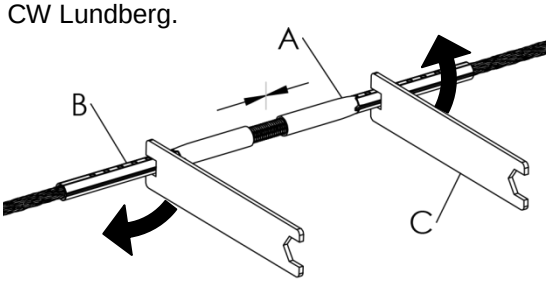
CWL Safety System
Pro and Light for Walkway

M-217 1806 GB

The wire system is only intended for installation on walkways from CW Lundberg.

From end bracket to end bracket, the slope of the wire must not deviate more than 15° from horizontal.



If the continuous length of the wire length is to be constructed two or more wires, screw together the wire terminals (A and B). Screw in the entire length of the thread and tighten with the included keys (2 x C).

Install the threaded pole (K) in the wire's ending threaded terminal (B). Screw in to the threaded pole's stop. Tighten with keys (2 x C).

Thread the wire running (L or O) onto the wire (max 2 wire runners may be installed on a wire). The runner is only intended for the attachment of one person equipped with personal fall protection.

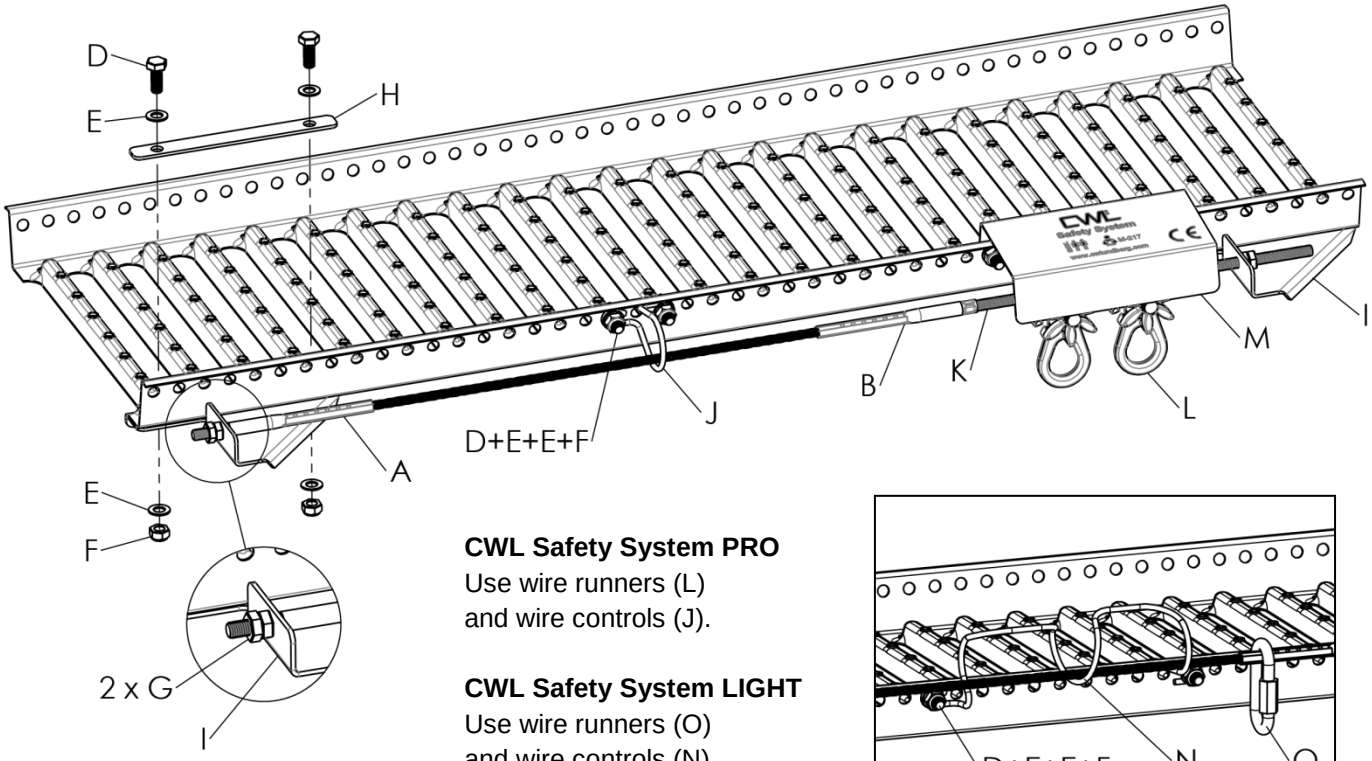
Install the end mount (2 x I) onto the walkway so that the wire can be tightened.

Install the wire using nuts (2 x G) outside of each end bracket. Tighten the nuts using keys (2 x C).

Wire controls (F) are installed at a maximum of 5 m from the end mounts (E). The spacing between them is max 5 m.

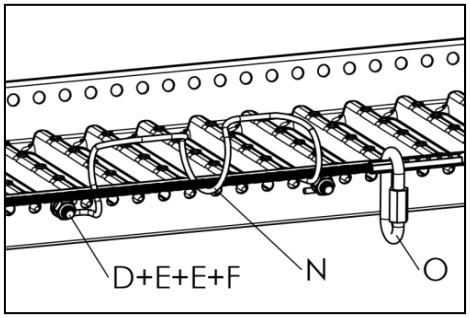
The protective plate (M) is installed where one climbs up onto the walkway and then the wire runner is placed underneath.

The wire corner is installed in accordance with **M-275.**



CWL Safety System PRO
Use wire runners (L)
and wire controls (J).

CWL Safety System LIGHT
Use wire runners (O)
and wire controls (N).



***A**= Threaded terminal male, **B**= Threaded terminal female, **C**= Key, **D**= Screw stainless M10 x 25, **E**= Washer 10.5 mm A2, **F**= Locking nut M10 A2, **G**= Nut M10 A2, **H**= Brace end mount, **I**= End mount, **J**= Wire control PRO, **K**= Threaded pole wire end, **L**= Wire runner PRO, **M**= Protective plate, **N**= Wire control LIGHT, **O**= Wire runner LIGHT*

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ROOF SAFETY MORA SWEDEN

WALKWAY CORNER

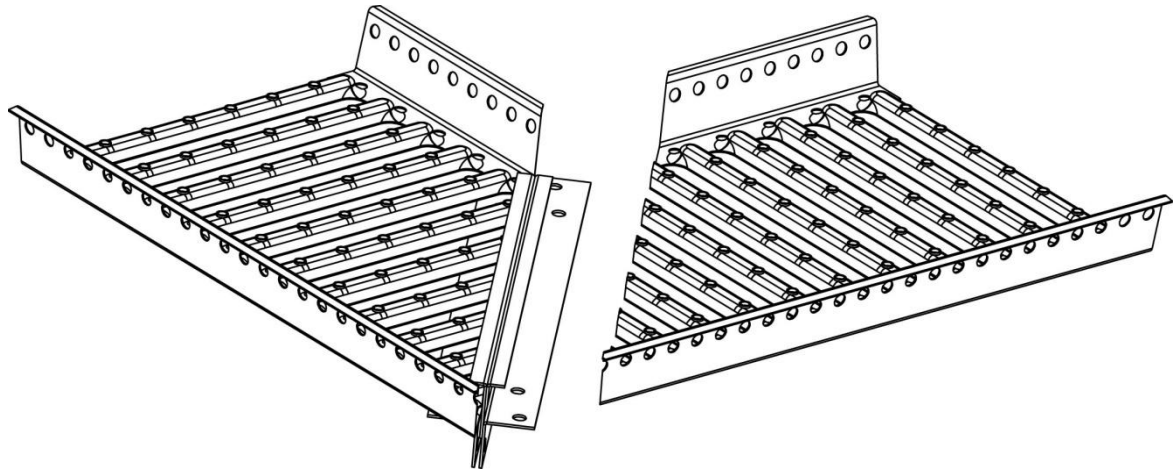
M-219 1807 GB

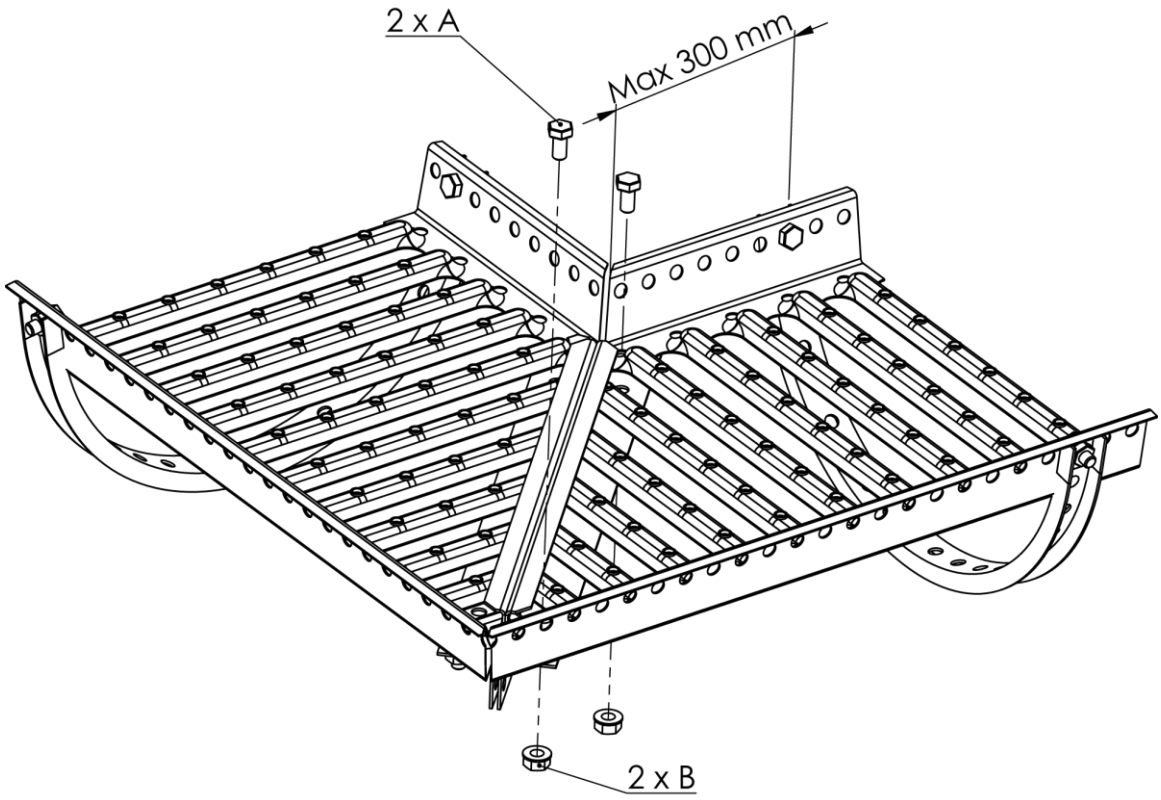
17 mm

Walkway, corner 90°

Maximum distance from bracket: 300 mm measured from the inner side of the corner.

At least two brackets must be installed on each side of the angle extension.





***A**= Hot galvanised screw M10 x 20, **B**= Hot galvanised flange nut M10*

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FLAG

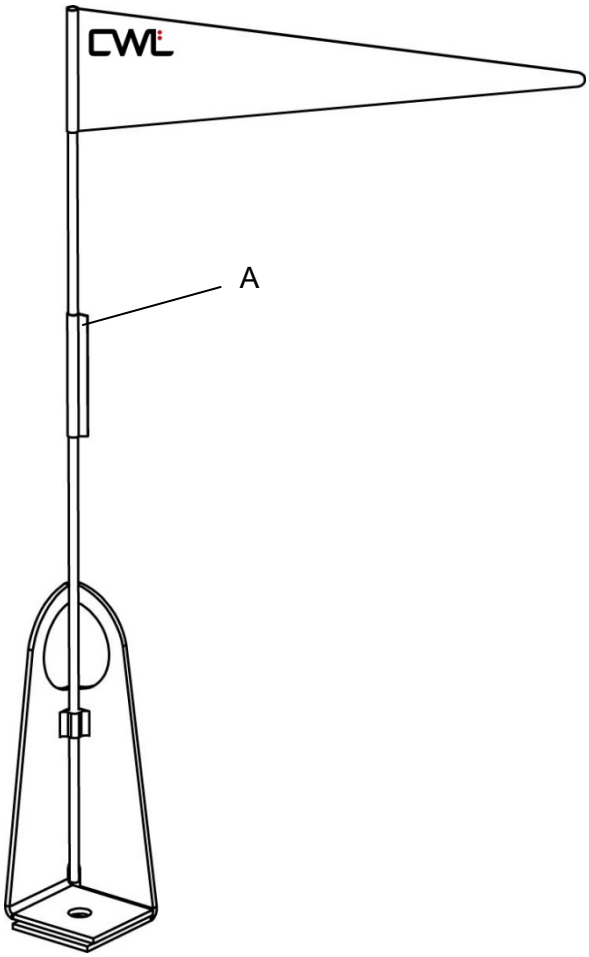
WITH SNOW DEPTH GAUGE

M-220 1807 GB

8 mm

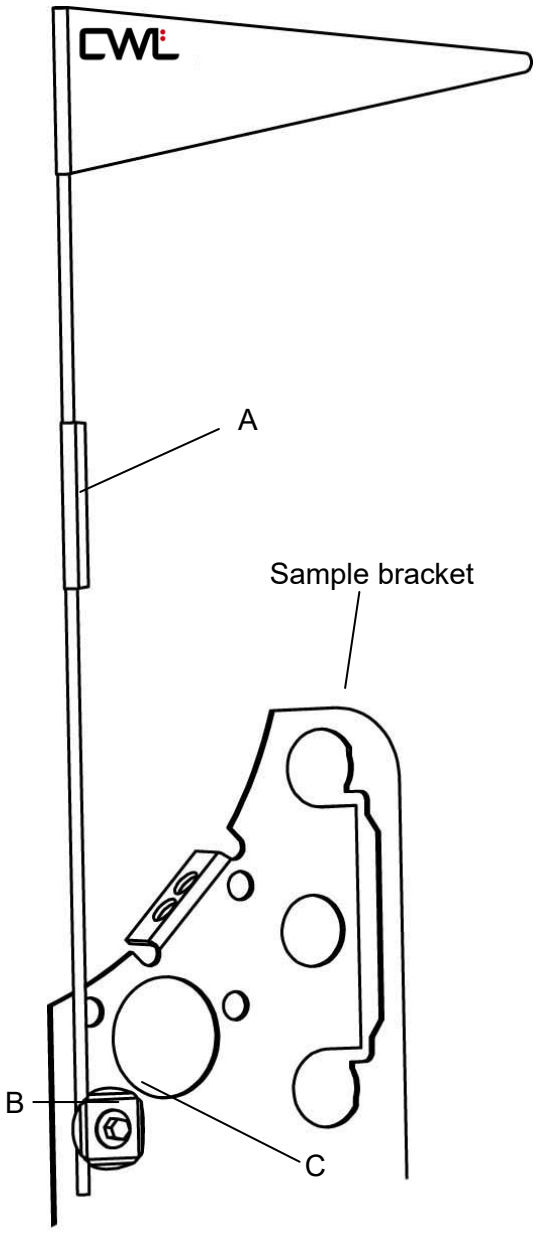
Flag on anchor loop with integrated flag mount

Place the flag into the flag mount and adjust the snow depth gauge to the desired position.



Flag on bracket without flag mount

Install the flag in a suitable location and move the snow depth gauge to the desired position.



A= Snow depth gauge ***B***= Locking plate ***C***= Self-tapping stainless steel screw with a sealing washer

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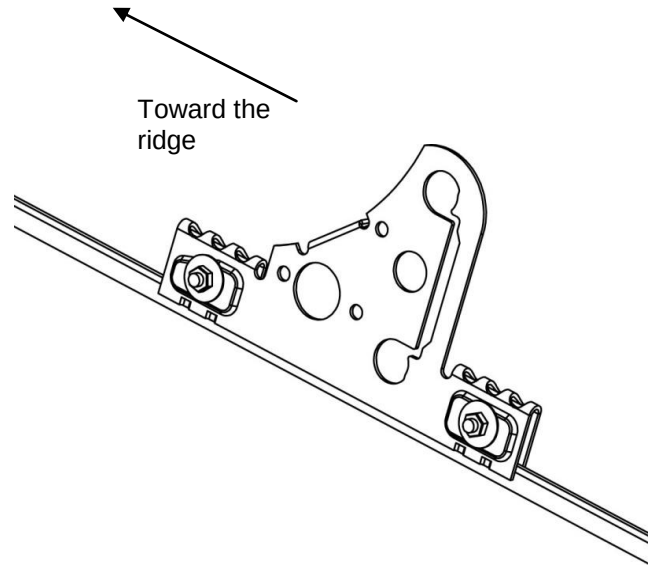
ROOF SAFETY MORA SWEDEN

MOUNTINGS

FOR SHEET METAL ROOFS

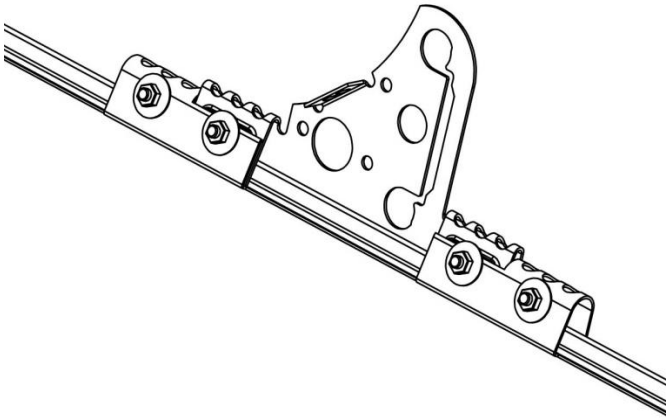


Fold mount for double-folded sheet metal roofs

Steel sheet metal min 0.6mm.

Install the fold mount over the standing seam and check to see that the fold mount tabs end up under the edge of the seam.

Tighten to a torque of 40 Nm.

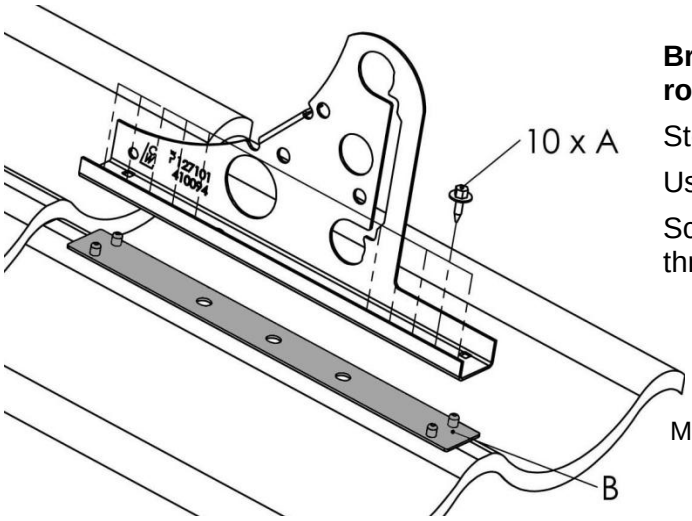


Fold mount, pre-fabricated panel roof

Steel sheet metal min 0.6mm.

Install the fold mount over the standing seam and check to see that the fold mount tabs end up under the edge of the seam.

Tighten to a torque of 40 Nm.



Bracket for profiled sheet metal roofs

Steel sheet metal min 0.5mm*.

Use bolt kit 410024P.

Screw with a low torque for an optimal thread formation in the steel plate.

Measurement tolerances according to EN 10143:2006

For installation onto other qualities of sheet metal, refer to Installation Instruction M-124.

***A**= Stainless building screws with washer 19 x 6.3 mm, **B**= EPDM seal*

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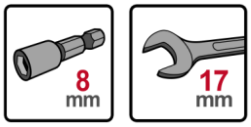
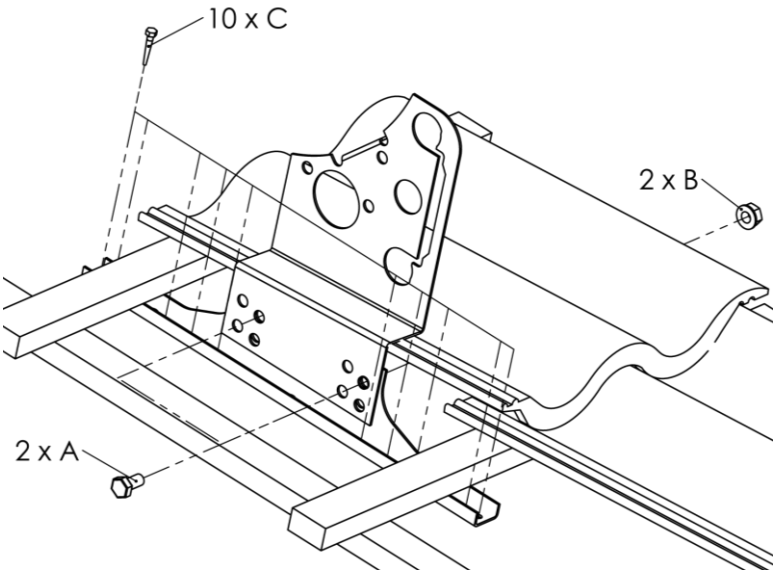
MOUNTS
FOR TILED ROOFS

M-223 1809 GB



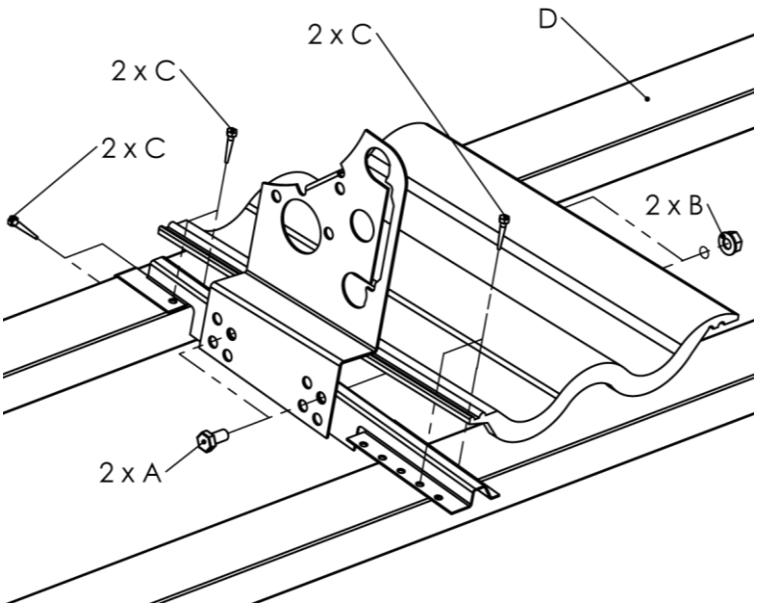


Foot plate for underlay roof

Tongue-in-groove min 17 mm / plywood min 12 mm.

Wood screws are distributed over the foot plate.

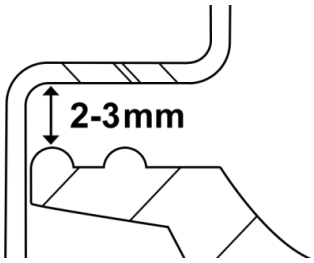
Use bolt kit item 410017P.



Batten bracket for simplified underlay roof

Batten 40 x 70 mm.

Use bolt kit item 410166P.



N.B.!

Always leave a gap of 2-3 mm between the bracket and the underlying roof tile.

***A** = Screw hot galv, M10 x 20, **B** = Flange nut hot galv. M10, **C**=Stainless steel wood screw 35 x 4.8 mm, **D**=Batten min 40 mm x 70 mm*

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ROOF SAFETY MORA SWEDEN

SNOWSTOPPER TUBE

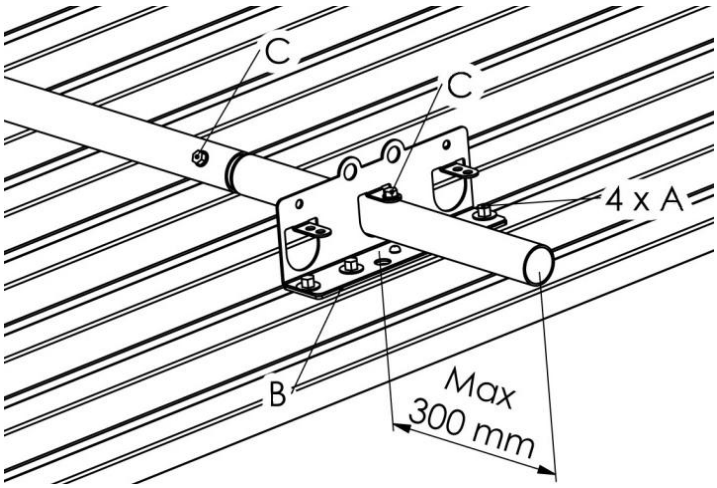
M-224 1807 GB

Snow stopper for installation on profiled metal roofs.

Install the bracket on top of the profile, C-C distance max 1200 mm, with EPDM seal and self-tapping screws. Screw into place using a low torque so that the threads are not damaged.

Extensions of the rail tube must be made with inserts and self-tapping screws (C); use screw kit 420012P.

The tube is locked into the outermost consoles in each continuous length with self-tapping screws (C x 1).



Please note that the snow stopper does not replace the snow fence at the roof foot.

Snow stopper tube for installation on smooth roofs.

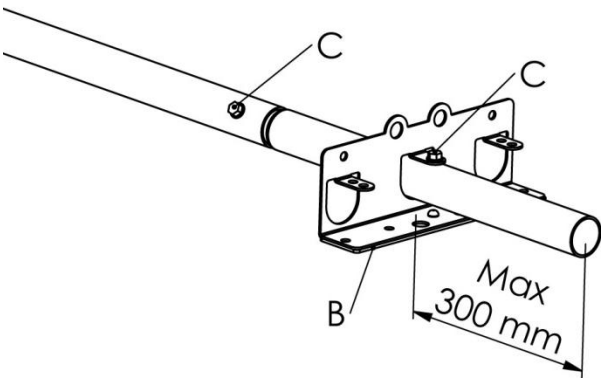
Installed with EPDM seal, M10 nut and washer.

Installation on asphalt-based sealing membrane as specified in installation instruction **M-082**.

Installation on PVC, ECB and FPO-based roofing felt as specified in **M-076**.

Extension of the rail tube shall be done with inserts and self-tapping screws (C); use screw kit 420012P.

The tube is locked into the outermost consoles in each continuous length with self-tapping screws (C x 1).



Please note that the snow stopper does not replace the snow fence at the roof foot.

***A**= Stainless self-tapping screw with washer, **B**= EPDM seal, **C**= Self-drilling stainless screw 20 x 5.5 mm*

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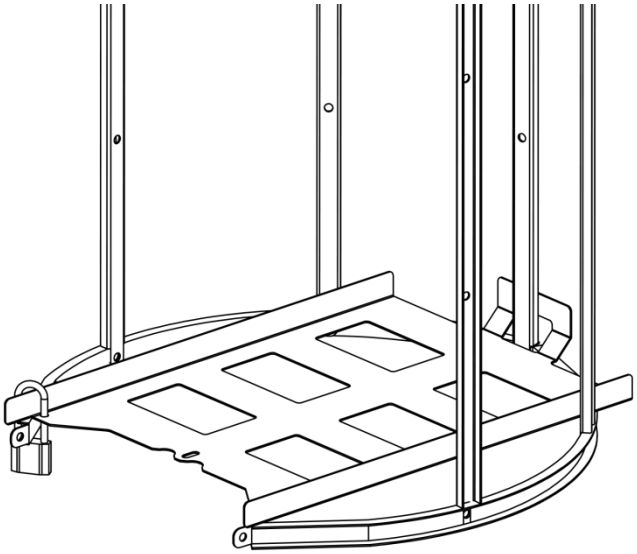
ROOF SAFETY MORA SWEDEN

Lockable Hatch

For backguard

M-225 1808 GB

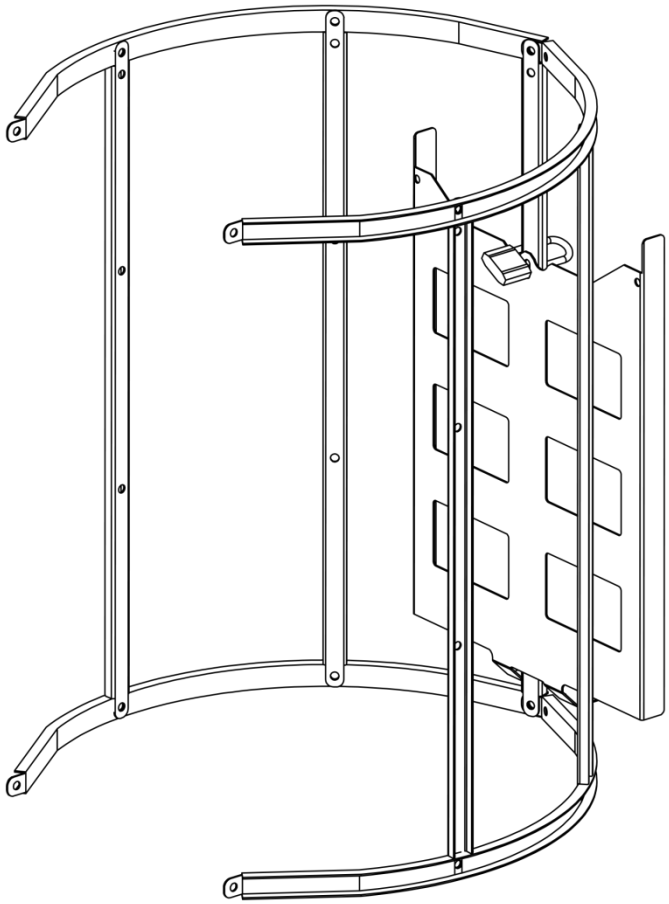
17 mm



Lockable hatch lowered

The lockable hatch is normally installed on the lowest arc of the backguard.

Remove the outermost backguard rail and thread it into the hatch attachment tab.
Screw the backguard rail back in place.



Lockable hatch in raised position

The hatch can be locked in raised position in a hole on the backguard

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ROOF SAFETY MORA SWEDEN

ICE STOP GUTTER VALLEY

FOR CORRUGATED PROFILED SHEET METAL ROOFS

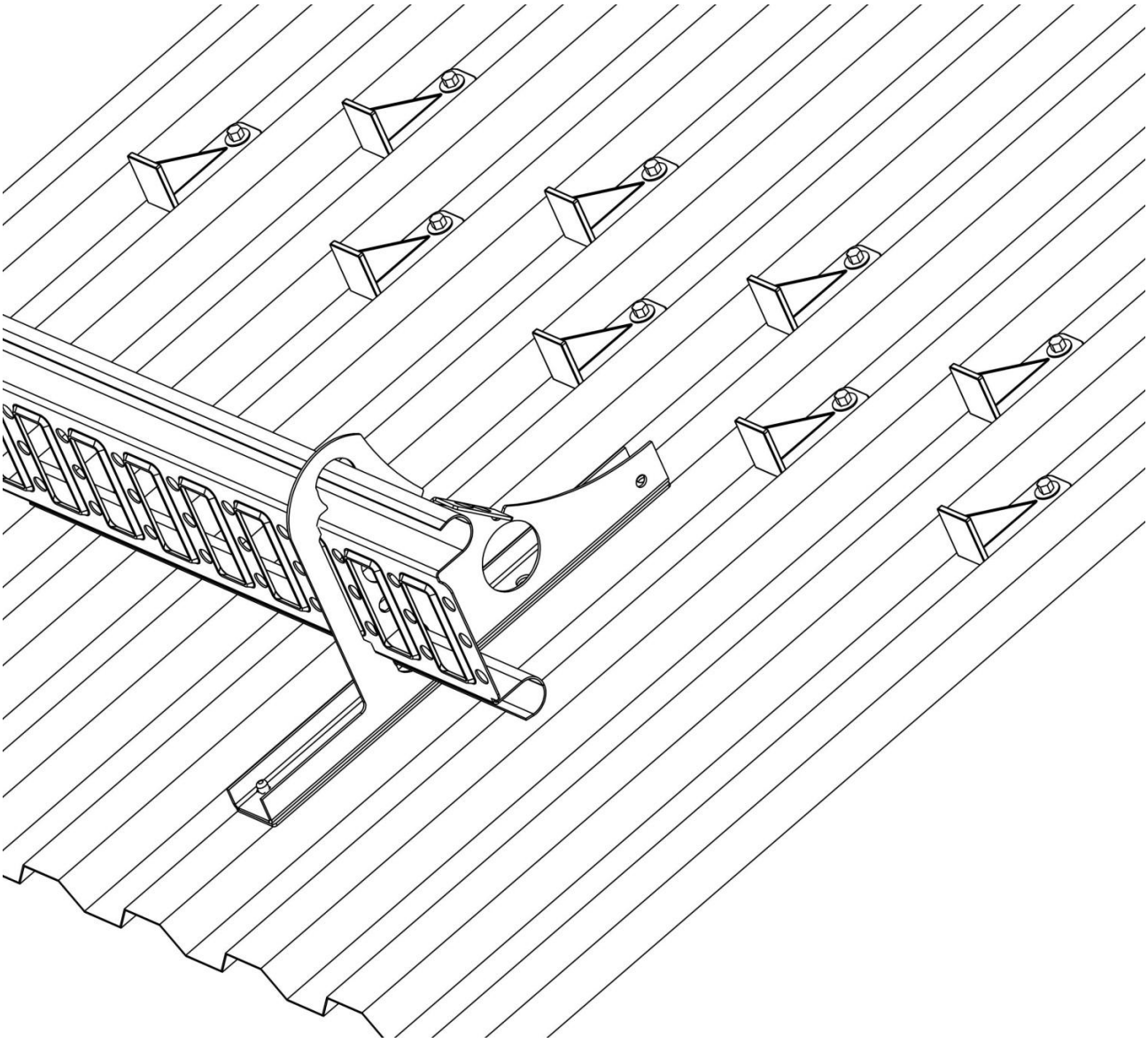
M-226 1807 GB

Ice-stop for installation on corrugated profiled sheet metal roof valleys

The ice-stops are installed where there is a risk of ice moving through the valley and in under the snow fence.
Installation must be done using stainless steel sheet metal screws and washers.
Fasten the screws in place with low torque in order to prevent damage to the threads.

The contact surface of the ice-stop is designed to prevent leakage.
The ice-stops can also be spread out over the entire surface of the roof.

Please note that the ice stop does not replace a snow stopper at the roof foot.



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ROOF SAFETY MORA SWEDEN

SNOWSTOPPER, RAKE

FOR FOLDED SHEET METAL ROOFS AND PREFABRICATED PANEL ROOFS

M-228 1805 GB

Snowstopper rake for installation on folded sheet metal roofs and pre-fabricated panel roofs.

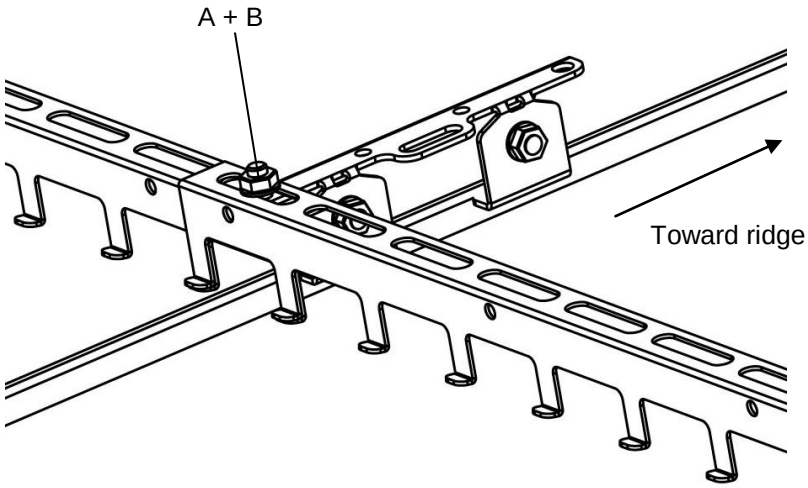
Maximum distance between fold mounts 600 mm.

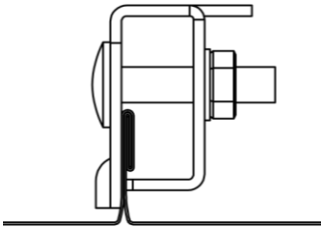
Tighten to a torque of 25 Nm.

Snowstopper is extended by overlapping at least one assembly hole at the fold mount.

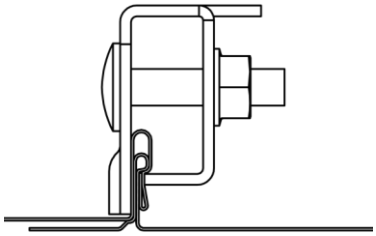
Bolted joints shall pass through both snowstoppers at overlaps.

Maximum protrusion from the outermost fold mount: 150 mm.





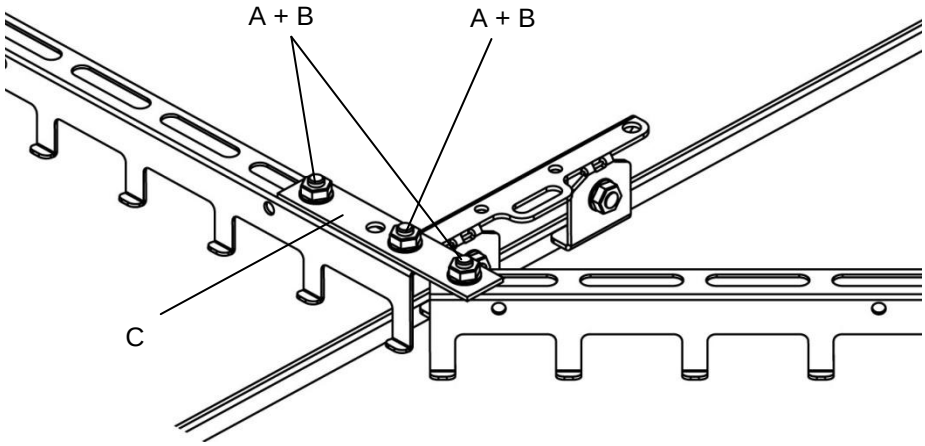
Folded sheet metal:
Make sure that the tabs on the fold mount clamp under the seam edge.



Prefabricated panel:
Make sure that the tabs on the fold mount clamp the seam so that the inner fold is clamped in place.

Extension of snowstopper rake at an angle

Use extension kit 470018P.



Please note that the snowstopper does not replace the snow fence at the roof foot.

***A**= Screw hot galv. M10 x 20, **B**= Flange nut, hot galv. M10, **C**= Extension kit*

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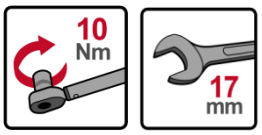
ROOF SAFETY MORA SWEDEN

RISER

M-229 1903 SE



The riser is used on sedum/peat roofs, thatch roofs, grass-covered roofs etc.

The mounting plate is first installed at the desired location according to **M-082** and **M-076**.

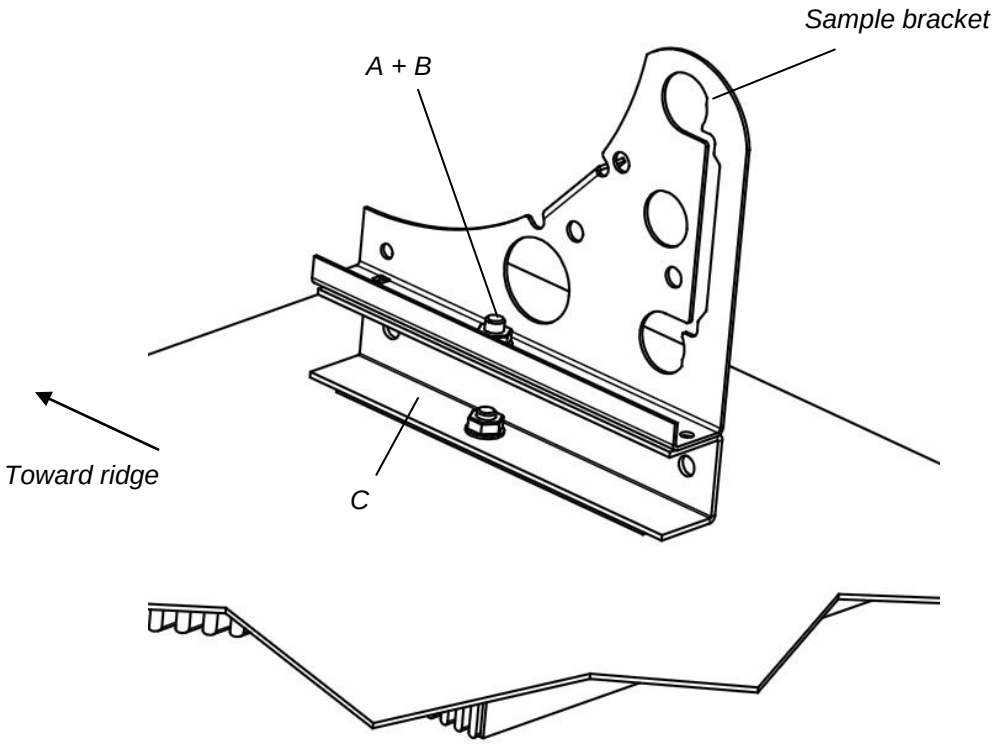
Cut off the stubs on the EPDM seal.

Install the riser with the EPDM against the sealing membrane, using a washer and nut M10 A2.

Recommended tightening torque is 10 Nm on bitumen- and 10 Nm and synthetic membrane roofs.

Install the bracket onto the riser using an M10 x 20 screw, washer and nut M10 hot galv. (but without EPDM) according to the installation instructions for the product in question.

Bracket, all-round bracket and anchor loop for smooth roofs **M-085**.
Solar panel bracket for flat roofs **M-277.**
CWL Safety System wire system for flat roofs **M-284.**
CWL Safety System wire corner for flat roofs **M-291.**



***A**= Screw hot galv.M10 x 20, **B**= Flange nut hot galv. M10, **C**= EPDM seal*

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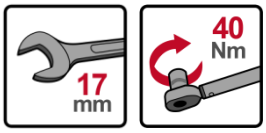
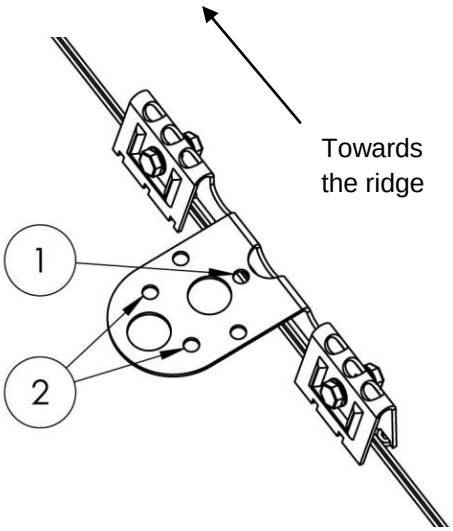
INSTALLATION

FOR FOLDED ROOFS WITH DIAGONAL FOLD



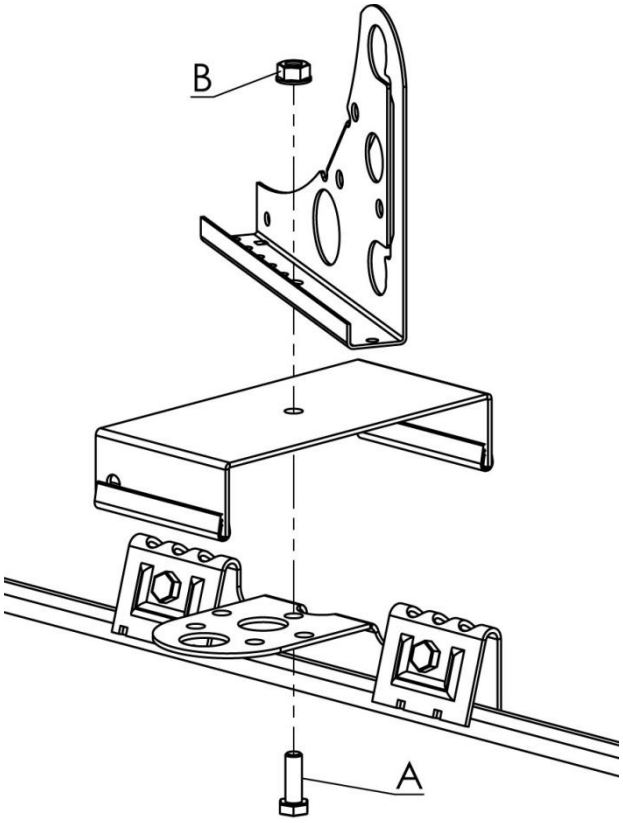


Fold mount for roof with diagonal fold

Steel sheet metal min 0.6 mm

Attach the fold mount to the standing seam, make sure that the tabs on the fold mount end up underneath the edge of the fold.

Torque 40 Nm.



Bracket on fold mount for diagonal fold

The anchor plate is placed over the fold mount with the centre hole over hole (1) if possible, otherwise hole (2) on the fold mount.

Place the bracket over the same hole.

Install with a screw (A x 1), washer (B x 2) and a nut (C x 1).

Torque 40 Nm.

Snow fence, Roof ridge and roof foot rail **M-204.**
Walkway, roof pitch >18° **M-203.**
Guard rail, roof hatch **M-206.**

*Upon installation of an avalanche guard on a fold mount on a diagonal fold, this must be supplemented with an ice-stop as specified in **M-204**.*

For installation on sheet metal with different specifications, see Installation Instruction M-124.

***A**= Hot galvanised screw M10 x 20, **B**= Hot galvanised flange nut M10*

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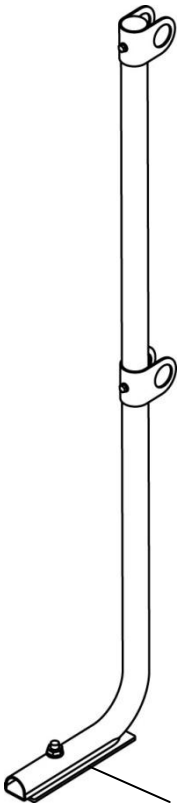
Installation Instructions

Guardrail 1.1 m for smooth, low-pitch roofs



Upright posts

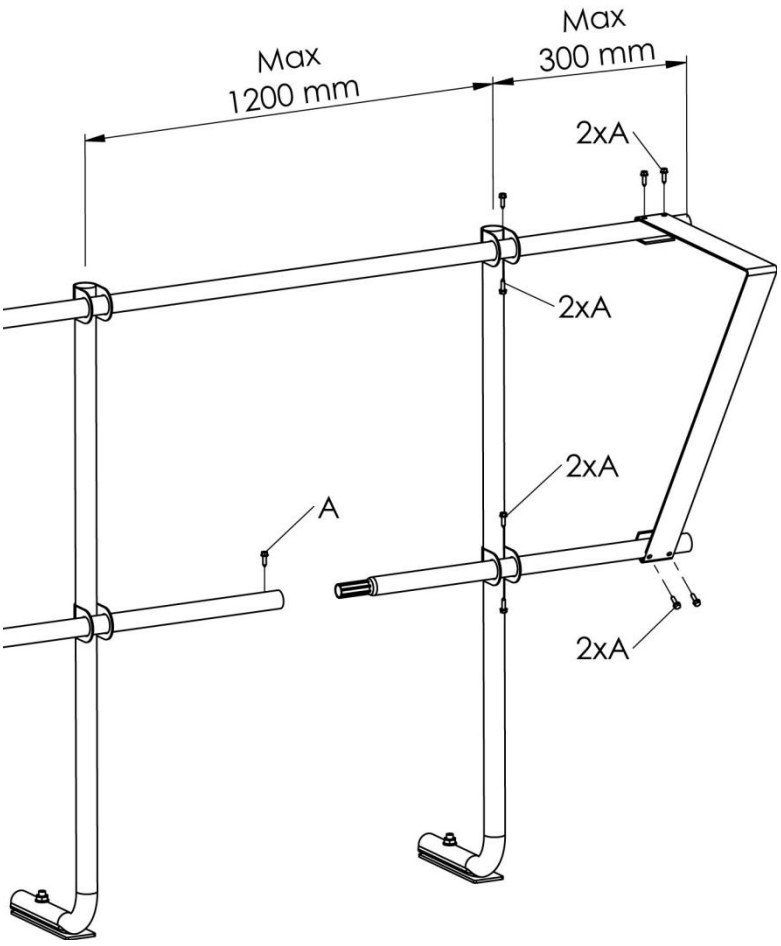
Installed with EPDM, nut M10 and washer.
Use bolt kit 430026P

Maximum distance between posts 1200.

Maximum roof pitch 6°.

Installation on bitumen-based waterproofing membrane shall be done according to installation instruction **M-082.**

Installation on roofs with PVC, ECB/FPO based waterproofing felt membrane according to **M-076.**



Guardrails

Extensions to rail tubes shall be made with inserts and self-tapping screws (A).
Use extension kit 420012P

2 pcs self-tapping screws (A) are installed on the rail tube at the first and last upright post per continuous length.

End bracket is mounted with 4 self-tapping screws (A).

***A**= Self-tapping stainless steel screw 20 x 5.5 mm*

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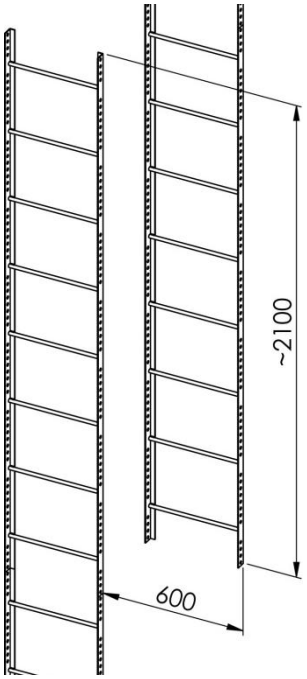
Installation Instructions

M-237 1410

Landing for façade ladders longer than 8 m

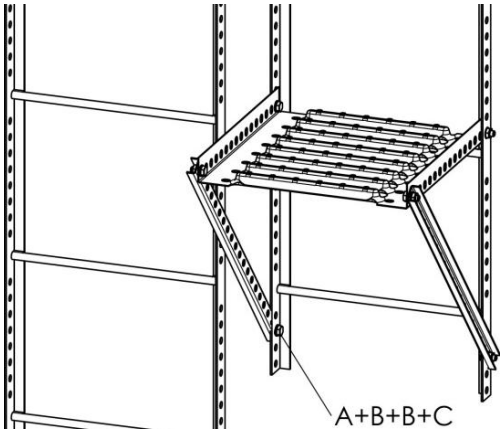


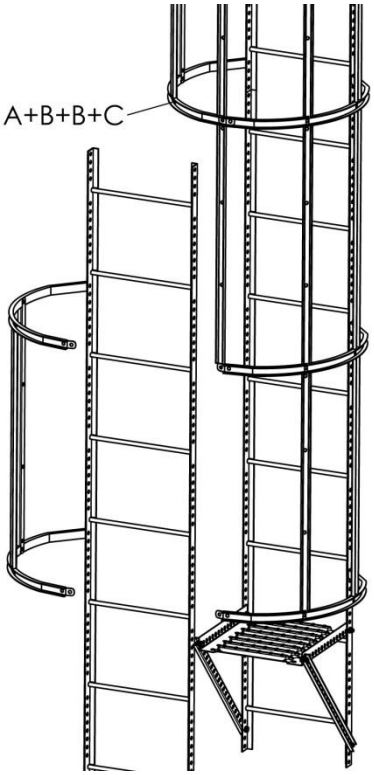
For increased safety on long ladders, they should be furnished with landings. The distance between landings should be a maximum of 6 metres.

Begin by installing the ladders and protective cages from the top and down, so that the installation fits properly along the entire way. Ladders should overlap approximately 2100 mm. The total length of the ladders can be adjusted by adjusting the overlap.

Install façade ladders as shown in installation instruction **M-074**.

Install the landing and support rails on the ladder using 6 screw connections (A+B+B+C).

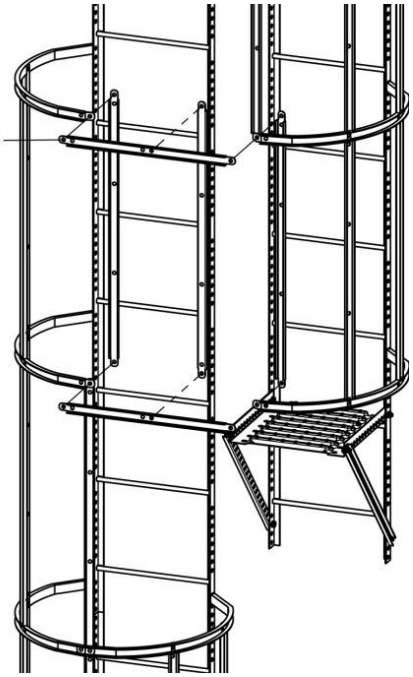




Install the safety clamps and vertical back-guard rails from above and down toward the landing.

A+B+B+C

Install the horizontal and vertical back-guard rails at the extension and then continue installing the protective cage downward.



When cutting products, the cut surfaces must be coated with rust-protective paint.

***A**= Screw, hot galv. M10 x 20, **B**= Washer, hot galv. 10.5 mm, **C**= Nut, hot galv. M10*

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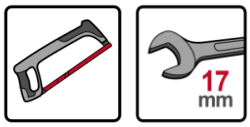
CWL Safety System

Roof Ladder

M-244 1807 GB

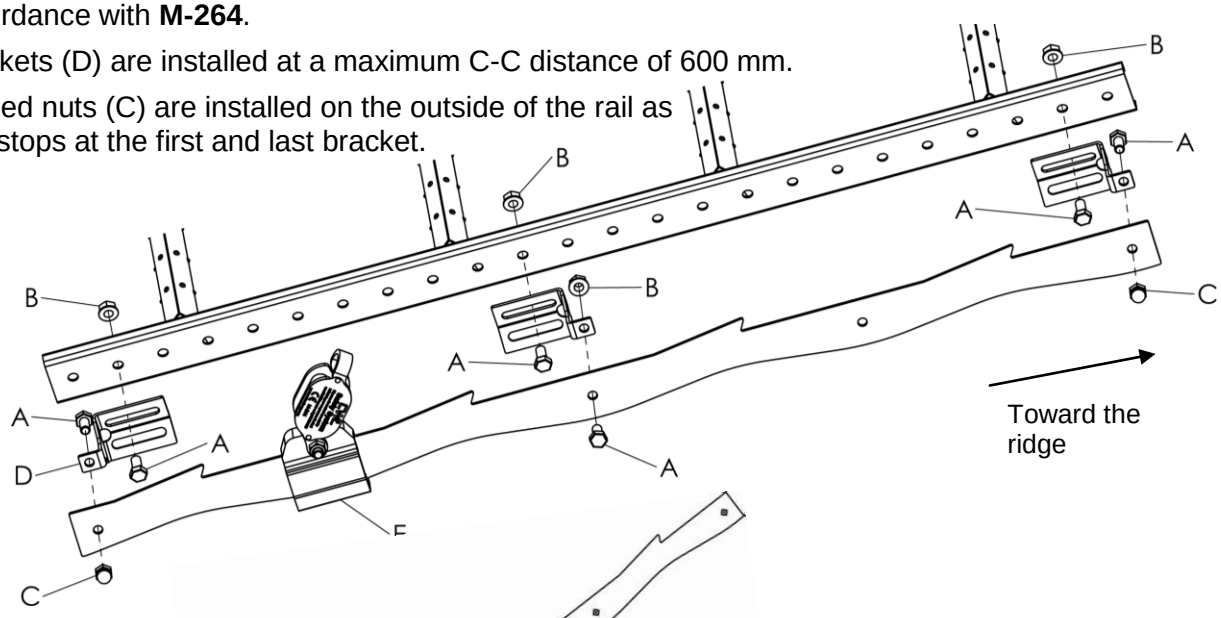


Rail with runner

The rail is installed on the right or left side. When installing on the left, it must be installed in accordance with **M-264**.

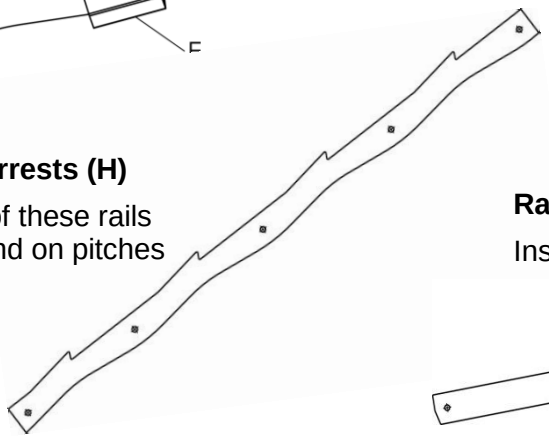
Brackets (D) are installed at a maximum C-C distance of 600 mm.

Domed nuts (C) are installed on the outside of the rail as end stops at the first and last bracket.



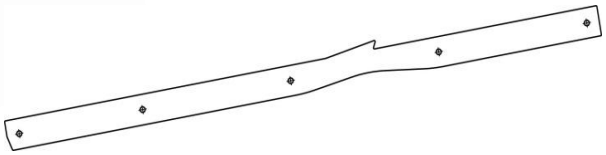
Rail with 4 fall arrests (H)

Always install 2 of these rails at the roof foot and on pitches that are >45º.



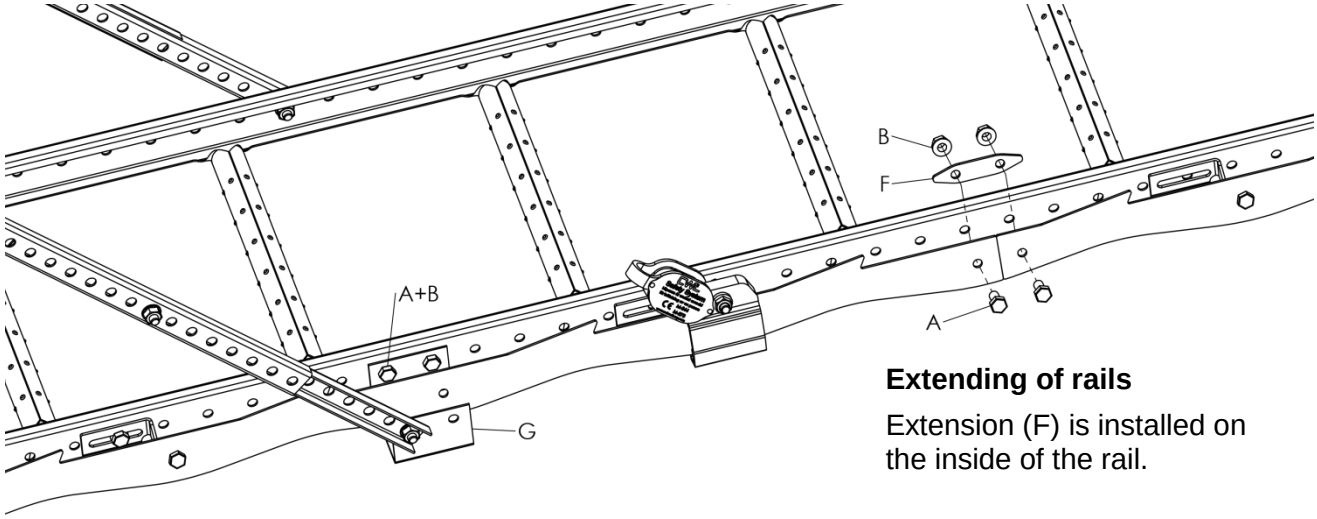
Rail with 1 fall arrest (H)

Installed for roof pitches of 0-45º.



Installation at a handrail

Strut mount (G) is installed using bolt kit 420009P on the side of the roof ladder where the rail is to be installed with screw (A) and flange nut (B).



Extending of rails

Extension (F) is installed on the inside of the rail.

***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Domed nut A2 M10, **D**= Bracket, **E**= Runner, **F**= Extension, **G**= Strut mount, **H**= Safety rail 300, **I**= Safety rail 1200*

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Valley Plate
For Snow Fence Guard, Profiled Sheet Metal

M-245 1807 GB

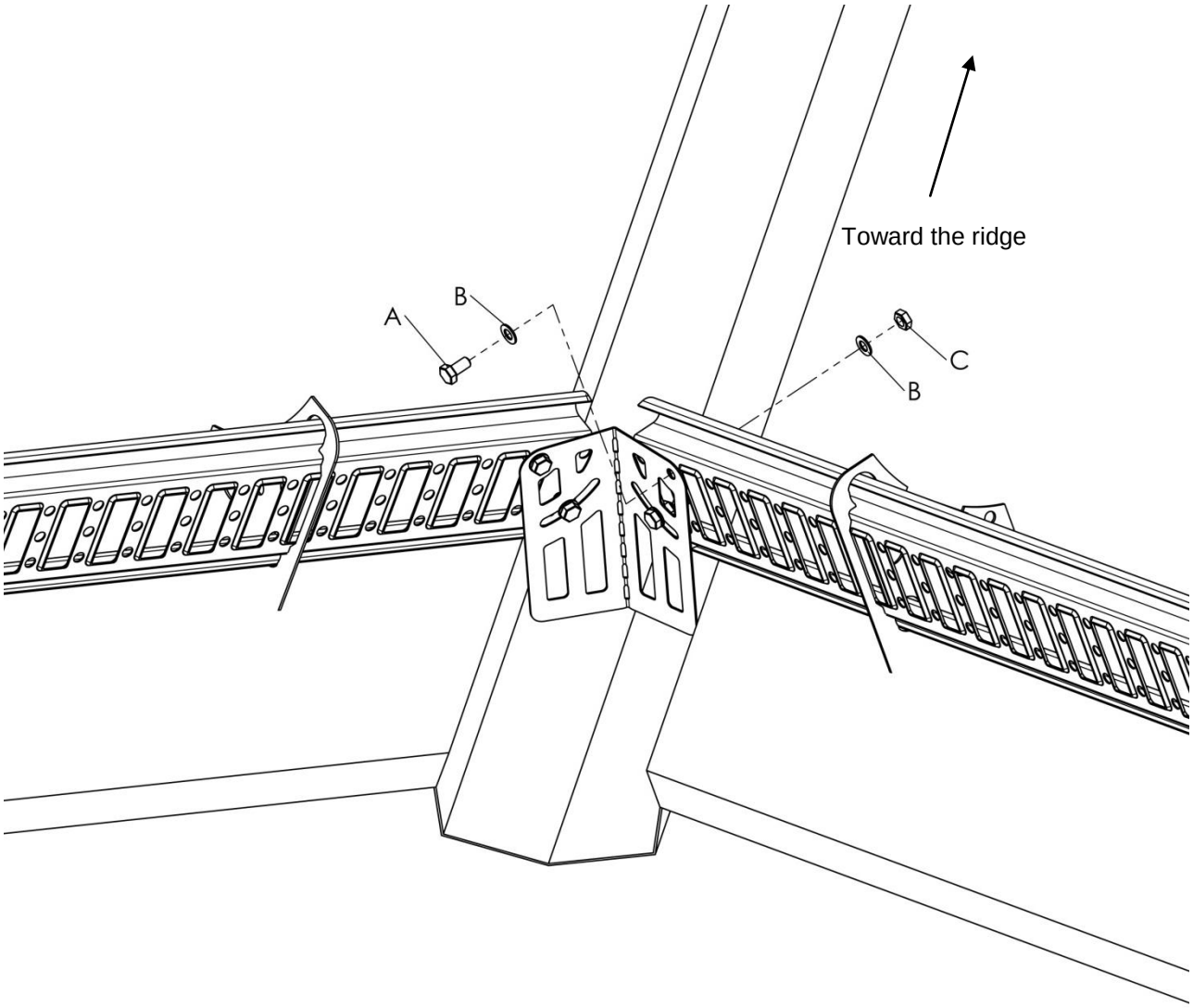
17 mm

Valley Plate for the Extension of Snow fence Guard, Profiled Sheet Metal over Valley Gutters.

Install the valley plate over the valley gutter on one of the profiled metal sheets.
Adjust the angle of the valley plate so that it fits against the adjoining profiled metal sheet.
Then install the other side.

Use screws (4 x A) and flange nuts (4 x B), bolt kit 420009P.

The snow fence is installed in accordance with a separate installation instruction, **M-204.**



***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv M10*

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RAIL 0.5 M

AROUND ROOF HATCHES AND SKYLIGHTS

M-251 1807 GB

Rail

Screw the vertical tubes in placed against the brackets using an M10x40 screw and flanged nut.

Measure the C-C distance between the brackets and cut the upper rail tubes according to measure minus 30 mm. Use bolt kit 420016P.

For rail lengths greater than 1800 mm, install an extra stanchion. The spacing between them is max 1200 mm. Use bolt kit 440075P.

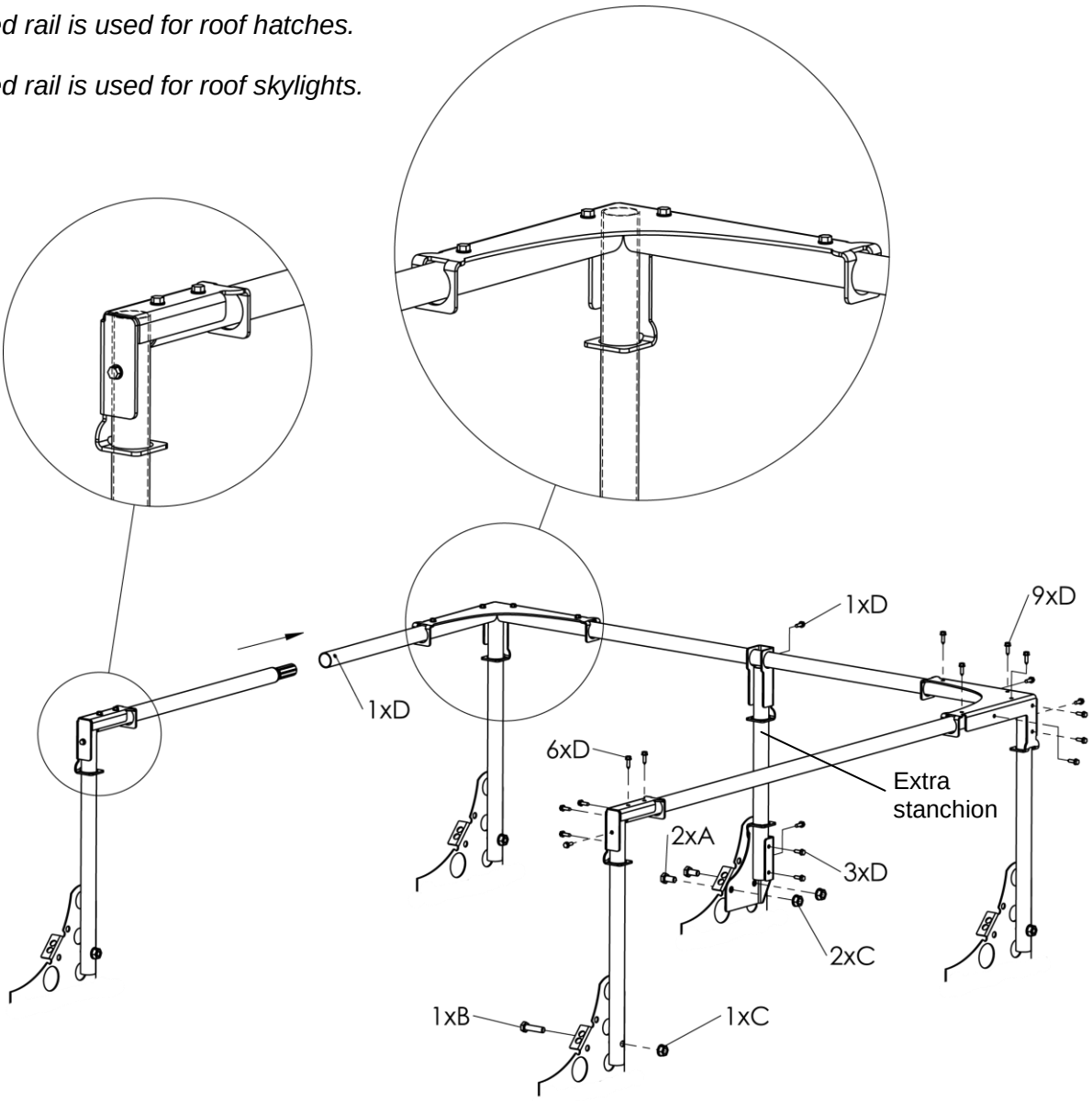
Extension of the rail tube is done with inserts and self-tapping screws. (D) Use bolt kit 420012P.

Roof attachment

Bitumen membrane and flat surfaces	**M-085**
Slate plate	**M-133**
Sheet metal roof	**M-222**
Tiled roof	**M-223**
Sedum roof with risers	**M-229**

3-sided rail is used for roof hatches.

4-sided rail is used for roof skylights.



***A**= Screw, hot galv. M10 x 20, **B**= Screw, hot galv. M10 x 40, **C**= Flanged nut, hot galv. M10, **D**= Self-tapping stainless steel screw 20 x 5.5 mm*

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ROOF LADDER SUPPORT

FOR FOLDED SHEET METAL ROOFS

M-257 1807 GB

17 mm

Supports are installed wherever it is necessary to place roof ladders in locations where it is impossible to install fold mounts.

The support is supplementary item and does not replace the requirement to use brackets.

Roof ladder protrusion from support max 200 mm.

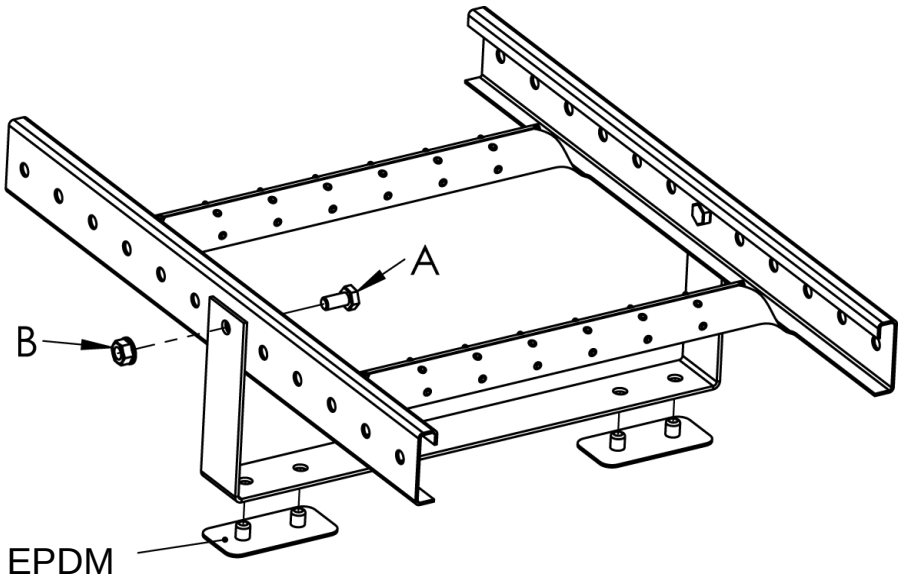
The distance to the nearest mount upon installation at the upper end of the roof ladder is max 300 mm.

The distance to the nearest mount upon installation at the lower end of the roof ladder is max 600 mm.

The distance to the nearest bracket upon installation between mounts is max 850 mm.

Install support with EPDM, screw (A), and washers (B). Use bolt kit 470091P.

The roof ladder is installed in accordance with installation instruction **M-303.**



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A= *Screw, hot galv. M10 x 20,* ***B***= *Screw, hot galv. M10*

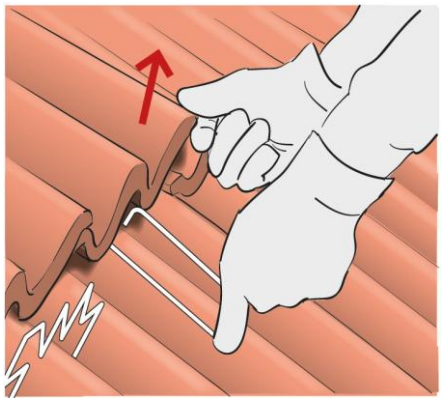
ROOF SAFETY MORA SWEDEN

CWL Grapple

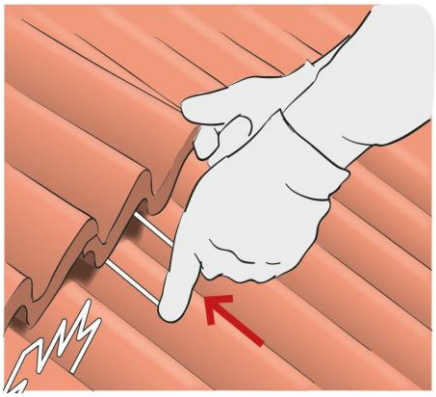
Snow stopper for roof tiles

M-260 1807 GB

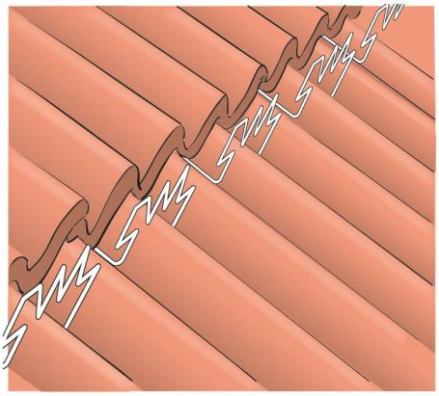
Installation of CWL Grapple



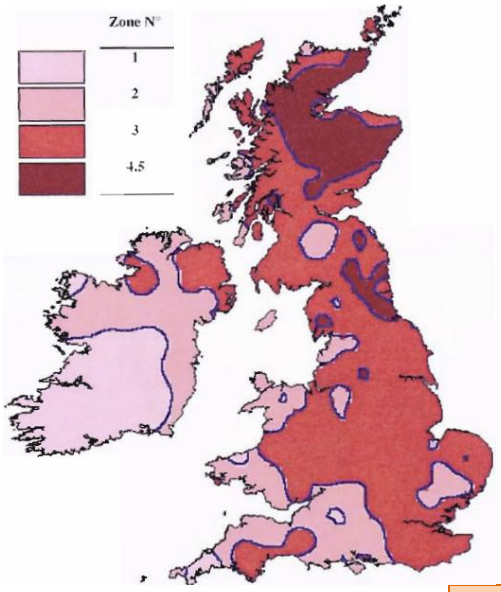
1. Lift a roofing tile.



2. Feed the grapple in so that it takes hold behind the edge of the roofing tile.



3. Put the roofing tile back in place.



Snowzone according to EN-1991-1-3.

Positioning of CWL Grapples

Install at least the number of CWL grapples as stated for the given roof pitch and snow zone.

Half of the CWL grapples must be installed on each roofing tile in rows from the foot of the roof and upward.

The remaining CWL grapples are spread evenly across the roof.

Always install CWL Grapples on every roofing tile nearest to the roof footing if there is no snow fence.

If the roof risks being overloaded with large quantities of snow, the snow must be removed in a safe manner.

Minimum number of CWL grapples/m² of roof

Pitch	Snow zone										
	1	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**	**5**	**5.5**
27° *	1.2	1.8	2.4	3.0	3.7	4.3	4.9	5.5	6.1	6.7
45° **	2.4	3.6	4.8	6.0	7.2	8.4	9.6	10.8	12.0	13.2

** Standard roof pitch, single-storey house.*

For the correct rating, look for information in your municipality/region about which snow zone and load (kN/m2) to which this is estimated to correspond according to Euro-Code 1991:1-3.

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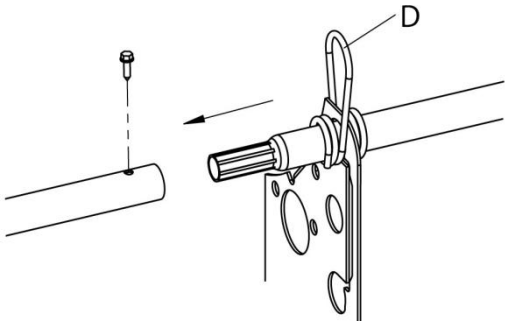
ROOF SAFETY MORA SWEDEN

CWL Safety System

Ridge Rail and Snow Fence, 3-tube

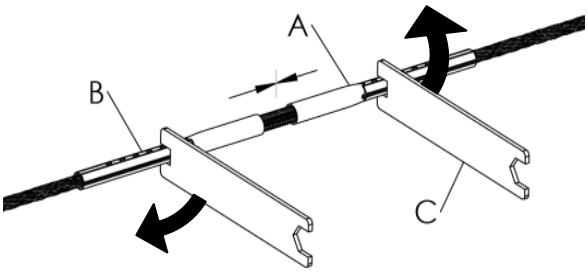
M-261 1806 GB

The wire system is only intended for horizontal installation on CW Lundberg ridge rails or 3-.tube snow fences.



Install the wire controls (D) onto the bracket by threading the rail tube through. Install at a maximum of 5 m from the end bracket (i) at wire lengths of over 10 m. The internal distance between the wire controls (D) is a maximum of 5 m.

If a continuous wire length is to be made of two or more wires, screw together the wire terminals (A and B). Screw in the entire length of the thread and tighten with the included keys (2 x C).



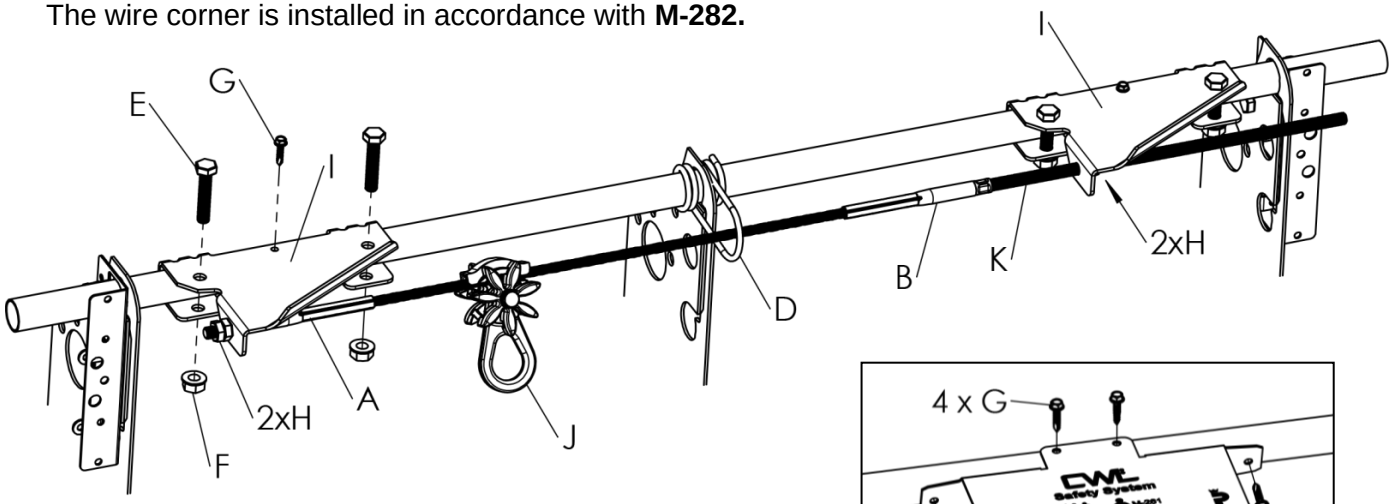
Install the threaded pole (K) in the wire's ending terminal (B). **Tighten** the nuts using keys (2 x C).

Thread the wire runner (J) onto the wire (max 2 wire runners may be installed on a wire).
The runner (J) is only intended for the attachment of one person. The person must be equipped with personal fall protection.

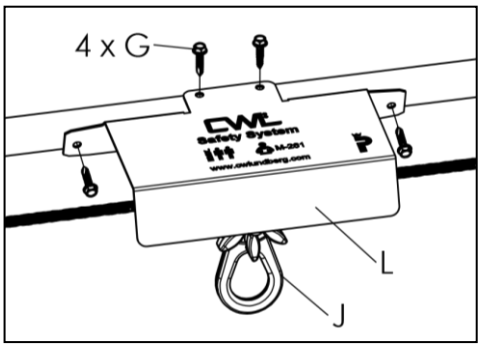
Install the end bracket (I) with screws (2 x E) and flange nuts (2 x F).
Tighten to a torque of 30 Nm. Fasten the end brackets in place with self-tapping screws (G).

Install the wire using nuts (2 x H) outside of each end bracket (I). **Tighten** the nuts using keys (2 x C).

The wire corner is installed in accordance with **M-282.**



Install the protective plate (L), at the intended position for anchoring, with self-tapping screws (4 x G).
The wire runner (J) is placed underneath.



__A__= Thread terminal male, __B__= Thread terminal female, __C__= Key, __D__= Wire control, __E__= Screw M10 x 50, __F__= Flange nut M10 hot galv, __G__= Self-tapping screws 20 x 5.5 A2, __H__= Nut M10 A2, __I__= End bracket, __J__= Wire runner PRO, __K__= Threaded pole, variable, __L__= Protective plate

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ROOF SAFETY MORA SWEDEN

SAFETY RAIL RUNNER

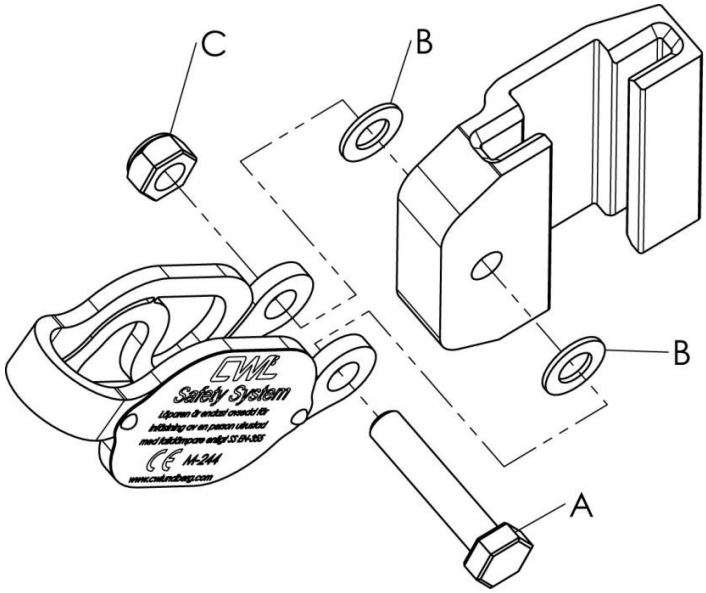
LEFT/RIGHT INSTALLATION

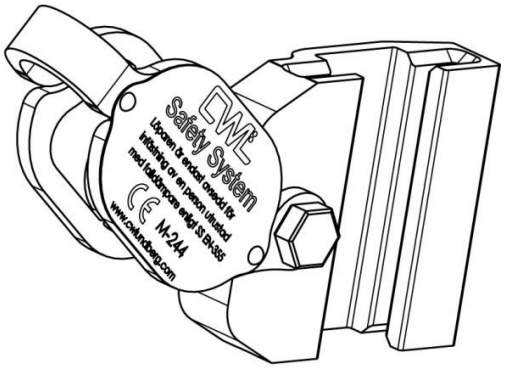
M-264 1807 GB

17 mm

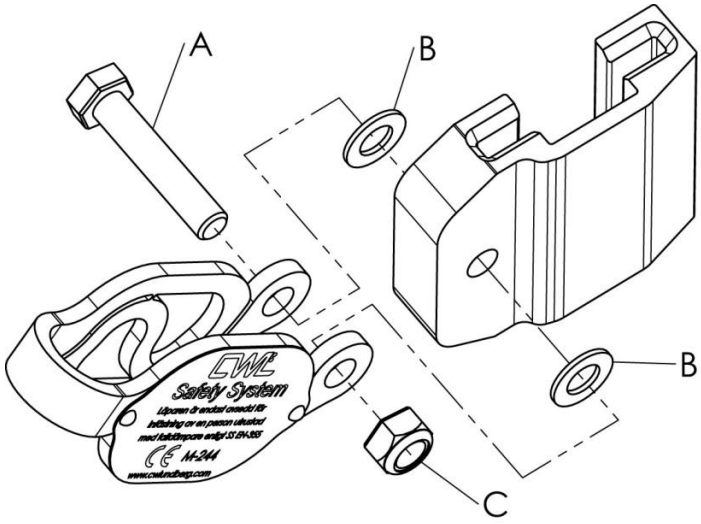
Runner for CWL Safety System Roof Ladder (**M-244**) and Façade ladder (**M-273**) supplied assembled for installation on the right side of the roof ladder.

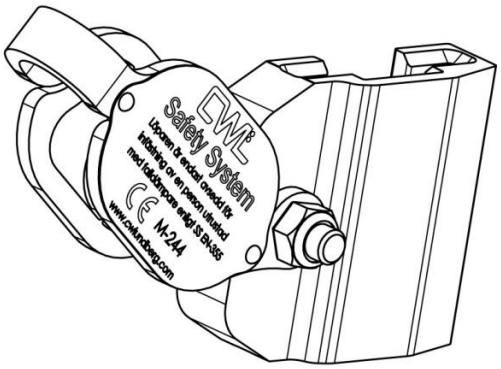
Runner for left-side installation
Tighten the locking nut (C) so that the shock absorber can move about freely.





Runner for right-side installation
Tighten the locking nut (C) so that the shock absorber can move about freely.





***A**= Screw M10 x 50 A2, **B**=Washer 10 x 5 A2, **C**= Locking nut M10 A2*

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ROOF SAFETY MORA SWEDEN

SOLAR PANEL BRACKET

FOR SMOOTH ROOFS

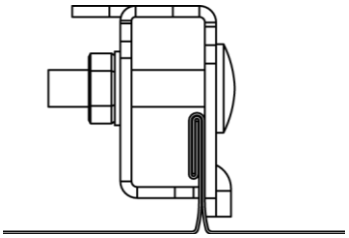
M-270 1807 GB

Fold mount for double-folded sheet metal roofs and prefabricated panel roofs

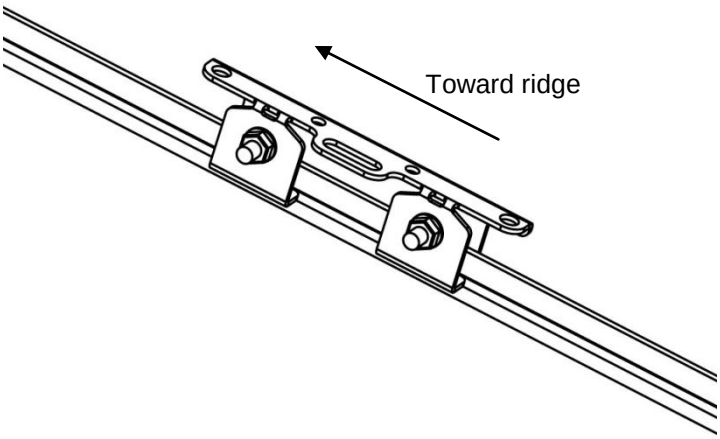
Steel sheet metal min 0.6 mm.

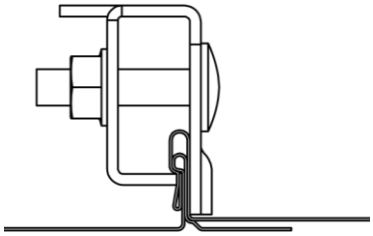
Install the fold mount onto the standing seam.

Tighten to a torque of 20-25 Nm.

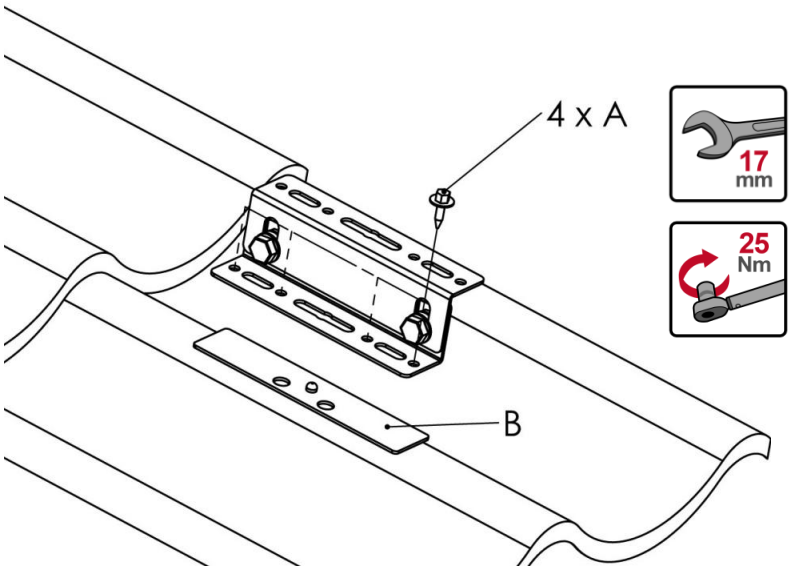


Folded sheet metal roof:
Make sure that the bracket tabs grasp under the edge of the seam.





Prefabricated panel roof:
Make sure that the bracket tabs grasp the seam so that the inner seam is squeezed tightly in place.



Bracket for Sheet Metal Roofs

Steel sheet metal min 0.4 mm.

Use bolt kit 420193P.

Adjust the height of the bracket as needed using the bolted joints.

Screw into place using a low torque for optimal threading in the sheet metal.

Installation of Solar Panels on Brackets

Solar panels are installed onto solar panel brackets, *e.g.,* by screwing rails onto the bracket and attaching the solar panels onto them. Follow the instructions provided by the solar panel supplier.

For installation onto other qualities of sheet metal, follow the recommendations found in Installation Instruction M-124.

***A**= Stainless steel building screw with washer 19 x 6.3 mm, **B**= EPDM seal*

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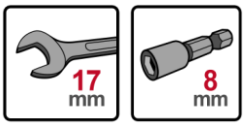
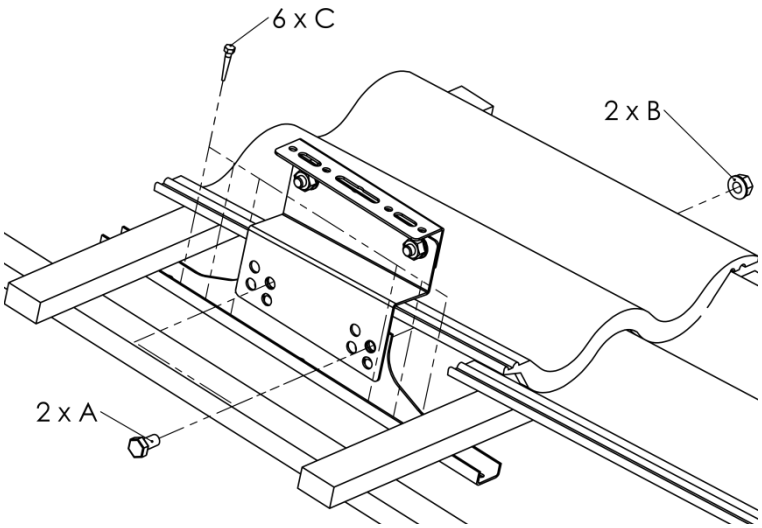
ROOF SAFETY MORA SWEDEN

SOLAR PANEL BRACKETS

FOR TILED ROOFS

M-271 1812 GB





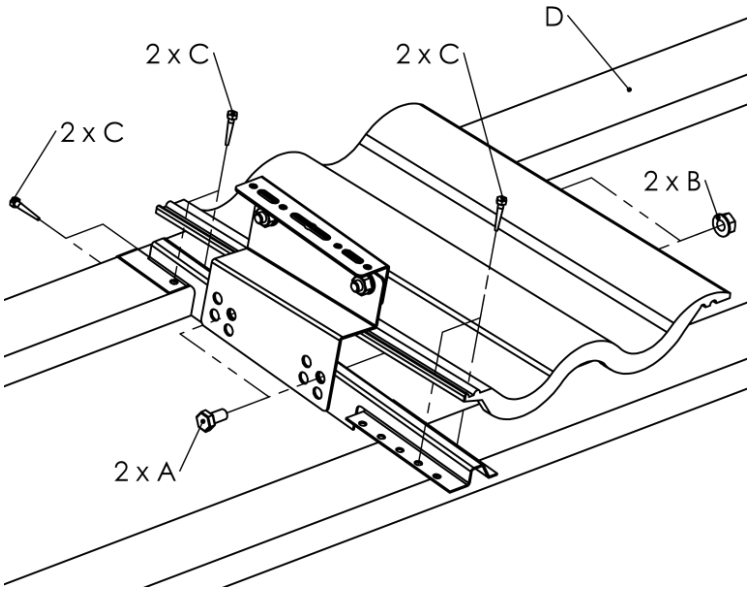
Anchor plate for roof underlay

Tongue-in-groove underlay
min 17 mm / plywood min 12 mm.

The wood screws are evenly distributed over the anchor plate between counter battens.

Use bolt kit, item no. 410166P.

Adjust the height of the bracket as needed using the bolted joints.

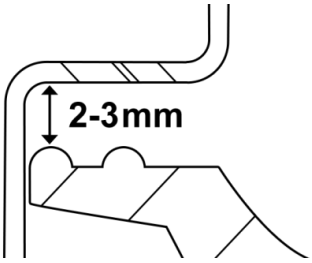


Batten bracket, simplified roof underlay

Batten min 40 x 70 mm.

Use bolt kit, item no. 410166P.

Adjust the height on the bracket as needed using the bolted joints.



N.B.!

Always leave a gap of 2-3 mm between the bracket and the underlying roof tile.

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Installation of Solar Panels on Brackets

Solar panels are installed onto solar panel brackets, *e.g.,* by screwing rails onto the bracket and attaching the solar panels onto them. Follow the instructions provided by the solar panel supplier.

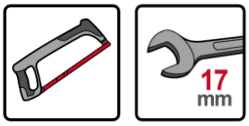
***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Stainless wood screw 35 x 4.8 mm, **D**=Batten min 40 x 70 mm*

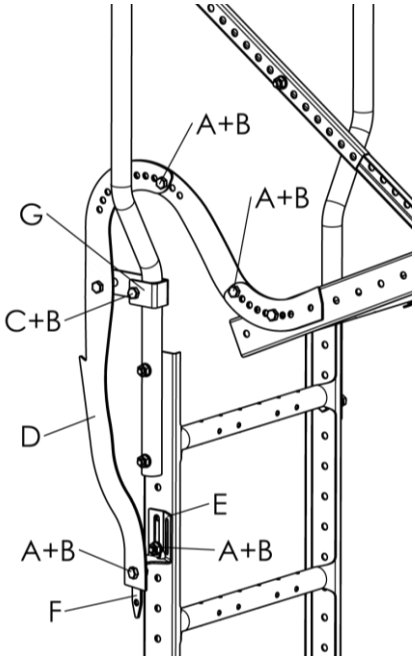
ROOF SAFETY MORA SWEDEN

CWL Safety System

Façade ladder

M-273 1807 GB





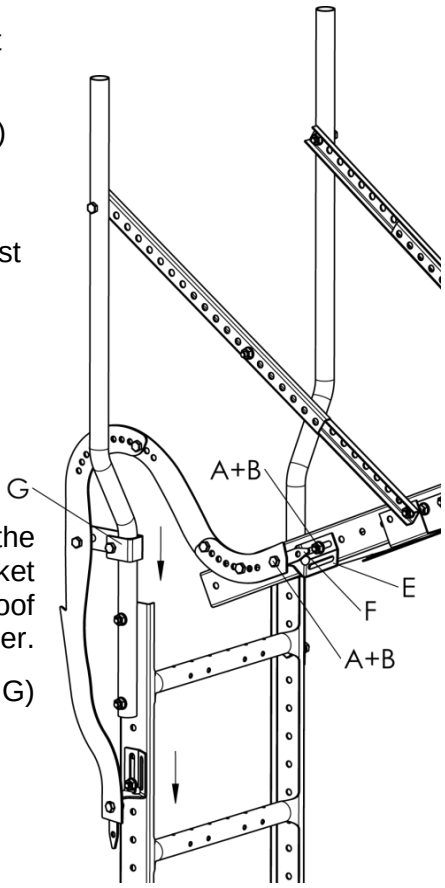
Safety rail with runner

The rail is installed on the right or left side. When installing on the left, it must be installed in accordance with **M-264**.

Install the extension (F) and bracket (E) on the transition (D).

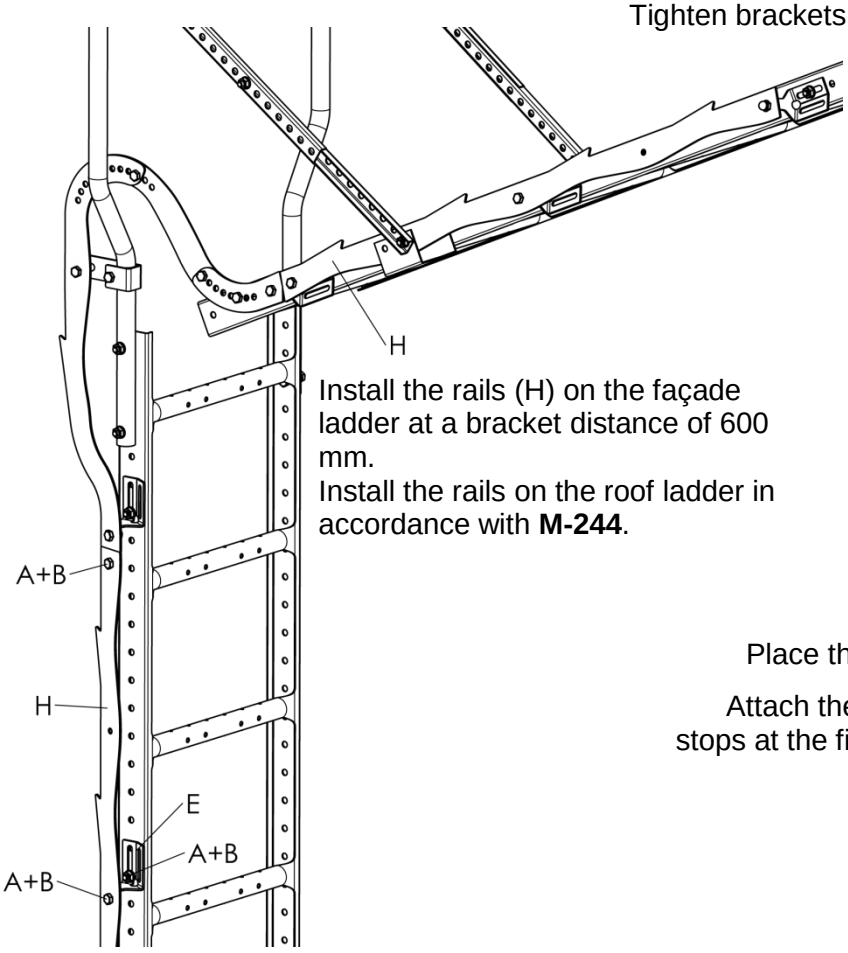
Install the transition (D) loosely against the handrail with bracket (G) and against the façade ladder with bracket (E).

Adjust the transition so that it goes downward toward the roof ladder and touches just immediately above it.

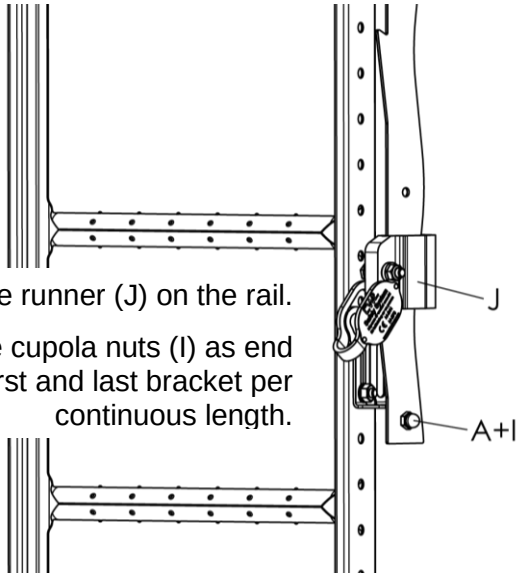


Remove bracket (G) and move the transition (D) downward so that bracket (E) can be installed against the roof ladder.

Tighten brackets (E and G)



Install the rails (H) on the façade ladder at a bracket distance of 600 mm.
Install the rails on the roof ladder in accordance with **M-244**.



Place the runner (J) on the rail.

Attach the cupola nuts (I) as end stops at the first and last bracket per continuous length.

***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Screw hot galv. M10 x 50, **D**= Transition safety rail façade to roof, **E**=Bracket safety rail, **F**= Extension, **G**= Bracket handrail, **H**= Safety rail 300, **I**= Cupola nut A2 M10, **J**= Runner*

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ROOF SAFETY MORA SWEDEN

CWL SAFETY SYSTEM PRO

WIRE CORNER FOR WALKWAY

M-275 1807 GB

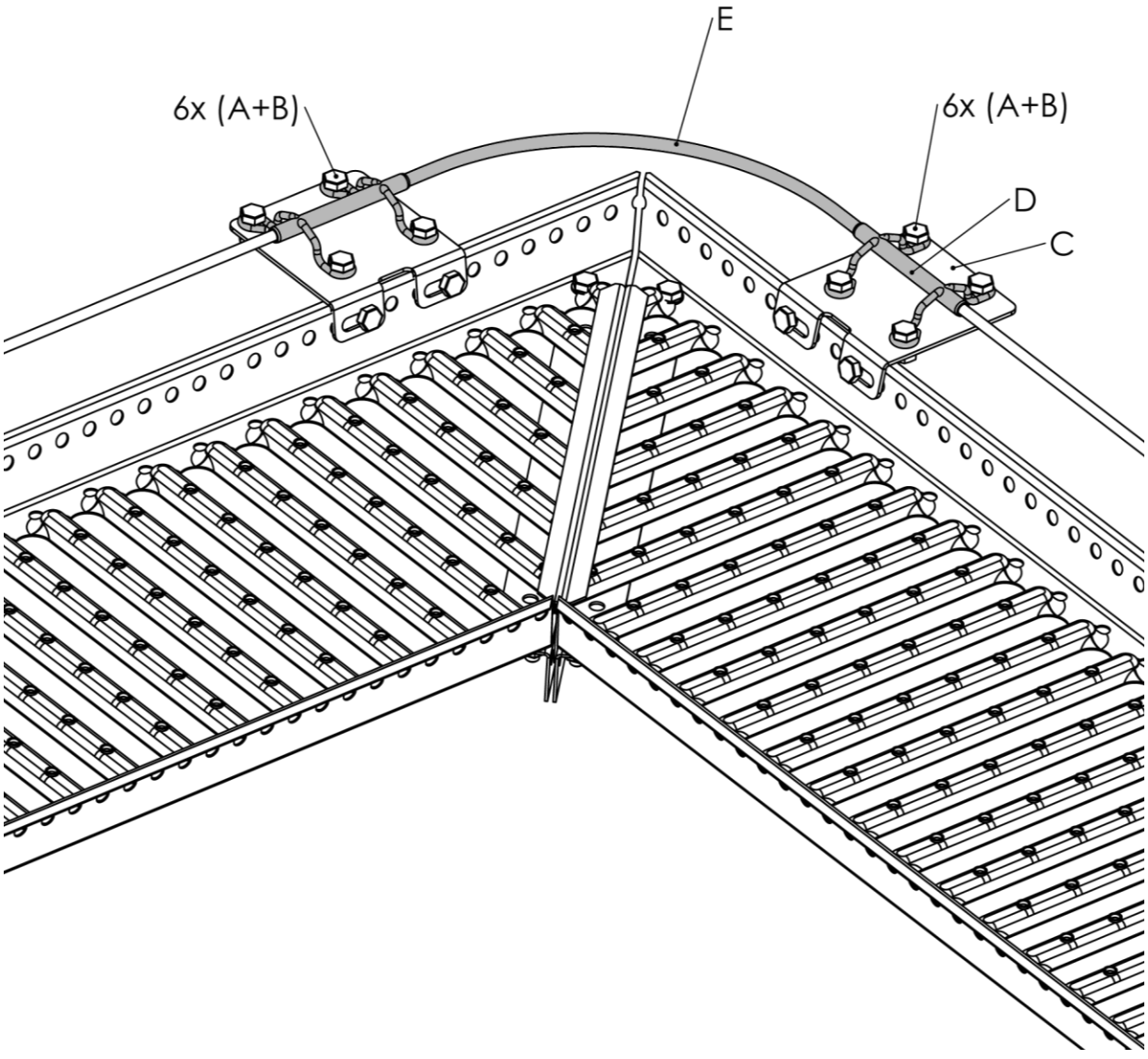
17 mm

Corner for safety wire

Firstly, install the end bracket to the wire system on the walkway in accordance with **M-217.**

Move the wire controls (D) and the tube (E) to the corner of the walkway.
Carefully bend the tube (E) using an even and large radius to the angle needed.
Install the wire controls (D) onto the attachment plates (C).
Install the attachment plates (C) onto the walkway.
Use 2x bolt kits 420009p.

The tube (E) shall rest against the wire controls.
The wire must be taught at both sides of the corner.



Walkway corners are installed in accordance with **M-219.**

***A**= Screw, hot galv. M10 x 20, **B**= Flange nut FZV M10, **C**= Attachment plate, **D**= Wire control, **E**= Tube wire corner*

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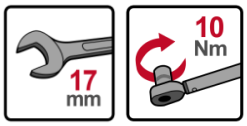
SOLAR PANEL BRACKETS

FOR SMOOTH ROOFS

M-277 1812 GB



Carriage Bolt as a Bracket

Installation on bitumen-based membrane as specified in installation instruction **M-082.**

Installation on roofs with PVC, ECO/FPO-based membranes as specified in **M-076.**

For installation with M10 carriage bold with EPDM, bolt kit 410132P is used.
Place an M10 carriage bolt into the square hole in the centre of the mounting plate.

For installation with an M12 carriage bolt, use a stainless steel carriage bolt of any selected length.

Solar Panel Attachment as a Bracket

Installation on asphalt-based sealing membrane as specified in installation instruction **M-082.**

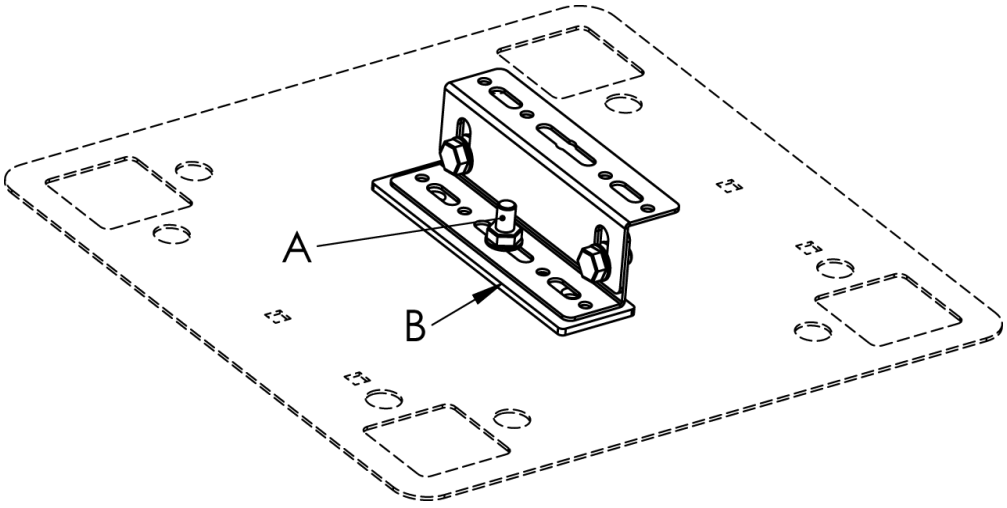
Installation on roofs with PVC, ECO/FPO-based sealing membranes as specified in **M-076.**

Installed with EPDM seal, nut and washer.

Use bolt kit 410226P.

Adjust the height of the bracket as needed using the bolted joints.

Installation with expandable screw, safety expanders or chemical anchors in concrete must be done in accordance with instructions provider from the supplier of such a bracket. Screw dimension M10 stainless steel.



***A**= Carriage bolt, **B**= EPDM seal*

Installation of Solar Panels or Similar Devices on Brackets.

Solar panels are installed onto solar panel brackets, e.g., by screwing rails on to the carriage bolt/brackets and attaching the solar panels onto them. Follow the instructions provided by the solar panel supplier.

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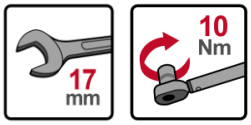
MOUNTING PLATE FOR WIRE

PVC-, ECB/FPO-BASED MEMBRANE

M-279 1807 GB

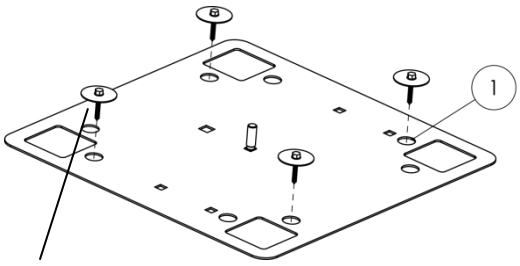


For other roof safety systems, use installation instruction **M-076.**

Mounting plate 400 x 400 mm for installation of wire systems on roofs with PVC, ECB/FPO-based waterproofing felt membranes min 1.2 mm.

The waterproofing felt membrane must be tested in accordance with EN 13956 and satisfy the following requirements:

Tensile strength:	min 500 N/50 mm	EN 12311-2
Tear resistance:	min 110 N	EN 12310-2
Shear strength at extension:	min 450 N/50 mm	EN 12317-2
Peel adhesion at extension:	min 150 N/50 mm	EN 12316-2



Example mount end brackets

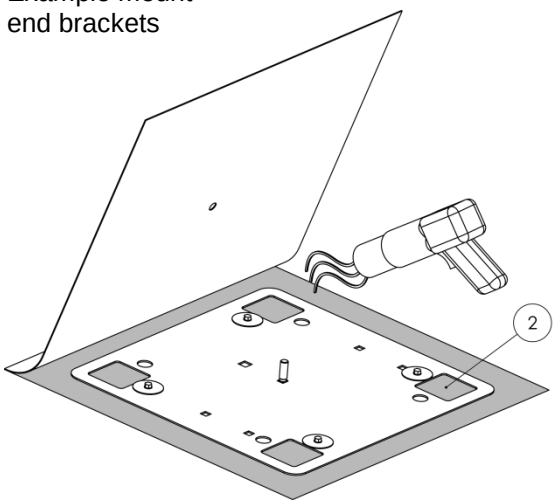
End Bracket and Corner for Wire System

Install the carriage bolt into the middle hole in the mounting plate and place the mounting plate onto the desired location on the waterproofing felt membrane.

In the mounting plate onto a load-bearing structure with 4 fasteners in the **mounting holes** (1). The mount shall be of the same kind as used when laying the roofing felt.

Cut a ***waterproofing felt measuring 500 x 500 mm***. Make a hole for the carriage bolt in the centre of the cut waterproofing felt membrane.

Weld the felt in the four **attachment points** (2) and 50 mm **around the entire mounting plate**.



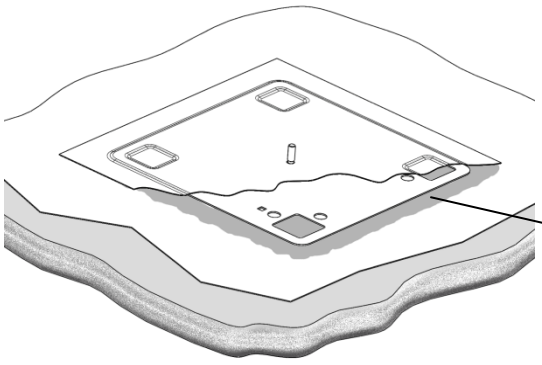
Bracket wire system - Installed between the wire end brackets and corner

Install the carriage bolt into the middle hole in the mounting plate and place the mounting plate onto the desired location on the waterproofing felt membrane.

The mounting plate does not need to the installed with fasteners to the load-bearing structure.

Cut a piece of **the waterproofing felt membrane measuring 500 x 500 mm.** Make a hole for the carriage bolt in the centre of the cut waterproofing felt membrane.

Weld the felt in the four **attachment points** (2) and 50 mm **around the entire mounting plate**.



N.B.! Carefully check for a proper adhesion between the welded surfaces.

Attach the brackets with nut M10 A2 washer and EPDM according to the instructions for each project.
CWL Safety System – mounts smooth roof **M-284,** wire corner 15°– 90° **M-291**.

Recommended tightening torque 10 Nm.

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ROOF SAFETY MORA SWEDEN

CWL Safety System PRO

Ridge Rail Corner for Ridge Rail

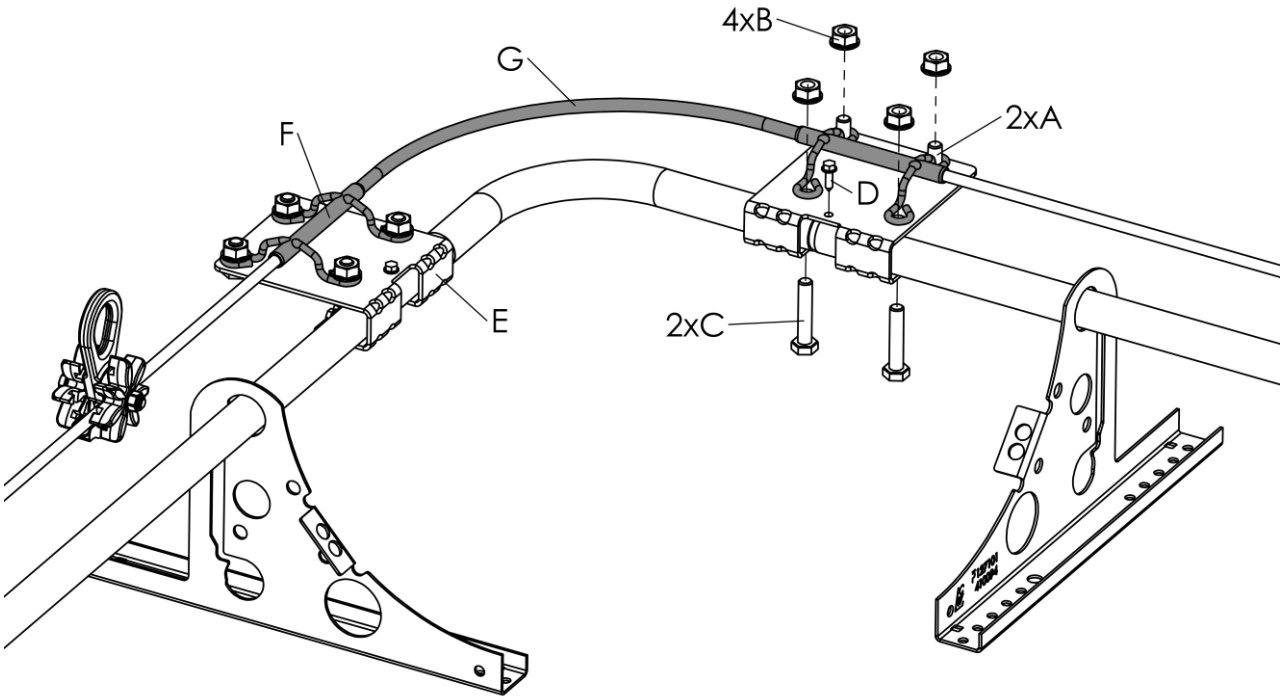
M-282 1807 GB

Corner for Safety Wires on Ridge Rail

Firstly, install the end bracket to the wire system on the ridge rail in accordance with **M-261.**

Move the wire controls (F) and the tube (G) to the corner of the ridge rail.
Carefully bend the tube (G) using an even and large radius to the angle needed.
Attach the wire controls (F) to the mounting plates (E) and attach them to the rail tube.
Tighten the screws (C) to **a torque of 30 Nm.**
Screw the mounting plates in place with self-tapping screws (D).
Use bolt kit 490137p

The tube (G) shall rest against the wire controls.
The wire must be taught at both sides of the corner.



The ridge rail must be installed in accordance with **M-204.**

***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Screw hot galv. M10 x 50,*
***D**= Self-tapping, stainless steel screw 20 x 5.5 mm, **E**= Mounting plate, **F**= Wire control, **G**= Tube, wire corner*

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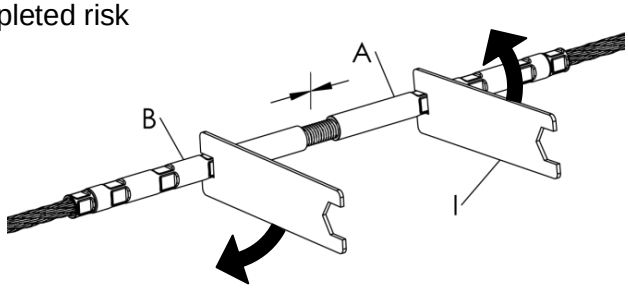
INSTALLATION INSTRUCTIONS

CWL SAFETY SYSTEM - WIRE SYSTEM

The wire system is put in place in accordance with the completed risk analysis; refer to document CWL0061.

From end bracket to end bracket, the slope of the wire may deviate by no more than 15° from horizontal.

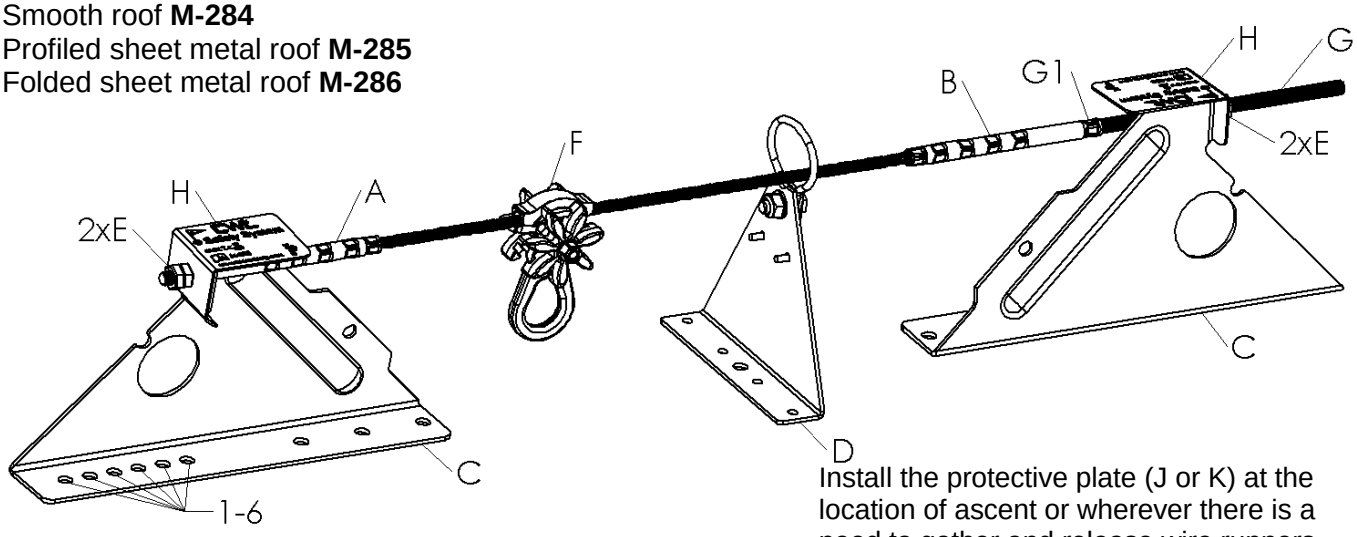


If the continuous wire length is to be made from two or more wires, screw the wire terminals together (A and B). Screw in the entire length of the thread and tighten with the included keys (2 x I).

N.B.! Lay out the continuous wire length along the planned extent of the installation. Wire controls (D) shall be located at a minimum of 200 mm from the wire terminals (A and B).

Attach the end brackets (C) and the wire controls (D) in accordance with the installation instructions for the relevant type of roof:

Smooth roof **M-284**
Profiled sheet metal roof **M-285**
Folded sheet metal roof **M-286**



Thread the wire runners (F) onto the wire.
Max 2 wire runners per continuous length.

Insert the wire terminal thread (A) into the end bracket (C). Place an identification plate (H) onto the thread with the text upward. **Reverse-tighten the nuts** (2 x E) with the keys (2 x I).

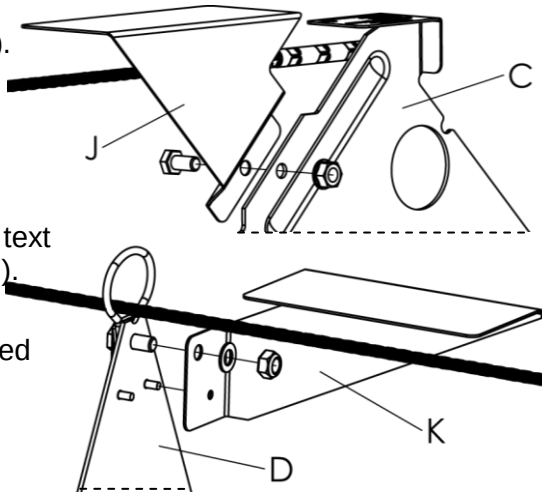
Screw the threaded rod (G) into the wire terminal (B) to the threaded rod stop (G1), **Tighten the threaded rod** (G) against the wire terminal (B) with keys (2 x I).

Insert the threaded rod (G) into the end bracket (C). Place an identification plate (H) onto the threaded rod with the text upward. **Reverse-tighten the nuts** (2 x E) with the keys (2 x I).

Tension the wire by selecting installation holes (1-6) on the end brackets (C) and the position of the nuts on the threaded rod (G).

The wire must hang a little bit over the surface of the roof. For more specific information, please refer to inspection points **CWL0152**.

Install the protective plate (J or K) at the location of ascent or wherever there is a need to gather and release wire runners (F).
Dragline runners are placed under the protective plates.



__A__= Wire terminal male, __B__= Wire terminal female, __C__= End bracket, __D__= Wire control, __E__= Nut M10 A2, __F__= Wire runner PRO, __G__= Threaded rod wire end, __H__= Identification plate, __I__= Key, __J__= Protective plate end bracket, __K__= Protective plate wire control

ROOF SAFETY MORA SWEDEN

CWL Safety System

Mounts for smooth roofs

Install the wire system in accordance with installation instruction **M-283**.

Install CW Lundberg's mounting plates on a waterproofing membrane roofs:

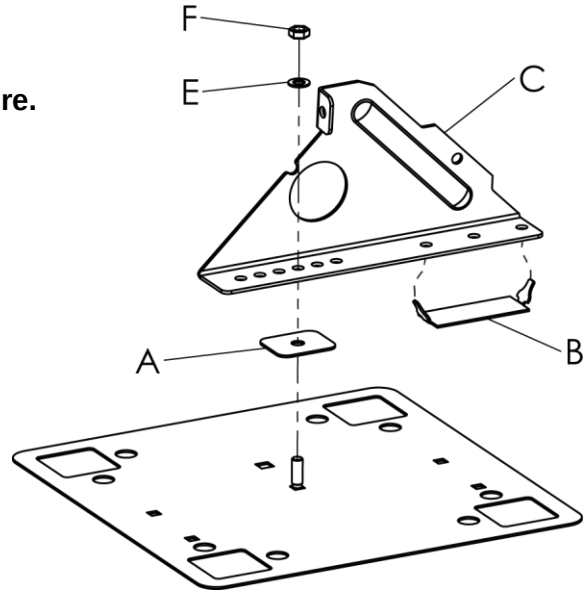
Asphalt-based waterproofing membrane, in accordance with installation instruction **M-082**.

PVC, EBC/FPO-based waterproofing membrane, to be done in accordance with **M-279.**

An end bracket is installed at each end of the wire.

Adjust the position of the mounting bracket according to the length of the wire.
The outer mounting plate must be installed at the c-c distance of the length of the wire, including the threaded pole.

Install EPDM (A) at the carriage bolt.
Install EPDM (B) under the end bracket (C).
Install the end bracket (C) on the carriage bolt with a washer (E) and nut (F)..



Wire controls are installed between the end brackets.

Wire control (D) must be placed a minimum of 200 mm from the wire extension.

The recommended distance between wire controls (D) and from the end bracket © to the wire control (D) is a maximum of 5 m.

Note that **the** distance between wire controls can be chosen up to a maximum of 10 m. However, in such a configuration, there is a risk that the wire will slacken and get stuck in the snow and ice.

Install EPDM (G) on the carriage bolt.
Install the wire control (D) on the carriage bolt with a washer (E) and nut (F).
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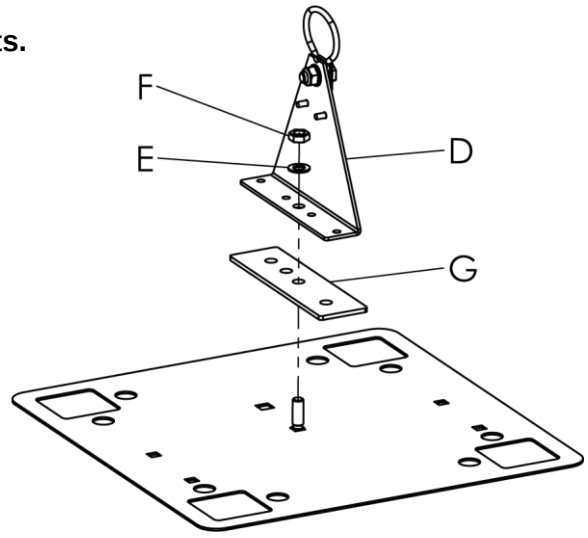

***A**= EPDM 60 x 50, **B**= EPDM 100 x 40, **C**= End bracket, **D**= Wire control*
***E**= Washer, stainless steel 10.5 mm A2, **F**= Nut, stainless steel M10, **G**= EPDM 180 x 50*

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CWL Safety System

Brackets, profiled sheet metal

The wire is installed in accordance with installation instruction **M-283.**

Installed onto steel sheet metal min 0.5 mm.

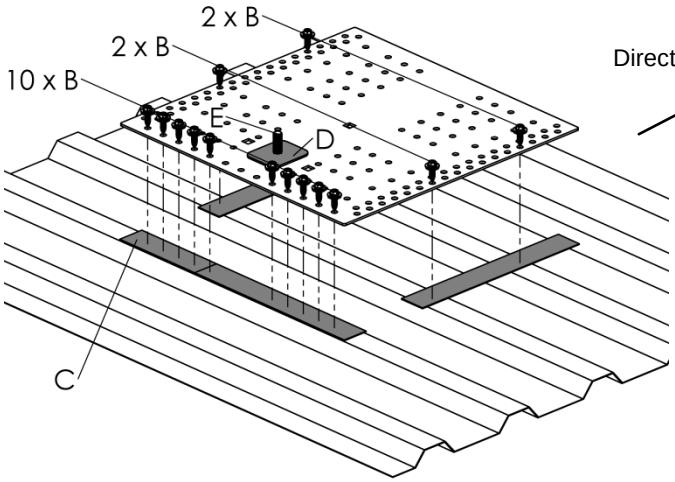
N.B. Be sure to select the correct installation procedure. Mounting plates are installed in different manners depending on the direction of the wires and the product.

Tighten the building screw (B) with a low torque for an optimal thread formation in the steel plate.

Mounting the end brackets

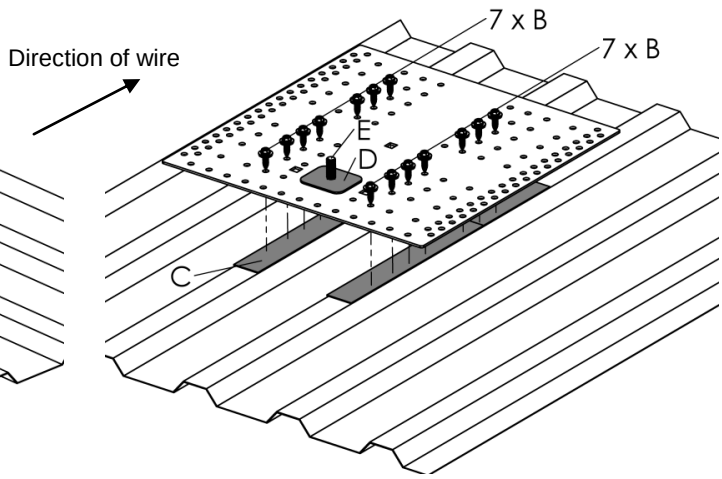
Adjust the position of the mounting plate according to the length of the wire.

Wire direction perpendicular to the profile tops



Install a self-adhesive EPDM (C) under the mounting plate so that it covers the screw holes.
Cut the EPDMs (C) as needed.
Install carriage bolt (E) and EPDM (D).
10 building screws (B) are installed on the outer profile top and 2 building screws in each of the closest profile tops.

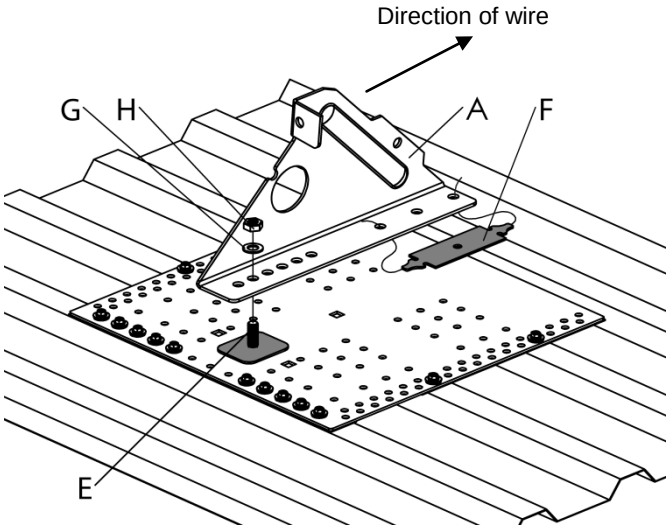
Wire direction parallel with the profile tops



Install a self-adhesive EPDM (C) under the mounting plate so that it covers the screw holes.
Cut the EPDM (C) as needed.
Install carriage bolt (E) and EPDM (D).
7 building screws (B) are placed into each profile top.

Installation of end brackets

Install the EPDM (E) under the end bracket (A).
Place the end bracket (A) on the carriage bolt (E) into one of the end bracket's installation holes.
Attach the end bracket (A) with washer (G) and nut (H).



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CWL Safety System

Brackets, profiled sheet metal

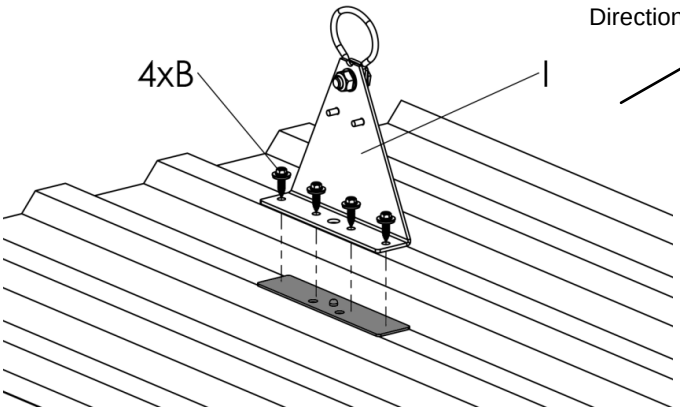
Attachment of wire controls

Attach the wire control (I) at least 200 mm from any wire extensions.

Recommended distance between wire controls (I), and from end bracket (A) to the wire control (I) max 5 m.

Note that the distance between the wire controls (I) can be chosen for a maximum of 10 m.
In this arrangement, however, there is a risk that the wire will go slack and get stuck in snow and ice.

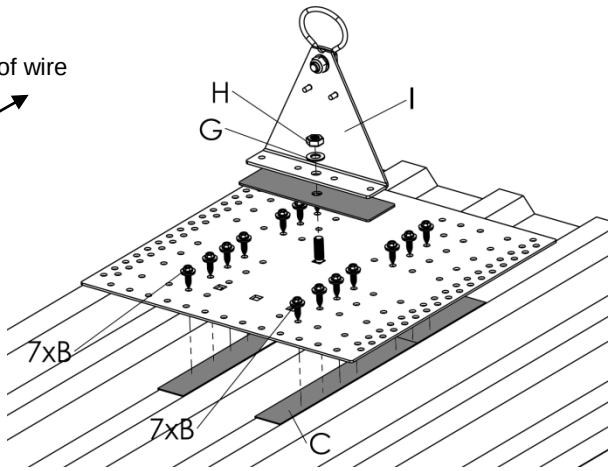
Wire direction perpendicular to the profile tops



Attach wire connection (I) with EPDM and 4 building screws (B).

Tighten the building screw (B) with a low torque for an optimal thread formation in the steel plate.

Wire direction parallel with the profile tops



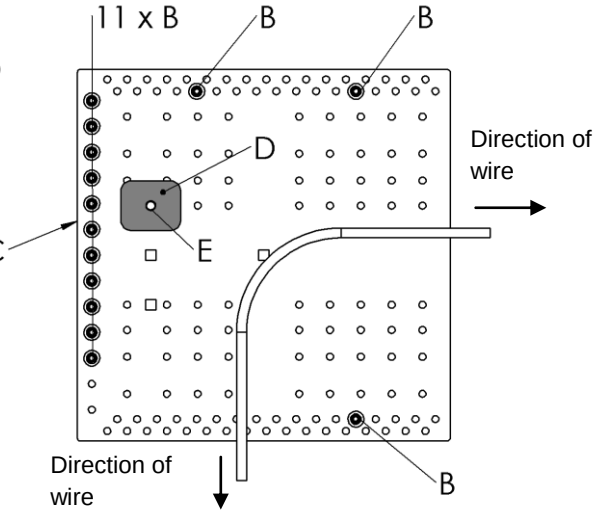
Install a self-adhesive EPDM (C) under the mounting plate so that it covers the screw holes.
Cut the EPDM (C) as needed.
Attach the carriage bolt (E) into the mounting plate's centre hold and put the EPDM in place.
7 building screws (B) are placed into each profile top.
Attach the wire control (I) with a washer (G) and nut (H).

Installation of wire corner

Install a self-adhesive EPDM (C) under the mounting plate so that it covers the screw holes.
Cut the EPDM (C) as needed.

Install carriage bolt (E) and put the EPDM (D) in place.

11 building screws (B) are placed into the outer profile top.
1 building screw (B) is placed into profile top at the inside of the corner.
1 building screw (B) at each of the closest profile tops on the outside.



The wire corner is installed in accordance with installation instruction **M-291.**

***A**= End bracket, **B**= Building screws with washer 19 x 6.3 mm A2, **C**= EPDM self-attaching, **D**= EPDM 60 x 50, **E**= Carriage bolt M10 x 32 mm A2, **F**= EPDM 145 x 38, **G**= Washer 10.5 mm A2, **H**= Nut M10 A2, **I**= Wire control*

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CWL Safety System

Bracket Folded Roof

M-286 1901 GB

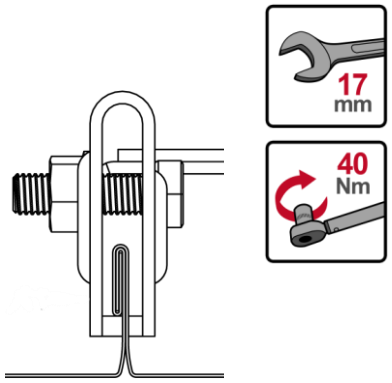
Brackets for safety wires on double-folded flat roofs

Installed on steel sheet metal min 0.6 mm, aluminium min 0.7 mm and zinc min 0.6 mm.

Install wires as shown in installation instruction **M-283**.

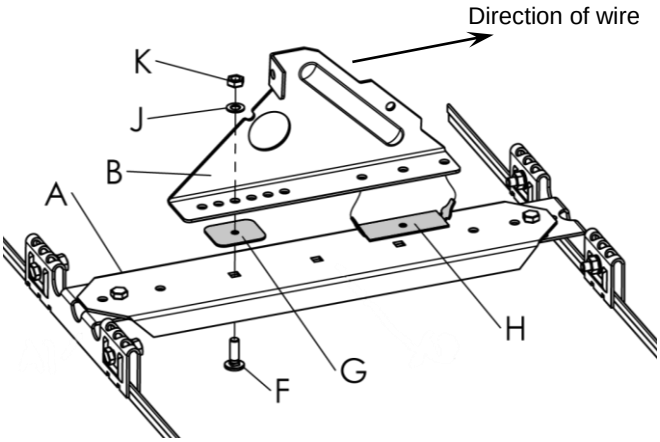
Place the carriage bolt (F) into the installation holes on the bracket (A). Install the EPDM (G) at the carriage bolt (F).

The placement of the bracket (A) is determined by the length of the wire. Install the bracket (A) over the standing seams.

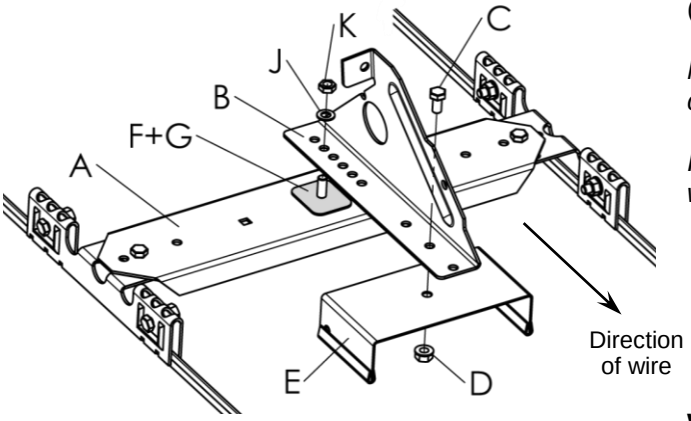


Make sure that the tabs on the fold mount grip on under the edge of the seam. **Tighten to a torque of 40 Nm.**

End bracket is installed onto the bracket

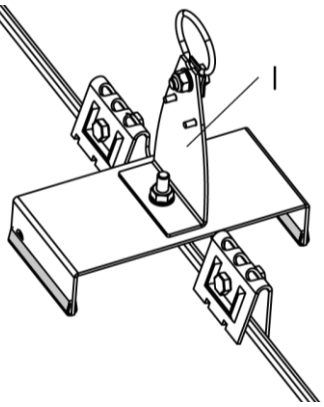


Install EPDM (H) under the end bracket (B). Install the end bracket (B) at the carriage bolt (F) with a washer (J) and nut (K).



When installing parallel with the folds, the end bracket (B) is supplemented with an anchor plate (E). Install with screw (C) and flange nut (D). Use bolt kit, item no. 420009P.

Wire controllers are installed between end brackets



Wire controller (I) shall be installed onto the fold min 200 mm from the wire extension.

Recommended distance between the end brackets (B) and the wire controllers (I) is 5 m.

Note that the distance between the wire controls (I) can be chosen for a maximum of 10 m.

In this arrangement, however, there is a risk that the wire will go slack and get stuck in snow and ice.

Wire Corner, see Installation Instruction **M-291**. Install anchor plate (E),where the corner bracket angles out from the mount(A).

***A**= Bracket, double-folded sheet metal roof, **B**= End bracket **C**= Screw hot galv. M10 x 20, **D**= Flange nut hot galv. M10, **E**= Anchor plate with clip strip, **F**= Carriage bolt, stainless steel M10 x 32 A2, **G**= EPDM 60 x 50, **H**= EPDM 100 x 40, **I**= Wire control, **J**= Washer, stainless steel 10.5 mm A2, **K**= Nut, stainless steel M10 A2*

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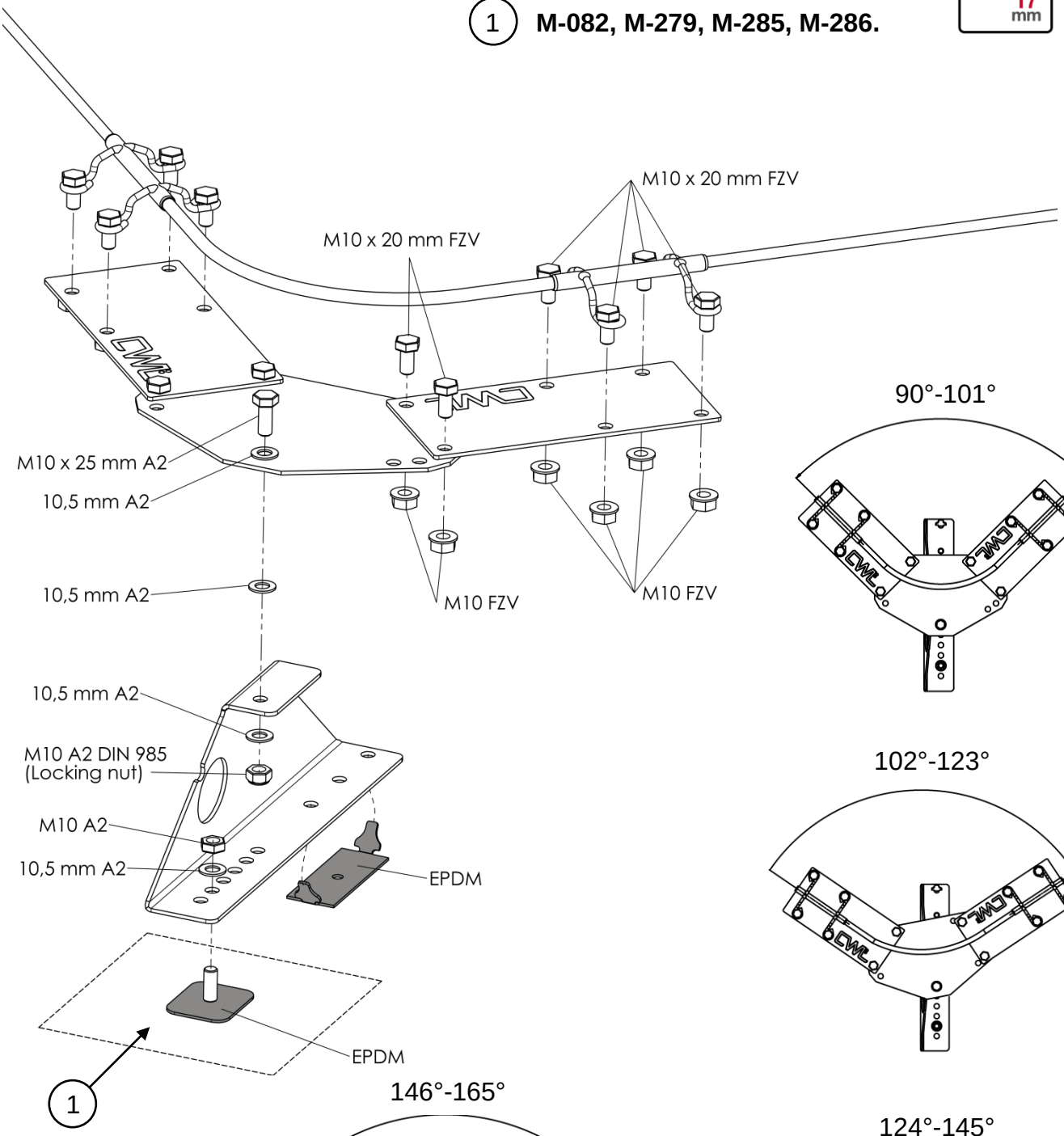
CWL Safety System

∠ 15°- 90°

M-291 1811 EU

17 mm

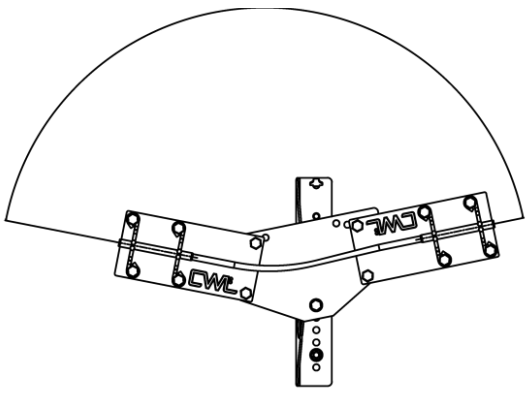
(1) **M-082, M-279, M-285, M-286.**



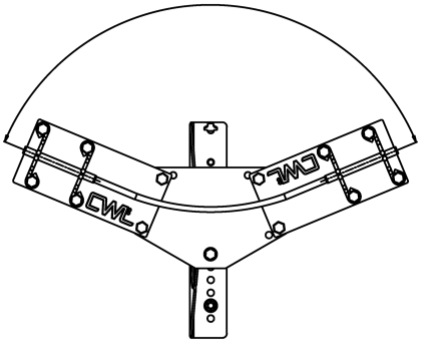
90°-101°

102°-123°

146°-165°



124°-145°



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ROOF SAFETY MORA SWEDEN

Guard Rail

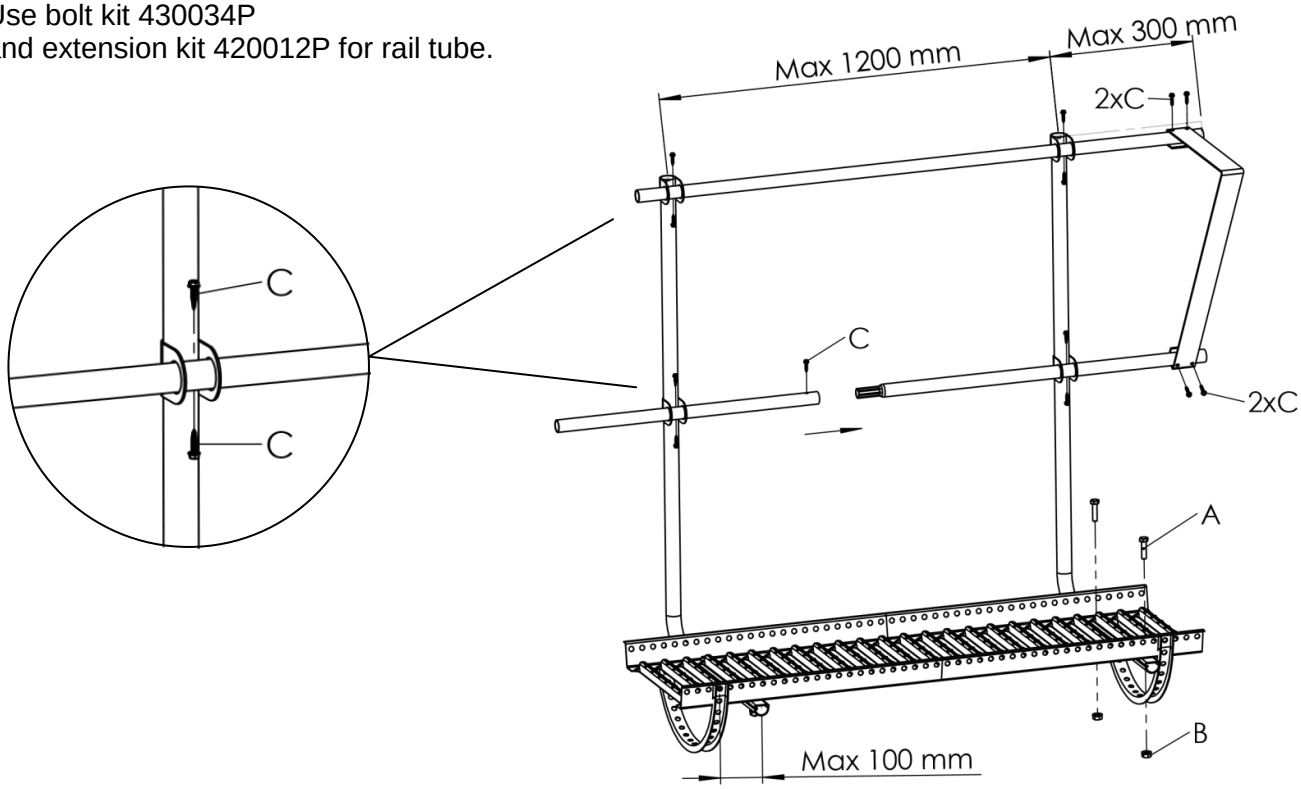
Walkway and Roof Ladder

M-294 1804 GB

Guard rail for walkway

The rail posts are installed in connection with the bridge brackets. Two self-tapping screws (C) are installed on the rail tube at the first and last post per continuous length.

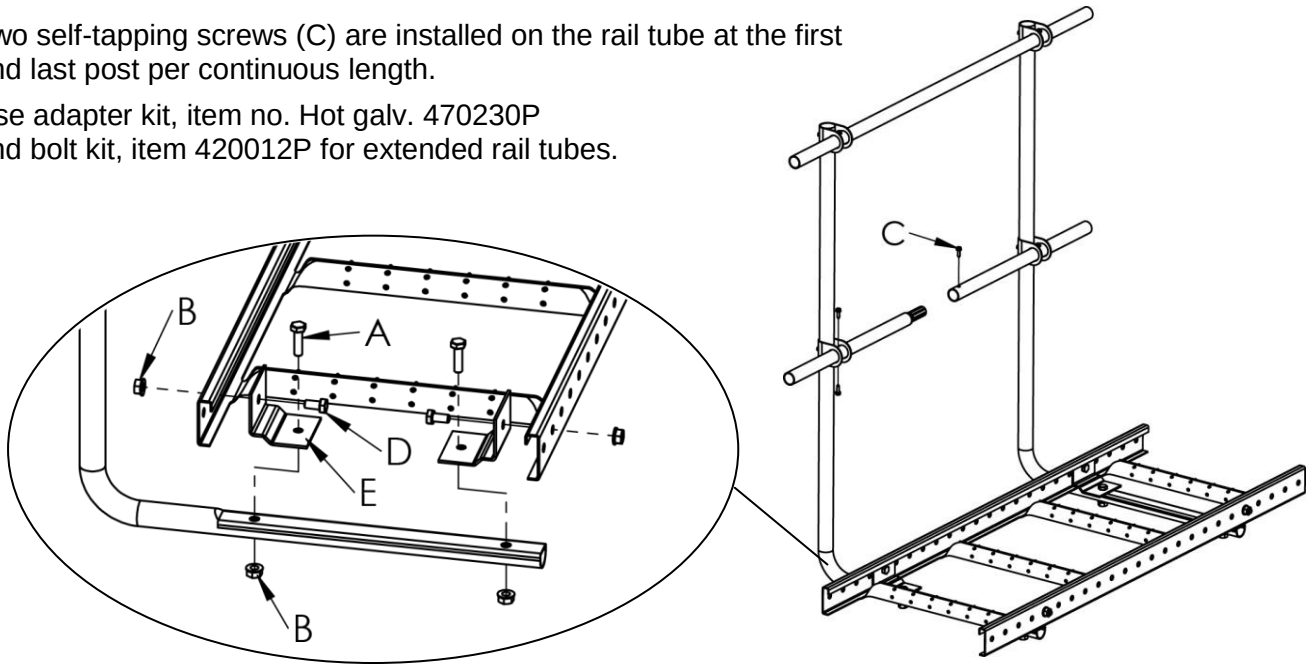
Use bolt kit 430034P
and extension kit 420012P for rail tube.



Guard rail for roof ladder in accordance with M-303.

Two self-tapping screws (C) are installed on the rail tube at the first and last post per continuous length.

Use adapter kit, item no. Hot galv. 470230P
and bolt kit, item 420012P for extended rail tubes.



***A**= Screw hot galv. M10 x 35, **B**= Flange nut hot galv. M10, **C**= Self-tapping stainless steel screw 20 x 5.5 mm, **D**= EPDM, **E**= Adapter*

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ROOF SAFETY MORA SWEDEN

Foldable Landing

For façade ladders longer than 8 m

M-295 1805 GB

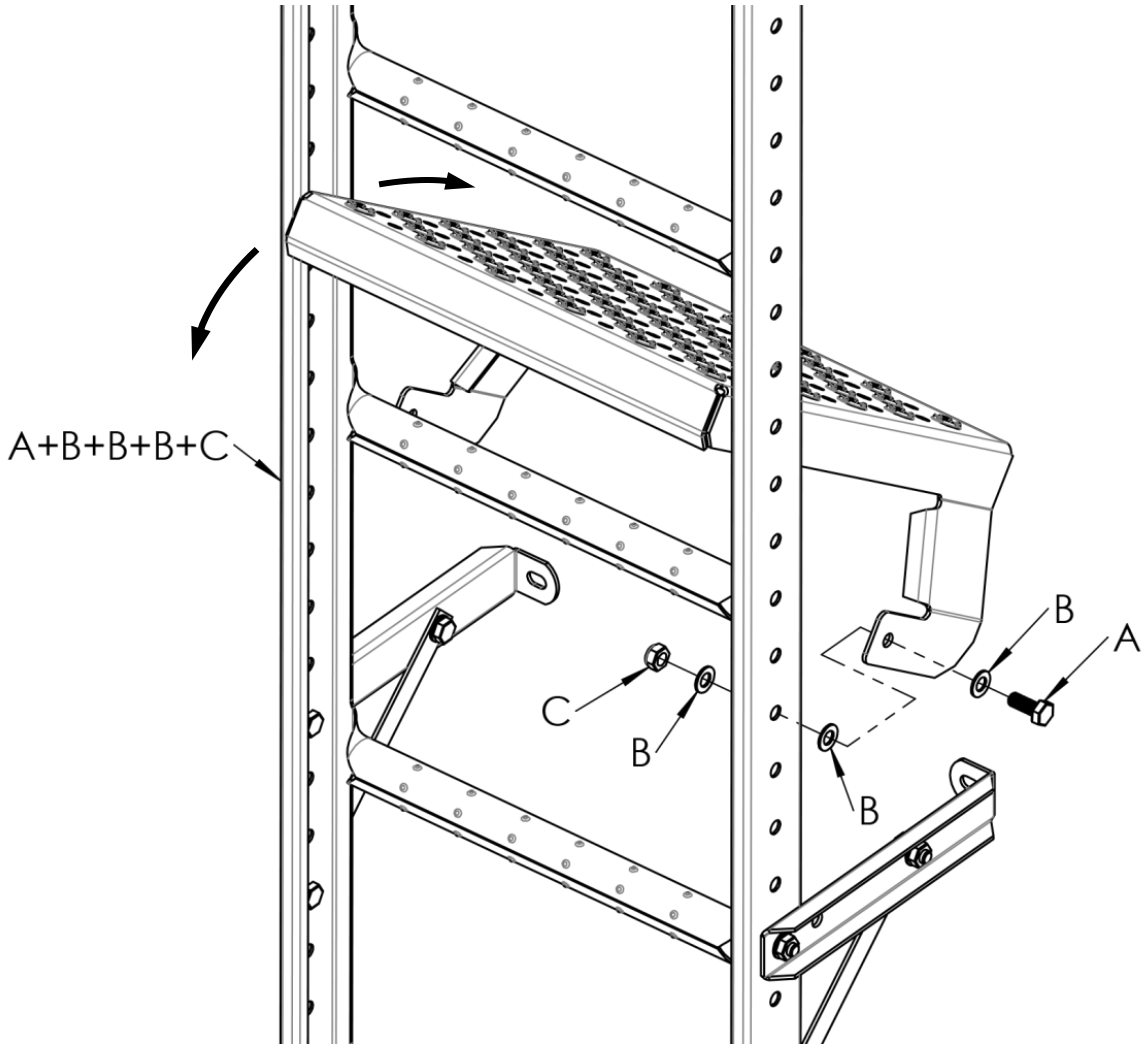
17 mm

Foldable landing for façade ladder according to M-302

For increased safety on long ladders, they should be furnished with landings.
The distance between landings should be a maximum of 6 metres.

Install the landing on each side of the ladder with a screw (A), washers (3 x B) and a locking nut (C).
One washer must be installed on each side between the landing and the outside of the ladder.
Tighten fully and then loosen the locking nut (C) by one half-turn.

Choose a hole on the side of the ladder so that the landing ends up immediately over a ladder rung when it is folded out. The landing must be able to be folded out and in without contacting the rung above.



***A**= Screw A2 M10 x 25, **B**= Washer A2 10.5 mm, **C**= Locking nut A2 M10*

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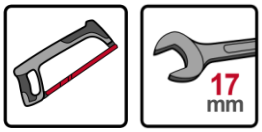
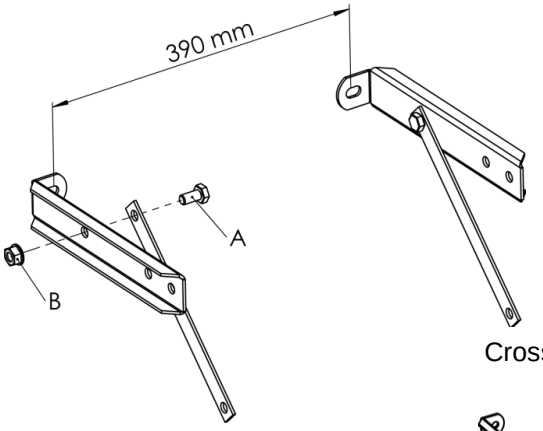
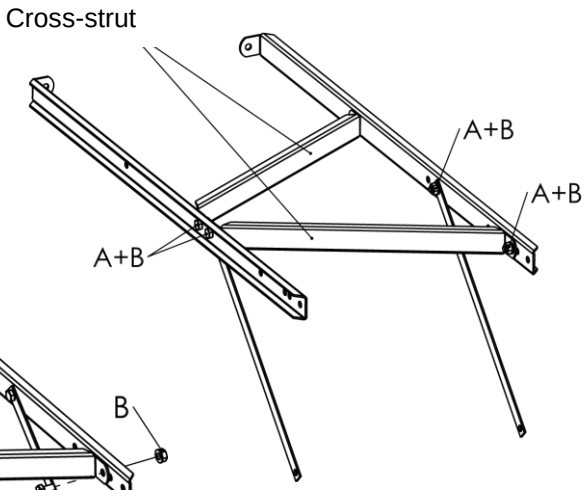
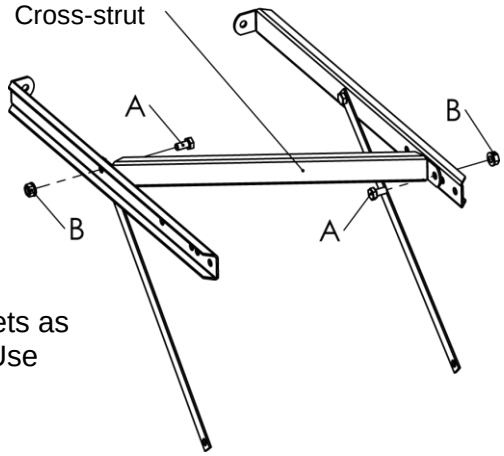
FAÇADE LADDER

M-302 1903 GB









Install the uppermost pair of brackets as close to the roof foot as possible. Use what fasteners are required by the façade.

When installing on sheet metal or wooden façades, a mounting plate can be used; see Installation Instruction **M-130**.

On brackets measuring 600 mm, one cross-strut must be installed.

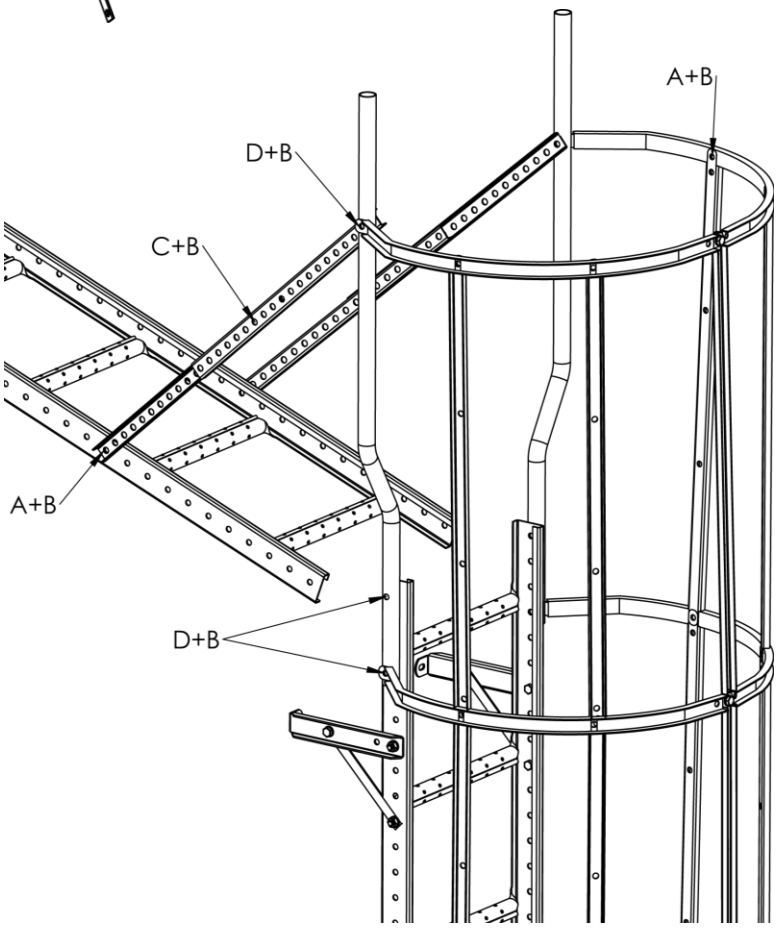
On brackets measuring 800 mm and 1000 mm, two cross-struts must be installed.

Install the ladder at the uppermost pair of brackets, the uppermost rung shall be approximately 30 mm above the roof gutter or roof edge.

Ladders can be extended using extension kit 470285P.

Max c-c distance between brackets 2400 mm.

- The handrail shall be secured with a bracing kit in the roof or other permanently attached access device.



***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Screw hot galv. M10 x 35, **D**= Screw hot galv. M10 x 50*

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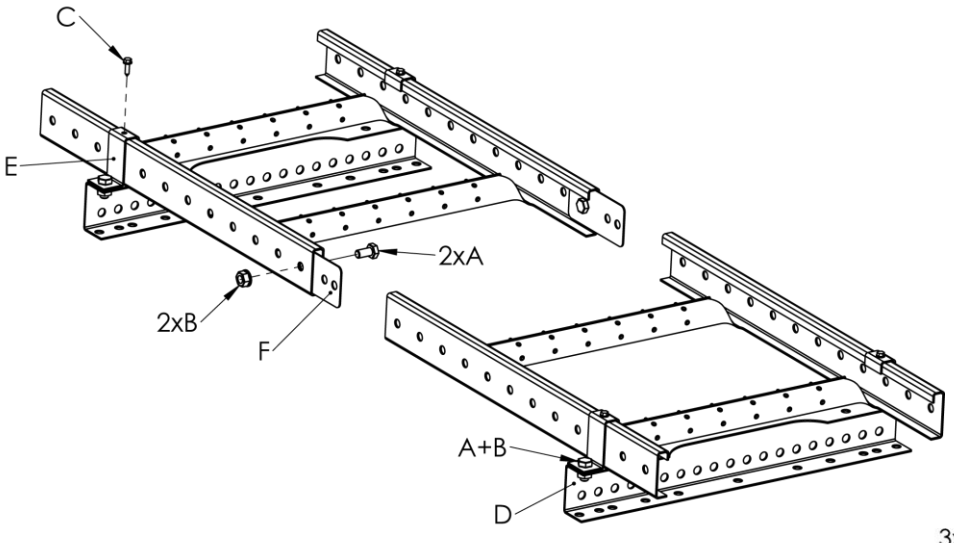
ROOF SAFETY MORA SWEDEN

Roof Ladder
and Walkway on Pitched Roofs

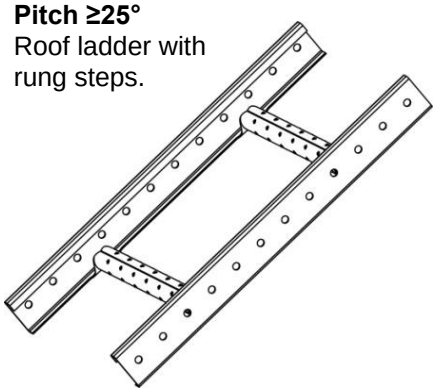
M-303 1903 GB

Roof ladder, approved from 10° pitch

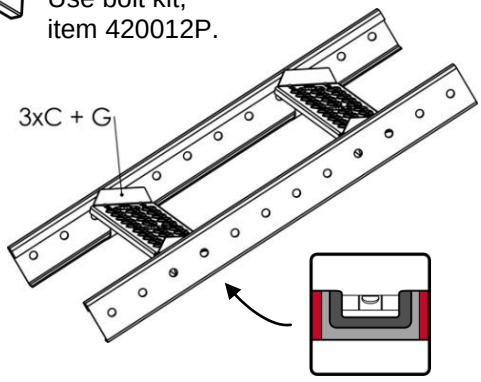
C-C distance for brackets is a max of 1700 mm.
The ladders protrusion from brackets is a max of 200 mm.
Use screw kit, item no. 470260P and
extension kit item hot galv. 470285P



Pitch ≥25°
Roof ladder with rung steps.



Pitch 10-45°
Roof ladder with steps.
The tread must not deviate more than 3° from horizontal.
Use bolt kit,
item 420012P.

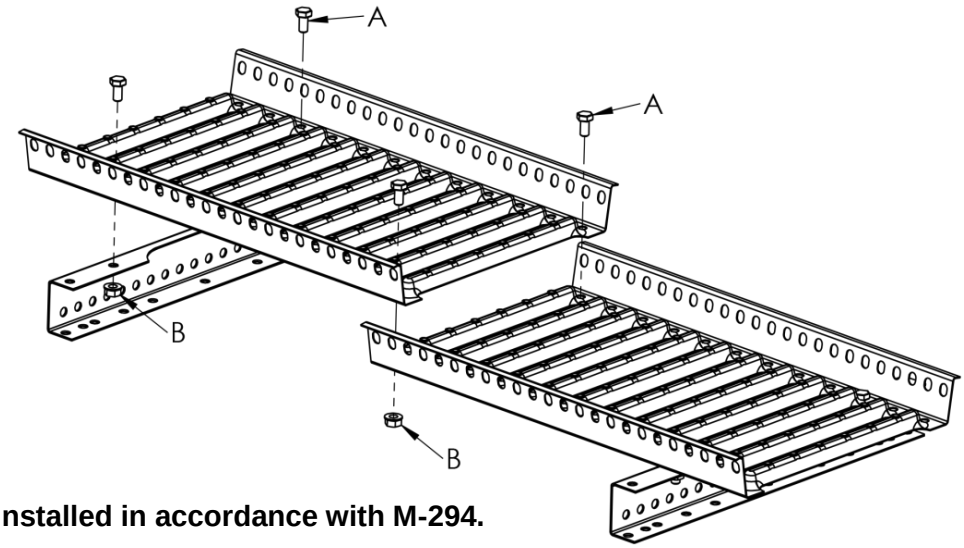


Roof attachment

Bitumen membrane and flat surfaces	**M-085**
Tiled roof	**M-201**
Sheet metal roof	**M-202**

Walkway on a pitch, approved for up to 15° pitch.

C-C distance for brackets is a max of 1200 mm. The walkways protrusion from brackets is a max of 200 mm.
Use screw kit, item no. 420009P upon installation and extension.
At least 2 brackets are installed on each side of the extension.



Guard rail installed in accordance with M-294.

__A__= Screw hot galv. M10 x 20, __B__= Flange nut M10 hot galv, __C__= Self-tapping stainless screw 20 x 5.5 mm, __D__= Bracket, __E__= Mounting plate, __F__= Extension, __G__= Step

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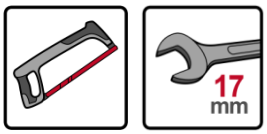
CWL
ROOF SAFETY MORA SWEDEN

CHIMNEY STRIP

INCLUDING ACCESSORIES

M-304 1903 GB

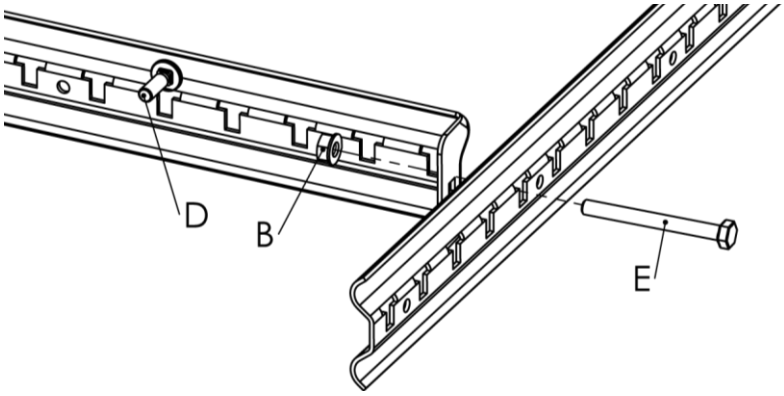


Chimney strip for the installation of steps, walkways and accessories from CW Lundberg

Place one of the loops of the chimney strip against a suitable hole in the next chimney strip, leave space so that you can tighten it. In order to extend the chimney strip, they can be overlapped onto each other. In that case, cut off the loop at the overlap. Once the chimney strip has been fitted onto the chimney, tighten the screw joints.

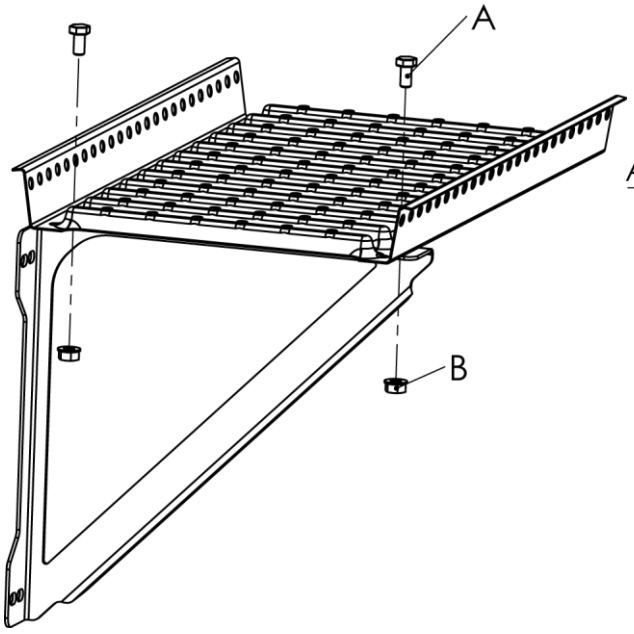
Cut away any protrusion. Place the carriage bolts (D) in the appropriate perforation for each product.

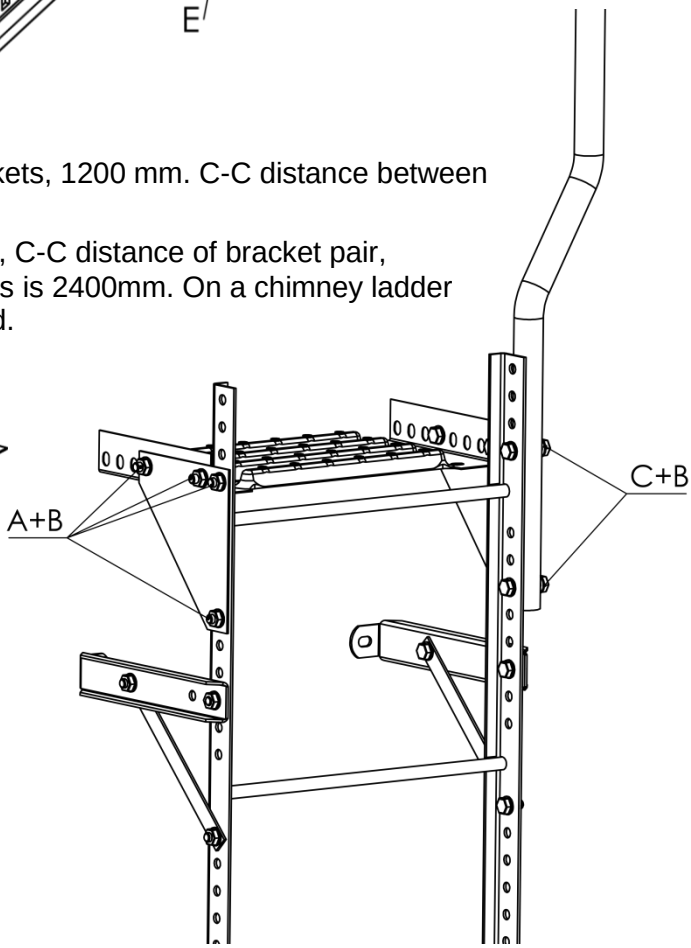
For increased security, there should always be two sets of the chimney strips installed per chimney.



Installation of walkway max C-C distance of brackets, 1200 mm. C-C distance between the chimney strips is 320 mm.

Installation of chimney ladder according to **M-074**, C-C distance of bracket pair, 350 mm. C-C distance between the chimney strips is 2400mm. On a chimney ladder without a backguard, only one handrail is installed.





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When cutting products, the cut surfaces must be coated with rust-proof paint.

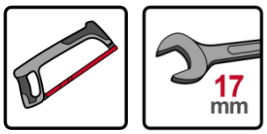
***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Screw hot galv. M10 x 50,*
***D**= Carriage bold with flat head A2 M10 x 32, **E**= Screw hot galv. M10 x 100*

ROOF SAFETY MORA SWEDEN

CHIMNEY STRIP

INCLUDING ACCESSORIES

M-305 1903 GB

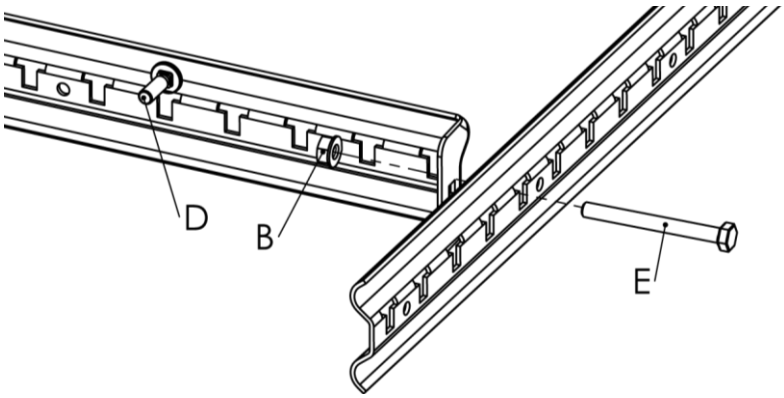


Chimney strip for the installation of steps, walkways and accessories from CW Lundberg

Place one of the loops of the chimney strip against a suitable hole in the next chimney strip, leave space so that you can tighten it. In order to extend the chimney strip, they can be overlapped onto each other. In that case, cut off the loop at the overlap. Once the chimney strip has been fitted onto the chimney, tighten the screw joints.

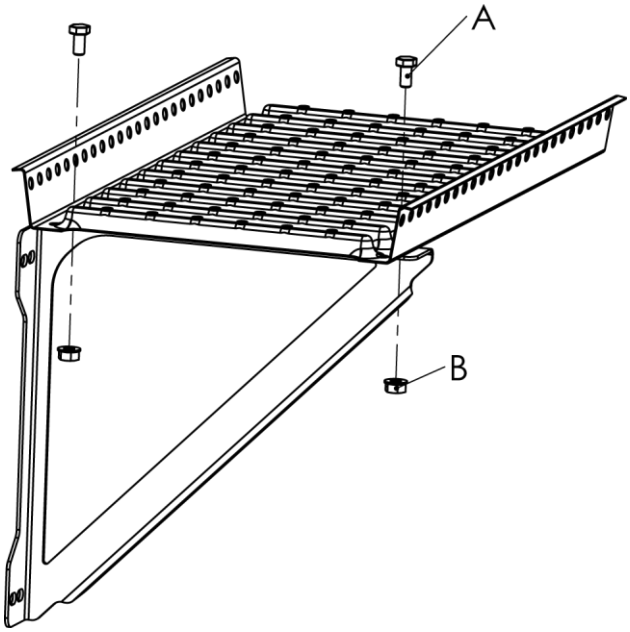
Cut away any protrusion. Place the carriage bolts (D) in the appropriate perforation for each product.

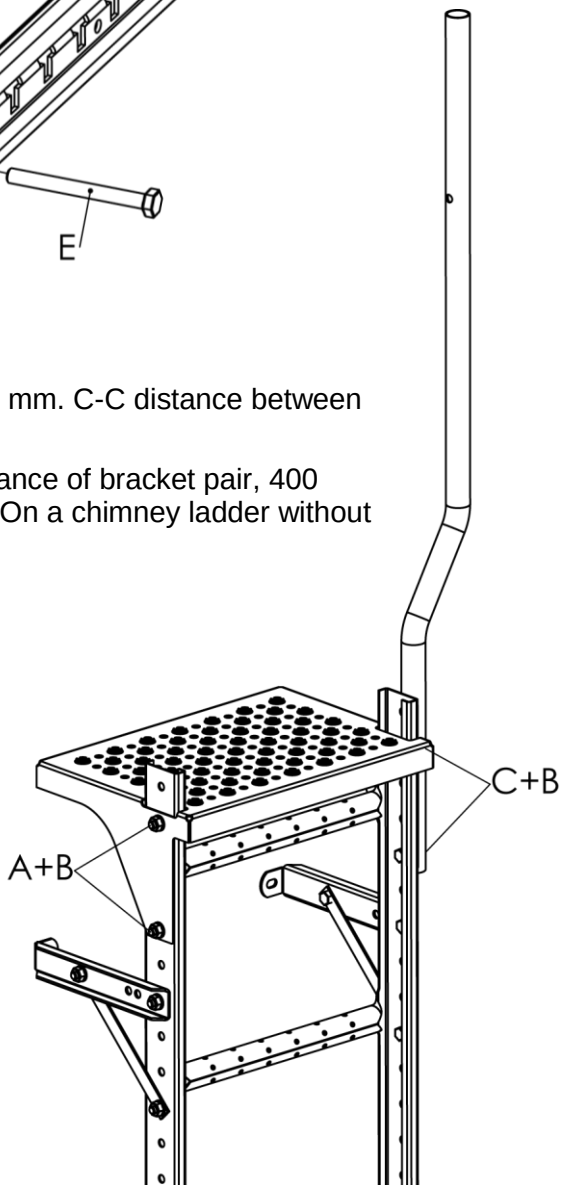
For increased security, there should always be two sets of the chimney strips installed per chimney.



Installation of walkway max C-C distance of brackets, 1200 mm. C-C distance between the chimney strips is 320 mm.

Installation of chimney ladder according to **M-302**, C-C distance of bracket pair, 400 mm. C-C distance between the chimney strips is 2400mm. On a chimney ladder without a backguard, only one handrail is installed.





***A**= Screw hot galv. M10 x 20, **B**= Flange nut hot galv. M10, **C**= Screw hot galv. M10 x 50, **D**= Carriage bold with flat head A2 M10 x 32, **E**= Screw hot galv. M10 x 100*

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ROOF SAFETY MORA SWEDEN

Item Registry

Installation Instructions

M-001

Slipguard, roof tiles/prof. sheet metal incl. screws	470101
Slipguard, smooth roof l incl. screws	470103
Mounting plate, waterproofing surface	410115
Slipguard folded sheet metal roof	470300
Slipguard, roof ladder	470110
Bolt kit M10 x 20 6-pack	420009P

M-034

Roof step 2-bulge conc. C-C 300	450020
Roof step 2-bulge clay / 1-bulge conc. C-C 240	450022
Roof step 1-bulge clay C-C 220	450023
Flange tool roof step	450032

M-074

Bracket kit façade ladder A-220	410106
Bracket kit façade ladder A-400	410109
Bracket kit façade ladder A-500	410232
Bracket kit façade ladder A-600	410037
Bracket kit façade ladder A-800	410040
Bracket kit façade ladder A-1000	410041
Façade ladder 1.2 m	470000
Façade ladder 2.4 m	470001
Extension kit, façade ladder	470011P
Handrail for façade ladder	490002
Bolts for handrails	490031P
Bracing kit for handrail	490035
Back guard brace façade ladder	490003
Bolt kit, back guard brace	490017P
Bracing kit, back guard 900 mm	490004

M-076

Mounting plate, waterproofing surface	410115

M-081

Batten step combi 5 pcs	450015
Flange tool batten step	450032

M-082

Mounting plate, waterproofing surface	410115

M-085

Bracket smooth roof short	420060
Bolt kit bracket smooth roof 5 pcs	410126P
Bracket, walkway, smooth roof <18°	430008
Bolt kit bracket walkway smooth roof <18º 2 pcs	410226P
All-round bracket, roof ladder/walkway on pitched roofs	470121
Bolt kit all-round bracket mounting plate	410148P
Anchor loop, smooth roof	420039
Anchor loop, smooth roof, signal red	420239
Bolt kit for anchor loop 5 pcs	410132P

M-124

Bracket, profiled sheet metal	410094
Bolt kit bracket prof sheet excl EPDM 3 pcs	410024P
EPDM, bracket, profiled sheet metal	410173
Fold mount	410174

M-130

Mounting plate façade ladder	410002
Bolt kit mounting plate sheet metal façade 2 pcs	410185P
Bolt kit mounting plate wood façade 2 pcs	410186P

M-131

Step bracket set, all-round brac, prof. sh metal	410168P
Extension rail, all-round bracket	470009
All-round bracket, roof ladder/walkway on pitched roofs	470121

M-132

Mounting plate, shingle	410113

M-133

Slate, sheet metal walkway/roof ridge	410139
Slate, sheet metal ladder	410164
Bolts for anchor plate	410017P

M-201

All-round bracket, roof ladder/walkway on pitched roofs	470121
Strip bracket, clay/concrete roofing tiles	410020
Strip bracket, smooth tiles	410202
Bolts for strip bracket	410023P
Batten bracket, simplified roof underlay	410157
Adapter kit, batten bracket roof ladder	410170P
Bolt kit batten bracket 2 pcs	410166P

M-202

All-round bracket, roof ladder/walkway on pitched roofs	470121
Step bracket set, all-round brac, prof. sheet metal	410168P
Fold mount, roof ladder/walkway on pitched roofs	410178

M-203

Walkway 1.2 m	430012
Walkway 2.4 m	430000
Upper section, bridge bracket	430010
Bolt kit M10 x 20 6-pack	420009P
Stanchion, guardrail walkway/roof ladder	430025
Bolt kit guardrail walkway/roof ladder	430034P
Rail tube 2.4 m	420014
Bolt kit self-tapping screws 6 pcs	420012P
End brace, guardrail incl. screw	430021

M-204

Snow fence profiled sheet metal 2.345 m	420033
Snow fence profiled sheet metal 1.255 m	420038
Locking plate rail tube/profiled sheet metal	420010P
Rail 2.4 m	420014
Bolt kit self-tapping screws 6 pcs	420012P
Ice stop fence railing/grid	420053

M-205

Roof ladder 1.2 m	470002
Roof ladder 2.4 m	470003
Extension kit, roof ladder	470018P
Bolt kit M10 x 20 6-pack	420009P
Stanchion, guardrail walkway/roof ladder	430025
Bolt kit guardrail walkway/roof ladder	430034P
Adapter kit, guardrail roof ladder	470200P
Rail tube 2.4 m	420014
Bolt kit self-tapping screws 6 pcs	420012P
End brace, guardrail incl. screw	430021

M-213

Roof step profiled sheet metal	450050

M-217

Wire, walkway PRO	430217
Steel wire 8 mm A2	490108
CWL wire running PRO	490167
End bracket, walkway PRO	490103
Back plate, end bracket	490106
Wire controller, walkway PRO	490104
Protective plate, walkway PRO	490114
Bolt kit M10 x 25 A2 4 pcs	490229P

M-219

Walkway, corner 90° 2 x 2.4 m	430094

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M-220

Flag with snow-depth indication	480960
Bolt kit flag 5 pcs	480670P

M-222

Fold mount	410174
Fold mount, pre-fabricated panel roof	410290
Bracket, profiled sheet metal	410094
Bolt kit bracket prof sheet excl EPDM 3 pcs	410024P
EPDM, bracket, profiled sheet metal	410173

M-223

Anchor plate, load-bearing roof underlay	410003
Bolts for anchor plate	410017P
Batten bracket, simplified roof underlay	410157
Bolt kit batten bracket 2 pcs	410166P
Bracket, concrete tiles	420056
Bracket, clay tiles	420057

M-224

Bracket snowstopper tube prof sheet/smooth roof	420007
Bolt kit bracket snowstopper on profiled sheet metal roof 5 pcs	420193P
Bolt kit bracket snowstopper smooth roof 5 pcs	420170P
Rail tube 2.4 m	420014
Bolt kit self-tapping screws 6 pcs	420012P

M-225

Lockable hatch, back guard incl. lock	490052

M-226

Ice stop, gutter valley incl. screws grey	420052

M-228

Snowstopper, rake 1.290 m	420210
Fold mount, snowstopper rake	410193
Bolt kit M10 x 20 6-pack	420009P
Extension kit, roof ladder	470018P

M-229

Raising smooth roof X mm	420089
Raising smooth roof 40 mm	420089
Raising smooth roof 50 mm	420091
Bolt kit bracket smooth roof 5 pcs	410126P
Bolt kit M10 x 20 6-pack	420009P

M-235

Fold mount diagonal fold	410251

M-236

Stanchion guard rail smooth roof 1.1 m	430030
Bolt kit for anchor loop 5 pcs	410132P
Rail tube 2.4 m	420014
Bolt kit self-tapping screws 6 pcs	420012P
End brace, guardrail incl. screw	430021

M-237

Landing façade ladder complete	490019

M-244

Safety rail 300 1.2 m	490060
Safety rail 1200 1.2 m	490065
Bracket kit, safety rail	490061P
Extension kit, safety rail	490063P
Runner, safety rail	490064
End plug kit, safety rail	490061P
Strut mount	490141
Bolt kit M10 x 20 6-pack	420009P

M-245

Valley plate 180 mm	410274
Bolt kit M10 x 20 6-pack	420009P

M-251

Basic kit, rail for roof hatch, 3 sides	440060
Rail tube 2.4 m	420014
Stanchion, rail for roof hatch, complete	440070
Mounting kit, skylight	440062
Bolt kit self-tapping screws 6 pcs	420012P

M-255

Wire, walkway LIGHT	430216
Steel wire 8 mm A2	490108
Quick-link stainless dia. 10 mm	490117
End bracket, walkway light	490109
Backing plate, end bracket	490106
Wire control, walkway LIGHT	490130
Bolt kit M10 x 25 A2 4 pcs	490130

M-257

Support, roof ladder folded/prefab. panel roof	470090
Bolt kit support roof ladder	470091P

M-260

CWL Grapple roofing tiles 50 pcs	450030P

M-261

Wire, ridge rail PRO	430220
Assembly kit, wire ridge roof	430210P
Wire controller, ridge rail PRO	490080
CWL wire runner PRO	490167
Quick-link stainless steel dia. 10 mm	490117

M-264

Runner, safety rail	490064

M-270

Fold mount, snow stopper rake	410193
Solar panel bracket smooth roof/prof. sheet metal	410009
Bolt kit bracket snow stopper on profiled sheet metal roof 5 pcs	420193P

M-271

Foot plate tongue-in-groove underlay	410003
Batten bracket, simplified roof underlay	410157
Solar panel bracket concrete tiles	410006
Solar panel bracket clay tiles	410007
Bolt kit batten bracket 2 pcs	410166P

M-273

Transition safety rail façade to roof	490174

Other items see M-244

M-275

Wire corner installed on wire	490218
Mounting plate, wire corner PRO, walkway	490190
Bolt kit M10 x 20 6 pcs	420009P

M-279

Mounting plate, waterproofing membrane	410115

M-280

Ice grip incl. anti-slip granulates	410076

M-282

Wire corner installed on wire	490218
Mounting plate wire corner PRO ridge rail	490135
Bolt kit wire corner PRO ridge rail	490137P

M-283

End bracket kit, standalone wire	430240
CWL wire runner PRO	490167
Protective plate end bracket PRO	490196
Protective plate wire controller PRO	490198

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Wire M-F 2 m	430243
Wire M-F 3 m	430244
Wire M-F 5 m	430245
Wire M-F 9 m	430246
Wire M-F 14 m	430247
Wire M-F 20 m	430248
Wire M-F 30 m	430249

M-284

End bracket kit, standalone wire	430240
Wire controller smooth roof PRO	430242

M-285

End bracket kit, standalone wire	430240
Mounting plate wire, profiled sheet metal roof	490208
Bolt kit, wire mount profiled sheet metal 2 pcs	490204P
Wire controller profiled sheet metal PRO	430242
Wire controller smooth roof PRO	430242

M-286

End bracket, standalone wire	430240
Mount for wire, double-folded	490206
Wire controller, folded profiled sheet metal roof	490181
Support plate with clip edge	490210

M-291

Wire corner installed on wire	490218
Mounting kit, standalone wire corner	490224
Wire corner M-F 1+1 m	490226

SB-02

Chimney strip 1145 mm	490038
Bolt kit chimney strip 1 turn	490040P
Bolt kit chimney strip 2 extensions	490041P
Bracket kit façade ladder A-220	410091
Bracket, walkway chimney incl. screws	490015
Threaded pole A2 M10 x 250 with nut	480039
Threaded pole A2 M10 x 500 with nut	480040
Threaded pole A2 M10 x 1000 with nut	480041

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On our web page, we have gathered all of our products, as well as installation instructions, films and the associated documentation in order to make it safe for you to be on the roof.

Use the Calculator - Calculate Material Consumption and Prices Directly on the Home Page.

CALCULATOR - CALCULATE YOUR ROOF

The brochures and the latest documentation are available on our home page for downloading and printout; alternatively, you can contact us and have them e-mailed/sent to you.

CWL0058 CWL0059 CWL0053 CWL0062

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