

# CARLISLE® product range: Installation Manual

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BY THE PROFESSIONALS, FOR THE PROFESSIONALS



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## Introduction

This installation manual will provide contractors with a quick refresher of the product training by CARLISLE® ACADEMY and/or directly on the construction site. Our manual shows step by step guide in easy to understand visual format. The adhesives / primers associated with the system must be used for joint and junction applications

Other local circumstances or material combinations that are not described may potentially have an impact on functionality. Variants that deviate from the installation instructions and special solutions therefore require prior consultation with our Technical Department. Both the information and the product descriptions contained in this publication have been compiled to the best of our knowledge and belief based on our prior experiences and tests. They form the basis of all the solutions described. Claims for compensation may not be derived from the contents of this publication We reserve the right to make technically reasonable changes to designs and ranges to meet our high quality and continuous advancement.



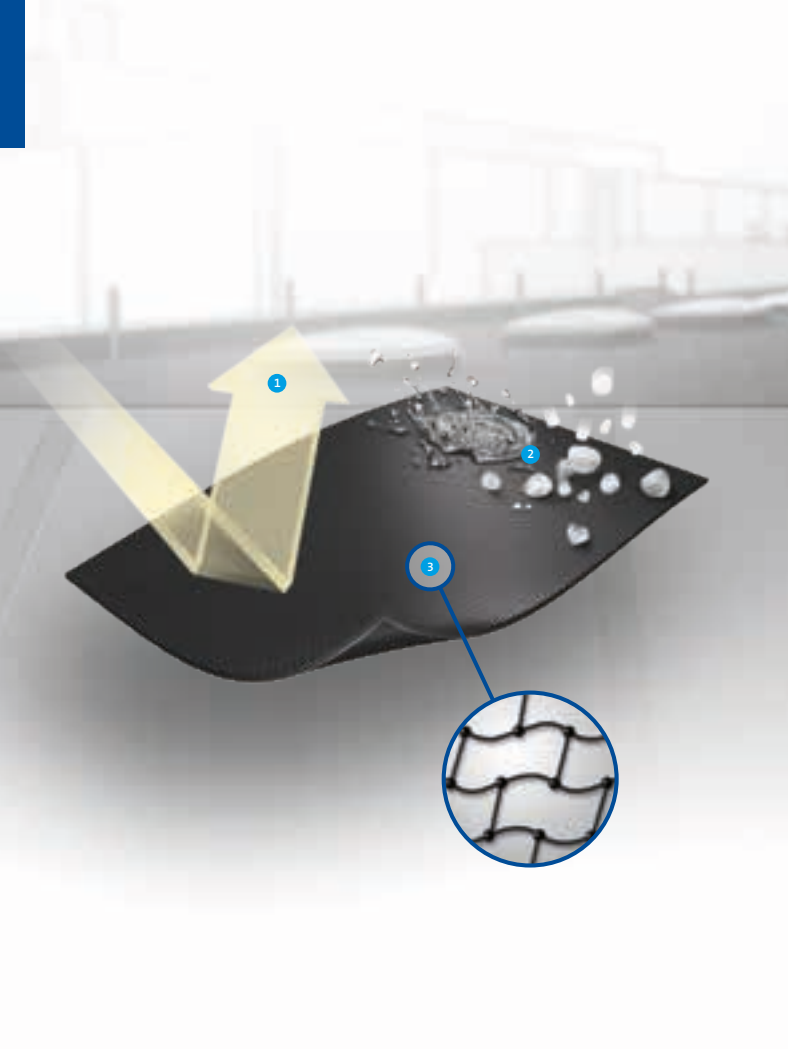
A selection of product and instllation videos are available on our YouTube channel:[https://www.youtube.com/channel/UCd4pUDk\\_lgdzsCPOYfHoqBw/videos](https://www.youtube.com/channel/UCd4pUDk_lgdzsCPOYfHoqBw/videos)



## EPDM – Waterproofing solutions for flat roofs

A waterproofing system has to withstand a great deal. Extreme weather conditions, as well as thermal and mechanical influences, lead to severe material movements and can quickly age conventional systems.

And it is here that the unique properties of the EPDM can be put to test. Indeed, the synthetic ethylene propylene diene monomer rubber has excellent material properties due to its molecular structure – and is unbeatable in terms of elasticity and resistance to ageing.



**1 Permanently resistant to**

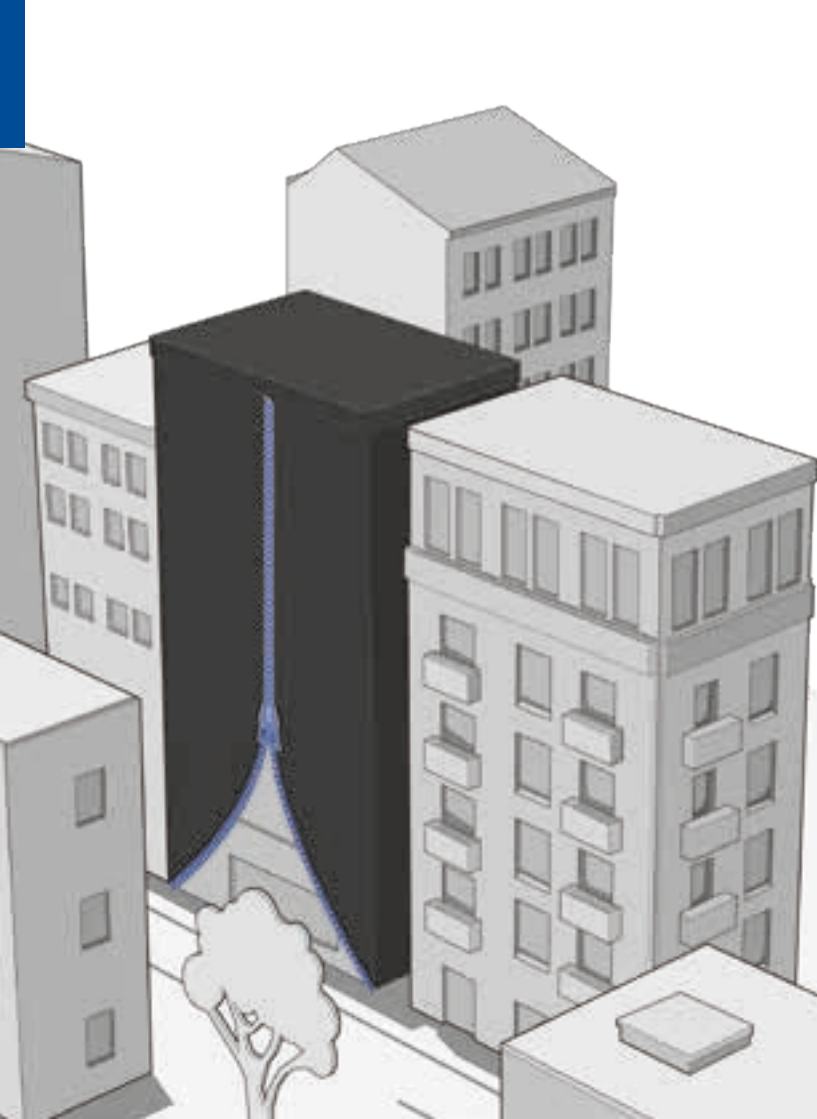
- UV radiation
- Ozone radiation

**2 A very high level of resistance to ageing and weatherability against:**

- Rain
- Hail, ice and snow
- High and low temperatures

**3 Fully networked molecular structure**

- Permanently elastic and highly flexible
- Ultimate elongation of more than 500%
- Flexible at low temperatures of down to -45°C
- Practically free from shrinkage
- Bitumen compatible
- Free from halogens and plasticisers
- Highly resistant to a range of chemicals



## About CARLISLE® CM EUROPE

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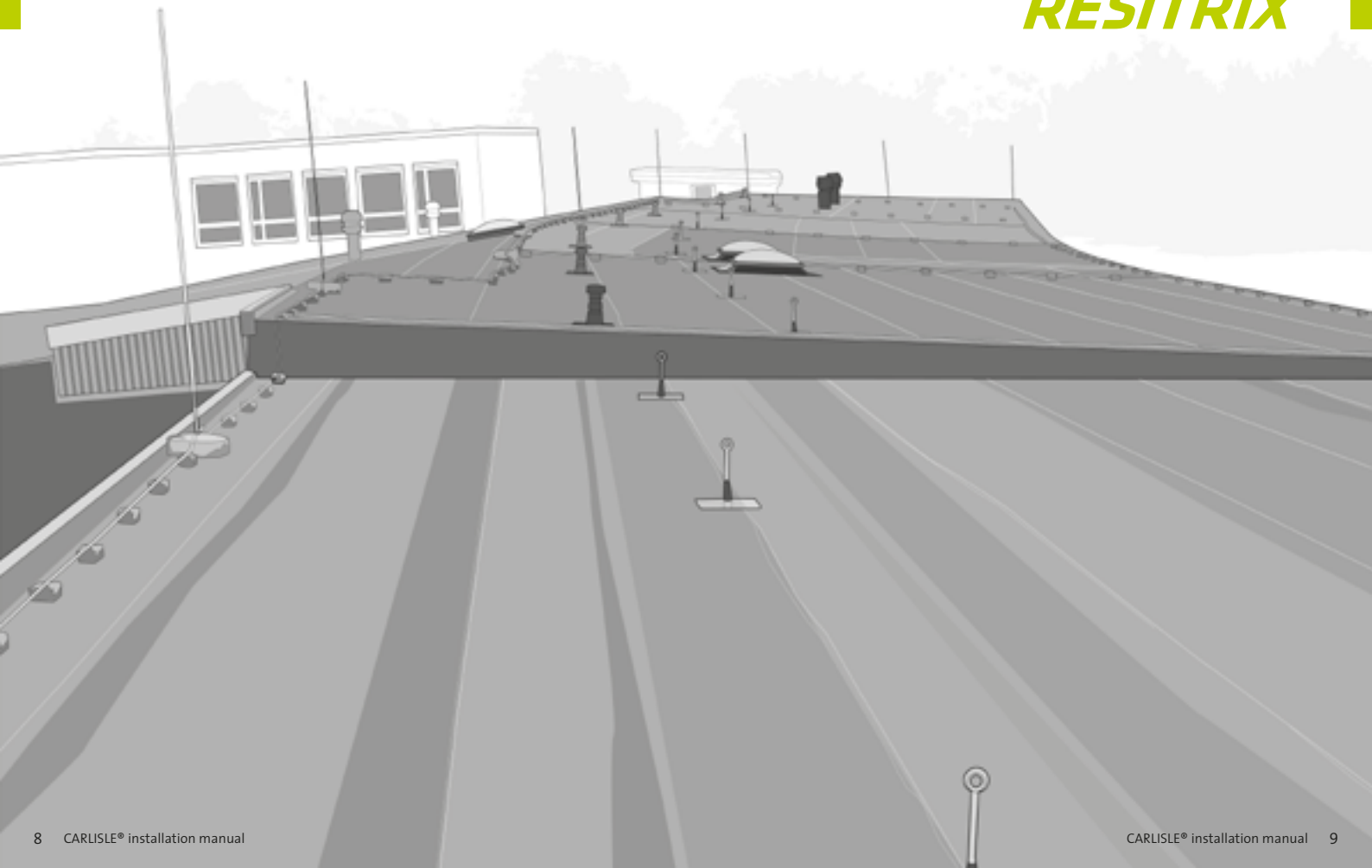
“Made in Europe” quality at home on the roofs of the world.  
Best in class quality trusted across the UK

RESITRIX®, HERTALAN® and ALUTRIX® are some of the innovative products included under the strong umbrella brand of CARLISLE® CM Europe and stand for decades of expertise in EPDM waterproofing solutions.

CARLISLE® CM Europe is part of the listed US corporation CARLISLE® Companies Incorporated and can look back on a long-standing tradition as Europe's market leader for high tech EPDM waterproofing products. Many of the European companies started out in the 19th century as rubber processing firms and are now established specialists for high tech elastomer products used in the waterproofing of flat roofs, façades and buildings.

With our 475 members of staff, every day we are committed to inspire our customers – with the best products, the best advice and the best training.

# ***RESITRIX®***

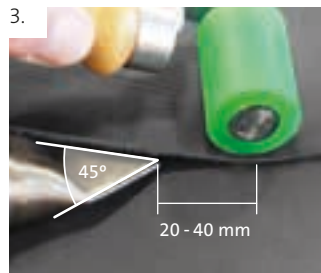




Choose a welding temperature between approx. 500°C (level 8) and max. 700°C (level 10). The ideal setting depends on the ambient temperature, the weather conditions and the quality of the substrate.



Round visible corners.



Guide the welding nozzle into the overlap at an angle of approx. 45°. The distance between the welding nozzle and the silicone pressure roller is approx. 20 to 40 mm.



During this process, run the roller parallel to the edge of the membrane (distance: approx. 2 mm).



A very clearly visible bead of bitumen measuring approx. 2 mm to 4 mm must escape at the edge of the membrane.



**A welding test should always be carried out. «**



Please set the welding temperature to approx. 620°C (maximum level).

Run the automatic welder's pressure roller precisely along the top edge of the membrane.



A bead of bitumen measuring approx. 2 – 4 mm must escape at the side and thus ensures that the welded seam is completely watertight.

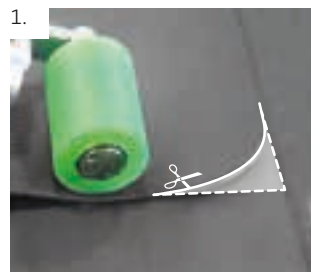


**A welding test should always be carried out.**

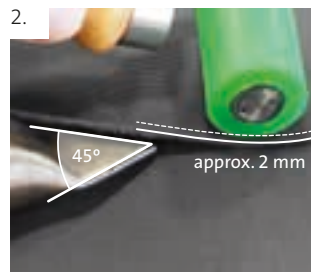
**If the welding process is interrupted, you must always start welding again from the previous weld end and continue welding from this precise point.**

The width of the pressure roller and the nozzle for the bonded variant and the variant with ballasting is 40 mm.

For the mechanically fixed variant, the relevant settings depend on the make selected:  
Leister / Steinel make:  
RESITRIX® = 80 mm welded lap (actual lap 150 mm minimum) «



Round all visible corners.



Guide the welding nozzle into the overlap at an angle of approx. 45°.

Run the silicone pressure roller parallel to the edge of the membrane (distance: approx. 2 mm).




Apply extra pressure in the T-joint area so that 2 – 4 mm of bitumen is guaranteed to escape.

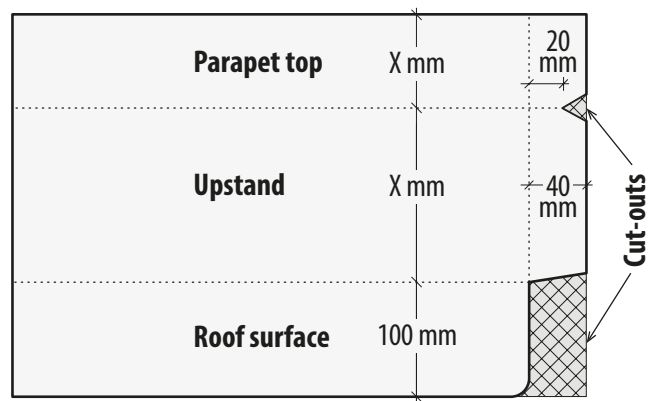


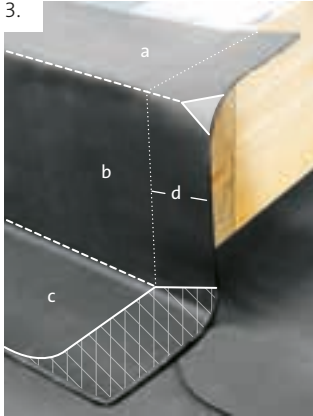
**Note:**

Only perform repeat rolling in the weld direction «

1.  Guide the base membrane to the upstand.

2.  Carefully transfer the upstand dimensions onto the protective film on the rear using a folding ruler and a craft knife – see the image below.



3. 
  - a) Upstand parapet
  - b) Upstand height
  - c) Roof surface
  - d) Projection to the corner (40 mm)

4.  Cut 20 mm into the top projection (1.) and cut into the bottom projection as far as the corner (2.). »





Remove the protective film on the rear one section at a time (from area a to d) and bond the roofing membrane to the upstand and parapet top.



Form an inverted pleat  
1. Cover the top projection  
2. Cover the side projection to the inverted pleat and weld with hot air.

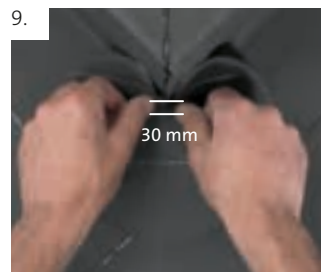
Once the steps 1. & 2. are complete, weld the base of the membrane to the field area as shown in the picture.



Apply the second connecting strip and make a mitre cut on the upstand parapet.



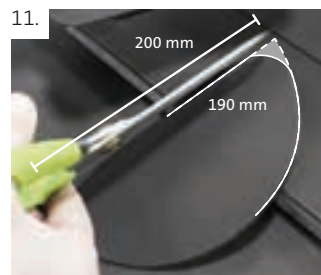
Bond and weld the second connecting to the field area, and weld vertical lap. »



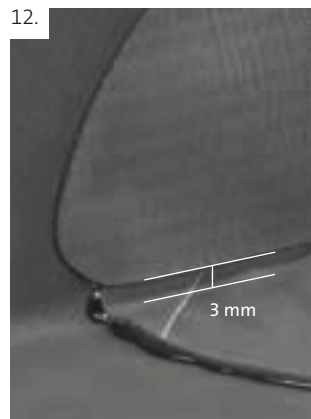
Attach the pre formed part (kidney shape) in the corner area without creating any creases; coverage in the corner area: 30 mm (the pre formed part can also be from a 200 mm circle cut from RESITRIX® SKW full bond).



Fully surface weld the stamped part.



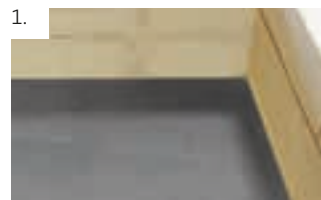
Cut a semicircle with a diameter of min. 200 mm; round the corners.



Attach the semicircle at a distance of 3 mm from the roof surface and fully surface-weld.



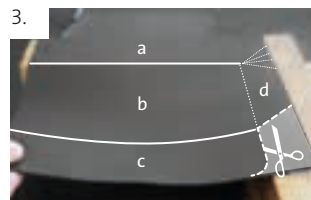
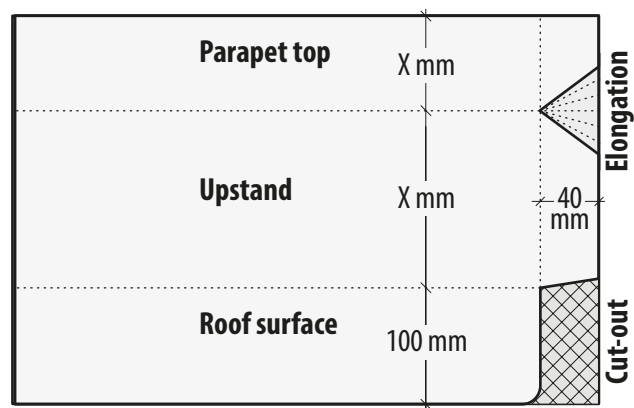
Finished outside corner. «



1. Guide the base membrane to the upstand.



2. Carefully transfer the upstand unrolling dimensions onto the protective film on the rear using a chalk line and a craft knife – see the image below.



3. a) Upstand parapet  
b) Upstand height  
c) Roof surface  
d) Projection to the corner (40 mm)



4. Remove one section at a time (from point a to d), bond to the building structure and work into the corner with a pressure roller.



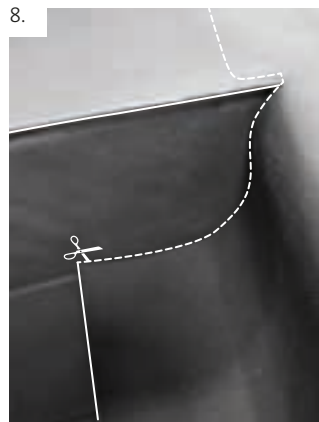
5. Remove excess material at the base point.



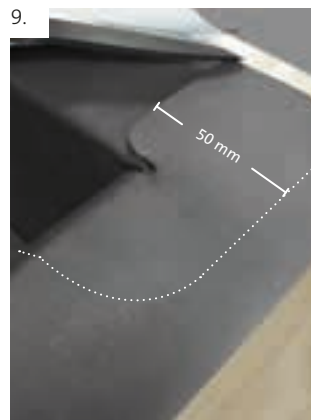
6. Stretch the transition from the vertical line to the upstand parapet. »



Completely laid first connecting strip.

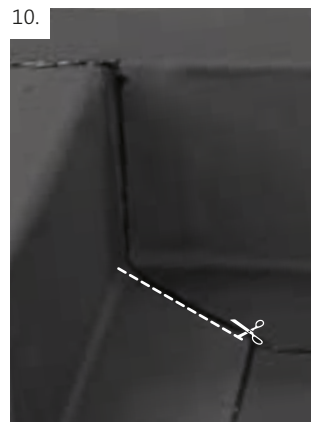


Cut and bond the second connecting strip.

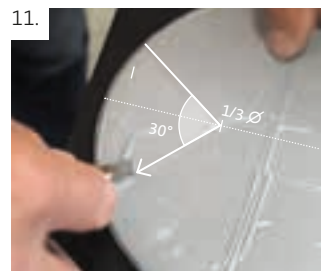


**Note:**

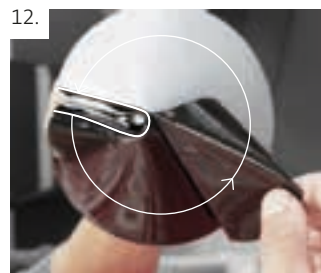
Ensure 50 mm seam coverage in the upstand parapet area.



Make a mitre cut in the roof surface area and then weld the second connecting strip. »



Carefully cut the circular stamped part (200 mm in diameter) into the rear of the film according to the image on the left.



Then remove the film up to the inverted pleat area.



Attach the stamped part without creating any creases and fully surface-weld.



Remove the protective film in the inverted pleat area and weld it with hot air.

Fix the inverted pleat to the upstand using bitumen coating.



First of all, overstretch the moulded part (tongue) in the corner areas (top and bottom) (see shaded areas). Then place the tongue over the inverted pleat at a distance of 3 mm above the roof waterproofing membrane and fully surface weld.



Finished inside corner. «

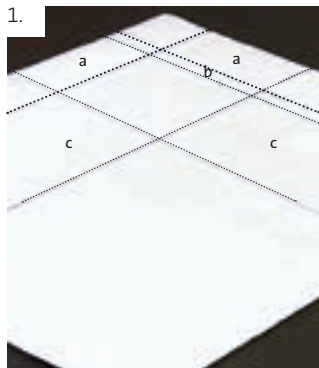
## RESITRIX® inside corner with inverted pleat



### General information:

Only work on this inside corner after receiving training from our Technical Department. This variant must be designed up to a maximum parapet height of 300 mm.

1.



Transfer the parapet dimensions

- a) Upstand parapet
- b) Upstand parapet + 20 mm
- c) Parapet height

to the protective film on the rear and then carefully cut into it with a craft knife.

2.



Fold the connecting strip according to the image (2.).

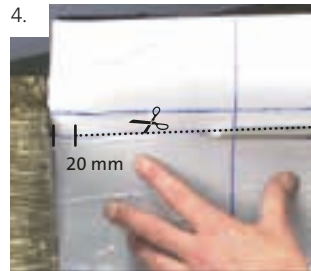
3.



Neatly place the connecting strip in the corner.

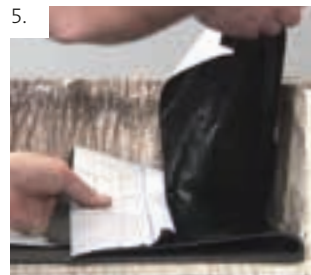
Remove the protective film on the underside and bond.

4.



Use scissors to cut into the connecting strip along line b up to 20 mm towards the corner.

5.




Pull off the film on the rear (upstand height) and press / roll the membrane on without creating any creases. »

## RESITRIX® inside corner with inverted pleat


6.  Pull off the film on the rear (parapet) and press / roll it on.

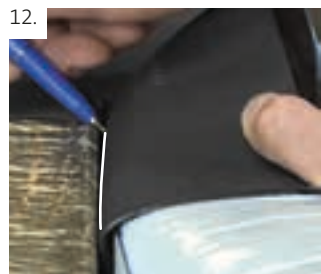
7.  Overstretch the connecting membrane over the last 20 mm and guide it over the corner area.

8.  Remove excess material.

9.  Carefully cut into the film on the rear, starting from the corner and working diagonally towards the parapet, and remove.

10.  Then neatly bond in the vertical line.

11.  Fold the connecting half upwards and work into the corner. »



Mark the rear of the parapet as far as the corner.



Cut into the marking.



Adjust the corner and make a mitre cut.



Remove the film on the rear (parapet height) and roll it on without creating any creases.



Heat up the bitumen compound of a leftover piece.



Place the leftover piece in the corner area. »





18. Press the connecting strip against the hot bitumen compound and then pull the leftover piece up and out. »



19. Roll the inverted pleat on with the silicone roller.



20. Pull off the remaining protective film and bond / roll it onto the parapet without creating any creases. Then weld with hot air in the cover area (parapet).



21. Finished inside corner. «

## RESITRIX® connection to outlet vent with prefabricated sleeve



Prefabricated sleeve.



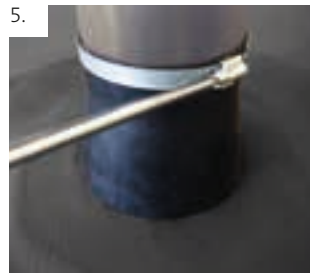
Adjust the connection height according to the rules and regulations.



Pull the sleeve over the outlet vent.



Weld to the roof surface.

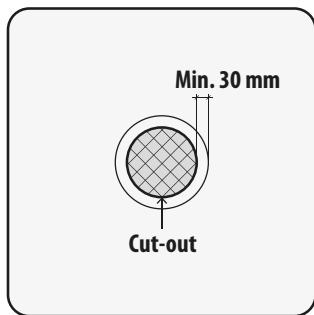
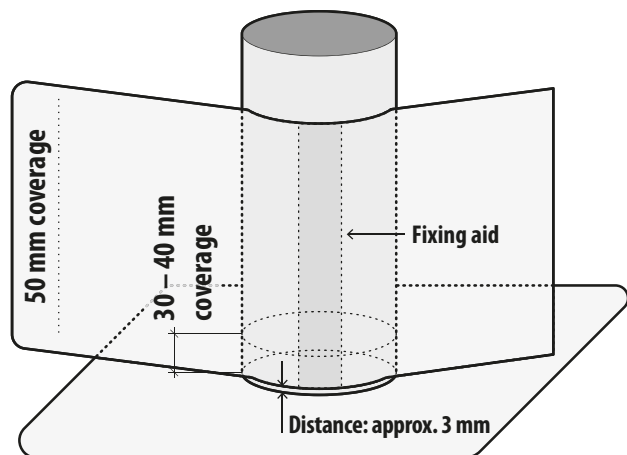


Use a stainless steel clamping strap to connect the top junction area in such a way that it is impermeable.



Finished outlet vent connection. «

## RESITRIX® connection to outlet vent without finished sleeve



1.



Determine the diameter.

2.



Transfer approx. half of the pipe diameter to the sleeve and cut out.

3.



Carefully cut into the film on the rear. Film cut = hole diameter + 30 mm »

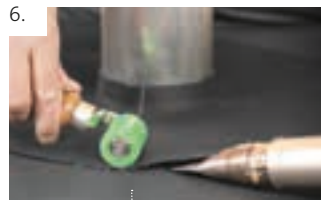
## RESITRIX® connection to outlet vent without finished sleeve



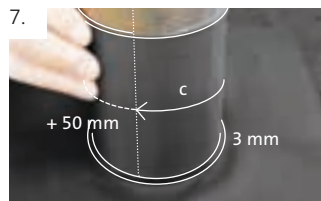
Overstretch the sleeve cut out.



Pull the sleeve over the penetration without creating any creases and work in with a pressure roller.



Pull off the film and fully surface-weld.



Unrolling: collar = circumference (c) + 50 mm, height according to rules and regulations.

Pull off the film on the rear and place the collar on the penetration at a distance of 3 mm from the roof surface.

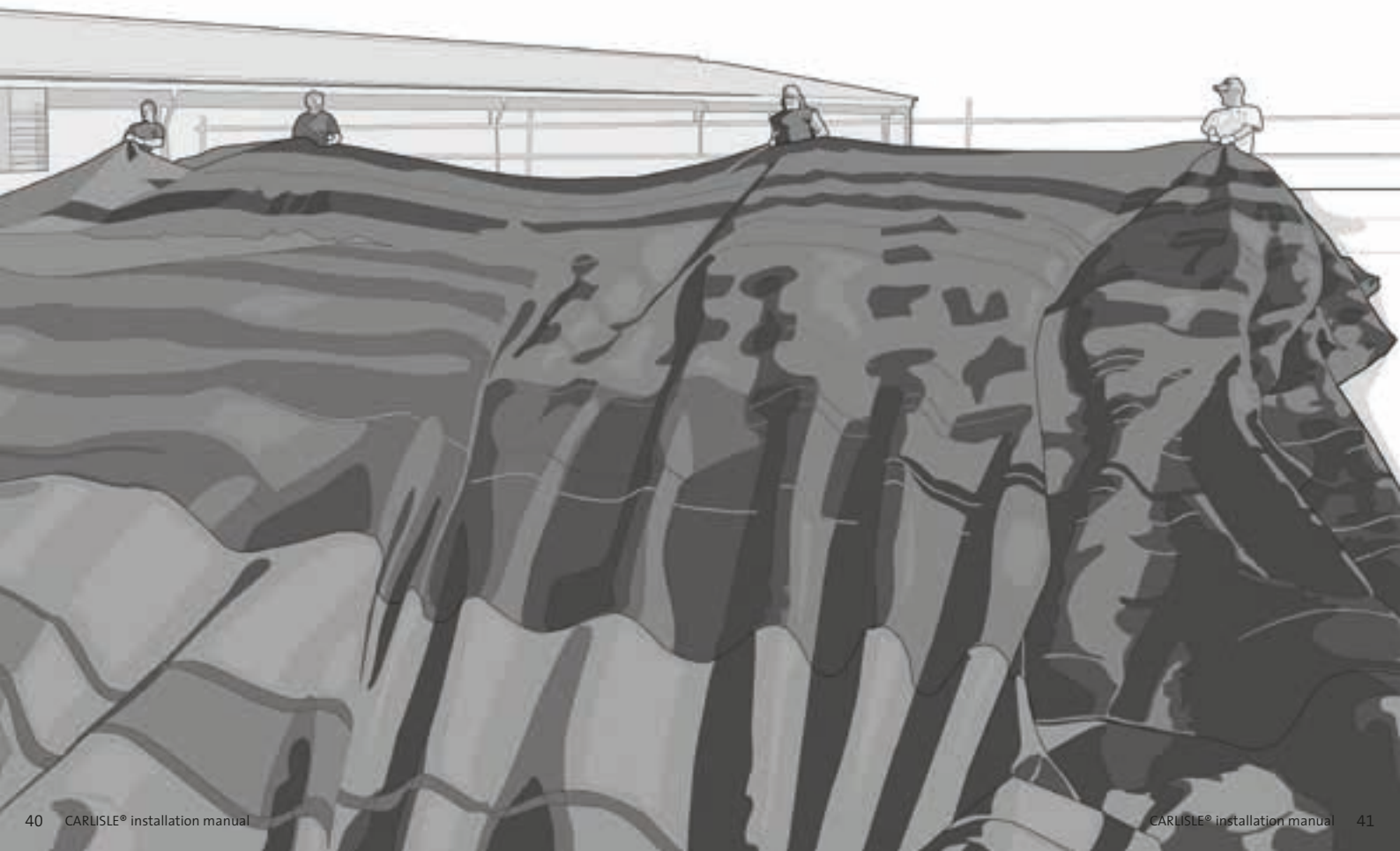


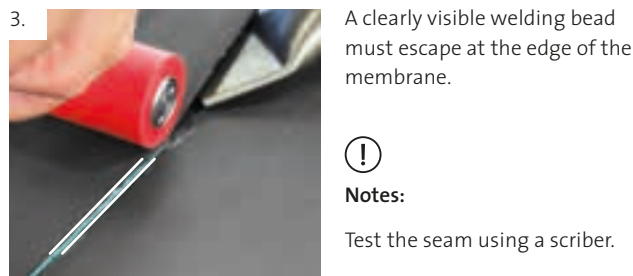
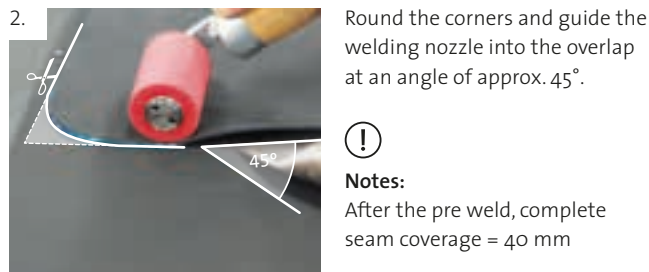
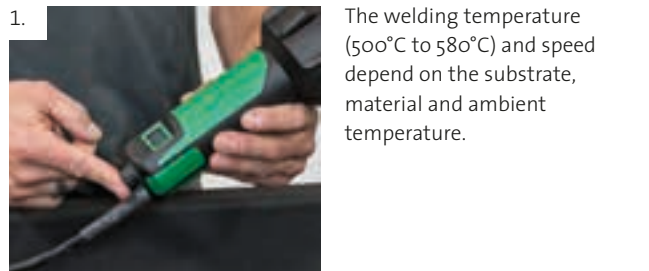
Weld the collar cover area (shaded areas) with hot air.



Use a stainless steel clamping strap to connect the top junction area in such a way that it is impermeable – finished outlet vent. «

# ***HERTALAN®***





## Notes:

- In the case of the green-on-black seam connection, after approx. 24 hours of free exposure (depending on the weather conditions) the surfaces to be welded (EPDM) must be roughened up using a suitable power file to ensure an optimum seam connection.
- **Before welding, the grinding dust must be removed with spirit or a similar product. This measure is not necessary for a green-on-green connection.**

**Always carry out a welding test «**



## Notes:

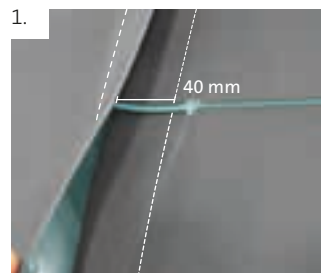
After the pre weld, complete seam coverage = 40 mm



## Notes:

Test the seam using a scribe.

## HERTALAN® T-joint formation with welding cord



Insert the welding cord approx.  
10 mm in the seam offset area.

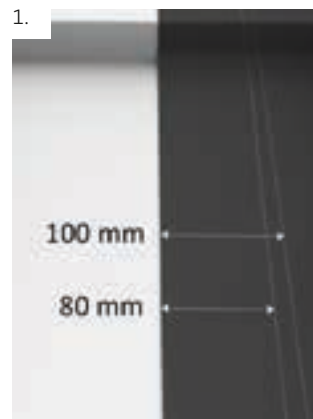


Have the welding cord protrude  
approx. 10 mm from the  
coverage.



During the welding process,  
persist with the welder for  
a short time to guarantee  
optimum heating of the  
welding cord. «

## HERTALAN® seam bonding with HERTALAN® KS 137 / KS 96



Once the EPDM sheet has been  
aligned, the planned seam joint  
is marked using two markings,  
e.g. using a line of chalk (lines:  
100 / 80 mm).



### **Note:**

The seam area must be free from  
impurities, oil, dust and water.



The side to be overlapped must  
also be marked as described  
previously. 80 mm of HERTALAN®  
KS 137 is applied on both sides  
using a brush / paint roller so  
as to provide good coverage.  
The outer seam edge, which is  
20 mm wide, remains free.



### **Note:**

The bonded seam must not be  
created with HERTALAN® KS 205. »



3. Following an airing time of approx. 5 – 15 minutes (carry out a finger test), place the overlaps one on top of the other without creating any tension or creases, and firmly roll them on without creating any air bubbles.



4. HERTALAN® KS 96 is applied in the outer overlapping zone, which is 20 mm wide and free from adhesive.

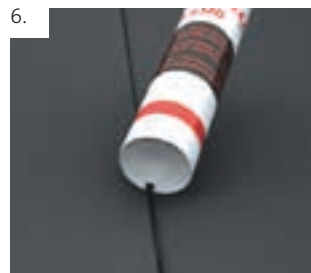


**Note:**

**Do not leave the HERTALAN® KS 96 to stand for long, as otherwise a skin starts to form and a neat seam is not formed as a result.**



5. The seam is then rolled on with a silicone pressure roller. Care must be taken here to ensure that a bead of adhesive (approx. 1 mm) escapes.



6. The excess adhesive is then removed with the rear of an empty cartridge, for example.

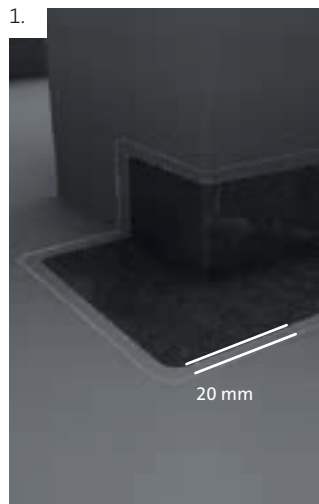


**Notes:**

- Following completion, the seam must be protected against mechanical influences until final curing has taken place (approx. 24 h).
- The seam must not be stepped on until it is fully cured. «



## HERTALAN® outside corner with moulded part



The HERTALAN® EASY COVER EPDM sheet is adjusted or cut to suit the local circumstances without creating any tension.

Apply the moulded part (outside corner) without creating any tension and mark at the outer edges.

Use HERTALAN® KS 137 contact adhesive to bond the moulded part onto the HERTALAN® EASY COVER EPDM sheet up to 20 mm in front of the outer marking.



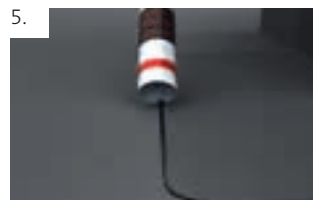
Use a pressure roller to firmly roll it on after adhering to the airing times.



HERTALAN® KS 96 is applied in the outer overlapping zone, which is 20 mm wide and free from adhesive.



The seam is then rolled on with a silicone pressure roller in both the longitudinal direction and the width direction. Care must be taken here to ensure that a bead of adhesive escapes.



The excess HERTALAN® KS 96 adhesive is then neatly removed with the rear of an empty cartridge, for example.

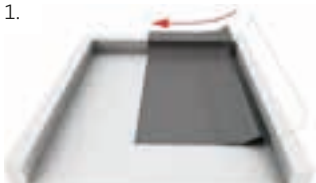


### Notes:



Do not step on the adhesive zone before it is fully cured (24 hours).


Moulded parts with an EW joining edge (green EW welding edge) must not be bonded. «

- 

Apply the EPDM sheet, align so that the edges are straight, and fold back on one side in the longitudinal direction.

Raise on the upstand in the top corner.

Fold the sheet and mark the cutting surface.

- 

Cut into the mark at or up to the highest point.

Fold back the cut part of the material.

- 

Raise the opposite side, fold inwards.


- 

Mark the fold on the upper edge from the outside.

- 

Cut into the mark up to the highest point.

Fold the inside corner so that the edges are straight and adjust the gradient accordingly. Cut off excess material.

- 

Fold the inside corner back and bond horizontally and vertically using contact adhesive, including the overlapping zones. «

## HERTALAN® connection to outlet vent without finished sleeve bonded with HERTALAN® KS 137 / KS 96



Determine the diameter of the pipe.

Cut out the base sleeve:  
pipe diameter + 150 mm.

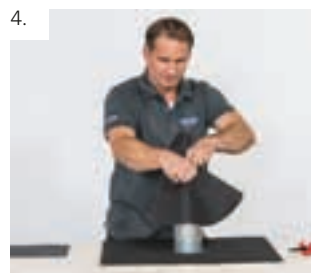


Cut a roughly 30% smaller hole in the base sleeve.

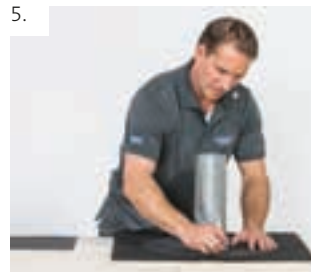
Hole cut-out = diameter of the pipe opening - 30%.



Remove 20 mm at the outer edge with a white pen in order to precisely apply the HERTALAN® KS 137 and HERTALAN® KS 96 contact adhesive.



Pull the sleeve over the pipe as far as the surface waterproofing.




Draw around the circumference of the sleeve with a pen in order to precisely apply the HERTALAN® KS 137 and HERTALAN® KS 96 contact adhesive.





Apply the HERTALAN® KS 137 contact adhesive to the underside up to the 20 mm outer edge marking. »


## HERTALAN® connection to outlet vent without finished sleeve bonded with KS 137 / KS 96


7. 
- Apply the HERTALAN® KS 137 contact adhesive to the surface waterproofing up to the 20 mm outer edge marking.


Leave to airdry for approx. 5 – 15 minutes.

8. 
- Pull the sleeve over the pipe without creating any creases and roll on.

9. 
- Unrolling: cut pipe + 50 mm coverage.

10. 
- Brush the pipe and collar with the HERTALAN® KS 137 contact adhesive. Leave to air-dry for approx. 5 – 15 minutes.

11. 
- Bond the collar around the outlet vent.

12. 
- Seal the transition to the sleeve with HERTALAN® KS 96. »

## HERTALAN® connection to outlet vent without finished sleeve bonded with KS 137 / KS 96

13.



Seal the last 20 mm of the seam coverage with HERTALAN® KS 96.

14.



Seal the transition to the sleeve with HERTALAN® KS 96.

15.



Roll the seam on with the silicone roller.

16.




Remove excess sealant.

17.




Use a stainless steel clamping strap to connect the top junction area in such a way that it is impermeable. «


- 

A laying pattern for the fastening plates is defined using the wind load calculation and the manufacturer's instructions for the insulation.

Apply the laying pattern to the roof using a chalk line, for example.

- 

Apply the fastening plates according to the laying pattern. An additional protective plate must be placed between the fastening plates and the substrate for substrates with a low melting point (e.g. polystyrene). The top of the fastening plates must be clean and dry.


- 

Roll out and then align the HERTALAN® EASY COVER sheet.



**Note:**

Ensure that the laying pattern is created without any creases.

- 

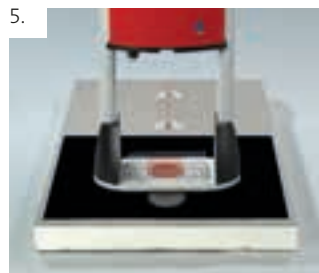
Adjust (calibrate) the device to the weather and ambient conditions using a range of welding tests.

The energy level is assessed manually and by means of a simple visual inspection.

## DOCUMENTATION

The only way of proving that welding took place according to the installation instructions is to document the device setting used. The day, time and device setting must be documented, and a picture of the tests must be included.





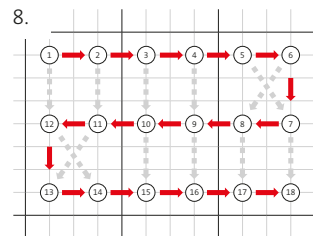
Weld the individual fastening plates; the welding process (5 sec.) is complete when the acoustic signal sounds.



Attach magnetic cooling rods for min. 45 seconds.



Repeat this process until all the RhinoBond® fastening plates are connected to the HERTALAN® EPDM sheet.



Ideal magnet rotation

➔ SEQUENCE OF OPERATOR MOVEMENTS

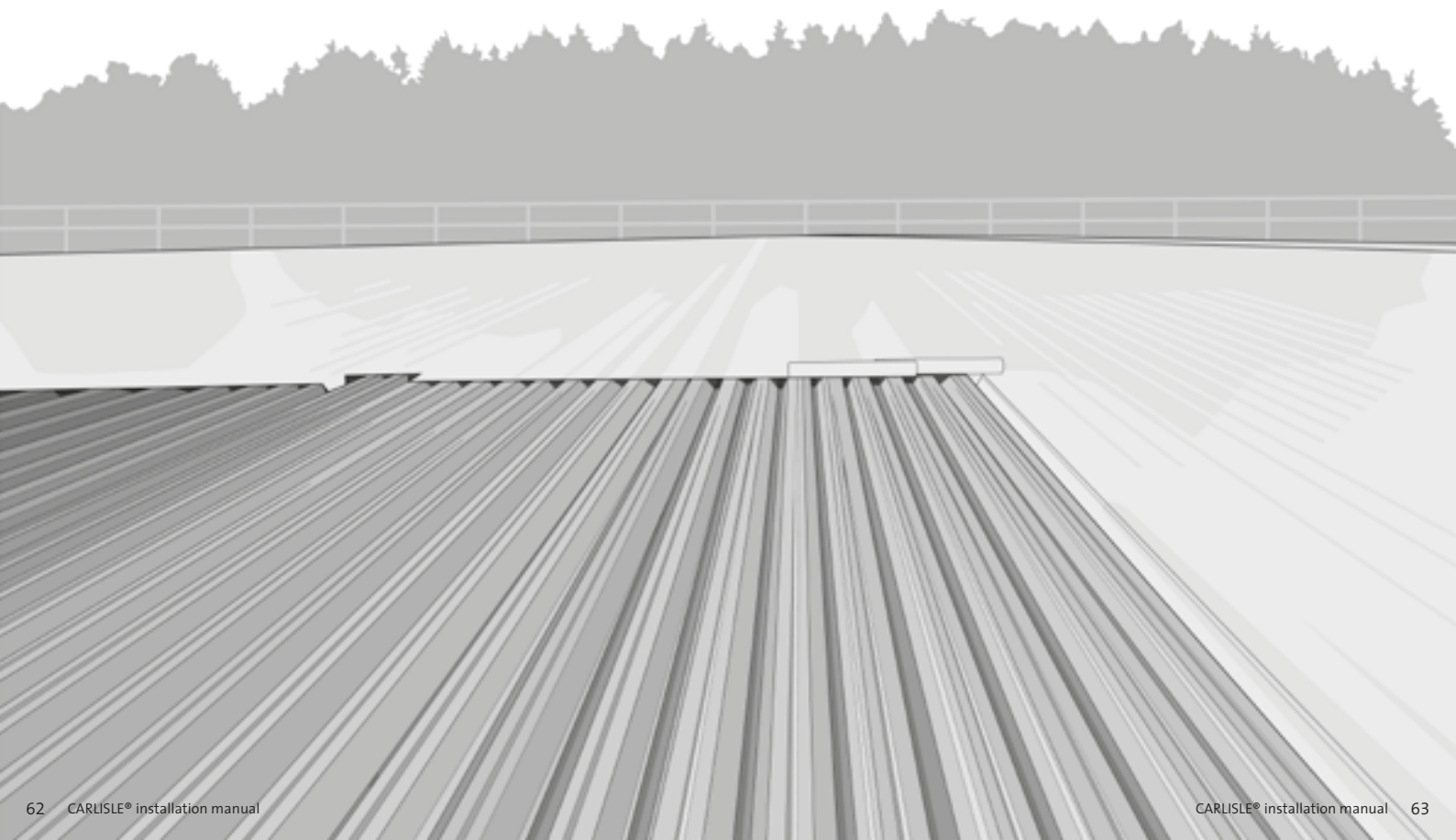
➔ MAGNET ROTATION



**Notes:**

- The fastening plates must be checked for dirt or moisture before the sheet is installed.
- Random inspection of the welded mounting plates.
- Calibration must be carried out again if the temperature changes by  $\pm 5^{\circ}\text{C}$ . «

# ALUTRIX®







1. Roll out ALUTRIX® with 50 mm lap coverage.
2. Fold down one metre, pull off the release film at an angle of 45° and press on with a brush or a similar auxiliary tool.
3. Evenly press the seam on with a silicone roller.



## Note:

Evenly fold back the first metre with both hands, without creating any creases.

- On trapezoidal sheet, arrange the longitudinal seam on the top crease.
  - In the case of transverse joints on trapezoidal sheet, ALUTRIX® or a metal strip must be laid underneath.
4. Roll out the rest of the membrane; the gradient is checked and, if necessary, corrected by lifting and

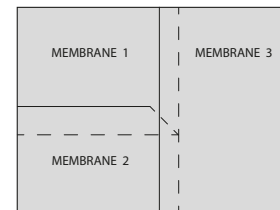
tightening the membrane slightly. Pull off the release film at an incline in the longitudinal direction; press the membrane on with a brush or similar item.



## Note:

Start in the middle of the membrane and move in the direction of the outer membrane to prevent bubbles or air pockets from forming.

In the case of the T-joint, a corner cut must be created along the middle, covered edge of the membrane.



A corner cut must be made in the second membrane. «



Guide the base membrane to the upstand.



## Notes:

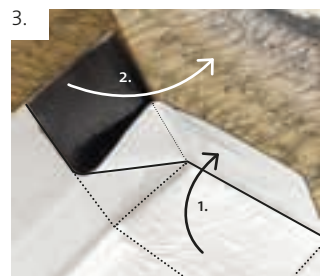
Prime the full surface of rising components.



Position the first connecting strip precisely in the corner, pull off the release film in the vertical line and use a silicone roller to fully roll it onto the surface without creating any creases.

Unrolling = insulation height

This detail can also be formed with a separate strip



The connecting strip must be designed with an inverted pleat in the corner area.



Guide the second connecting strip into the corner. Remove the film in the upstand area, bond the connecting strip onto the inverted pleat and roll it on without creating any creases.



Make a mitre cut in the roof surface area.



Pull off the release film and roll it on without creating any creases.



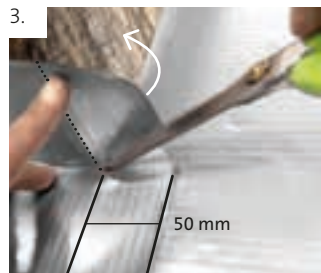
Finished inside corner «



1. Guide the base membrane to the upstand.



2. Bond the circular cut-out (diameter: 80 mm) to the corner.



3. Guide the first connecting strip out and 50 mm over the corner, cut into it and fold it over. Pull off the release film and roll the membrane on without creating any creases.



**Note:**

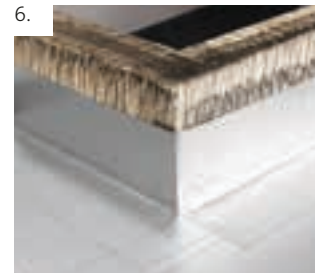
Unrolling = insulation height



4. Guide the second connecting strip into the corner.



5. Pull off the release film in the vertical line and roll the membrane on without creating any creases.

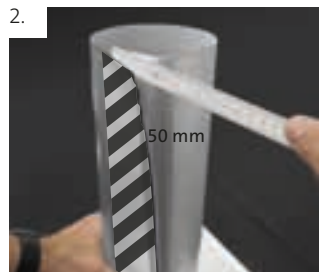


6. Finished outside corner. «

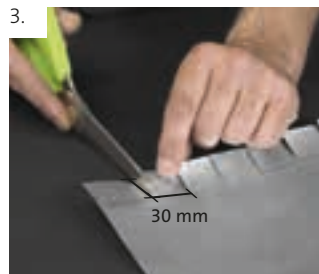


ALUTRIX® sleeve cut = 300 mm x 300 mm.

- Determine the diameter of the outlet vent.
- Precisely cut out a hole for the outlet vent.
- Bond and roll it onto the base membrane without creating any creases.
- Prime the outlet vent up to the top edge of the insulation.



Unrolling: connecting strip  
= circumference of outlet vent + 50 mm.

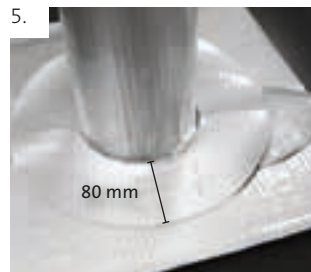


Cut into the connecting strip at regular intervals (approx. 30 mm).



Guide the connecting strip around the outlet vent.

Pull off the release film and roll it on without creating any creases.



Cover ring cut = diameter + 2 x 80 mm

- Mark the central point.
- Precisely cut out a hole for the outlet vent.
- Guide the cover ring over the outlet vent and press as far as the vapour barrier level, pull off the release film and roll it onto the base membrane without creating any creases.



Finished outlet vent connection.

«

[illegible]

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