



# APPLICATION MANUAL

## Sarnafil® AT

***Sarnafil® AT***

**BUILDING TRUST**



The information contained herein and any other advice are given in good faith – based on Sika Roofings current knowledge and experience of products when properly stored, handled and applied under normal conditions in accordance with Sika Roofing recommendations. The information given only apply to the applications and products expressly referred to herein. The information given is based on laboratory tests which do not replace practical tests. In case of changes in any parameter of the application, such as changes in substrates, or in case of a different application, consult Sika Roofing Technical Service prior to using Sika Roofing products. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned. Copies of which will be supplied on request.





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## GENERAL INFORMATION

### GENERAL INFORMATION SIKA ROOFING



Sika Roofing is a world leader in polymeric waterproofing membranes and system solutions with more than 50 years of experience. Superior installation quality is vital to the long life of a roofing system. In order to ensure a high-quality roofing job, hands-on and theoretical training is required.



Therefore Sika Roofing puts great emphasis on application training and offers a wide range of expert training courses.

Only those who have successfully completed one of the Sika Roofing training courses and have regular, practical site experience may install Sika Roofing systems.



#### **Watertight Seams**

The intent of this application manual is to supplement the knowledge acquired during an application training course and to serve as an on-site reference.

The integrity of the waterproofing should be ensured by systematically following the procedures in the application manual.



## GENERAL INFORMATION

### GENERAL INFORMATION SIKA ROOFING

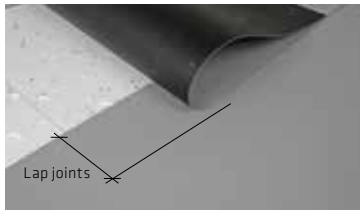


#### **Storage of Sarnafil® Membranes**

On the building site, Sarnafil® membranes must be protected against humidity, dirt, dust and exposure.

#### **Cutting Sarnafil® Membranes**

Cut Sarnafil® membranes with scissors or a knife.



#### **Lap Joints**

Adjoining Sarnafil® membranes are overlapped and hot-air welded to form a water-tight seam.

The recommended membrane overlaps vary between the roofing systems.

Details are found in the corresponding chapters of this application manual.

## GENERAL INFORMATION

### COMPATIBILITY



Sarnafil® AT is resistant to environmental effects and various chemicals.

Sarnafil® AT is suitable for installation directly on top of existing (old) bituminous roofing. In case of partitioned installations, Sarnafil® AT is adhered directly on to the bituminous vapor barrier.



Sarnafil® AT may be installed on all types of thermal insulation, especially polystyrene (EPS/XPS) and levelling layers suitable for roofing.

No additional separation layer is required. Based on national requirements, a fire protection layer may be required.





## GENERAL INFORMATION

### SEAM CLEANING

#### General

Sarnafil® AT membranes must generally not be prepared for welding.

During installation and in case of repair, different cleaning and seam preparation procedures may apply.



#### Procedure During Installation

- In case of slightly soiled membrane surface, Sarnafil® T Prep is used for cleaning

#### Procedure During Repair

- For heavily soiled membrane surfaces, Sarnafil® T Clean (red liquid) must be used first.

#### Important:

Only heavily soiled surfaces should be cleaned with Sarnafil® T Clean as treating both sides of the seam overlap will impair seam quality.

#### General Rules

- The seam area must be clean and dry.
- During cleaning the cloths should be frequently changed, otherwise dirt will simply be spread over the sheet and not removed.
- A new white cleaning cloth should be used for seam preparation. White cloths will effectively absorb dirt and the color will not stain the membrane.

#### Note:

Sika Roofing offers suitable seam preparation kits. (e.g. Sarnafil® T WetTask-Set).

## GENERAL INFORMATION

### SEAM CLEANING

#### Cleaning procedures Sarnafil® AT

Seam preparation is not needed if welding seams are clean, dry and free of dust.

Installation Phase	Condition of Sarnafil® AT	Steps to be taken in overlap area (both sides)	
Utilization Phase	■ Slightly soiled Sarnafil® AT (loose dust, dirt, bitumen residue)	■ Wipe off loose dirt ■ If necessary, wash down with water	■ Prepare seam using a clean cloth moistened with Sarnafil® T Clean ■ Allow Sarnafil® T Clean to dry
	■ Heavily soiled Sarnafil® AT (repair work, extensions to existing membranes etc.)	■ Wipe off loose dirt ■ Clean with water-based, all-purpose cleaner using a brush or cleaning pad ■ Allow Sarnafil® T Clean to dry	

**When repairing membranes the new Sarnafil® AT should be laid underneath the existing roofing.**

**Note:** When using cleaning fluids, protective gloves must be worn.

**Caution:** Avoid all contact between Sarnafil® T Prep and polystyrene insulation boards.

#### Dry off procedure of felt backing under wet or humid conditions



## GENERAL INFORMATION

### HAND WELDING



#### Hand Welding Tools

The following tools are available to hand weld Sarnafil® AT:

1. Hand welder Leister Triac AT/ST
2. 20 mm wide welding nozzle for details
3. 40 mm wide welding nozzle for straight welds
4. Pressure roller
5. Chamfer tool



The air outlet of the nozzle must be of uniform width and open over the entire width. The nozzle should be positioned so that it forms an airtight seal on to the neck of the hand welder.



The air intake slots must be open and free of dust (1). Remove accumulated dust and dirt with a brush or compressed air.

## GENERAL INFORMATION

### HAND WELDING



#### General

The temperature of the hand welder must be adjusted to suit the selected nozzle width and the particular type of welder.

#### Basic Settings for Sarnafil® AT

Hand Welder Leister	Nozzle 20 mm	Nozzle 40 mm
Triac AT	280 - 300°C (on setting scale)	280 - 300°C (on setting scale)
Triac ST	280 - 300°C	280 - 300°C

- Welding temperature to be adjusted according to local conditions.
- Perform test weld prior welding process.

## GENERAL INFORMATION

### HAND WELDING

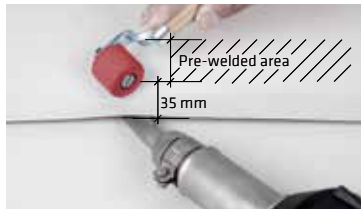


#### Hand welding procedure

When welding Sarnafil® AT, the overlap area must be clean and dry.

Overlaps are required as follows:

- 80 mm for loose laid
- 120 mm for mechanically fastened

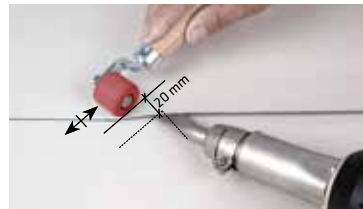


Hand welding is carried out in three steps:

#### 1. Spot weld the overlap

#### 2. Pre-weld

Weld the rear overlap area so that a 35 mm opening (when using 40 mm nozzle) remains for the final weld.



#### 3. Final weld

Weld the 35 mm opening area. Guide the pressure roller at a distance of 20 mm parallel to the air outlet of the welding nozzle. Roll the pressure roller fully across the seam.

#### Attention:

Always perform a test weld.

## GENERAL INFORMATION

### AUTOMATIC WELDING



#### **Automatic Welding Machine**

Sarnamatic® welding machines are available from Sika Roofing. For operation please refer to the operating manual delivered with the machine.

To weld Sarnafil® AT thicker than 1.5 mm, the middle (2) and additional weight (3) need to be added to the main weight (1) of the welding machine (Sarnamatic® 661/681).

#### **Attention:**

The basic machine settings must be checked in any case by carrying out a test weld and by observing the welding pattern. Adjust the basic setting as required.

## GENERAL INFORMATION

### AUTOMATIC WELDING



#### General

The Sarnamatic® welding machine is delivered with a comprehensive operating manual.

The basic settings must be checked, and if necessary adjusted, by observing the welding pattern.

Please carry out test welding and seam checks.

#### Basic Settings for Sarnafil® AT

	Sarnamatic®-681*	Sarnamatic®-661
Speed	3 m/min	3 m/min
Temperature	470°C	420°C
Air setting	100%	14,000

\* New deliveries of Sarnamatic®-681 will include the Sarnafil® AT parameter pre-setted.

## GENERAL INFORMATION

### TEST WELDING



Before welding the actual roofing membrane, a test weld must be carried out to check the settings of the hand welder and/or the automatic welding machine. The test weld must be also carried out to check local site conditions during a working day.

A test weld consists of:

- a) Test welding with peel test
- b) Seam check during test welding
- c) Seam check after test welding



#### a) Test Weld with Peel Test

Before welding the actual roofing membrane, a test weld with subsequent peel test must be carried out.

This test welding serves to check the temperature settings of the hand welder or the basic settings of the automatic welding machine so that they can be adjusted to the site conditions if necessary.

#### 1. Test welding

Carry out a test weld (automatic/manual).



#### 2. Peel test across the seam

The welding seam must be fully cooled. Cut a small strip into the upper membrane. Pull away the strip of the upper membrane sheet across the seam. The seam must not separate. Any tearing must be located outside the welded seam, either in the synthetic sheeting (as shown) or within the layer of reinforcing material.



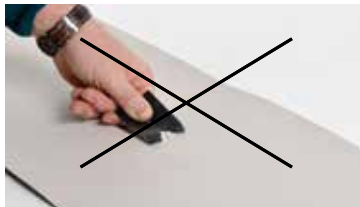
## GENERAL INFORMATION

### TEST WELDING



#### 3. Peel test along the seam

Cut a small strip over the fully cooled welding seam at the beginning or end of the welding seam. Pull away the strip of the upper membrane in the direction of the seam. The seam must not separate. Any tearing must be located outside the welded seam, either in the synthetic sheeting (as shown) or within the layer of reinforcing material.



**Incorrect peeling** is an indication of insufficient cleaning and seam preparation or an incorrectly set welding machine or hand welder.

## GENERAL INFORMATION

### TEST WELDS



#### **b) Seam Check During Test Welding**

During welding the seam must be visually checked.



#### **c) Seam Check After Test Welding**

After welding the seam should be visually checked.

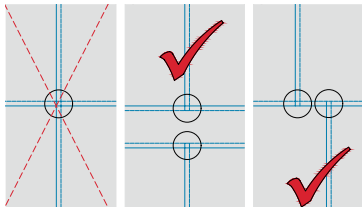
- **Size of the welding bead**

A continuous, excessively large welding bead is an indication of an improperly welded seam. It indicates that the welding temperature is too high or the welding speed is too slow.



## GENERAL INFORMATION

### WELDS AT TRANSVERSE JOINTS



By proper arrangement of Sarnafil® AT, all seams can be reduced to straight welded seams and transverse joints (T joint).

**Cross joints are to be avoided!**



To achieve proper welding, all transverse joints of all Sarnafil® AT thickness, for manual and automatic welding have to be chamfered.



Weld the membrane over the chamfered area.

## GENERAL INFORMATION

### SEAM CHECK DURING WELDING

During welding the seam must be inspected visually (shiny surfaces, discoloration of the welding bead, size of welding bead).

#### ■ Size of the welding bead

A continuous, excessively large welding bead is an indication of an improperly welded seam.



#### Formation of a Welding Bead During Automatic Welding

During the automatic welding process, the welding bead can be seen underneath the pressure roller. After the cooling-off period, little or no welding bead should remain with Sarnafil® AT membrane.



#### Formation of a Welding Bead During Hand Welding

During hand welding the welding bead is more prominent and remains clearly visible after cooling.

## GENERAL INFORMATION

### SEAM CHECK AFTER WELDING



#### **Mechanical Seam Check**

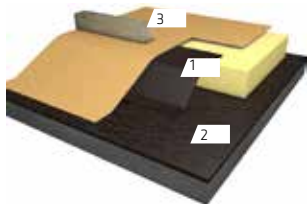
All seams must be checked mechanically once they have completely cooled. For this purpose a screwdriver (approx. 5 mm wide, with rounded edges) shall be used. Although slight pressure shall be applied to the seam, the membrane must not be damaged. The mechanical seam check assists in locating any seam areas not fully welded.

#### **Visual Seam Check**

After welding all seams should be inspected visually (shiny surfaces, size and quality of welding bead). Special attention should be paid to transverse joints, penetrations and flashings.

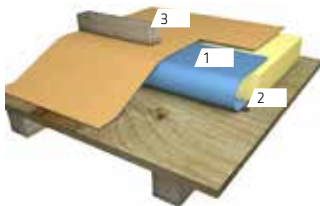
## GENERAL INFORMATION

### DAY JOINTS



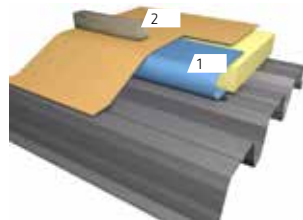
#### Day Joints to a Bituminous Vapor Control Layer

- Adhere the bituminous vapor control layer strip (1) to the installed vapor control layer (2).
- Put weight (3) on the Sarnafil® AT membrane.



#### Day Joints with Sarnavap® Vapor Control Layer on Top of a Level Deck

- Adhere the Sarnavap® vapor control layer (1) to the roof deck using a Sarnavap® sealing tape (2).
- Fold back the Sarnavap® vapor control layer (1) over the thermal insulation.
- Put weight (3) on the Sarnafil® AT membrane.



#### Day Joints with Sarnavap® Vapor Control Layer on Top of Profiled Metal Sheet

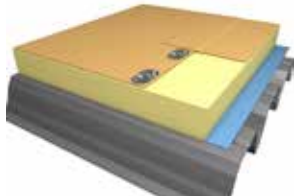
- Fold back the Sarnavap® vapor control layer (1) over the thermal insulation.
- Put weight (2) on the Sarnafil® AT membrane.

Remove the bituminous vapor control layer strip (1) on the next day before work starts. Day joints protect flat roof areas against water penetration when work is interrupted.



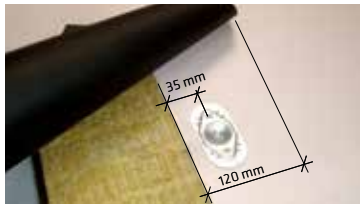


## MECHANICALLY FASTENED SYSTEM Sarnafast® SYSTEM



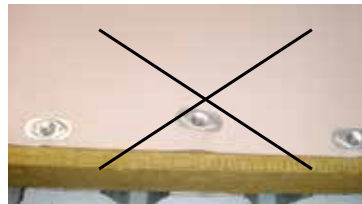
Fasten the thermal insulation boards with Sarnafast® Fastener and Insulation Washers. Use at least one fastener per insulation board or 1 m<sup>2</sup>.

Orient Sarnafil® AT sheets perpendicular to the metal corrugation.



Sarnafil® AT is fastened using the Sarnafast® Fasteners and Sarnafast® Washers along the marked line 35 mm from the edge of the membrane. Space the fasteners in accordance with project specifications by Sika Roofing.

Unroll the next Sarnafil® AT membrane sheet, overlap by 120 mm along the marked line and weld.



Sarnafast® Fasteners and Sarnafast® Washers must be installed with the Sarnafast® automatic setting tool or by means of an electric screw-driver with depth guide.

Incorrect positioning and/or setting of Sarnafast® Fastener and Sarnafast® Washers will substantially reduce wind uplift resistance of the system.



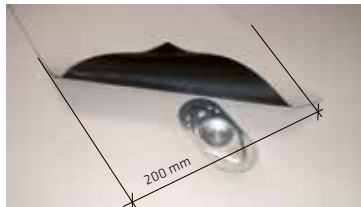


## MECHANICALLY FASTENED SYSTEM Sarnafast® SYSTEM



### Attention:

With correctly anchored Sarnafast® Fastener, the Sarnafast® Washer must be level with the Sarnafil® AT membrane.



In perimeter and corner areas where additional fastening is required, Sarnafast® Fasteners and Sarnafast® Washers are installed through the membrane.

Cover the rows of Sarnafast® Fasteners with a 200 mm wide membrane cover strip and weld both sides.

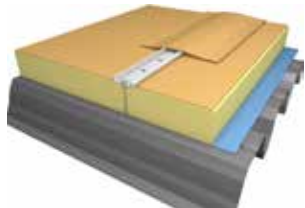
Space the fasteners in accordance with project specifications by Sika Roofing.

### Important Notes:

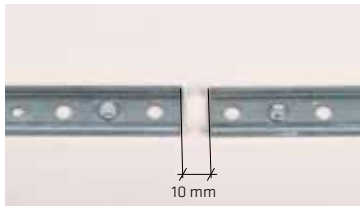
- All Sarnafast® Fasteners must be fastened immediately after the Sarnafil® AT membrane has been installed.
- All welding on the flat roofing must be carried out with the Sarnamatic® welding machine.

**Hand welding is only allowed for detail work.**

## MECHANICALLY FASTENED SYSTEM Sarnabar® SYSTEM

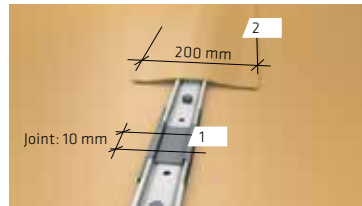


Before installing Sarnabar®, fasten the thermal insulation boards with Sarnafast® Fasteners and Insulation Washers. Use at least one fastener per insulation board or 1 m<sup>2</sup>. In the Sarnabar® system, Sarnafil® AT membranes are used. Unroll the Sarnafil® AT membrane, overlap by 80 mm (min 60 mm), weld immediately and fasten to the substrate using Sarnabar®.



Leave a 10 mm clearance between bar ends. Do not fasten in hole nearest bar end.

The fastening pattern and type of fastener to be used will be specified by Sika Roofing. Sarnabar® must be installed perpendicular to the direction of the deck ribbing.

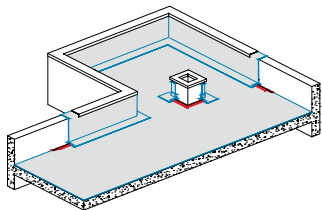


Cover the bar with the Sarnabar® Connection Clip (1). The installed Sarnabar® need to be immediately covered by a Sarnafil® membrane cover strip (2).

### **Important Note:**

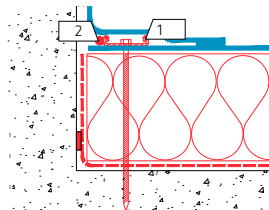
Use whenever possible the Sarnamatic® welding machine.

## MECHANICALLY FASTENED SYSTEM PERIMETER SECUREMENT



### Perimeter Securement

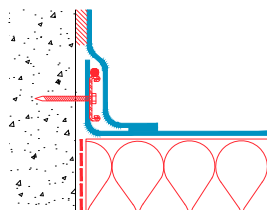
All flashings, terminations and penetrations of mechanically fastened systems must be secured mechanically using Sarnabar® and Sarnafil® T Welding Cord.



### Securement in Roof Deck

The Sarnabar® must be anchored using suitable fasteners into the roof deck.

Sarnabar® types 6, 6/10, 6/15 (1) with at least 4 fasteners per meter must be used. In addition a Sarnafil® T Welding Cord of 4 mm diameter (2) must be welded to the side of the fastening bar facing towards the upstand. The welding cord secures the membrane against tearing off by thermal expansion or wind uplift forces.



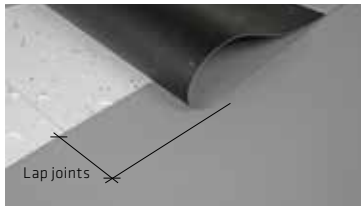
### Securement in Upstand

The Sarnabar® can also be anchored into the transition area of the upstand by using suitable fasteners. If the roof structure in the upstand area is not strong enough (e.g. timber planking, aerated concrete, thin metal sheets, skylight frames etc.) the fastening may be anchored into the roof deck.





## BALLASTED SYSTEM GENERAL INFORMATION



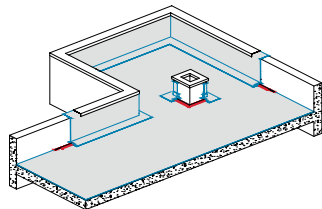
### General Information

In ballasted roofing systems loose laid Sarnafil® AT membrane is used.

The membranes should be unrolled flat without waves or creases and be positioned to overlap by 80 mm.

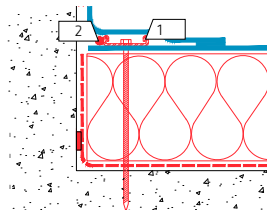
The overlapping sheets must be welded immediately (on the same working day) and the loose laid Sarnafil® AT membrane ballasted as soon as possible.

## BALLASTED SYSTEM PERIMETER SECUREMENT



### Perimeter Securement

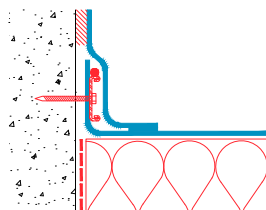
All flashings, terminations and penetrations wider than 50 cm must be secured mechanically using Sarnabar® and Sarnafil® T Welding Cord.



### Securement in Roof Deck

The Sarnabar® must be anchored using suitable fasteners into the roof deck.

Sarnabar® types 6, 6/10, 6/15 (1) with at least 4 fasteners per meter must be used. In addition a Sarnafil® T Welding Cord of 4 mm diameter (2) must be welded to the side of the fastening bar facing towards the upstand. The welding cord secures the membrane against tearing off by thermal expansion.



### Securement in Upstand

The Sarnabar® can also be anchored into the transition area of the upstand by using suitable fasteners. If the roof structure in the upstand area is not strong enough (e.g. timber planking, aerated concrete, thin metal sheets, skylight frames etc.) the fastening may be anchored into the roof deck.



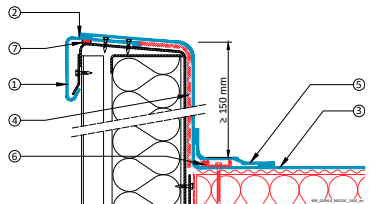




## Sarnafil® AT ON PARAPET MECHANICALLY FASTENED PERIMETER FLASHING

Fasten the bar (Sarnabar®) in the Sarnafil® AT, along the vertical or horizontal transition, either to the upstand or to the roof structure.

A levelling layer must be installed between Sarnafil® AT and rough substrates. The number and type of fasteners per linear meter depend on the substrate and the wind load (pullout value). At least four fasteners per meter must be used. Fastener type, spacing and type of Sarnabar® must be in accordance with specifications by Sika Roofing.

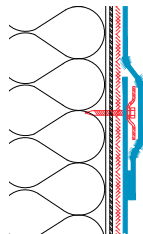
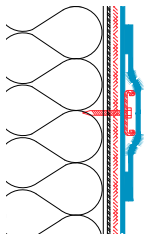


1. Sarnafil® T Metal Sheet
2. Hot air weld
3. Sarnafil® AT membrane
4. Levelling/separation layer
5. Cover strip
6. Sarnabar® and Sarnafil® T welding cord
7. S-Sealing tape

## Sarnafil® AT ON PARAPET

### MECHANICALLY FASTENED PERIMETER FLASHING

- For parapet heights  $\leq 800$  mm Sarnafil® AT is used. Additional fastening as described in following paragraph is not required.
- For parapet heights  $> 800$  mm Sarnafil® AT is used. Additional mechanical fastening is required.



#### **Additional fastening:**

Sarnabar® / Sarnafast® must be attached with at least four fasteners per meter.

## Sarnafil® AT ON PARAPET SELF-ADHERED PERIMETER FLASHING

Perimeter are formed using strips of Sarnafil® AT FAS P membrane. The flashing strips are to be fully self-adhered to the substrate and welded to the field sheet. The substrate must be free of ridges, and the flashing must be attached with a good adhesive bond.



Perimeter fixation incl. welding cord. Fasten the bar (Sarnabar®) incl. Sarnafil® T welding cord in the vertical or horizontal transition, either to the upstand or to the roofing structure. At least four fasteners must be used per meter.



Unrolling of Sarnafil® AT FSA P and peel off 1/3 of the release liner from the top.



Attach Sarnafil® AT FSA P to upstand and roll it tight to the substrate.

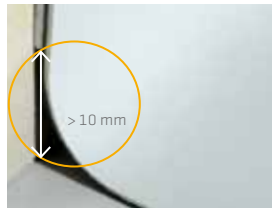
Sarnafil® AT ON PARAPET  
SELF-ADHERED PERIMETER FLASHING



Tear off the remaining 2/3 of the release liner.



Roll it tight to the substrate.

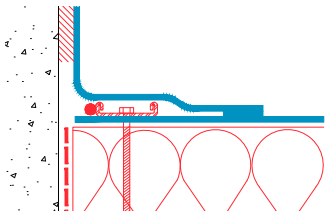


Final Sarnafil® AT FSA P shall have > 10 mm of 'non self adhesive' gap to roofing membrane.



Sarnafil® AT FSA P to be welded to the roofing membrane.

## Sarnafil® AT ON PARAPET FULLY-ADHERED PERIMETER FLASHING



Flashings are formed using strips of Sarnafil® AT membrane. The flashing strips are fully-adhered to the upstand and welded to the roofing membrane.

Fasten the bar (Sarnabar®) incl. Sarnafil® AT welding cord in the Sarnafil® AT along the vertical or horizontal transition, either to the upstand or to the roofing structure. At least four fasteners must be used per meter.



Sarnafil® AT is adhered to substrate layers such as reinforced concrete, rendering, wood panels or metal sheets using Sarnacol® T 660 adhesive. The substrate layer must be solvent resistant, clean, dry and free of grease or dust. Thoroughly stir Sarnacol® T 660 before use. The container must be closed when work is interrupted. Sarnacol® T 660 can be diluted (max. 10%) with Solvent T 660. It must be used at temperatures between +5°C and 40°C.



Sarnacol® T 660 is applied evenly with a brush or roller to the substrate. Allow the adhesive to dry completely.

Absorbent substrates require two coats of adhesive. Allow the adhesive to dry completely before the second coating is applied. Allow an evaporation time of minimum 2 hours and maximum 10 hours. If Sarnacol® T 660 is allowed to dry for more than 10 hours, an additional coating of Sarnacol® T 660 is required.

Sarnafil® AT ON PARAPET  
FULLY-ADHERED PERIMETER FLASHING



Sarnacol® T 660 is also applied to the underside of the Sarnafil® AT membrane.

No adhesive must be applied within the welding area. Residual adhesive must be removed with Solvent T 660 and the clean surface then treated with Sarnafil® T Prep.



**Finger Test:**

Let Sarnacol® T 660 adhesive evaporate for about 30 minutes. The evaporation time on the membrane must be observed. At higher ambient temperatures a shorter evaporation time is possible.



After the solvent has evaporated place Sarnafil® AT on to the coated substrate layer and press down firmly, using a hand roller.

## ADHERING Sarnafil® AT FULLY-ADHERED PERIMETER FLASHING



By heating the Sarnafil® AT membrane the adhesive can be re-activated so that a fully-adhered bond with no air pockets is achieved even in corner and perimeter areas.

### **Caution:**

**No open flame on adhesive.**

**When heating the membrane avoid glazing the surface, particularly in the welding area.**





## Sarnafil® AT ON PARAPET SEALANTS AT FLASHINGS



### General Information

- Use Sarnaplast® 2235.
- The surface must be clean, dry and free of dust and dirt.
- The surface must be primed before sealant is applied.



### Sealing along Skylights

Apply Primer T 501 along the frame edge and the upper 20 mm of the Sarnafil® AT. Allow Primer T 501 to evaporate.



Form an angled bead of sealant using Sarnaplast® 2235.

## ADHERING Sarnafil® AT SEALANTS AT FLASHINGS



### Sealing at Counter Flashings:

To achieve sealant bond on both faces of the joint, it is recommended that a backing rod (1) is installed.



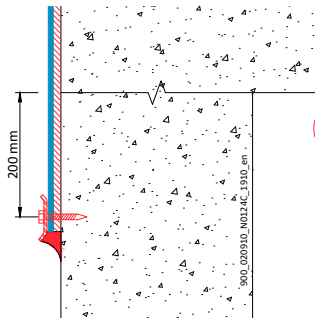
Apply Primer 110 to contact areas (counter flashings, brickwork or plaster etc.). Allow primer to evaporate.



Apply Sarnaplast® 2235 on top of the backing rod (1) and strike bead to form a concave groove (2).

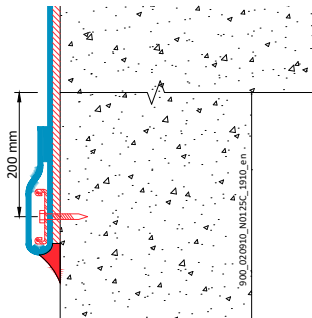


## ADHERING Sarnafil® AT SEALANTS AT FLASHINGS



### Sealant Packing with Perimeter Fastening

- The membrane should be pulled down at least 100 mm below the deck-to-wall joint.
- Adhere Sarnafil® AT using Sarnacol® T 660
- Apply Primer T 501 to the area to be sealed and allow evaporating.
- Apply Sarnaplast® 2235
- Mechanically fasten Sarnafil® AT over the packing using a fastening bar.



### Alternative Application with Longer Membrane Sheets:

Follow procedure as before.

- Fold up the additional Sarnafil® AT membrane and weld.



### Filler Packing at Jubilee Clips

Filler packing at jubilee clips (stainless steel) e.g. at penetrating pipes.

- Prime the sealing area with Primer T 501 and allow evaporating.
- Insert Sarnaplast® 2235 (1) between the penetrating pipe (2) and the Sarnafil® TG membrane (3).
- Secure the Sarnafil® AT membrane (over the Sarnaplast® 2235 sealant) with a jubilee clip (4).





## DETAILS GENERAL INFORMATION



### Material

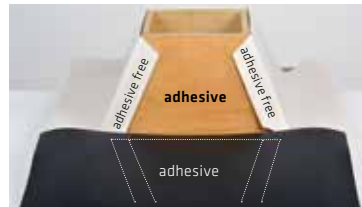
For roofing details the stretchable unreinforced Sarnafil® G or Sarnafil® TG membrane must be used.



### Welding

Use a hand welder with 20 mm nozzle for detail work.

To form Sarnafil® G or Sarnafil® TG membrane for detailing work, the membrane can be evenly warmed up at the edge and stretched manually.



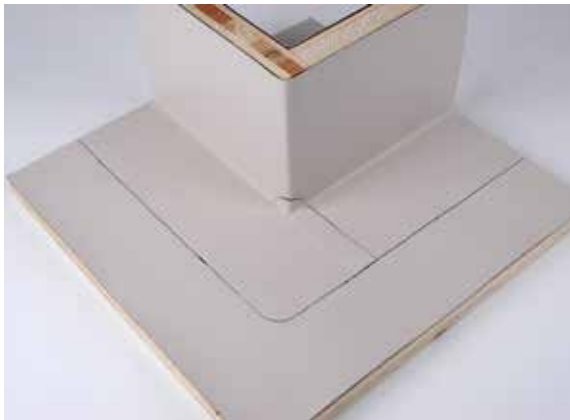
### Adhesive Application

Do not apply adhesive to welding areas. Allow contact adhesive to evaporate before adhering the membrane (finger test).

DETAILS

1 OUTSIDE CORNER WITH FLASHING STRIPS

**COMPLETE OUTSIDE CORNER FLASHING WITH HANDMADE FLANGE**



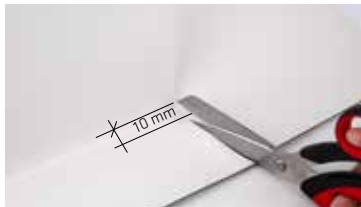
## DETAILS

### 1 OUTSIDE CORNER WITH FLASHING STRIPS



Coat the substrate with adhesive (Sarnacol®).

- Apply adhesive (Sarnacol®) to the Sarnafil® G/TG flashing strip.
- Allow the adhesive to evaporate (finger test).
- Adhere the flashing strip to the tack-dry adhesive bed.



- Cut the membrane overlap in line with the corner. Stop 10 mm short of the corner.



- Activate the adhesive (Sarnacol®) with the hand welder.



## DETAILS

### 1 OUTSIDE CORNER WITH FLASHING STRIPS



- Adhere the flashing strip around the corner without creasing.
- Spot weld the overlap to the roofing membrane.



- Finish weld the overlap to the roofing membrane.



- Cut a square corner patch of membrane.
- The size should be approx. 50 mm larger than the corner area to cover.
- Round off the patch corner, that is to be positioned at the vertical edge.

## DETAILS

### 1 OUTSIDE CORNER WITH FLASHING STRIPS



- Heat and stretch the rounded corner.



- Spot weld the whole corner patch.



- Cut the corner patch so that it is aligned with the overlap of the Sarnafil® flashing strip.

## DETAILS

### 1 OUTSIDE CORNER WITH FLASHING STRIPS



- Round off the protruding corner.
- Weld the upstanding rounded corner:
- Start at the bottom and weld upwards along the vertically standing corner patch on the lap area.



- Weld both sides of the upstanding rounded corner ...



- ... and press down the welded corner with the finger tip.

## DETAILS

### 1 OUTSIDE CORNER WITH FLASHING STRIPS



- Weld the remaining sides of the patch.



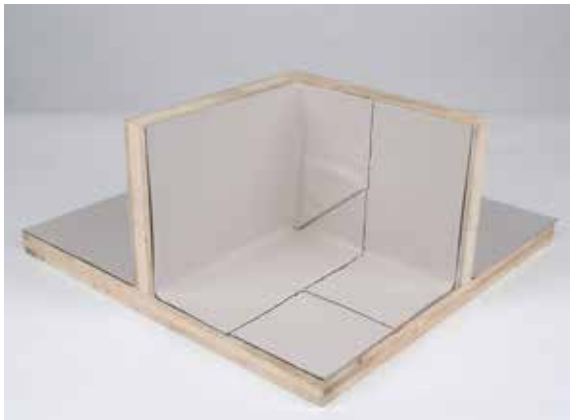
- Mechanically check the welds.



DETAILS

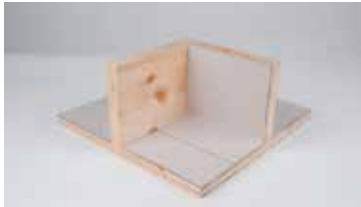
2 INSIDE CORNER WITH UPRIGHT CREASE

**INSIDE CORNER WITH AN UPRIGHT CREASE**

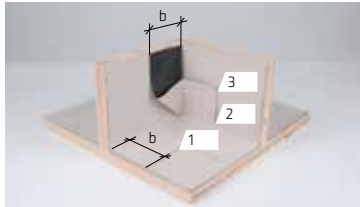


## DETAILS

### 2 INSIDE CORNER WITH UPRIGHT CREASE



- Cut the first Sarnafil® flashing strip to fit.
- Coat the upstand with adhesive (Sarnacol®).
- Apply adhesive (Sarnacol®) to the flashing strip.
- Allow the adhesive to evaporate (finger test).
- Adhere the flashing strip to the tack-dry surface.
- Weld the overlap to the roofing membrane adhesive bed.



- Cut and adhere the second flashing strip to the upstand so that overlap "b" measures the same on the roof surface as in the corner. An upright crease is thus formed.
- Spot weld the Sarnafil® flashing strip in 3 spots (1 - 3).



- Weld the crease shut to a closed pocket. Work from the inside towards the front edge.

## DETAILS

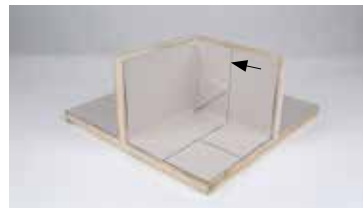
### 2 INSIDE CORNER WITH UPRIGHT CREASE



- Weld the second Sarnafil® flashing strip to the overlap area.



- Starting from the upright corner area, weld the closed pocket to the membrane upstand (pre-weld and final weld).



- Complete by welding the overlapping area.
- Mechanically check the weld.

DETAILS  
3 ROOF TRIM

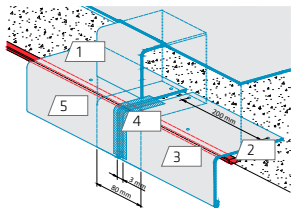
**ROOF TRIM WITH METAL SHEET (Sarnafil® T METAL SHEET)**





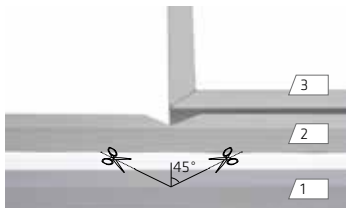
## DETAILS

### 3 ROOF TRIM



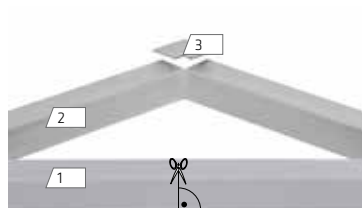
#### Longitudinal joint metal sheet

- Fix the metal sheet (3) and riveted connecting plate (4) to the substrate with screws set in two rows, staggered. Screw spacing within rows is 200 mm.
- Make sure that an S-Sealing tape (2) is installed under the metal sheet to ensure a waterproof joint between the wall and the metal sheet.
- Slide on the next metal sheet (5) and fasten to the parapet top (1) as shown. The open butt joint between the two pieces should measure 3 mm.



#### Cut the metal sheet to fit an inside corner

- Mark miter on the metal sheet (1).
- Cut metal sheet to size as shown (2) (45°).
- Bend the metal sheet to fit the corner (3) and fix to the substrate.
- Weld the crease shut to a closed pocket. Work from the inside towards the front edge.

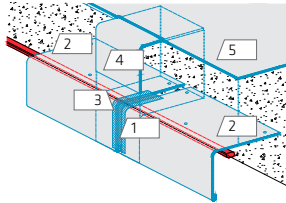


#### Cut the metal sheet to fit an outside corner

- Mark miter at right angles and cut open (1).
- Bend the metal sheet (2) and screw to the substrate.
- Cover the exposed area of the corner by slipping a piece of metal sheet (3) underneath the metal sheet (2).

## DETAILS

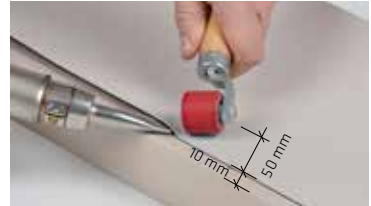
### 3 ROOF TRIM



#### Longitudinal joint completed after the metal sheets are fixed

- 1 Connecting plate
- 2 Metal sheet
- 3 Adhesive tape
- 4 Sarnafil® membrane strip (80 mm)
- 5 Sarnafil® flashing strip

- Apply adhesive tape (3) over the metal sheet expansion joint of 3 mm.
- Cut a 80 mm wide Sarnafil® membrane strip (4).
- Weld only 20 mm on both sides along the edge of the membrane strip to the metal sheet (2).



- Adhere the Sarnafil® flashing strip (5) to the substrate using Sarnacol® adhesive. Make sure that the outermost 50 mm is free of adhesive to allow welding.
- The edge of the Sarnafil® flashing strip should stop 10 mm behind the folded down section of the metal sheet.
- Weld the Sarnafil® flashing strip (5) to the metal sheet (2).

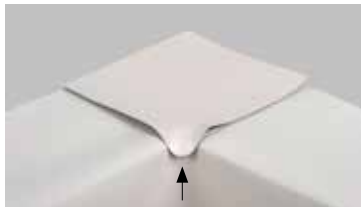
## DETAILS

### 3 ROOF TRIM

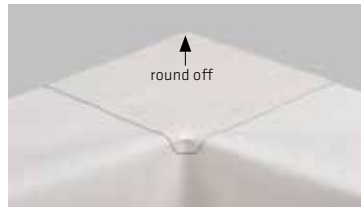


#### Inside corner

- Cut a Sarnafil® membrane corner patch to fit the inside corner.



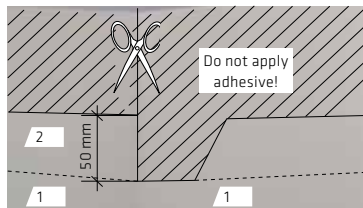
- Round the corner of the membrane patch.
- Heat and stretch the inside, rounded corner.



- Weld the Sarnafil® corner patch and round off the outer corner.

## DETAILS

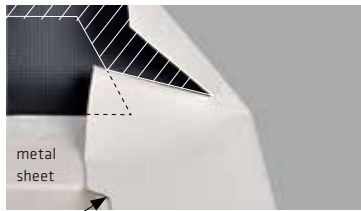
### 3 ROOF TRIM



#### Outside corner

(Roof side view)

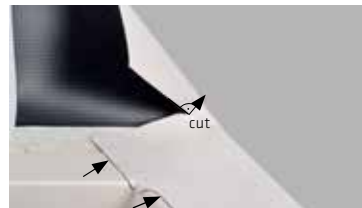
- Apply adhesive to substrate.
- Apply adhesive to the Sarnafil® flashing strip.  
Keep the area shown, free of adhesive to allow welding later on.
- Adhere the Sarnafil® flashing strip to the substrate (vertical roof trim area 1).



- Cut open the corner to a distance of 50 mm above the top of the parapet.
- Adhere the Sarnafil® flashing strip to the front edge area of the parapet (marked area with 2).

(View from outside / metal sheet side)

- Cut the flashing strip to size at the adhered parapet front edge.



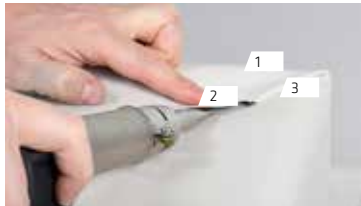
- Weld the flashing strip to the metal sheet.
- Cut the upstanding Sarnafil® flashing strip in a right angle as illustrated.

## DETAILS

### 3 ROOF TRIM

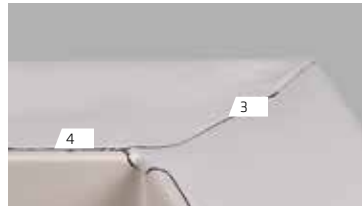


- Form a crease.
- Weld the crease together (membrane pocket).



(View from roof side)

- Fold down the welded crease and adhere the Sarnafil® flashing strip to the substrate layer (1).
- Cut the flashing strip (2).
- Weld the crease to the flashing strip (3).

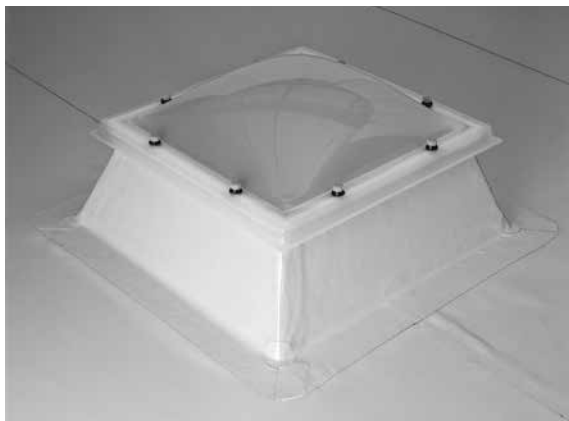


(View from outside / metal sheet side)

- Weld the Sarnafil® flashing strip to the metal sheet (4).

DETAILS  
4 SKYLIGHT

**COMPLETED SKYLIGHT DETAIL**

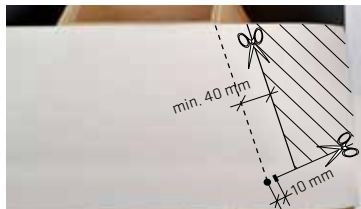


## DETAILS

### 4 SKYLIGHT



- Apply Sarnacol® adhesive around the skylight.
- Apply Sarnacol® adhesive to two Sarnafil® membrane strips and adhere to the opposing sides of the skylight. Ensure installation without air pockets.



- Mark and cut the corners as illustrated.



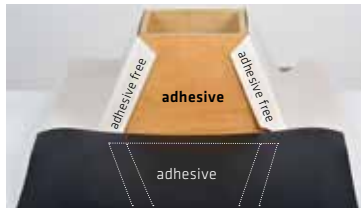
- Warm up the Sarnafil® membrane overlap.

## DETAILS

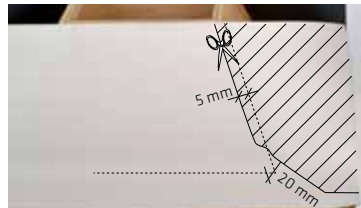
### 4 SKYLIGHT



- Fold the membrane overlap around the skylight edges and adhere.



- Take the remaining two Sarnafil® membrane flashing strips and mark the adhesive areas.
- Adhere the two remaining Sarnafil® flashing strips without air pockets.



- Cut the Sarnafil® membrane strips along the line as illustrated.
- In the lower corner area - leave an additional membrane "thumb tab" of 20 mm for welding.



## DETAILS

### 4 SKYLIGHT



- Pre-weld and final weld along the vertical seam starting from the "thumb tab".



- Round off the corners of the horizontally projecting Sarnafil® membrane strips (1).
- Cut off excess material as illustrated.



- Pre-weld and final weld the horizontal seam.

## DETAILS

### 4 SKYLIGHT



- Weld the membrane "thumb tab".
- Weld (gradually) from the inside towards the seam front edge.



- Press down the warmed up Sarnafil® membrane (thumb tab).



- Weld the membrane overlap shut at the bottom.

## DETAILS

### 4 SKYLIGHT



#### **Completed skylight**

- Seal the upper open perimeter and the joint of the skylight frame using Sarnaplast®.
- For sealing instructions refer to the corresponding chapter in this application manual.

DETAILS  
5 DRAINS

**COMPLETED DRAIN DETAIL**

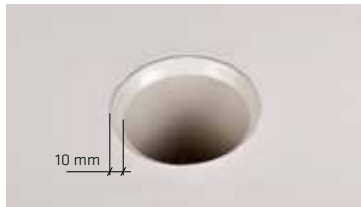


## DETAILS

### 5 DRAINS



Prefabricated drains should be used (Sarnafil® T Drains or S-Drains).



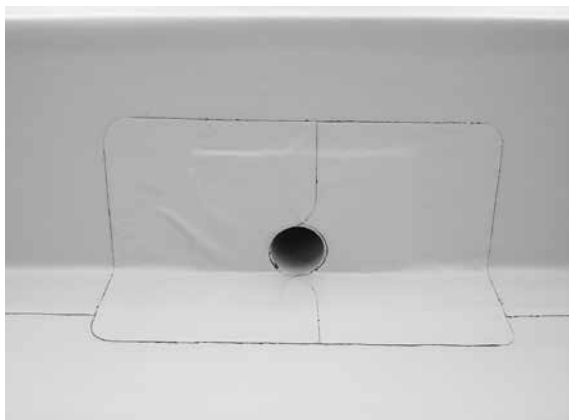
- Secure the drain to the substrate.
- Cut a hole into the Sarnafil® membrane, approx. 20 mm larger than the diameter of the drain.



- Handweld the Sarnafil® roofing membrane directly to the flange of the drain using a 20 mm wide nozzle.

DETAILS  
6 SCUPPERS

**COMPLETED SCUPPER DETAIL**



## DETAILS

### 6 SCUPPERS



Prefabricated scuppers should be used (Sarnafil® T Scuppers or S-Scupper).

- Secure the scupper to the substrate. Make sure fasteners do not protrude.



- Cut two matching Sarnafil® membrane pieces as illustrated. Cut larger than Scupper size.
- Weld the first Sarnafil® membrane piece to the bent flange.



- Weld the second piece overlapping the first.

## DETAILS

### 6 SCUPPERS



- Secure the prepared scupper to the roof and parapet by welding on the pre-attached Sarnafil® flashing strips.
- Weld the overlap to the Sarnafil® flashing strip and the roofing membrane (upstands and roof level).



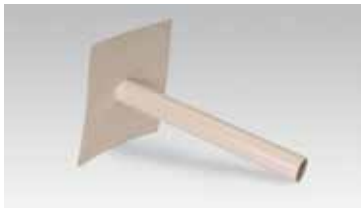
DETAILS  
7 OVERFLOWS

**COMPLETED OVERFLOW DETAIL**



## DETAILS

### 7 OVERFLOWS



- Prefabricated overflows should be used (Sarnafil® T-Overflow or S-Overflow).



#### Application Variation 1

- Secure the overflow to the parapet.
- Make sure fasteners do not protrude.



- Adhere the Sarnafil® membrane flashing strip to the parapet with Sarnacol®.
- Cut a hole into the flashing strip with a diameter approx. 5 mm larger than the overflow.
- Weld the Sarnafil® flashing strip to the flange of the overflow using a 20 mm wide nozzle

## DETAILS

### 7 OVERFLOWS



#### **Application Variation 2**

Flashing strip pre-adhered

##### **a. Preparation of overflow**

- Cut a piece of membrane as illustrated - larger than the overflow flange.
- Cut a hole into the membrane piece. The diameter should be approx. 5 mm larger than the diameter of the overflow.
- Weld the membrane piece to the overflow flange using a 20 mm nozzle

##### **b. Installation of overflow to parapet**

- Secure the prepared overflow to the roof and parapet by welding on the pre-adhered flashing strip.
- Weld the membrane overlap of the overflow to the adhered flashing strip.

## DETAILS

### 8 VENT PIPE FLASHING

#### COMPLETED VENT PIPE DETAIL WITH PLASTC CAP



## DETAILS

### 8 VENT PIPE FLASHING



- Cut a flange from a piece of Sarnafil® membrane.
- Cut a hole into the flange approx. 10 mm smaller than the diameter of the vent pipe.



- Slide the flange, without heating, over the vent pipe to create an upstand of 10 mm.
- Cut a piece of Sarnafil® membrane as pipe flashing with an overlap of 30 mm.



- Spot weld the overlap of the pipe flashing.

## DETAILS

### 8 VENT PIPE FLASHING



- Round the edges of the pipe flashing over-lap.
- Pull the pipe flashing off the vent pipe.



- Evenly warm up the bottom edge of the Sarnafil® pipe flashing.



- Stretch by at least 15 mm.

## DETAILS

### 8 VENT PIPE FLASHING



- Put the pipe flashing over the pipe and weld the rounded edges of the overlap area.



- Pre-weld the pipe flashing to the Sarnafil® membrane - while pressing down with a finger.



- Final-weld the pipe flashing to the Sarnafil® membrane using a pressure roller.

## 8 VENT PIPE FLASHING



- Weld the vertical seam.
- Cut the Sarnafil® pipe flashing level with the top of the vent pipe.
- Weld the flange to the Sarnafil® membrane (1).



### Finishing with a plastic cap:

- It is recommended to cover the vent pipe with a plastic pipe cap.
- Stretch the membrane by at least 15 mm.



### Finishing with handmade cap:

- If no plastic cap is available, form a handmade vent pipe cap:
- Insert a piece of Sarnafil® membrane into the vent pipe, light-side inwards minimum 50 mm length / overlapping approx. 20 mm.
- Spot weld the overlap.
- Cut the overlap edge as illustrated.



## DETAILS

### 8 VENT PIPE FLASHING



- Pull the whole membrane piece out of the vent pipe.
- Weld the inside overlap.



- Insert the membrane piece into the vent pipe again.
- Make sure that approx. 30 mm protrudes.
- Bend the membrane piece over the vent pipes.



- Spot weld the membrane piece in several places to the pipe flashing membrane.

NOTES





# FOR MORE ROOFING INFORMATION:



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