APPLICATION MANUAL
Sikaplan® TM/TB TYPES

BUILDING TRUST

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1 GENERAL INFORMATION

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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.


CERTIFICATE

ROOFING TRAINING SIKA SERVICES AG

This is to certify that

FIRST NAME LAST NAME

successfully passed the

BASIC ROOFING TRAINING

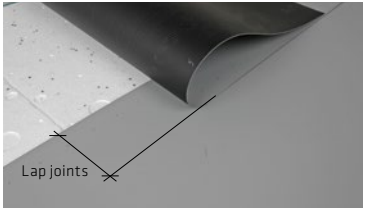
Therefore Sika Roofing puts great emphasis on application training and offers a wide range of expert training courses.
Only those who have successfully completed one of the Sika Roofing training courses and have regular, practical site experience may install Sika Roofing systems.

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 SIKA ROOFING

Storage of Sikaplan® T membranes
On the building site, Sikaplan® T membranes must be protected against humidity, dirt, dust and exposure.

Cutting Sikaplan® T membranes
Cut Sikaplan® T membranes with scissors or a knife.



Lap joints
Adjoining Sikaplan® T membranes are overlapped and hot-air welded to form a watertight seam.
The recommended membrane overlaps vary - between the roofing systems .
Details are found in the corresponding chapters of this application manual.

COMPTABILITY

Sikaplan® T is resistant to environmental effects and various chemicals.
Sikaplan® T is suitable for installation directly on top of existing (old) bituminous roofing. In case of partitioned installations, Sikaplan® T is adhered directly on to the bituminous vapor barrier.

Sikaplan® T 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.

SEAM CLEANING AND SEAM PREPARATION

General
Sikaplan® T membranes must be prepared for welding.

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

Procedure during installation
- Every seam is prepared with Sarnafil® T Prep (yellow liquid).
- In case of slightly soiled membrane surface, Sarnafil® T Prep is used for both cleaning and the subsequent seam preparation.

Procedure during repair
- Every seam is prepared with Sarnafil® T Prep (yellow liquid).
- 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. After cleaning, seam preparation with Sarnafil® T Prep (yellow liquid) must be carried out in any case.

General rules
- The seam area must be clean and dry.
- The seam preparation must be done right before welding.
- 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).

With Sikaplan® T, the seam area must be treated on both sides prior to welding.
For seam preparation and welding, the seam area must be clean and dry.

Cleaning and Seam preparation procedures Sikaplan® T

	Condition of Sikaplan® T	Steps to be taken in overlap area (both sides)
Installation Phase	■ Clean Sikaplan® T	■ Prepare seam areas using a clean cloth moistened with Sarnafil® T Prep ■ Allow Sarnafil® T Prep to dry
Utilization Phase	■ Slightly soiled Sikaplan® T (loose dust, dirt, bitumen residue)	■ Wipe off loose dirt ■ If necessary, wash down with water ■ Clean with Sarnafil® T Prep ■ Prepare seam using a clean cloth moistened with Sarnafil® T Prep ■ Allow Sarnafil® T Prep to dry
	■ Heavily soiled Sikaplan® T (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 ■ Prepare seam using a clean cloth moistened with Sarnafil® T Prep ■ Allow Sarnafil® T Prep to dry
	When repairing membranes the new Sikaplan® T should be laid underneath the existing roofing.	

Note: When using cleaning fluids and the seam preparation agent, protective gloves must be worn.
Caution: Avoid all contact between Sarnafil® T Clean or Sarnafil® T Prep and polystyrene insulation boards!

Hand welding tools
The following tools are available to hand weld Sikaplan® T:

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.

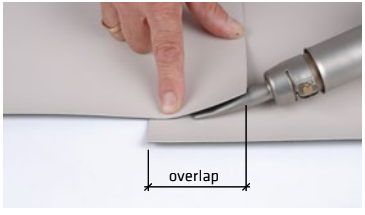
The air intake slots must be open and free of dust (1). Remove accumulated dust and dirt with a brush or compressed air.

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

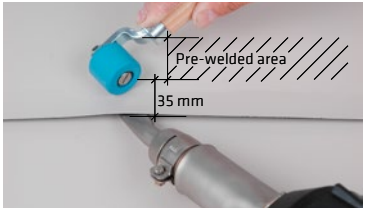
Basic settings for Sikaplan® T

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

Higher settings must be avoided. They will impair seam quality.



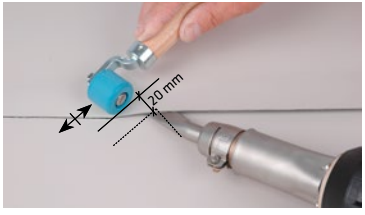
Hand welding procedure
When welding Sikaplan® T, the overlap area must be clean and dry.
Overlaps are required as follows:
- 80 mm for loose laid
- 80 mm for fully adhered



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.

Automatic welding
When welding Sikaplan® T membranes, the overlap area must be clean and dry.
Always perform a test weld before welding seams. Check seams during and after welding.

Leister Varimat V2
Use nozzle of at least 30 mm.

Mount additional weight of approx. 5 kg (1) onto the automatic welding machine. Determine the additional weight by inspecting the test weld.

Check the settings of the automatic welding machine by carrying out a test weld and adjust the settings if necessary.

Check seams during and after welding.

Sarnamatic® 681:
The Sarnamatic® welding machine is delivered with a comprehensive instruction manual.

Check the settings of the automatic welding machine by carrying out a test weld and adjust the settings if necessary.

Check seams during and after welding.

General
Always perform a test weld to check the basic machine settings. Adjust the basic settings as required.

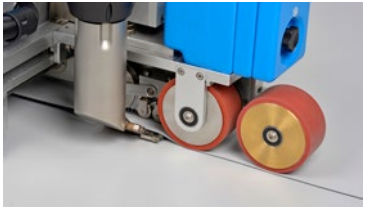
The correct welding temperature depends on:
- Welding speed
- Air supply volume (size and type of nozzle)
- Ambient air temperature and humidity
- Material temperature and moistness

Basic settings for Sikaplan® T

	Leister Varimat V2	Sarnamatic® 681
Speed	3 m/min.	All data are pre-set
Temperature	400 °C	All data are pre-set
Air setting	100%	All data are pre-set

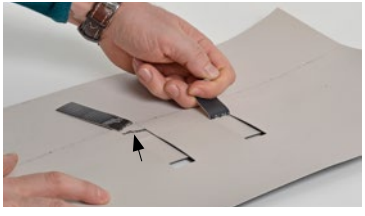
Before welding the actual roofing membrane, a test weld must be carried out to check the settings of the hand welder and/or the automatic welding machine. The test weld must be also carried out to check local site conditions during a working day.

A test weld consists of:
a) Test welding with peel test
b) Seam check during test welding
c) Seam check after test welding



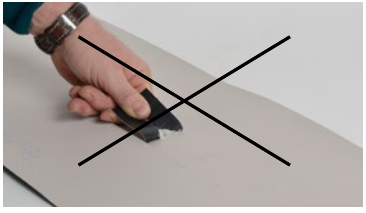
a) Test weld with peel test
Before welding the actual roofing membrane, a test weld with subsequent peel test must be carried out.
This test welding serves to check the temperature settings of the hand welder or the basic settings of the automatic welding machine so that they can be adjusted to the site conditions if necessary.

1. Test welding
Carry out a test weld (automatic/manual).

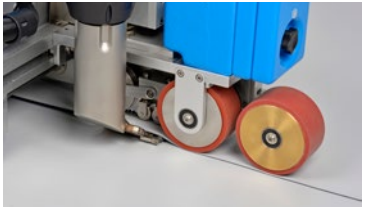


2. Peel test across the seam
The welding seam must be fully cooled. Cut a small strip into the upper membrane. Pull away the strip of the upper membrane sheet across the seam. The seam must not separate. Any tearing must be located outside the welded seam, either in the synthetic sheeting (as shown)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

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.



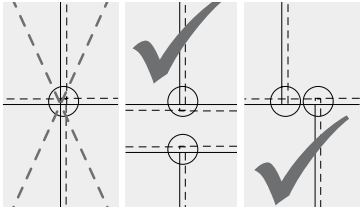
b) Seam check during test welding
During welding the seam must be visually checked.

- **Size of the welding bead**
  A continuous, excessively large welding bead is an indication of an improperly welded seam.

c) Seam check after test welding
After welding the seam should be visually checked.

- **Material discoloration**
  Black or brown discoloration in the weld overlap (visible when pulling away the upper sheet at the end of the seam) indicates that the welding temperature is too high or the welding speed is too slow.

WELDS AT TRANSVERSE JOINTS



By proper arrangement of Sikaplan® T, 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 Sikaplan® T thickness, for manual and automatic welding, have to be chamfered.

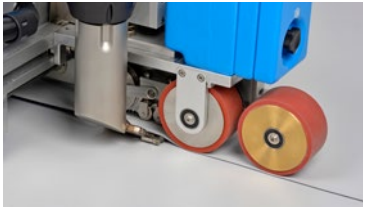
Weld the membrane over the chamfered area.

SEAM CHECK DURING WELDING

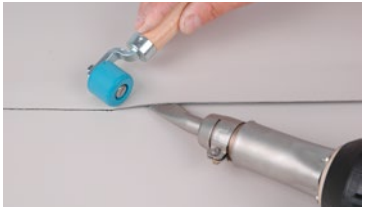
During welding the seam must be inspected visually (shiny surfaces, discoloration of the welding bead, size of welding bead).

- **Material discoloration**
  Black or brown next to or in the weld itself indicates that the welding temperature is too high or the welding speed is too slow.

- **Size of the welding bead**
  A continuous, excessively large welding bead is an indication of an improperly welded seam.

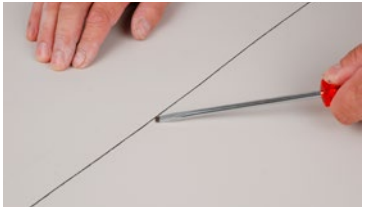


Formation of a welding bead during automatic welding
During the automatic welding process, the welding bead can be seen underneath the pressure roller. After the cooling-off period, little or no welding bead should remain with Sikaplan® T membrane.



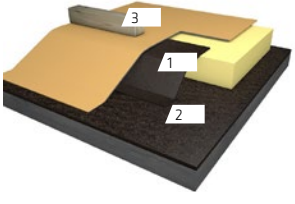
Formation of a welding bead during hand welding
During hand welding the welding bead is more prominent and remains clearly visible after cooling.

SEAM CHECK AFTER WELDING



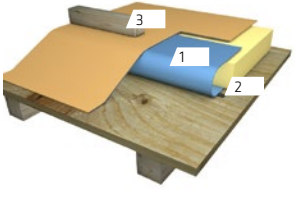
Mechanical seam check
All seams must be checked mechanically once they have completely cooled. For this purpose a screwdriver (approx. 5 mm wide, with rounded edges) should be used. Although slight pressure should be applied to the seam, the membrane must not be damaged.
The mechanical seam check assists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



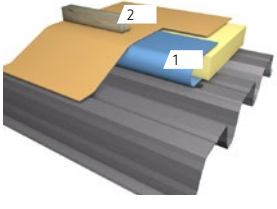
Day joints to a bituminous vapor control layer

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



Day joints with Sarnavap® vapor control layer on top of profiled metal sheet

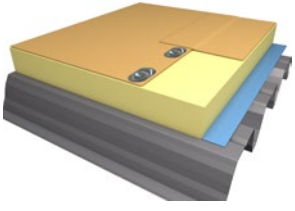
- Fold back the Sarnavap® vapor control layer (1) over the thermal insulation.
- Put weight (2) on the Sikaplan® T membrane.

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.

2 MECHANICALLY FASTENED SYSTEM Sikaplan® TM

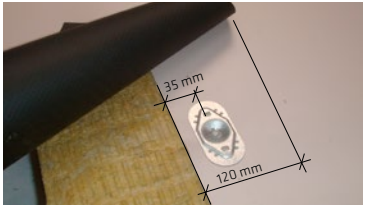
24 Spot Fastening in Overlap
26 Perimeter Securement

SPOT FASTENING IN OVERLAP



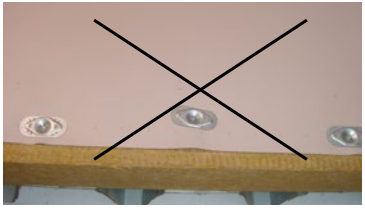
Fasten the thermal insulation boards with Sarnafast® Fastener and Insulation Washers. Use at least one fastener per insulation board or 1 m^2.

Orient Sikaplan® TM sheets perpendicular to the metal ribbing.



Sikaplan® TM 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 Sikaplan® TM membrane sheet, overlap by 120 mm along the marked line and weld.

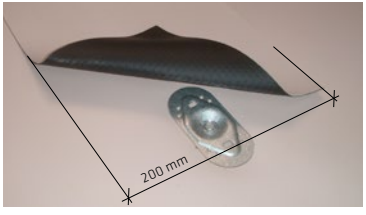


Attention:
Use an automatic setting tool or an electric screwdriver with depth guide to install fasteners and washers.

Incorrect positioning and/or setting of fasteners and washers will substantially reduce the wind-uplift resistance of the system.

SPOT FASTENING IN OVERLAP

Attention:
When the fastener is correctly anchored, the washer will be level with the Sikaplan® TM membrane.

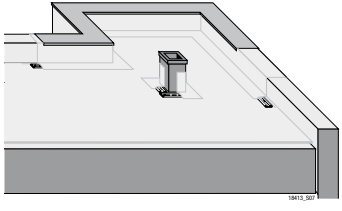


In perimeter and corner areas where additional fastening is required, Sarnafast® Fasteners and Sarnafast® Washers are installed through the membrane.

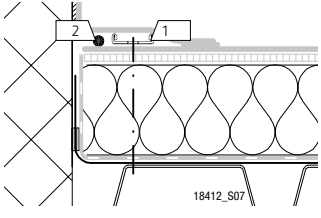
Cover the rows of Sarnafast® Fasteners with a 200 mm wide membrane cover strip and weld both sides.

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

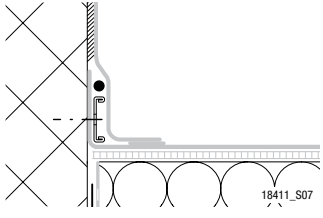
Important notes:
- All Sarnafast® Fasteners must be fastened immediately after the Sikaplan® TM membrane has been installed. Failure to do so may result in permanent membrane deformation.
- All welding on the flat roofing must be carried out with the Sarnamatic® welding machine.
  Hand welding is only allowed for detail work.



Perimeter securement
All flashings, terminations and penetrations of mechanically fastened systems must be secured mechanically using Sarnabar®.



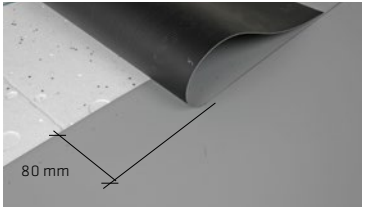
Securement in roof deck
The Sarnabar® must be anchored using suitable fasteners into the roof deck.
Sarnabar® types 6, 6/10, 6/15 (1) with at least 4 fasteners per meter must be used. In addition a Sarnafil® T Welding Cord of 4 mm diameter (2) must be welded to the side of the fastening bar facing towards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



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.

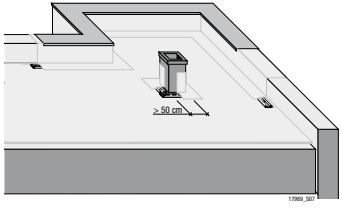
3 BALLASTED SYSTEM Sikaplan® TB

28 General Information
29 Perimeter Securement

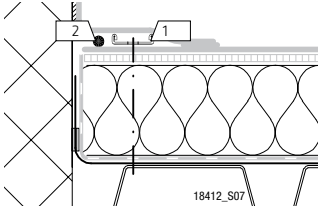


General information
In ballasted roofing systems loose laid Sikaplan® TB membrane is used.
The membranes should be unrolled flat without waves or creases and be positioned to overlap by 80 mm.
The overlapping sheets must be welded immediately (on the same working day) and the loose laid Sikaplan® TB membrane ballasted as soon as possible.

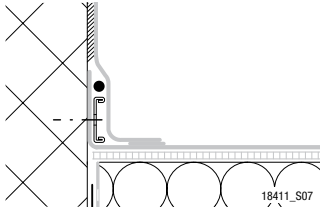
PERIMETER SECUREMENT



Perimeter securement
All flashings, terminations and penetrations wider than 50 cm must be secured mechanically using Sarnabar®.



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 by thermal construction.



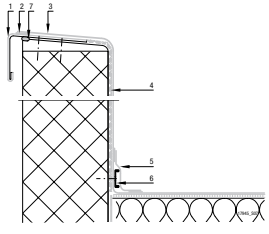
Securement in upstand
The Sarnabar® can also be anchored into the transition area of the upstand by using suitable fasteners. If the roof structure in the upstand area is not strong enough (e.g. timber planking, aerated concrete, thin metal sheets, skylight frames etc.) the fastening may be anchored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

4 ADHERED SYSTEM Sikaplan® TB

32 Flashing
37 Sealants at Flashing

FLASHINGS

Mechanically fastened perimeter flashing
Screw the fastening bar (Sarnabar®) over the Sikaplan® TB, along the vertical or horizontal transition, either to the upstand or to the roof surface.
A levelling layer must be installed between Sikaplan® TB 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.

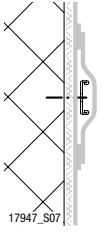


1 Sarnafil® T Metal Sheet
2 Hot air weld
3 Sikaplan® TB membrane
4 Levelling/separation layer
5 Cover strip
6 Sarnabar®
7 S-Sealing tape

FLASHINGS

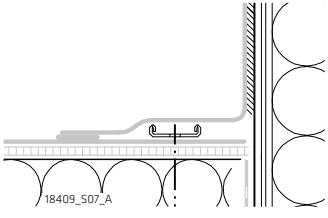
Mechanically fastened perimeter flashing

- For parapet heights ≤ 400 mm Sikaplan® T is used. Additional fastening as described in following paragraph is not required.
- For parapet heights ≤ 800 mm Sikaplan® TM is used. Additional fastening as described in following paragraph is not required.
- For parapet heights > 800 mm Sikaplan® TM is used. Additional mechanical fastening is required.



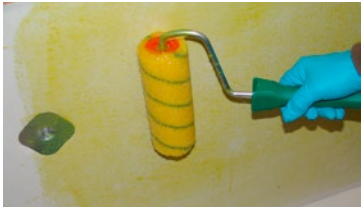
Additional fastening:
Sarnabar® must be attached with at least four fasteners per meter.

FLASHINGS



Fully adhered perimeter flashing
Flashings are formed using strips of Sikaplan® TB membrane. The flashing strips are fully adhered to the upstand and welded to the roofing membrane.

Sikaplan® TB 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.



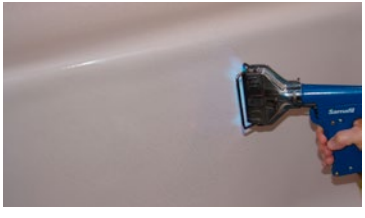
Sarnacol® T 660 is applied evenly with a brush or roller to the substrate. Allow the adhesive to dry completely.
Absorbent substrates require two coats of adhesive. Allow the adhesive to dry completely before the second coating is applied. Allow an evaporation time of minimum 2 hours and maximum 10 hours.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

Sarnacol® T 660 is also applied to the underside of the Sikaplan® TB 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 Sikaplan® TB on to the coated substrate layer and press down firmly, using a hand roller.

FLASHINGS



By heating the Sikaplan® TB 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.

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 Sikaplan® TB. Allow Primer T 501 to evaporate.

Form an angled bead of sealant using Sarnaplast® 2235.

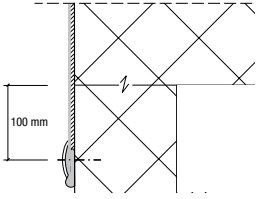
SEALANTS AT FLASHINGS

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.

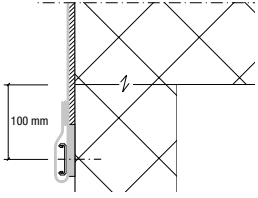
Apply Sarnaplast® 2235 on top of the backing rod (1) and strike bead to form a concave groove (2).

SEALANTS AT FLASHINGS



Sealant packing with perimeter fastening

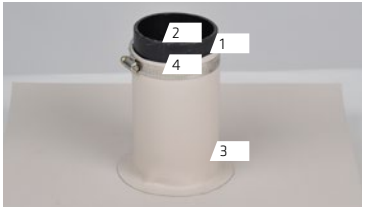
- The membrane should be pulled down at least 100 mm below the deck-to-wall joint.
- Adhere Sikaplan® TB using Sarnacol® T 660
- Apply Primer T 501 to the area to be sealed and allow evaporating.
- Apply Sarnaplast® 2235
- Mechanically fasten Sikaplan® TB over the packing using a fastening bar.



Alternative application with longer membrane sheets:

Follow procedure as before.

- Fold up the additional Sikaplan® TB membrane and weld.



Filler packing at jubilee clips

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

- Prime the sealing area with Primer T 501 and allow evaporating.
- Insert Sarnaplast® 2235 (1) between the penetrating pipe (2) and the Sikaplan® TB membrane (3).
- Secure the Sarnafil® T-15D or Sikaplan® TB membrane (over the Sarnaplast® 2235 sealant) with a jubilee clip (4).

5 DETAILS

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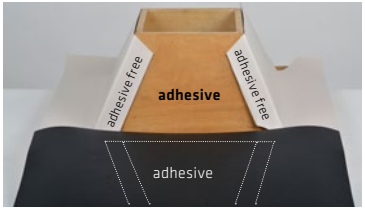
43 1 Outside Corner with Flashing Strips
49 2 Inside Corner with Upright Crease
52 3 Roof Trim
58 4 Skylight
64 5 Drains
66 6 Scuppers
69 7 Overflows
72 8 Vent Pipe Flashing

Material
For roofing details the stretchable unreinforced Sarnafil® T-15D or Sikaplan® TB membrane must be used.

Welding
Use a hand welder with 20 mm nozzle for detail work.
To form Sikaplan® TB membrane for detailing work, the membrane can be evenly warmed up at the edge and stretched manually.

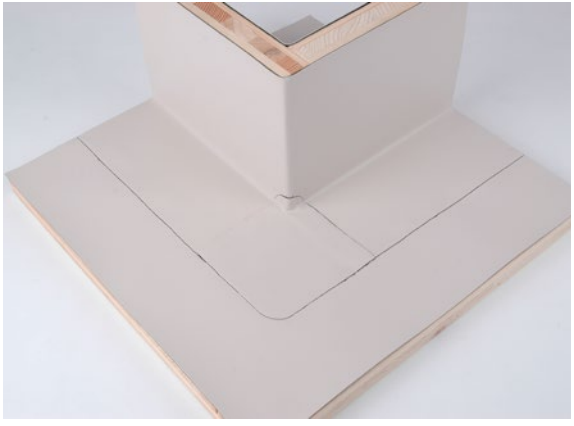


Adhesive application
Do not apply adhesive to welding areas.
Allow contact adhesive to evaporate before adhering the membrane (finger test).

DETAILS

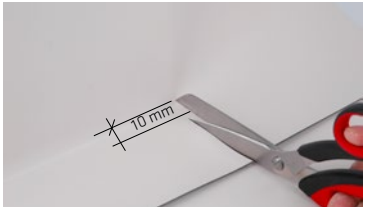
1 OUTSIDE CORNER WITH FLASHING STRIPS

COMPLETE OUTSIDE CORNER FLASHING WITH HANDMADE FLANGE



1 OUTSIDE CORNER WITH FLASHING STRIPS

Coat the substrate with adhesive (Sarnacol®).
- Apply adhesive (Sarnacol®) to the Sikaplan® TB 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

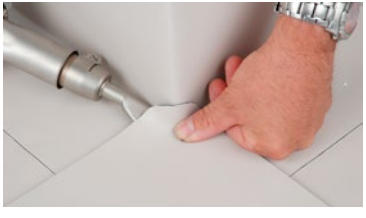
- Adhere the flashing strip around the corner without creasing.
- Spot weld the overlap to the roofing membrane.

- 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.

1 OUTSIDE CORNER WITH FLASHING STRIPS

– Heat and stretch the rounded corner.

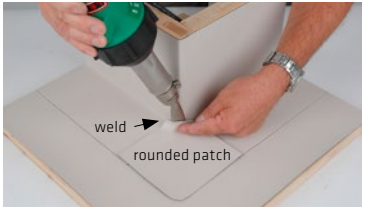


– Spot weld the whole corner patch.

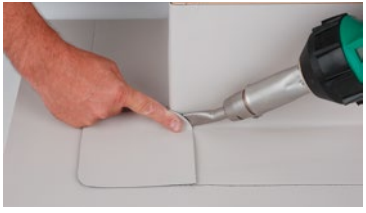
– Cut the corner patch so that it is aligned with the overlap of the Sikaplan® TB flashing strip.

DETAILS

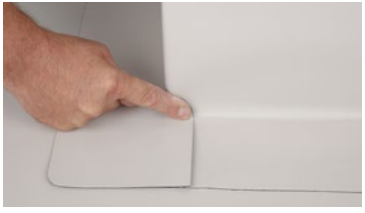
1 OUTSIDE CORNER WITH FLASHING STRIPS



- 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.

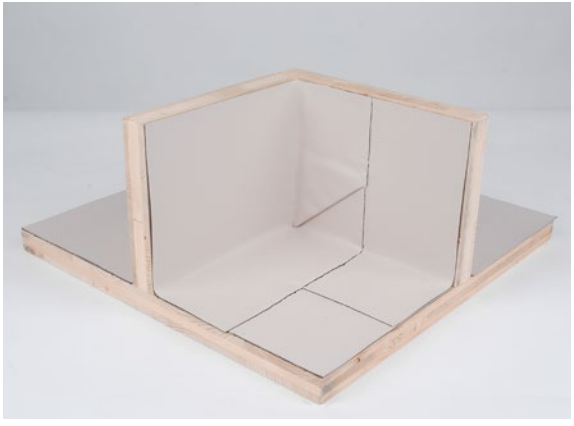
1 OUTSIDE CORNER WITH FLASHING STRIPS

– Weld the remaining sides of the patch.

– Mechanically check the welds.

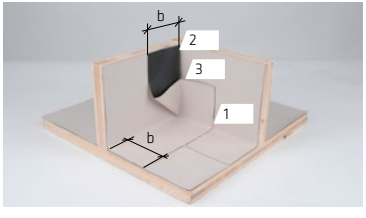
2 INSIDE CORNER WITH UPRIGHT CREASE

INSIDE CORNER WITH AN UPRIGHT CREASE

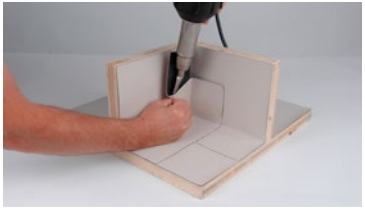


2 INSIDE CORNER WITH UPRIGHT CREASE

- Cut the first Sikaplan® TB 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 Sikaplan® TB flashing strip in 3 spots (1–3).

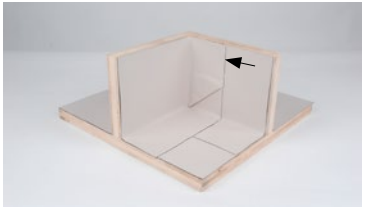


- Weld the crease shut to a closed pocket. Work from the inside towards the front edge.

2 INSIDE CORNER WITH UPRIGHT CREASE

- Weld the second Sikaplan® TB flashing strip to the overlap area.

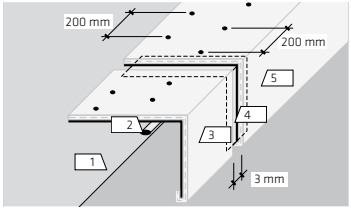
- Starting from the upright corner area, weld the closed pocket to the membrane upstand (pre-weld and final weld).



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

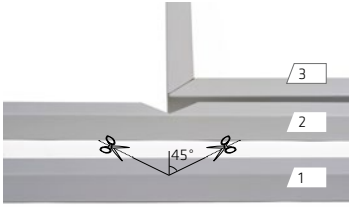
ROOF TRIM WITH Sarnafil® T METAL SHEET

3 ROOF TRIM



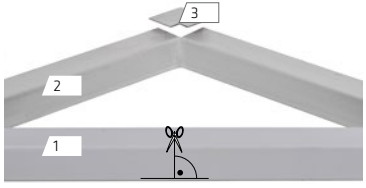
Longitudinal joint metal sheet

- 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

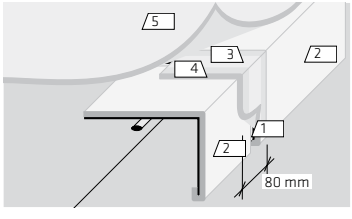
- Mark miter on the metal sheet (1).
- Cut metal sheet to size as shown (2) (45°).
- Bend the metal sheet to fit the corner (3) and fix to the substrate.
- Weld the crease shut to a closed pocket. Work from the inside towards the front edge.



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).

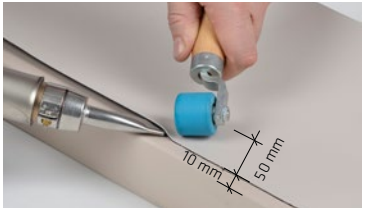
3 ROOF TRIM



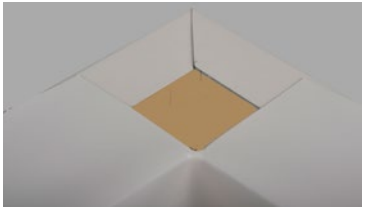
Longitudinal joint completed after the metal sheets are fixed

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

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

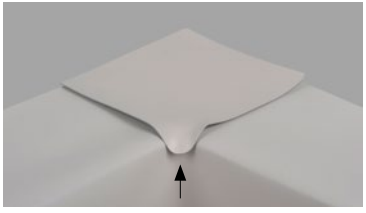


- Adhere the Sikaplan® T flashing strip (5) to the substrate using Sarnacol® adhesive. Make sure that the outermost 50 mm is free of adhesive to allow welding.
- The edge of the Sikaplan® T flashing strip should stop 10 mm behind the folded down section of the metal sheet.
- Weld the Sikaplan® T flashing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

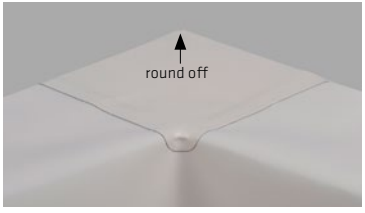


Inside corner

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

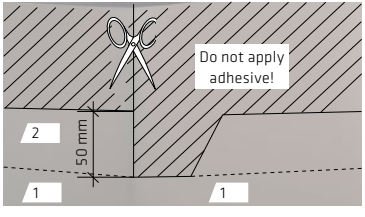


- Round the corner of the membrane patch.
- Heat and stretch the inside, rounded corner.

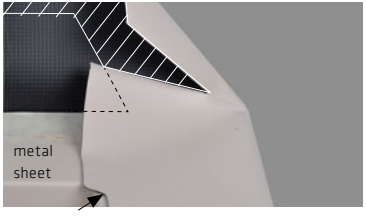


- Weld the Sikaplan® T corner patch and round off the outer corner.

3 ROOF TRIM

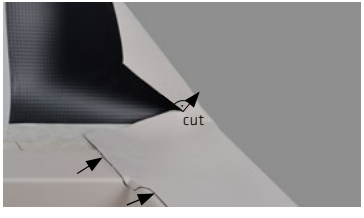


Outside corner
(Roof side view)
- Apply adhesive to substrate.
- Apply adhesive to the Sikaplan® T flashing strip.
  Keep the area shown, free of adhesive to allow welding later on.
- Adhere the Sikaplan® T flashing strip to the substrate (vertical roof trim area 1).



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

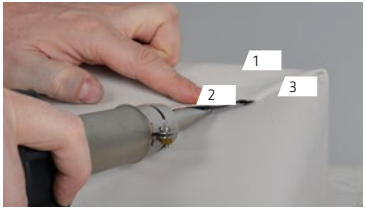
(View from outside / metal sheet side)
- Cut the flashing strip to size at the adhered parapet front edge.



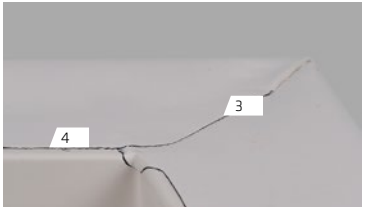
- Weld the flashing strip to the metal sheet.
- Cut the upstanding Sikaplan® T flashing strip in a right angle as illustrated.

3 ROOF TRIM

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

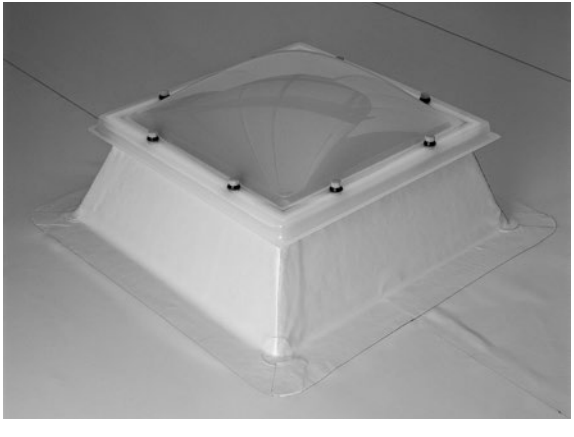


(View from roof side)
- Fold down the welded crease and adhere the Sikaplan® T flashing strip to the substrate layer (1).
- Cut the flashing strip (2).
- Weld the crease to the flashing strip (3).



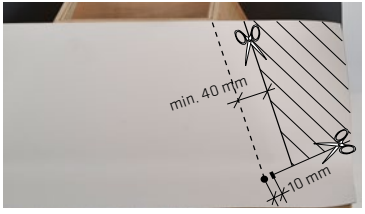
(View from outside / metal sheet side)
- Weld the Sikaplan® T flashing strip to the metal sheet (4).

COMPLETED SKYLIGHT DETAIL



4 SKYLIGHT

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

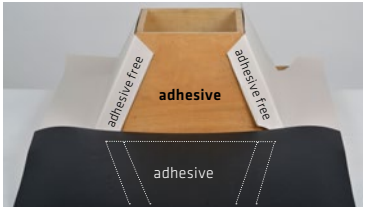


- Mark and cut the corners as illustrated.

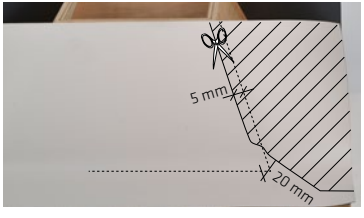
- Warm up the Sikaplan® T membrane overlap.

4 SKYLIGHT

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



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



- Cut the Sikaplan® T membrane strips along the line as illustrated.
- In the lower corner area – leave an additional membrane “thumb tab” of 20 mm for welding.

4 SKYLIGHT

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

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

- Pre-weld and final weld the horizontal seam.

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

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

- Weld the membrane overlap shut at the bottom.

4 SKYLIGHT

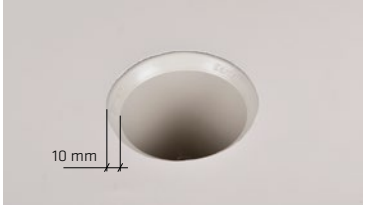
Completed skylight

- 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.

COMPLETED DRAIN DETAIL

5 DRAINS

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

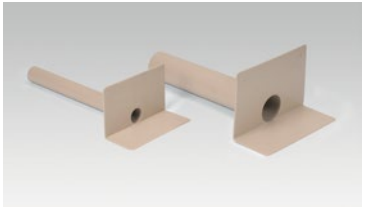


- Secure the drain to the substrate.
- Cut a hole into the Sikaplan® T membrane, approx. 20 mm larger than the diameter of the drain.

- Hand weld the Sikaplan® T roofing membrane directly to the flange of the drain using a 20 mm wide nozzle.

COMPLETED SCUPPER DETAIL

6 SCUPPERS



Prefabricated scuppers should be used (Sarnafil® T Scuppers).

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

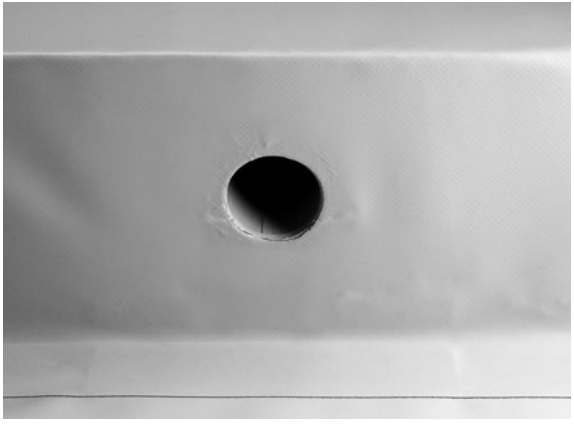
- Cut two matching Sikaplan® T membrane pieces as illustrated. Cut larger than Scupper size.
- Weld the first Sikaplan® T membrane piece to the bent flange.

- Weld the second piece overlapping the first.

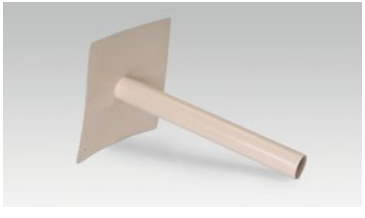
6 SCUPPERS

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

COMPLETED OVERFLOW DETAIL



7 OVERFLOWS



- Prefabricated owerflows should be used (Sarnafil® T-Owerflow).

Application variation 1
- Secure the overflow to the parapet.
- Make sure fasteners do not protrude.

- Adhere the Sikaplan® T 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 Sikaplan® T flashing strip to the flange of the overflow using a 20 mm wide nozzle

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

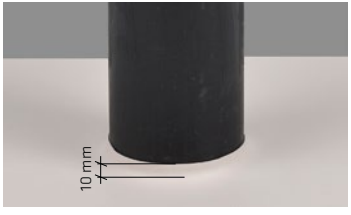
- Secure the prepared overflow to the roof and parapet by welding on the pre-adhered flashing strip.
- Weld the membrane overlap of the overflow to the adhered flashing strip.

8 VENT PIPE FLASHING

COMPLETED VENT PIPE DETAIL WITH PLASTC CAP

8 VENT PIPE FLASHING

- Cut a flange from a piece of Sikaplan® T 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 Sikaplan® T membrane as pipe flashing with an overlap of 30 mm.

- Spot weld the overlap of the pipe flashing.

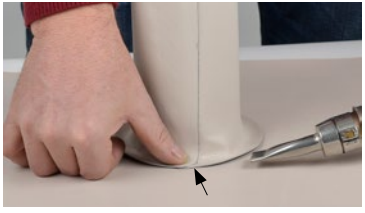
8 VENT PIPE FLASHING

- Round the edges of the pipe flashing overlap.
- Pull the pipe flashing off the vent pipe.

- Evenly warm up the bottom edge of the Sarnafil® T-15D or Sikaplan® T pipe flashing.

- Stretch by at least 15 mm.

8 VENT PIPE FLASHING



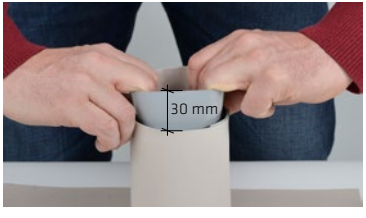
- Put the pipe flashing over the pipe and weld the rounded edges of the overlap area.

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

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

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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