

# TECHNICAL BULLETIN

## TARGET MARKET ROOFING



BUILDING TRUST



### Subject: Steep Drain Sumps

15-10

As a follow up to Technical Bulletin 11-13, Sika- Roofing would like to offer some additional options for flashing steep drain sumps. Sika- Roofing promotes the proper roofing practice of creating sufficiently sized sumps at all roof drains. A proper sump will help direct water to the drain, expedite removal and minimize ponding. Sika- Roofing offers prefabricated polyisocyanurate drain sumps to simplify this application. Historically in cold climates roofs were designed with wide sumps and less insulation at the drains. This would not only encourage good drainage but the escaping warm air would help to keep the drains clear of ice and snow in winter. As energy costs rise, more and more specifications are calling for high minimum R-values which make it difficult to properly sump the drains. Often times the insulation is shaved with a saw to create a transition to the drain resulting in a steep step down. Trying to force G-410 membrane down into a steep sump will cause wrinkling and will stress the membrane. The wrinkling could interfere with welding and prevent the clamping ring from achieving a tight seal. Over time, the excessive stress on the membrane will damage the sheet and can lead to leakage. Steep sumps will also require more maintenance as they are more prone to collecting debris. Steep sumps should be avoided. To create a gradual transition at drains, the sump should ideally be no more than 3 inches per foot.

We do however appreciate that this is not always possible. When steep sumps cannot be avoided as stated in the previous bulletin, 11-13, they can be addressed by:

- Making relief cuts in the field membrane or target patch and striping in those relief cuts being sure none of the cuts or patches extends under the drain ring. \*
- Raising the drain to lessen the transition.
- Install a Sarnadrain with U-Flow insert.

Sika- Roofing would like to offer another method for flashing steeply sumped drains. This method involves creating a slight cone shape out of the membrane. Typically the roof drains are flashed with Sarnafil G410 or Sikaplan Adhered. When Sarnafil S327 or Sikaplan Fastened is used in the field of the roof, they may also be used in the drains.

**Cone Flashing Detail.** This detail will result in a seam going through the drain clamping ring. Traditionally, positioning a seam through a drain clamping ring has not been allowed. With this detail the seam **must** be completely welded on the front and back side. This will prevent water from entering the roofing system through the seam in the event of a drain backup.

\*Target patches are always required on adhered roofing systems regardless of sump. Target patches are not required on mechanically attached systems if the sump is less than 3"/12" and the field seam does not extend into the sump area.



**Step 1.** This photo shows a condition where the insulation has been shaved with a saw. Position the field membrane and trim close to the drain bowl. Membrane is to lay flat, pie shape relief cuts may be required. Install the specified fasteners and plates to secure the field membrane. Installing the fasteners in the sump rather than on the flat area will make it easier to transition the target patch without wrinkling.



**Step 2** –Cut a round target patch. The target patch must be large enough so when installed there will be a minimum of 2"-3" coverage past the fasteners / plates and relief cuts. Cut the target from one edge to the center as shown. Cut the hole in the target patch slightly larger than the diameter of the drain pipe.



**Step 3-** Center the target patch over the drain pipe and allow it to conform to the sump. Lightly tack the lap to hold the target in the desired shape.



**Step 4-** Flip the target patch over and trim off excess membrane leaving 2"-3", round the top layer and cut the bottom layer at a 45° angle.



**Step 5-** Pre-weld and finish weld the back side lap completely. **This step is critical to prevent water migration into the roofing system in case of a drain back up.** Chafer finish weld using the hot air gun, creating a smoothness to the weld.



**Step 6-** Weld the top lap. The entire lap is fully welded from the center of the target patch to the outside



**Step 7-** Place the bolts to hold the target in place. Do not place welded seam on a bolt. When possible, position seam away from direct water flow (high side) of drain.



**Step 8-** Apply one full tube of Sikaflex 1A to the drain bowl flange.



**Step 9-** Pre-weld the target patch flange.



**Step 10-** Finish weld the target patch flange. Apply a T-patch over seam weld and field sheet intersection.

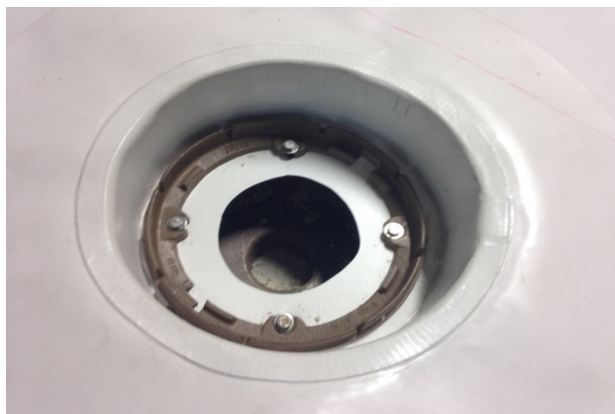
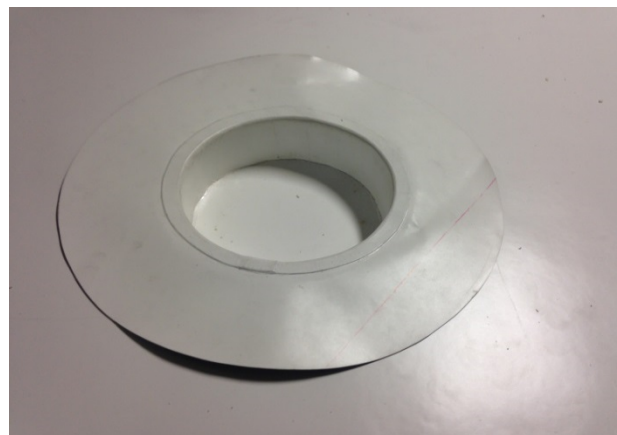


**Step 11-** Install the drain clamping ring

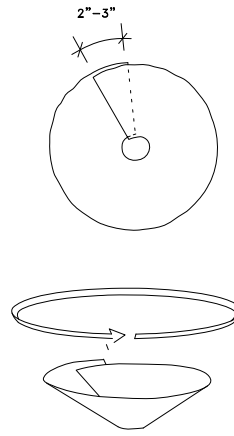
Completed drain detail



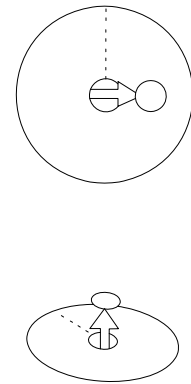
**Custom Insert** – The above detail should work with most drains. For extreme situations, with even steeper sumps or for no sump drains, (such as found near a corner at a parapet wall) a custom prefabricated, PVC drain insert can be purchased through Sika-Roofing.



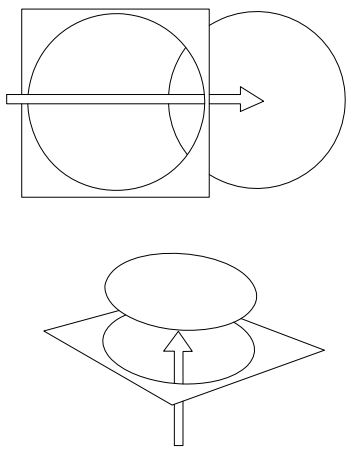
When using a pre-fabricated drain insert, a drain basket must be used which is higher than the roof plane. This will help prevent clogging. Please contact Sika-Roofing Technical Department for more information on measuring and ordering custom drain inserts.



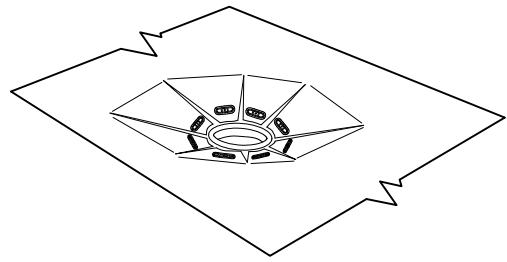
4) CENTER OVER DRAIN PIPE AND ALLOW TO CONFORM TO SUMP  
  
LIGHTLY TACK WELD TO KEEP OVERLAP



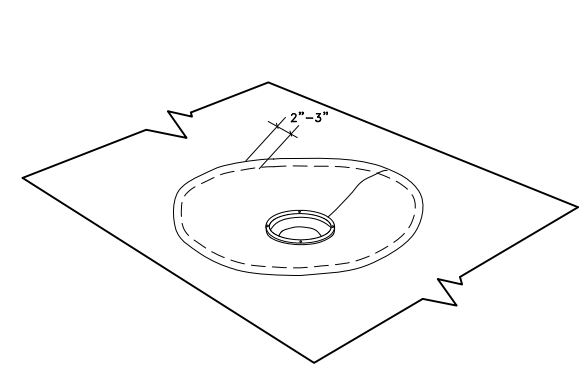
3) MAKE CUT FROM ONE EDGE TO THE CENTER



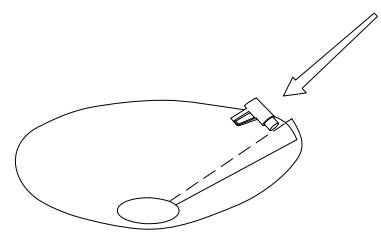
2) CUT ROUND TARGET PATCH LARGE ENOUGH TO EXTEND 2"-3" PAST MEMBRANE FASTENERS



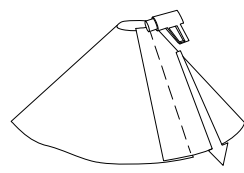
1) PREPARE AND FASTEN FIELD SHEET



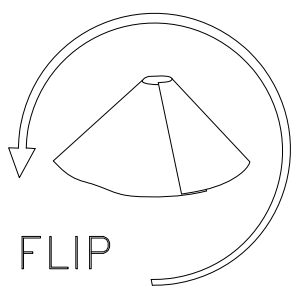
8) PLACE TARGET INTO SUMP AND INSTALL CLAMPING RING LOOSELY TO HOLD TARGET IN PLACE  
  
WELD TARGET FLANGE TO FIELD SHEET



7) WELD TOP SIDE LAP 100%



6) WELD BACK SIDE LAP 100%

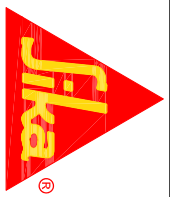


5) FLIP OVER AND TRIM EXCESS FROM FLAP

**BUILDING TRUST**

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JOB NAME:

**BUILDING A FUNNEL FOR A STEEP SUMP DRAIN DETAIL**

SCALE: **N.T.S.**

DATE: **11/15**

FILE NO.:

DRW. NO.:

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