

INSTALLATION INSTRUCTIONS

Cuff Entry Fittings

Please read all instructions completely prior to installation. These instructions do not supersede local laws and regulations. Always comply with local requirements.

CUFF BONDING:

- 1). Locate penetration on the outside of the sump. Using a hole-saw of the appropriate size, drill hole for penetration:

1.4" Cuff = 3" Hole Saw

1.5", 2", 2.4" 2.7" Cuff = 4.5" Hole Saw

3.6" Cuff = 5.5" Hole Saw

4.5" Cuff = 6.5" Hole Saw

On both the inside and the outside of the sump, grind an area that is at least 4" greater than the flat portion of the fiberglass cuff. Make sure the bonding surface is clean and dry. If there is not enough room between penetrations, the square base of the cuff can be trimmed so that they do not overlap each other.

- 2). Ensure the bonding surfaces of the cuff pieces are sanded and clean. Insert the smaller of the cuff pieces from the outside of the sump through the hole so that the square base is as tight up against the sump wall as possible, and centered in the hole. Use catalyzed putty to immobilize the cuff. Seal and smooth the transition from cuff to sump with a squeegee. If the fiberglass is not going to be applied immediately, get the putty very smooth. If any bumps or ridges are present after the putty hardens, they will have to be sanded smooth to ensure a good laminate.
- 3). Cut or tear pieces of fiberglass mat into 3" strips that are long enough to extend past the corners of the cuff. You will need a minimum of 16 pieces for each cuff (inside and out).
- 4). Use a piece of cardboard or other suitable surface to pre-wet the fiberglass mat pieces, two layers at a time with catalyzed resin, making sure to thoroughly saturate all the fibers. Place the mat around the perimeter of the square base of the cuff, sealing all edges and rolling out all of the air bubbles from the laminations. Get the laminations as smooth and consistent in thickness as possible. When the fiberglass has partially set up, it is possible to trim any excess with a razor knife. If the surface of the laminate is good and smooth, paint or "flow-coat" the entire surface with catalyzed resin to further smooth out the fiberglass.
- 5). If installing double wall cuff, wait until laminations have cured, center the larger of the two cuff pieces over the cuff on the inside of the sump. Laminate these pieces in the same manner as in step 4 above.
- 6). Allow cuff to cure for 2 hours.

- 7). When the cuff is fully cured, trim the smaller cuff so that it protrudes no more than 1" beyond the larger cuff. Sand the exposed edges and surfaces of the cuffs, ensuring that the exposed edges and surfaces to be bonded are sanded thoroughly. It is important that these surfaces be smooth and clean.

BOOT BONDING:

- 8). Dry fit the boot onto the cuff plate before beginning this procedure. The boot should be slightly snug on the cuff plate. If boot requires force to install dry, lightly sand the area the boot will be bonded on the cuff to provide a proper fit. Use a medium grit sand paper. Any trimming that that is required must be performed at this point in time.
- 9). Abrade the inside of the inner boot with a clean wire brush or 70% isopropyl alcohol prior to bonding boot to the cuff plate.
- 10). Lightly sand the part of the cuff plate to which the boot will be applied. Clean this area with 70% isopropyl alcohol within 12 hours of bonding. This will provide for a maximum bond strength.
- 11). Place a ¼" bead of WFG bonder (DWAC600) on the outer ribbed area of the boot which to be attached to the fiberglass cuff. Work the bonder into the ribs of the boot. Apply a small amount of bonder to the outer edge of the fiberglass cuff to act as a lubricant.
- 12). Slide the boot onto the cuff plate. Rotate the boot a ¼ turn as the boot is being installed on the cuff plate.
- 13). Snug the boot to the cuff using the provided stainless steel clamp. This is to provide pressure on the joint during bonding. **Over tightening of the clamp may cause the boot to slip off the cuff.**
- 14).** The torque on the stainless steel clamp around the boot can be increased once the bonder has become rubbery and feels dry to the touch. **Do not exceed 60 inch pounds torque on the stainless steel clamp fastener.**
- 15). Insert centralizer into back of cuff. This prevents pressure on the cuff. 16).
If double wall application, install the outer boot (repeat steps 1-7).
- 17). Clean the pipe to be inserted through the cuff. Next, insert the pipe into the cuff from the outside of the sump. Care should be taken not to contaminate the boot to pipe or the boot to boot sealing areas as this may become a source of leaks.

- 18). Tighten the clamp on the boot(s) around the pipe until snug. **Do not exceed 60 inch pounds torque on the stainless steel clamp fastener.**

Note: It is not necessary to bond the cuff boot to the pipe.

FOR RETROFIT INSTALLATION:

- 19). Remove existing penetration boots. Sand a 13" minimum square about the center of the pipe, making sure to remove all sealant material from the previous penetration. Wipe surface clean with acetone.
- 20). Ensure the bonding surface of the two-piece cuff is sanded and clean. Place the two pieces around the pipe and butt fit them making sure that all mating surfaces are flush. Temporarily secure the pieces to each other using a hose clamp.
- 21). Attach the cuff assembly to the wall of the sump with either hot glue or some other fast setting glue, making sure to center the pipe within the cuff. To make sure that the cuff is bonded correctly, place the split between the two pieces horizontally so that there is not a seam on the bottom that will have to be performed "blind". When the hot glue or other fast setting glue has set up, remove the hose clamp installed earlier.
- 22). Protect the pipe and any other equipment with some form of masking paper or tape to minimize the mess when bonding the cuff to the sump. Cut or tear pieces of fiberglass mat into 3"x13" strips. You will need a minimum of 10 pieces for each cuff.
- 23). Apply catalyzed putty to fill and smooth over the edges of the cuff where it meets the sump and also where the two pieces come together. If the fiberglass is not going to be applied immediately, get the putty very smooth. If any bumps or ridges are present after the putty hardens, they will have to be sanded smooth to ensure a good laminate.
- 24). Use a piece of cardboard or other suitable surface to pre-wet the fiberglass mat pieces, two layers at a time with catalyzed resin, making sure to thoroughly saturate all the fibers. Place the mat around the perimeter of the square base of the cuff, sealing all edges. Wrap mat around the round part of the cuff making sure to seal all of the mating edges and rolling out all of the air bubbles from the laminations. Get the laminations as smooth and consistent in thickness as possible. When the fiberglass has partially set up, it is possible to trim any excess with a razor knife being extremely careful not to nick the pipe. If the surface of the laminate is good and smooth, paint or "flow-coat" the entire surface with catalyzed resin to further smooth out the fiberglass.
- 25). When the cuff is fully cured, sand the exposed edge and surface of the round portion of the cuff where the boot is to be bonded on.
- 26). Place the split boot over the pipe and glue the edges of the "split" with Bulkhead Bonder. It is not necessary to put the boot over the cuff at this time. Use hose clamps to temporarily hold the boot together just tight enough to



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make sure the split stays together. After the glue has dried, loosen the hose clamps.

27). Bond boot to cuff as per steps 8-17 above.