Installation Instructions
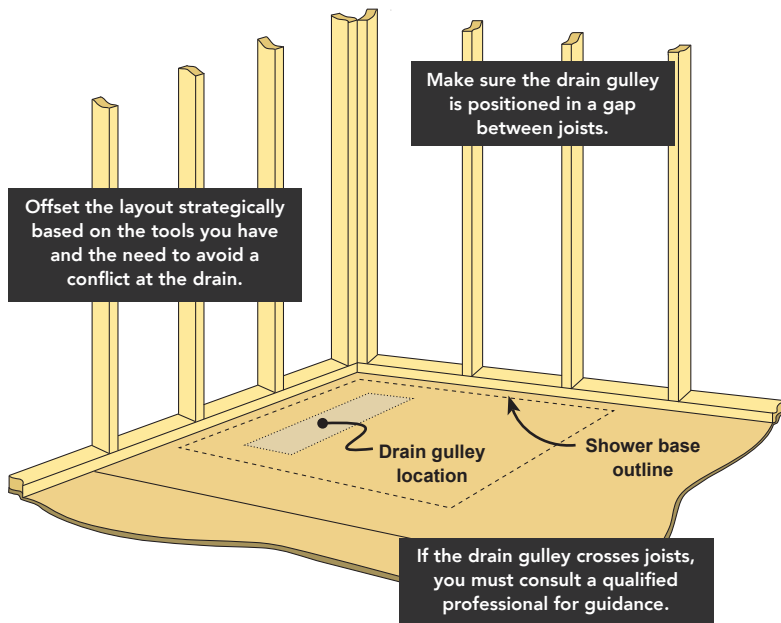
TrueDEK® Linear

2017-2018

ARC inc.

With an ARC TrueDEK® structural shower base, you'll build a beautiful, spa-style shower that's also safe and accommodating for everyone.

Install TrueDEK pre-pitched linear drain shower foundations directly on joists, on wood subfloor, on concrete, or in concrete. When installed on joists, your shower's pitch begins at the same elevation as the surrounding floor, making the shower drain the lowest place in the room and the natural collection point for draining water. Your shower won't need a curb or threshold of any kind, though you can choose to add a curb if you prefer that design appearance.

Compared to constructing a mud bed shower, our durable bases eliminate the need for mud mixing, reduce installation time by days, provide consistent, accurate shower slopes that align with the drain every time, and avoid the common causes of mud bed failures. ARC's prefabricated bases are lighter and easier to carry, too. There's simply less labor—you can often install an ARC base in one day, and tile the next day.

If the drain gulley in your shower base installation must cross joists, it is absolutely necessary to consult a qualified professional to determine what joist modifications and reinforcements are required.

Make sure the drain gulley is positioned in a gap between joists.

Offset the layout strategically based on the tools you have and the need to avoid a conflict at the drain.

Drain gulley location

Shower base outline

If the drain gulley crosses joists, you must consult a qualified professional for guidance.
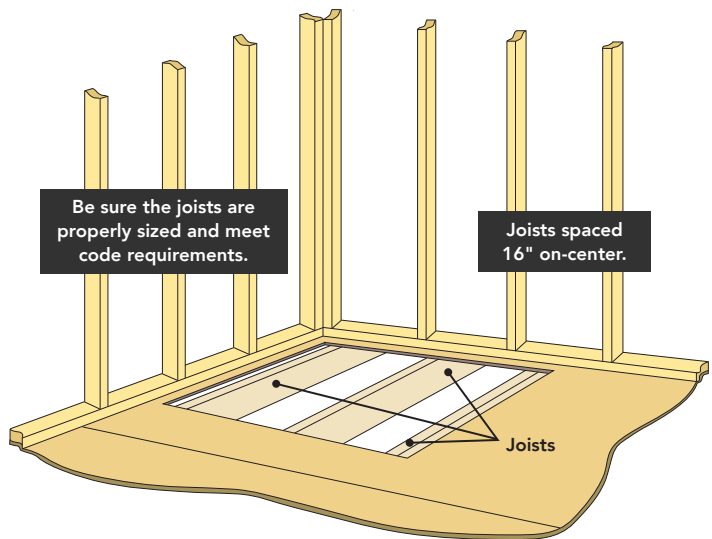
Layout Tips

Begin by outlining the shower base foundation on the subfloor. As you position the base, keep a few layout tips in mind: you need the drain gulley to hang between joists (joist locations are usually easy to spot based on subfloor nailing patterns), when possible you want to avoid obstructions like wiring and heat ducts, and it's not a problem to pull the base away from the walls to make cutting easier. If any joist modifications must be made, do consult an engineer or other qualified professional before making any cuts.

Remove Subfloor

Use a circular saw, reciprocating saw, or a flush cutting saw to cut the subfloor. For your safety and to prevent accidental damage, check for electric wiring, plumbing lines, and duct-work before you make any cuts. If you can't view the joist cavity spaces from underneath, consider cutting out small areas in the middle of the shower base layout first, so that you can look and feel for obstructions. Set the depth of the circular saw blade to avoid cutting into the joists. Complete the corner cuts using a chisel or multi-purpose tool.

Be sure the joists are properly sized and meet code requirements.

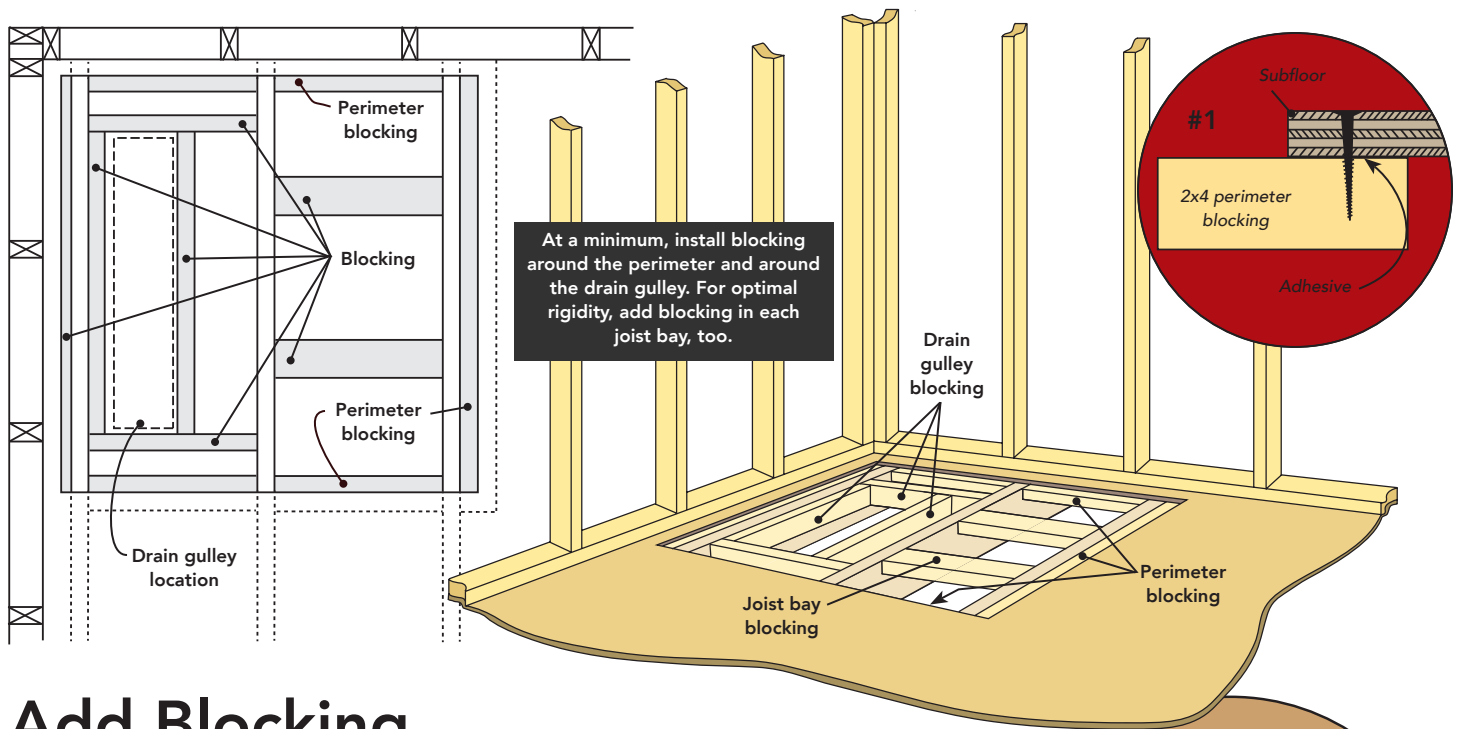**Joists spaced 16" on-center.**

Joists

Choose a Foundation, Drain Assembly, and Waterproofing Kit

To install an ARC TrueDEK® shower system you'll want to select a shower foundation, a drain assembly, and a waterproofing kit. ARC offers two linear drain options and three waterproofing kits to meet most needs, and all waterproofing materials are also available separately in case you need more material to complete a project.

Our Premium Waterproofing Kit (shown below) includes many convenience items in addition to ARC's proprietary TANK/10® liquid waterproofing compound and reinforcement tape supplies—we highly recommended this kit for first time installers as it puts all odds and ends at your fingertips, and avoids an extra trip to the store. ARC's Standard Waterproofing Kit contains the same waterproofing supplies as the Premium Kit, though without the convenience items. For a slimmed down option, our Pro Kit has enough tape and waterproofing compound to cover a shower base only (developed to serve installers who prefer to use other waterproofing materials on shower walls and the surrounding floor).

Premium Kit

Requirements of every project are different, depending on the complexity of the shower, the presence of a built-in bench or shelving niches, the number of joints between tile backer panels, and the amount of area to cover. Please see our TrueDEK® shower system catalog for details on shower foundation sizes, drain options, and the complete line of waterproofing supplies. To view ARC's catalog online go to www.arcfirst.net.

Perimeter blocking

Blocking

Perimeter blocking

Drain gulley location

At a minimum, install blocking around the perimeter and around the drain gulley. For optimal rigidity, add blocking in each joist bay, too.

Drain gulley blocking

Perimeter blocking

Joist bay blocking

#1

Subfloor

2x4 perimeter blocking

Adhesive

Subfloor

Flange

2x4

2x4

Adhesive

Drive screws through web into the end of the lower 2x4.

#2

Add Blocking

Using a spirit level, make sure all joists are level and even with each other. If there are high spots, remove material with a belt sander, rasp, or block plane. Low spots require shims, or better yet, alongside low joists fasten 2x4 sister blocking at the appropriate height. **It is very important that joists and blocking are level and even with each other.**

Next, add blocking to support all edges of the shower base and the surrounding subfloor edges. You want a full 1½" of support under every subfloor edge and shower base edge. You'll have to determine the best way to arrange and secure blocking for your project, though the illustrations above will provide general guidance.

You also want substantial support around the drain gulley. The area around the drain gulley is the thinnest part of the shower base, and needs to be supported. Locate supports ½" to 1" outside the gulley.

For typical installations, blocking with 2x4s is sufficient. You can install the blocking on edge or, it often works to install 2x4s flat, especially around the shower base perimeter so that each 2x4 supports both a subfloor edge and an edge of the shower base, as in illustration #1. Apply construction adhesive between any 2x4 and the subfloor, and drive screws through the subfloor to pull the blocking tight. Drive screws, as well, through joists into the ends of all blocking. For extra support, if you think it's needed, you can add a second 2x4 underneath the first one.

If your floor is supported by 'I' joists, special care is needed when installing blocking. You should not drive nails or screws into the sides of the flanges of an 'I' joist (illustration #2). A good blocking method is to position a flat 2x4 to span the gap between the top flanges of two parallel 'I' joists. Spread construction adhesive on the top surface of the 2x4 (the area that will support the subfloor), and drive screws through the subfloor into the 2x4 to pull the assembly tight. Next, install a second 2x4 underneath the first one. Put construction adhesive on its top surface, then fasten it—drive screws through both 2x4s, and drive screws through each 'I' joist's web into the end of the lower 2x4 only.

After all blocking is installed, test fit the shower base. **Use a spirit level in all directions to ensure that this "dry" installation is spot on. Many installers stand the shower base on edge across the joists to check for evenness. Adding more blocking between joists usually eliminates any flex. This is the best time to ensure the shower base is fully supported, does not flex or rock, and has no twist. Keep in mind that at the center of the base, you'll want to drive several screws to hold it down to the structure underneath (after drilling countersunk pilot holes). Once it's glued and screwed to a level, even, and substantial support structure, the shower base becomes very rigid.**
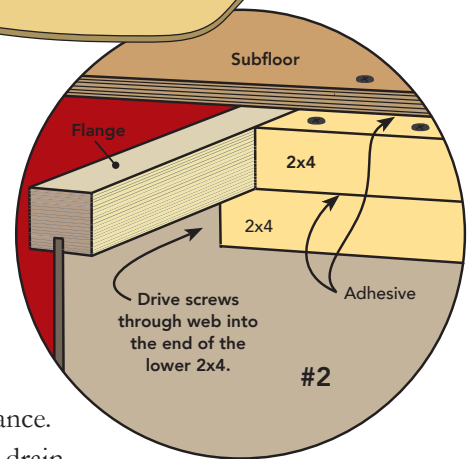
Drain Connection

Place a drain plug (three are supplied with the base) into the recess where you want to install the drain connector, and drill a ⅛" pilot hole through the center of the plug and gulley floor (at right). Make careful measurements from nearby walls to that pilot hole and record them—you'll need these to pinpoint your drain line installation. Next, remove the plug and use a 3¼" dia. holesaw, centered on the pilot hole, to bore through the gulley floor to create a large hole to accommodate the connector.
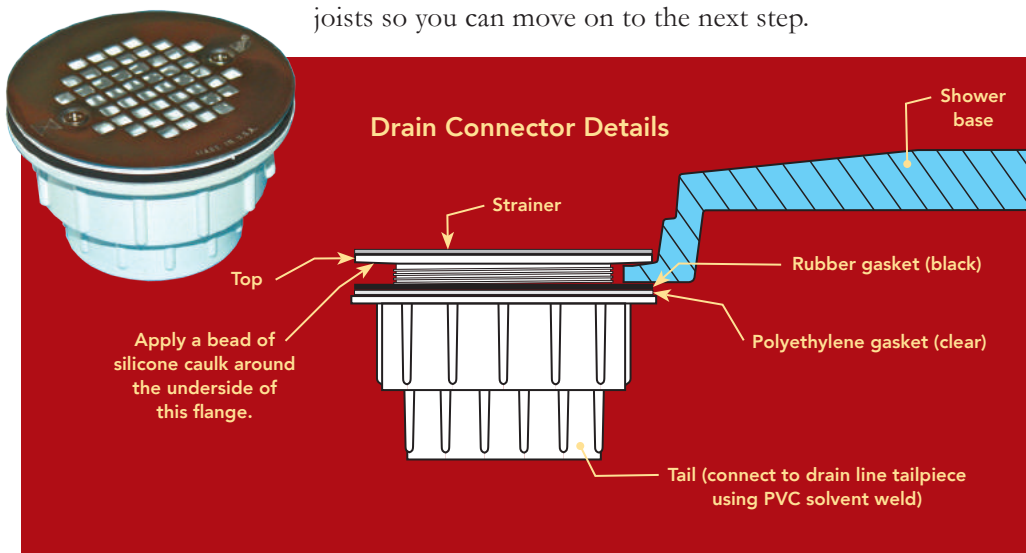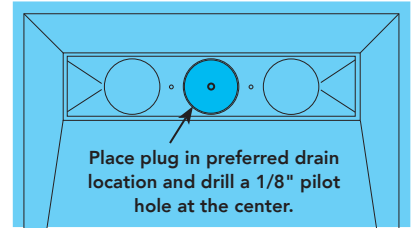
Unless you have access from below the shower base, now is the time to complete the 2"-dia. drain line. Be sure your tailpiece is centered precisely on the pilot hole location you measured. Allow for a little up-and-down movement in the drain line so that when you make the drain connection, the mating parts pull together tightly.

The elevation of the shower base determines the height at which you cutoff the tailpiece. Typically, subfloor is ¾" thick, and tile backer board is ¼" thick or ½" thick (check your local code requirements). The combination of ¾"-thick subfloor and ¼"-thick tile backer board is ideal for a shower base placed directly on joists. If your local code requires ½"-thick backer board, then use ¼"-thick plywood to raise the shower base to the proper elevation. Cut the drain line tailpiece 3" below the shower base's support structure and weld the drain connector tail to it (local code may require that a licensed plumber complete this connection).

Now set the shower base in position and test the drain connection. Slip the drain connector gaskets onto the top flange of the tail, below the shower base (see Drain Connector Details below). **The clear polyethylene gasket goes underneath the black rubber gasket.** The clear gasket is slick, allowing the drain connector to thread together without distorting or stretching the black rubber gasket. The black rubber gasket provides the critical seal below the shower base. **It is absolutely necessary to use both gaskets.**

Next, remove the strainer from the drain connector top. Be sure to put the strainer and the two screws somewhere safe and secure—you'll need to reinstall them later. **The drain connector tail and top should align and thread together easily by hand. If you have to use any force they are probably cross-threaded, which can result in a leaky connection. This must be corrected.** Make adjustments now, before the shower base is adhered to the joists and the drain line becomes inaccessible. When you're satisfied that the drain connector assembly is fitted properly and the pieces are seating well against the gulley floor, take the drain connector apart and remove the shower base from the joists so you can move on to the next step.

Place plug in preferred drain location and drill a 1/8" pilot hole at the center.

Tailpiece centered on shower base drain location.

Cut tailpiece 3" below supports.

Weld tail to tailpiece—comply with local codes.

Always place clear gasket under black gasket.

Drain Connector Details

Shower base

Strainer

Top

Apply a bead of silicone caulk around the underside of this flange.

Rubber gasket (black)

Polyethylene gasket (clear)

Tail (connect to drain line tailpiece using PVC solvent weld)

Tighten the drain connector assembly using a speed square inserted into notches in the top (strainer removed).

Setting the Base

At this time you can install the shower base. With your caulking gun loaded, apply thick beads of polyurethane construction adhesive to the top edge of all joists and blocking. ==Make sure the polyurethane construction adhesive you choose bonds with plastic and wood.== Be generous with the adhesive—it will fill gaps and hold everything tight. Use a minimum of three 10 oz. tubes of adhesive—ARC supplies five tubes in the Premium Kit.
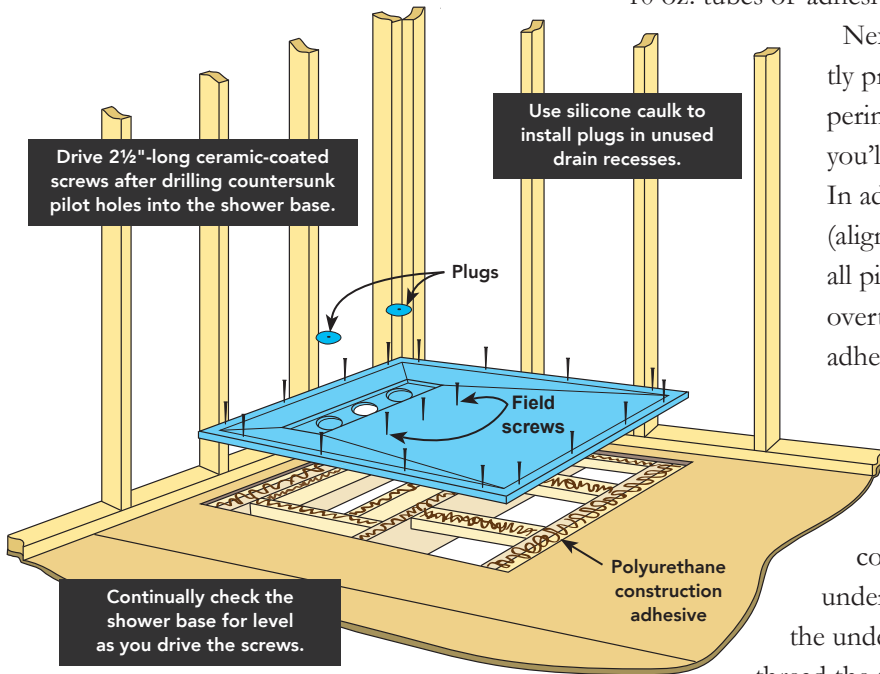
Next, set the shower base into the adhesive and gently press it downward. Bore $\frac{1}{8}$" pilot holes around the perimeter about 8" apart—just so you're not surprised, you'll drill through soft metal tubing inside the base. In addition, drill two or three pilot holes in the field (align with joists or blocking underneath). Countersink all pilot holes, then drive the screws so they're snug—overtightening screws can squeeze out too much adhesive. Drive the field screws last.

As you drive the screws, routinely check the base for level all around. The shower base must be level in all directions.

After driving the screws, reassemble the drain connector permanently. Remember, it's clear gasket under black gasket. Apply a bead of silicone caulk to the underside of the drain connector top's flange and thread the 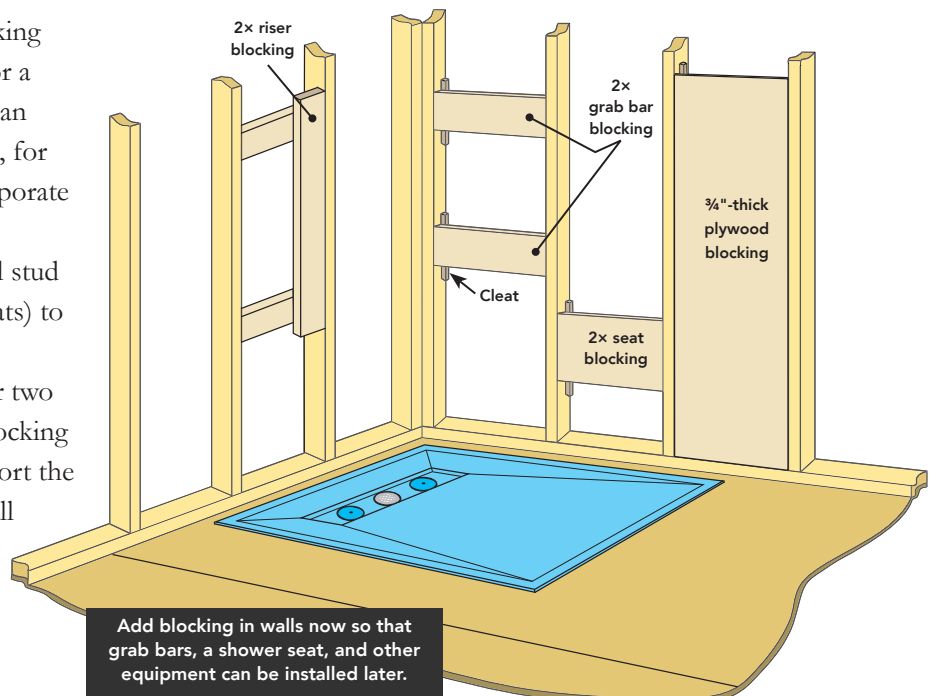top into the tail. Finish turning the top so it's good and tight using a speed square for leverage. Bond the remaining two drain plugs into the unused gulley recesses with silicone caulk (apply thick coatings to the bottom of each plug). ==For good measure, put a small bead of silicone around the top perimeter of each plug after they're set into the recesses—while wearing nitrile gloves, wet a finger with denatured alcohol and smooth out the beads.== Finally, reinstall the stainless steel strainer on top of the drain connector.

Drive 2½"-long ceramic-coated screws after drilling countersunk pilot holes into the shower base.

Use silicone caulk to install plugs in unused drain recesses.

Plugs

Field screws

Continually check the shower base for level as you drive the screws.

Polyurethane construction adhesive

Future-Proof

This is a great opportunity to install wall blocking for accessories, like grab bars, a shower seat, or a riser rod for an adjustable shower head. You can use 2× stock fastened to studs with screws, or, for more strength and greater load capacity, incorporate cleats—toenailing is insufficient.

One very effective blocking method is to fill stud bays with ¾"-thick plywood (mounted to cleats) to provide a continuous fastening platform.

For a shower seat, definitely use 2× stock or two layers of ¾"-thick plywood. Make sure the blocking is well secured to the studs so that it can support the load rating of a seat. You may want to block all the way to the baseplate of the wall framing to ensure that you have a strong foundation for a seat—the preferred method for mounting a seat without legs.

2× riser blocking

2× grab bar blocking

¾"-thick plywood blocking

Cleat

2× seat blocking

Add blocking in walls now so that grab bars, a shower seat, and other equipment can be installed later.
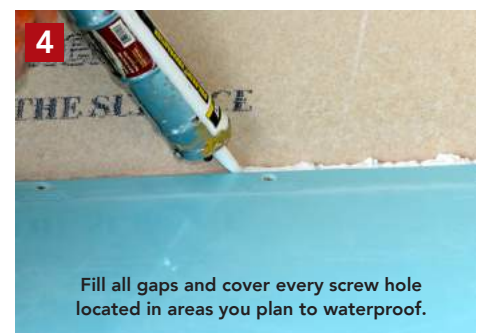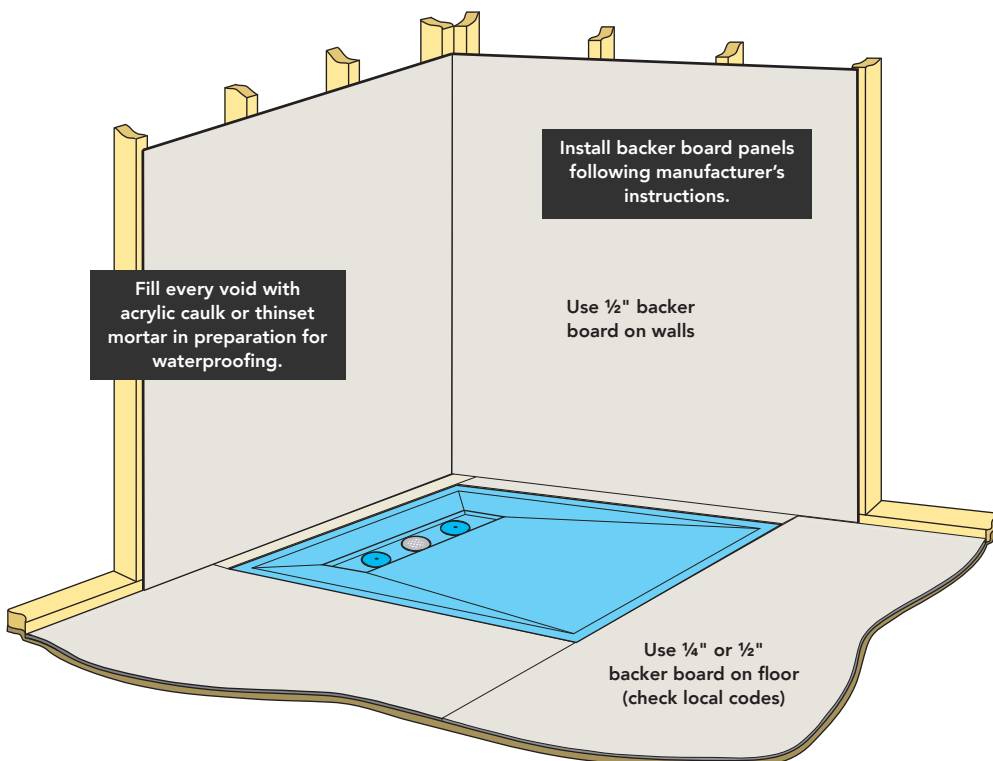
Waterproofing Prep

Fiber cement board underlayment is easy to handle and cut, and you can quickly sand edges that butt against the shower base. Install panels (½" thick on the walls, and ¼" or ½" thick on the floor, depending on your code requirements) according to the manufacturer's instructions. Be sure to use the recommended screws. Use thinset mortar, applied with a properly-toothed trowel, between the subfloor and the cement board panels you lay on it. Completing the substrate preparation properly is really important—a good foundation will improve the durability of your tilework or stonework.

After installing the backer board, prepare the shower base for waterproofing. First, take a minute or two to scuff the surface of the shower base with an orbital sander equipped with sandpaper of 80 to 120 grit. Scuffing the shower base cleans it (removes oil from handling, footprints, dirt, etc.) and improves adhesion for the waterproofing compound. Remember, Tank/10 waterproofing provides anti-fracture properties and bonds well with thinset, in addition to its waterproofing prowess, so it pays to get the building blocks done right here. Use the same sander to blend the edges of the tile backer board to the shower base. Sand the tile backer edges at a shallow angle until they're flush with the shower base—later, when you install tile or stone with thinset mortar, you will be able to blend these transitions perfectly.

Once you've finished with the sander, vacuum all dust and debris from the site. Make sure you clean all cracks and crevices to remove every bit of dust and backer board waste—you don't want debris mixing with the waterproofing and preventing the joint tape from laying flat. **Follow-up with a sponge and a bucket of water to clean all surfaces thoroughly, then let them dry completely.**
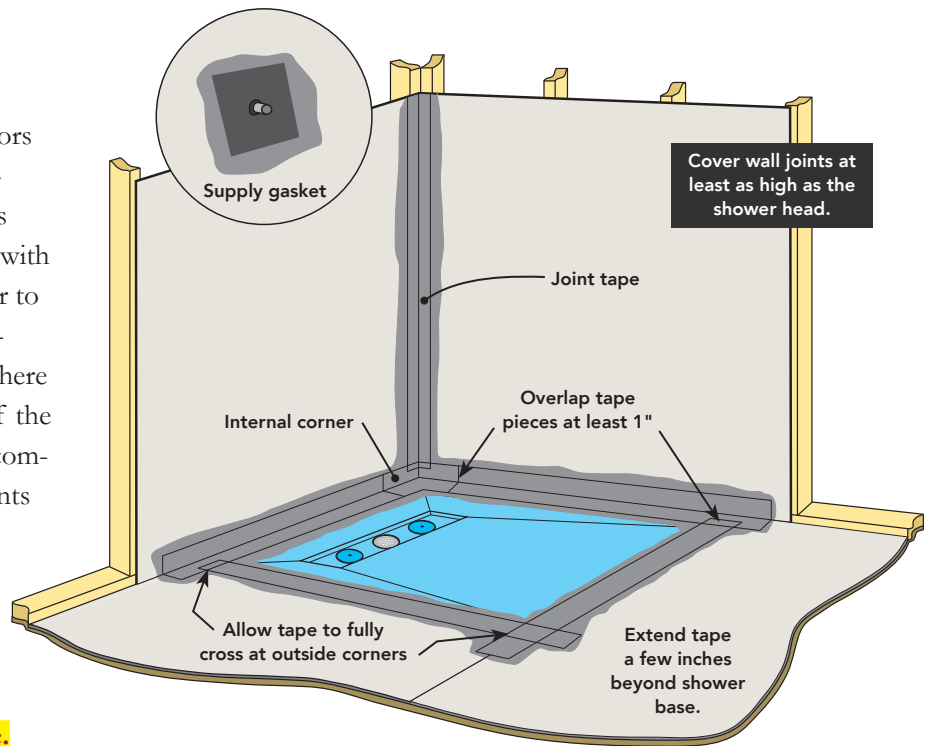
Now fill all voids (⅛" and wider) to provide solid backing for the reinforcement tape and waterproofing compound. This includes covering all screw heads, unused pilot holes, plus gaps around the shower base and between backer board panels. If you intend to make a wet room, fill gaps in the entire floor and up the walls 2" to 3", in addition to the shower area. Acrylic caulk does a good job as a void filler, and it skins over quickly.—**do not use any caulk with silicone as a void filler.** Thinset mortar also makes for a good, quick-drying void filler.

1

Roughen the shower base with an orbital sander.

2

Sand edges of the tile backer to ease the transition to the shower base.

3

Vacuum, then use a damp sponge to clean the base. Allow the base to dry before waterproofing.

4

Fill all gaps and cover every screw hole located in areas you plan to waterproof.

Install backer board panels following manufacturer's instructions.

Fill every void with acrylic caulk or thinset mortar in preparation for waterproofing.

Use ½" backer board on walls

Use ¼" or ½" backer board on floor (check local codes)

Cover All Joints

Cut tape to length with a utility knife or scissors for each joint before tackling the waterproofing—it saves time to batch the cutting and it's better to do it with clean hands. For projects with a lot of joints, consider using a felt tip marker to number each reinforcement piece and its corresponding location. Allow for 1" overlaps where tape pieces meet, except at outside corners of the shower base, where you want tape pieces to completely cross. On the walls, plan to embed joints to the height of the shower head or higher.

To avoid reaching over wet waterproofing, it's best to begin bedding tape at the back of the shower and work your way toward the front. **All surfaces must be clean and dry before embedding any tape.**

Supply gasket

Cover wall joints at least as high as the shower head.

Joint tape

Internal corner

Overlap tape pieces at least 1"

Allow tape to fully cross at outside corners

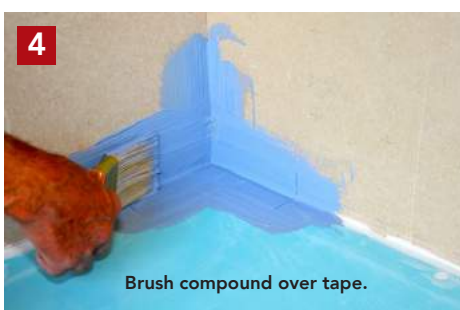Extend tape a few inches beyond shower base.

Start by embedding an internal corner reinforcement at the back wall-to-floor joint(s). Embedding tape follows the same procedure everywhere—a process similar to embedding drywall tape in joint compound: 1) brush waterproofing compound generously along a joint to coat an area that's a little bigger than the tape itself, 2) set the tape into position, 3) press the tape into the compound with the brush (or lightly with a putty knife) to ensure uniform contact and to squeeze out excess, and 4) brush waterproofing compound over the tape. Some installers like to "butter" the back of the tape before setting it into position.
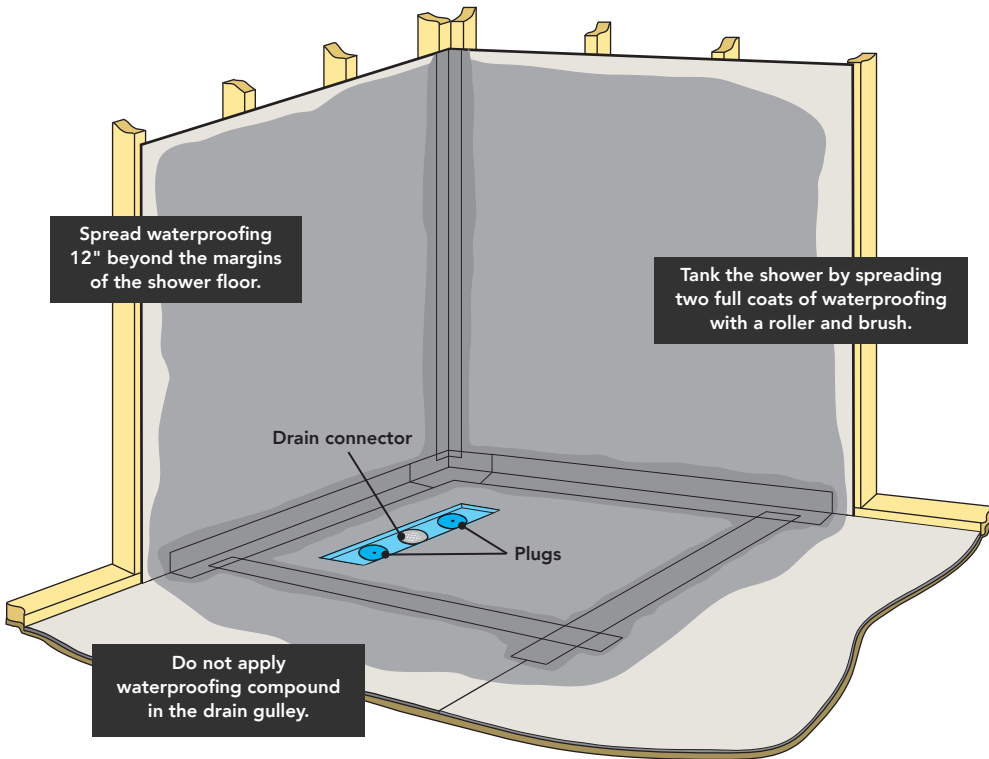
Once the wall-to-floor corners at the back of the shower are covered, embed tape over all shower wall joints, then cover the wall-to-floor joints. Keep in mind that, for wall-to-floor joints, you can fold tape to make one leg longer than the other so as to cover floor joints set away from the wall, as happens when a shower base location is offset from the wall a bit. Proceed in this manner to cover all joints in the shower, and to install the supply line gasket (shower heads, hand wands, and jet sprays require an embedded gasket). The last step is to embed tape over the outside joints of the shower base.

For a total wet room treatment, embed joint tape and corner tape over all joints between backer board panels, all floor-to-wall joints, and corners throughout the room.

1 Cut tape pieces to length.

2 Apply waterproofing compound, then position internal corner.

3 Press tape into compound.

4 Brush compound over tape.

5 Embed tape over wall joints.

6 Embed tape over each wall-to-floor joint.

Spread waterproofing 12" beyond the margins of the shower floor.

Tank the shower by spreading two full coats of waterproofing with a roller and brush.

Drain connector

Plugs

Do not apply waterproofing compound in the drain gulley.

Niche joints and corners require embedded tape protection, plus two full coats of waterproofing.

Allow the first full "tanking" coat to dry before topping it with a second full coat.

"Tanking" the Shower

Now you can complete the shower preparation by "tanking" the floor and walls with two full coats of waterproofing compound. This process will create a seamless protective shield over the entire shower, or throughout the room if you plan to create a wet room. Making a wet room ensures the floor underlayment and related structural materials are safeguarded from moisture—while tile and stone are generally impervious to water, grout and the fine fisures and pits that often form in grout can permit moisture to reach the subfloor if no waterproofing layer exists.

Waterproofing compound applied earlier to embed reinforcement tape does not have to be fully dry before topping it with the first tanking coat, though it's best to avoid stepping on compound that's still tacky. Also, prevent dust or debris from getting on the waterproofing membrane as it may affect adhesion of the next coat.

Veteran ARC shower system installers have found that using the shower base as a roller tray accelerates the tanking process. They put mounds of waterproofing on the shower base, then spread the compound onto the floor and walls with a paint roller and brush. Make sure you apply waterproofing compound beyond the shower base at least 12" to ensure that the surrounding area is well protected from moisture should any water get outside the shower.

Allow the first full coat to dry (typically 1½ to 2 hours, depending on humidity, air flow, and temperature) before applying the final tanking coat at right angles to the first coat. To speed up the drying process, run a dehumidifier or fan in the room. This is especially helpful during humid summer months. If you're making a wetroom, tank the entire floor, plus go up the walls 2" to 3" (no higher than the mopboard will cover). Let the final waterproofing coat dry at least 12 hours before laying tile.

1 Pour waterproofing compound on the base and spread it with a roller.

2 "Tank" the shower base and walls with two full coats of waterproofing.

3 Coat walls thoroughly to ensure they are protected from moisture.