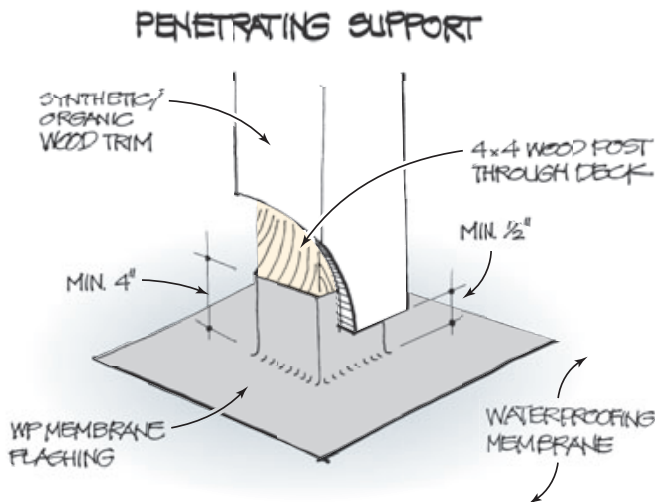
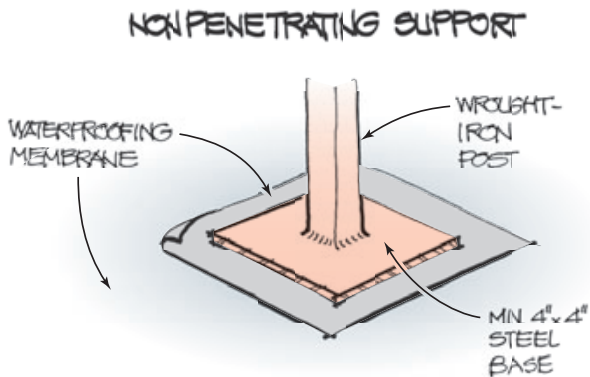


Q&A

Q. Mounting a Nonfunctional Railing

The low-slope roof on the addition I'm building has an ornamental iron railing at the edge. Since the roof won't be used as a deck, it's just there for appearance. Given that high strength isn't a requirement, I'm wondering if there's some way to fasten the railing that doesn't involve penetrating the roofing and creating potential leaks.

A. Harrison McCampbell, an architect and moisture-intrusion consultant in Brentwood, Tenn., responds: Your concern about through-fastening is justified — it makes little sense to apply a carefully waterproofed membrane and then poke it full of holes.



Base plates supporting an ornamental rooftop railing (one not required by code) stand on scraps of membrane roofing, which protect the roof from abrasion (top). If a true railing is called for, a correctly detailed post penetration is necessary (above).

It is technically possible to put a railing on the roof that is held in place by gravity alone. A simple way to do that would be to weld each of the railing columns to steel base plates (see illustration). But first check your local code to make sure that the area where the railing will go is clearly defined as a roof, not a deck. This will probably depend on how accessible it is to the building's occupants — whether it can be reached through a door, by climbing out a window, or only by using a ladder. If the area could be considered a deck under the code, the railing should conform fully with the code requirements for that application — anything less is asking for trouble.

Either way, make sure the roof itself is properly designed and built to last. Provide the structural deck with enough slope to allow water to flow away from the building the addition will be attached to — $\frac{1}{8}$ inch per foot is a practical minimum — and toward the roof edge or drain. Install a fully adhered waterproofing membrane, making sure to terminate it properly by turning it up and under the main building's moisture barrier and extending it fully over the drip edges. If there is an access door, the deck level should be at least 4 to 6 inches below it so that there's enough vertical space to turn the membrane up, terminate it, and counterflash it with the overhang of the door sill.

Q. Piers for a Lakeside Deck

What's a good way to set deck piers in shallow water?

A. Shane Bryant, P.E., an engineer in Tooele, Utah, responds: For a recent lakeside-deck project that involved placing 32 posts in 3 to 4 feet of water, we started by hand-digging out as much of the lake bed in the location of each footing as possible. Based on the 1,000-psf bearing capacity of the clay soil, we used lengths of 8-inch schedule-40 pipe as forms, driving them about 2 feet into the lake bed with a sledgehammer and a portable jackhammer and checking for plumb as we went with a torpedo level.

Once the pipe forms were in place, we used a torch to cut them off a few inches above the water level. Just before filling them with ready-mix delivered with a concrete pump, we suctioned out the water. Once the piers had cured, we used epoxy anchors to fasten galvanized post bases to their tops.

The remaining piers on shore were oversized to increase the deck's overall lateral stability.

Q. Controlling the Moisture Content of Wood Flooring

What's the proper procedure for acclimating wood flooring to the moisture content of a building before installation?

A. *Howard Brickman, a wood-flooring contractor and consultant in Norwell, Mass., responds:* One of the enduring myths of the wood-floor business is that you can prevent swelling and shrinkage problems if you just let the flooring acclimate for x days before installation (supply your own value for x).

In fact, though, the first consideration is to manage the moisture content of the job site itself. Especially with new construction, the key is to make sure that excess moisture — from curing concrete, from less-than-dry framing lumber, or from rain or snow that may have soaked the structure before the roof was on — is removed before the wood flooring is even delivered.

The best way to determine whether the site is dry enough is to measure it with a pin-type moisture meter. The moisture content of the subflooring should not exceed 11 percent in the northeastern U.S., 14 percent in the humid Southeast, and 9 percent in the

arid regions of the West. In western coastal regions, the acceptable subfloor moisture content will vary from about 11 percent to 14 percent, depending on the local microclimate.

The moisture content of the flooring itself should ideally be 3.5 percentage points lower than that of the subfloor — or 7.5 percent in the Northeast, 10.5 percent in the humid Southeast, and 5.5 percent in the arid regions of the West. (To verify these values, you may want to measure the moisture content of a few three-year-old or older floors in your own area that you know look good throughout the year.)

Most solid wood flooring is manufactured at a moisture content of 7 percent, but — just as with subflooring — the actual figure should be determined with a moisture meter. If the numbers show that the flooring does need to be acclimated — hardwood with a moisture content of 7 percent, for example, should be brought up to 10.5 percent before installation in a humid climate — it should be unboxed and laid out directly on the subfloor until its moisture content, as measured with the meter, reaches the proper level.