

# The Rotproof

Water management is the key to keeping a porch standing for decades

BY CHRIS ERMIDES

Covered front porches aren't like decks. They're both good places to enjoy the outdoors, but they don't serve the same functions. Grills and dining tables don't typically find themselves on front porches. Swings and rockers do, though. On the front of the house, a well-designed porch can set a welcoming tone; the porch's purpose is as much architectural as practical.

Porches don't take the same kind of beating that decks do, either, but they do take a significant amount of abuse from the elements. Rain, snow, and humid air can wreak havoc. No matter what part of the country, moisture is a porch's worst enemy.

To learn the best building practices for porches and to discover where the most troublesome details lie, I spoke with builders in Rhode Island, Louisiana, Arkansas, and North Carolina. What follows is a compilation of the most meticulous details I could find. One builder, Mike Davis in New Orleans, takes a particularly aggressive approach to creating a rotproof porch and has devised a way of connecting a railing to a column that is as practical as it is strong. Much depends on the design of the porch, but the principles are the same. As Davis likes to say, "Think marine—and I mean boats, not military."

Chris Ermides is an associate editor.



**9** Protect the newel with an applied cap. Newel caps should be well pitched for drainage.

**1** Avoid single-board stair treads when possible. Two-board or three-board treads spaced slightly apart allow water to drain to a pitched concrete pad below the stringers and keep water moving.

**2** No matter what type of pier design you use, isolate the framing. When wood and concrete touch, rot happens, no matter how well the lumber is treated.

# Porch

- 1 Slope the stairs
- 2 Isolate the framing
- 3 Pitch the floor
- 4 Protect the posts
- 5 Cover the soil
- 6 Flash the ledger
- 7 Bevel the railings
- 8 Vent the trim
- 9 Cap the newel

**8** Fur trim details like the fascia and stair skirting ½ in. away from framing they attach to. This promotes air movement, which allows drying.

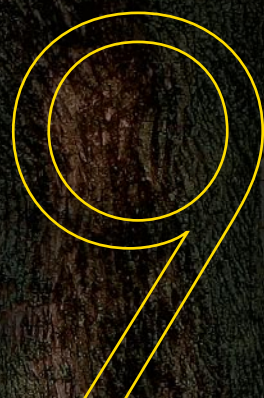
**7** Railing tops and bottoms should be pitched to shed water. Seal all end cuts, and attach balusters through the tops and bottoms. Use rot-resistant lumber and epoxy coatings, especially when the railings are flat.

**6** Despite the roof, wind-driven rain and snow can creep behind the flooring and siding. Flash the ledgers into the housewrap and siding using peel-and-stick and metal flashing.

**3** Traditionally, porch flooring runs perpendicular to the house and consists of tongue-and-groove Douglas fir. Priming all six sides and pitching the floor frame to drain water are keys to longevity. Flooring that runs parallel to the house should have gaps for water drainage.

**4** Keep water moving around (or through) the column bottom, and facilitate air movement via weep holes or vents. Seal and pitch exposed column tops and applied trim.

**5** Make sure the grade below the porch pitches away from the house at least ¼ in. per ft. Porches that sit close to the ground should be protected from rising ground moisture with a polyurethane vapor barrier over the soil. It's important to allow air circulation below the deck as well.



## TROUBLE SPOTS

Many elements of a covered porch are protected by the roof, but they still take a lot of abuse from the elements. Moisture is the biggest offender. Depending on the climate, rain and snow can result in trapped moisture and can promote rot. Taking steps to ensure drainage and to facilitate air movement can go a long way toward keeping a porch around for decades. Here is a look at the most vulnerable parts of a porch and some tips on how to protect them.



## TWO WAYS TO DETAIL PIERS

Like piers for decks, porch piers support loads from floor framing. Unlike most deck piers, however, they also have to support the roof. Brick piers were common in old homes, but they aren't ideal. Both brick and mortar absorb water, so they're prone to deterioration from ground moisture.

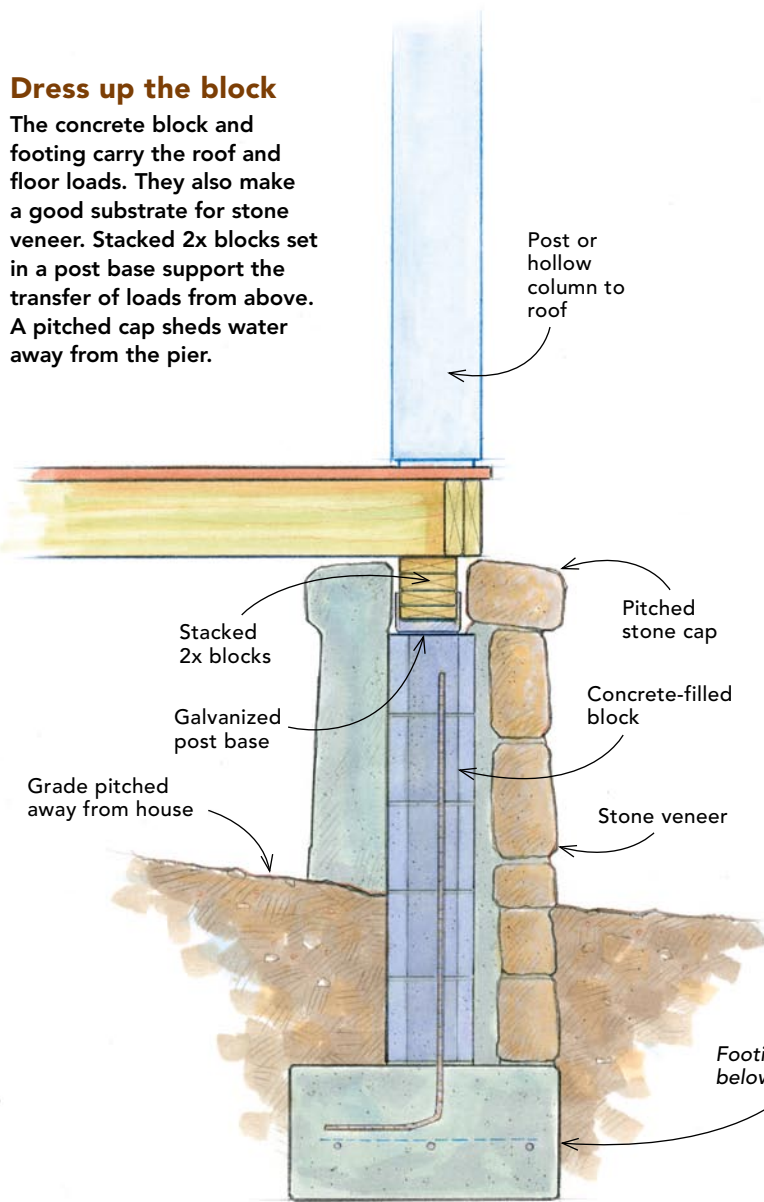
While concrete-filled builders' tubes are the obvious choice for decks, they're not necessarily the first choice for porches. Many builders use concrete blocks and chimney blocks for porch piers because they're often part of the porch's design, as seen in the photo at left and in the drawing below left. Set on a concrete footing below the frost line, concrete-filled block provides a substantial foundation—visually and practically—on which floor framing can be built. Wrapping the block with stone or brick dresses it up. A pitched cap should be used if the veneered stone or brick sits proud of the porch's fascia.

Forming a capillary break between the concrete and the framing material is the key to avoiding moisture damage. Use metal anchors to connect piers and framing lumber.

Areas where wind uplift is a concern often require posts to run continuously from pier to roof and are fastened with hurricane-rated metal connectors, as seen in the drawing below right. Piers should be isolated from freeze-thaw cycles, which can cause frost heave.

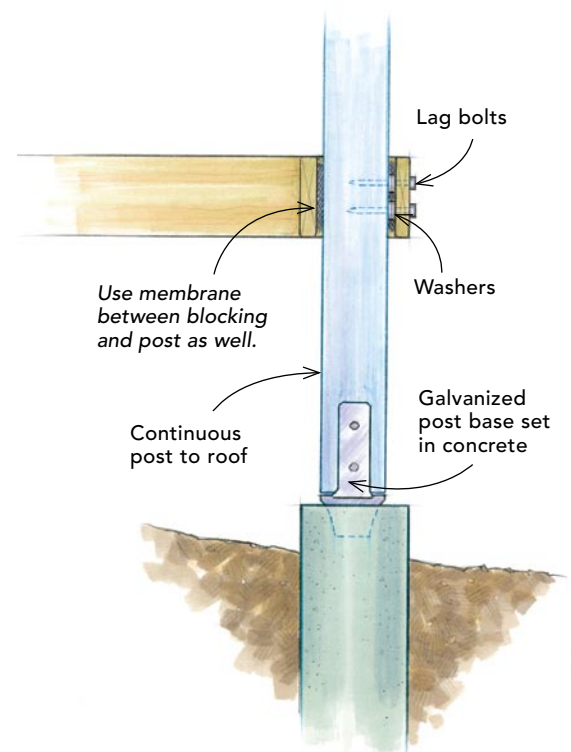
### Dress up the block

The concrete block and footing carry the roof and floor loads. They also make a good substrate for stone veneer. Stacked 2x blocks set in a post base support the transfer of loads from above. A pitched cap sheds water away from the pier.



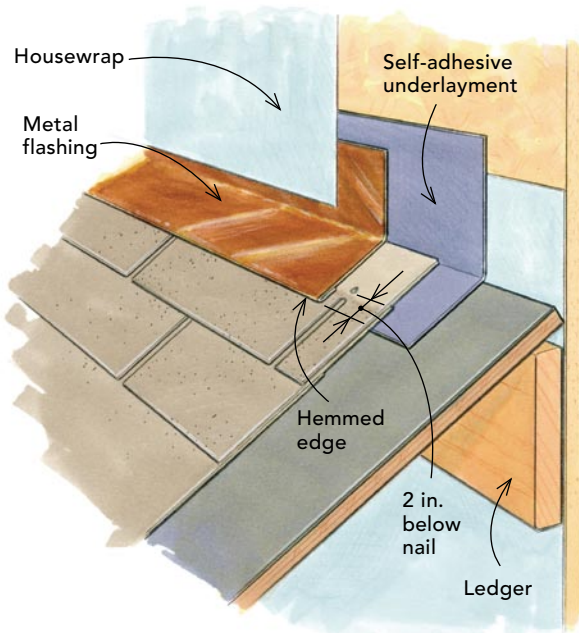
### Frame around a column

Code-approved galvanized post bases set in concrete resist wind uplift. Stainless-steel lag bolts secure the floor frame to the columns. Framing is held off the post with washers and a drainage membrane. Floorboards held ¼ in. back from the columns allow for drainage.



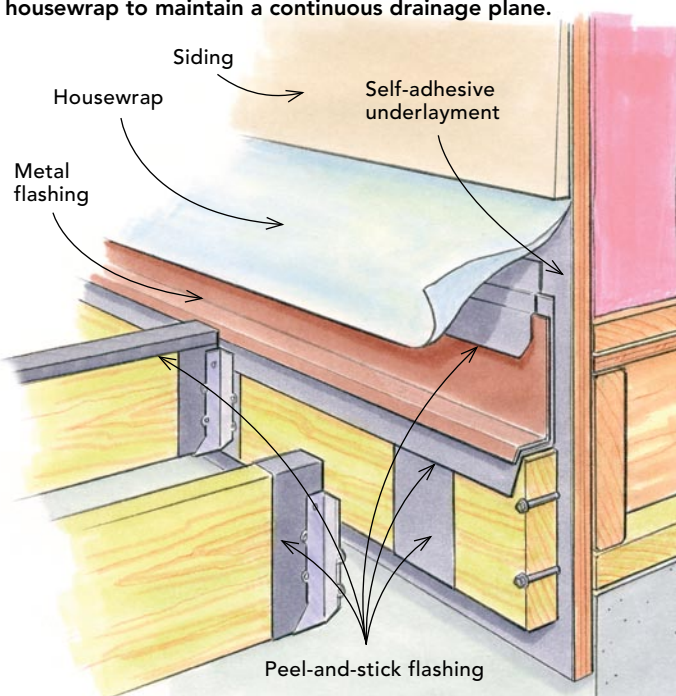
### Flash the roof, not the ledger

A ledger attached to the wall framing carries the rafters. Peel-and-stick flashing or tar paper seals the house-to-sheathing joint. Metal flashing woven behind the layer of housewrap kicks out moisture behind the siding.



### Flash the ledger, not the decking

Self-adhesive underlayment attached to the house sheathing protects the wall from wind-driven rain. Attach the ledger to the house with LedgerLok screws, carriage bolts, or lag bolts. Cap the ledger with both peel-and-stick and metal flashings. Run all flashing shingle style in conjunction with the housewrap to maintain a continuous drainage plane.



## FLASHING PROTECTS THE FRAMING

Protect the framing beneath the roof and the floor of the porch with a combination of peel-and-stick and metal flashings. The process for each location is slightly different, but the results are the same: a continuous drainage plane that keeps the ledgers dry and moisture at bay.

While most treated-wood manufacturers have addressed the corrosion issues associated with galvanized-hanger-and-wood contact, the potential for a reaction still exists. Choose stainless-steel hangers and fasteners if possible. Or wrap joist ends with peel-and-stick flashing. Covering the tops of joists with peel-and-stick flashing prevents water intrusion around the fasteners.



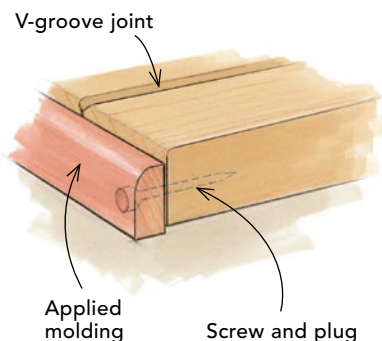
## PERPENDICULAR OR PARALLEL?



Traditional porch floors consist of tongue-and-groove flooring run perpendicular to the house. When laid this way, priming all six sides is essential. Running a board parallel to the house at the edge of the porch can help to protect the otherwise exposed end grain of the porch floor. When running flooring perpendicular to the house, space the boards and use hidden fasteners. The best reason for using hidden fasteners is the same for tongue-and-groove flooring: The untarnished finished surface is more durable and smooth.

### Protect and drain

An applied molding secured with epoxy and stainless-steel screws seals the end grain. A V-groove at each joint channels heavy water flows away from the house.



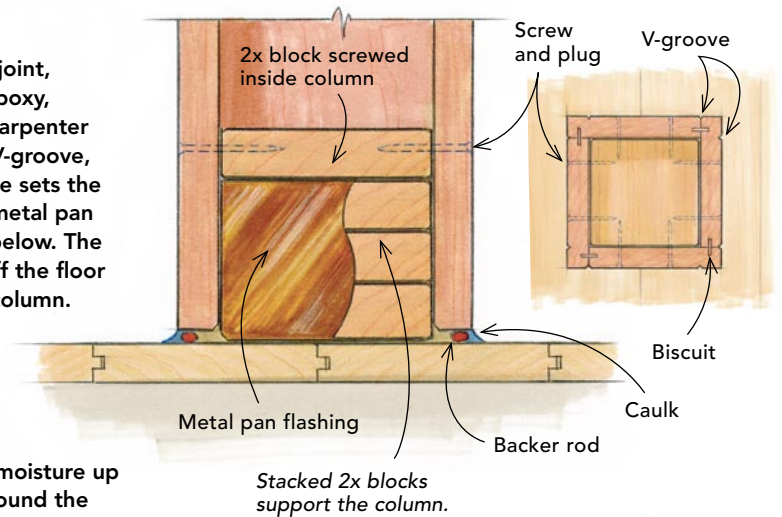


## LET WATER MOVE THROUGH OR AROUND THE COLUMN

Whether solid or hollow, porch columns are highly susceptible to moisture damage. On a pitched floor, water can build up behind the column and eventually penetrate the end grain. Sealing the end grain with a high-quality primer is key, but providing a path for water to travel is an often-overlooked detail. When the porch design calls for a wide column, wrapping a structural post with 1x trim is a common practice. But building a hollow column that is both structural and aesthetic makes venting the post easier. On solid columns, rout drainage channels on post bottoms to provide a tunnel for moisture to travel through and to allow air movement. Cutting a shallow rabbet around the bottom, then filling it with caulk, serves a similar purpose.

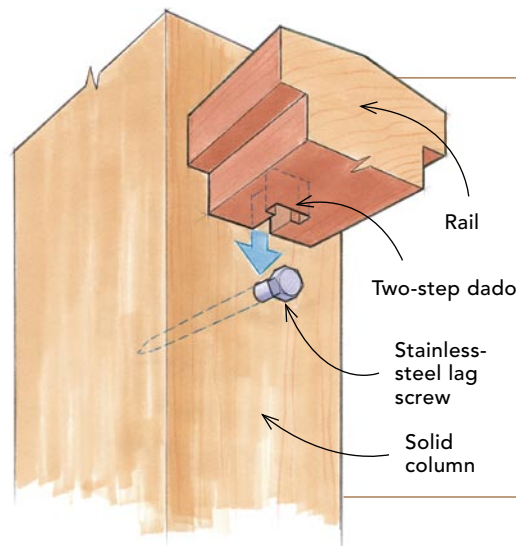
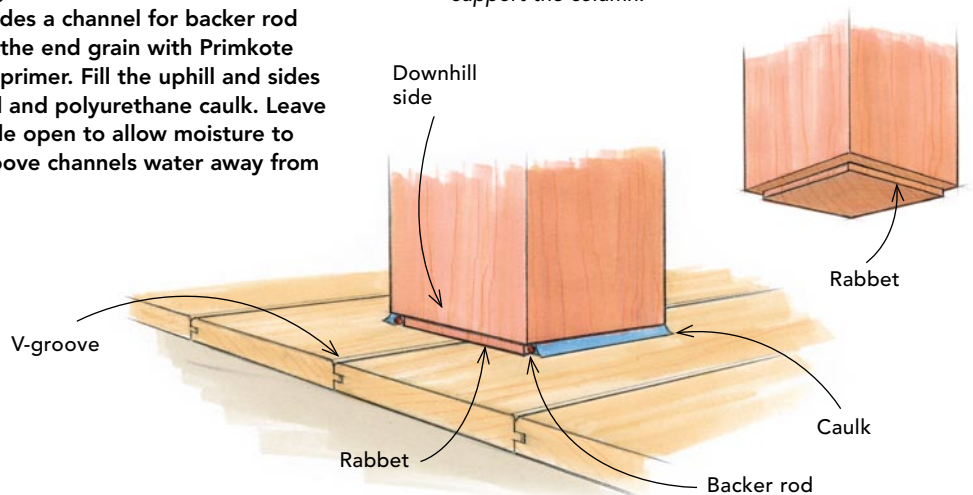
### Stout and hollow

Butt joints create the most stable joint, especially when assembled with epoxy, biscuits, and screws. Restoration carpenter Mike Davis hides the joint with a V-groove, followed by polyurethane caulk. He sets the column over a stack of 2xs set in metal pan flashing and bolted to the frame below. The column's end grain is kept ¼ in. off the floor by a 2x block screwed inside the column.



### Wick-free base

Unprotected post bases can wick moisture up like a dry sponge. A rabbet cut around the post base provides a channel for backer rod and caulk. Seal the end grain with Primkote or an oil-based primer. Fill the uphill and sides with backer rod and polyurethane caulk. Leave the downhill side open to allow moisture to escape. A V-groove channels water away from the house.



### Hang the top and bottom rail

Mike Davis devised a system that is sturdy and slick. He locks the top and bottom rail to a stainless-steel lag bolt left 1 in. proud of the column. Using a plunge router and jigs, he routs two slots in the bottom of each rail: one for the lag bolt's shank, the other for its head. The railing slips over the lags. He leaves a ¼-in. gap between the rail and the column. Using backer rod and polyurethane caulk, he seals the top and sides of the rail-to-column joint. The bottom again remains open to allow for drainage.