

The Ins and Outs of Exterior Doors

A crash course in choosing a door, from basic features to premium upgrades

BY PATRICK MCCOMBE

I can't think of something in a house that's more important than the front door. It keeps out wind, rain, and intruders; it greets guests and provides light and fresh air; and it gets used every single day. For an exterior door to do a good job, its beauty must be more than skin deep—it's the things you don't see at first that determine whether an exterior door is ready for the long haul.

In addition to the years I spent as a carpenter installing exterior doors, I also spent a few years selling them at a pro-oriented lumberyard, where we had an in-house door shop and sold hundreds of doors every year. I got to see what makes a good door, and I also heard from builders and homeowners about all the possible problems. I learned what to know when ordering a door, and what you should look for when comparing options. Prices vary widely, so I'll discuss options for all budgets. □

Patrick McCombe is a senior editor.

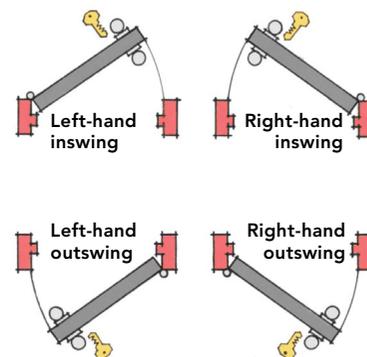
FOOLPROOF ORDERING

INSWING VS. OUTSWING

The first step in picking a door is to decide whether the door will swing in or out when it opens. In the United States, inswing doors are far more common than outswing doors, because you can open an inswing door when there are several feet of snow outside, and enter the house easily when your hands are full. That said, they don't seal as well as outswing doors because wind pressure will work to open the door instead of pushing it closed. Because of their weathertightness, outswing doors are a better choice for coastal areas, though they can be harder to open for the reasons mentioned above.

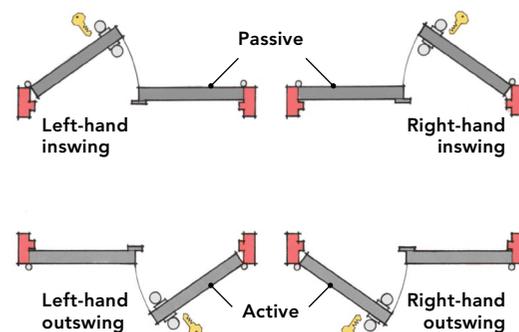
SINGLE DOOR

One way to tell the swing, or "handing," of a door is by standing in the doorway with your back to the hinge-side jamb. If the door swings left, it's a left-hand door, and vice versa. Note that this is not a universal convention; some manufacturers use different nomenclature and methods for determining handedness.



DOUBLE DOOR

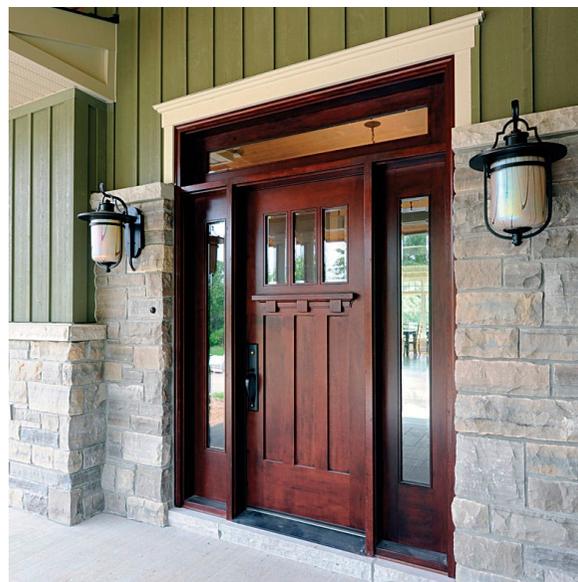
If your opening has a pair of doors, you'll have to specify which door is the active door. The active door is the one you use most often and the one you have to open before you can open the passive door.



SIZING

The width and height (in that order) of a door is identified by feet and inches, with the odd convention of removing the feet and inches labels. So a 36-in. by 80-in. door, the most common residential size, would be described as 3/0 x 6/8 (pronounced as "three-oh, six-eight"). Although custom doors can be virtually any size (See "Build a High-Performance Exterior Door," *FHB* #256), major manufacturers offer entry doors in widths from 2/0 to 3/6 and in heights from 6/6 to 8/0 or taller. Remember that the IRC says that at least one door in the home must have a minimum 32-in. clear opening, which requires a 3-ft.-wide door slab.

With new construction, follow the door manufacturer's instructions for rough-opening sizes. When matching existing openings, remove the casing and measure the height and width of the opening and the thickness of the wall to avoid surprises. More than once I had customers who ordered doors that were too big because they assumed the existing jambs were thicker than they were. One customer ordered a new door based on the existing door it would replace, only to discover that someone had removed the jack studs to squeeze a larger door into a too-small rough opening.



TRANSOMS AND SIDELIGHTS

Many doors have small windows called sidelights on one or both sides of the door. Usually sidelights are fixed, but they can also be operable. Sidelights come in 10-in., 12-in., and 14-in. widths. Transoms (windows above the door) come in several widths to match the various door and sidelight combinations. They can be round, rectangular, or elliptical, and they come in many heights.

GETTING A GOOD DOOR

For a door that works like it's supposed to, insist on these basic construction details.

MATERIAL



STEEL is the least expensive option. You can find prehung steel entry doors for less than \$150. The most expensive setup with sidelights and a transom could be \$2000 to \$3000. Steel paints nicely, but staining is difficult. Steel slabs also can't be easily trimmed to fit an existing opening. This material isn't a good idea for those living close to salt water, but in noncoastal areas, a regular paint job can keep rust at bay for decades.



FIBERGLASS doors are in the middle to high end. Prices start at a few hundred dollars for a basic prehung door to \$5000 to \$10,000 for fully optioned models with sidelights and a transom. Fiberglass doors can be painted or stained to look like wood, and some models have a smooth skin, while others have a faux-wood-grain texture. The big pros of fiberglass doors is they don't rust, and they offer the look of wood with little maintenance.



WOOD doors have a wide price range. Six-panel pine doors can be found for a few hundred dollars, or you can commission a hardwood door that costs thousands. The great thing about wood is the wide variety of species and finishes available, but each comes with the universal downside of necessary ongoing maintenance. Because of this, wood doors should be covered by a storm door, roof, or generous overhang.



SILLS

Inexpensive doors will have a nonadjustable aluminum sill, but an adjustable sill should be the bare minimum, allowing it to be raised as the sweep wears or the building settles. Consider raised coastal sills in areas subject to regular wind-driven rain. You can also order relatively flat ADA sills that are less of an obstacle to those with mobility issues.



ADJUSTABLE
INSWING SILL



COASTAL
SILL



OUTSWING
SILL



ADA SILL

CONSTRUCTION

Less expensive doors have narrow stiles, as little as 1 in. across. Narrow stiles are weaker and more prone to warping than wider stiles. High-quality wood and fiberglass doors have stiles that are 4 in. or more. You can find out the width of stiles and rails on steel and fiberglass doors in the manufacturer's technical data.



JAMBS AND CASING

Prehung entry doors are usually sold with the exterior casing already installed. The most common casing is 2¼-in.-wide brick molding. This chunky casing works with a wide range of claddings, including brick, clapboards, vinyl, and even stone veneer. Most suppliers can also install 5/4-in. or 1-in. nominal casing in several widths if you need to match existing doors and windows or to cover an oversize opening. Some suppliers will even custom-mill casing to match existing profiles.

The most common jamb thicknesses for exterior doors are 4⁹/₁₆ in. and 6⁹/₁₆ in. This assumes a 2x4 or 2x6 wall with a ½-in. layer of sheathing on the outside and a ½-in. layer of drywall on the inside. You can get wider jambs for homes with foam sheathing or thick claddings, and old homes often need unusually sized jambs because of thick plaster walls and board sheathing. You can extend jambs for thick or odd-size walls from the inside or outside with ¾-in.- or 1-in.-thick flat stock applied to the existing jamb. But beware site-applied extension jambs on the inside of inswing doors, as they will prevent the door from opening all the way. The same is true when you put extension jambs on the outside of outswing doors.

HINGES



NONADJUSTABLE hinges work fine for lightweight wood (less than 75 lb.), steel, and fiberglass doors without a lot of glass.



To ensure smooth operation, insist on **BALL-BEARING** hinges on heavy wood doors, ¾-lite and full-lite steel and fiberglass doors, and on doors taller than 6/8.



SPRING hinges automatically close the door after it's opened. They are often used on doors connecting garages and living spaces.

LOCKSET PREP

Most door slabs are cross- and edge-bored for a standard lockset and the jamb is prepped for the strike plate. Door suppliers will drill the door for a deadbolt for a few bucks more, which saves installation time and prevents the agony of drilling the door incorrectly. They may also be able to make the mortise for popular brands of mortise locks.

WEATHERSTRIPPING

Good weatherstripping is really what makes a door perform. It's important to match the reach of the weatherstripping to the door's edge profile. Doors with square corners use **MEDIUM-REACH WEATHERSTRIPPING**.

The alternative is **LONG-REACH WEATHERSTRIPPING**, which is used on eased-edge doors. Long-reach weatherstripping on a square-corner door will pinch, making the door hard to close. Some manufacturers also offer magnetic weatherstripping, but there are complaints that it makes doors hard to open.



GETTING A BETTER DOOR

These worthwhile upgrades make a door easier to live with and last longer.

MULTIPOINT LOCK

Multipoint locks employ three or more locking points to make the door more secure and wind resistant than a typical lockset/deadbolt combo. The setup also relieves stress on the hinges and jambs because the locks shoulder more of the door's weight. If you're using a multipoint lock, have the supplier prep the door and install the hardware, because the process is finicky.



ADJUSTABLE HINGES

Adjustable hinges can move the door slab on three axes to correct for seasonal movement, slight warpage, and the shrinkage of new framing. They're a worthy upgrade on any door, but especially helpful on heavy doors, like those with a lot of glass. Insist on adjustable hinges on patio and other double-door setups, no matter what material the doors are made from.



COMPOSITE JAMBS

The weakest link in modern exterior-door systems is the jamb. Generally made from finger-jointed stock with a thin coat of primer, they can rot in short order if they're in a wet spot. Composite jambs have either a composite bottom to prevent water wicking or they're entirely composite. Both last much longer in adverse conditions.



IMPACT-RESISTANT CONSTRUCTION

In hurricane-prone areas, impact-rated doors are a must. You can see the steel skin inside this fiberglass door that prevents breaches by flying debris. Glass must also be able to withstand an impact equivalent to a 9-lb. 2x4 flying at 50 ft. per second. Suppliers in coastal areas can help you match a door to your specific wind-zone requirements.





COMPOSITE SILL

Instead of wood (which can rot) under the aluminum sill, composite sills use either a fiber-composite or high-impact-plastic base under the aluminum. They're available in both inswing and outswing versions.



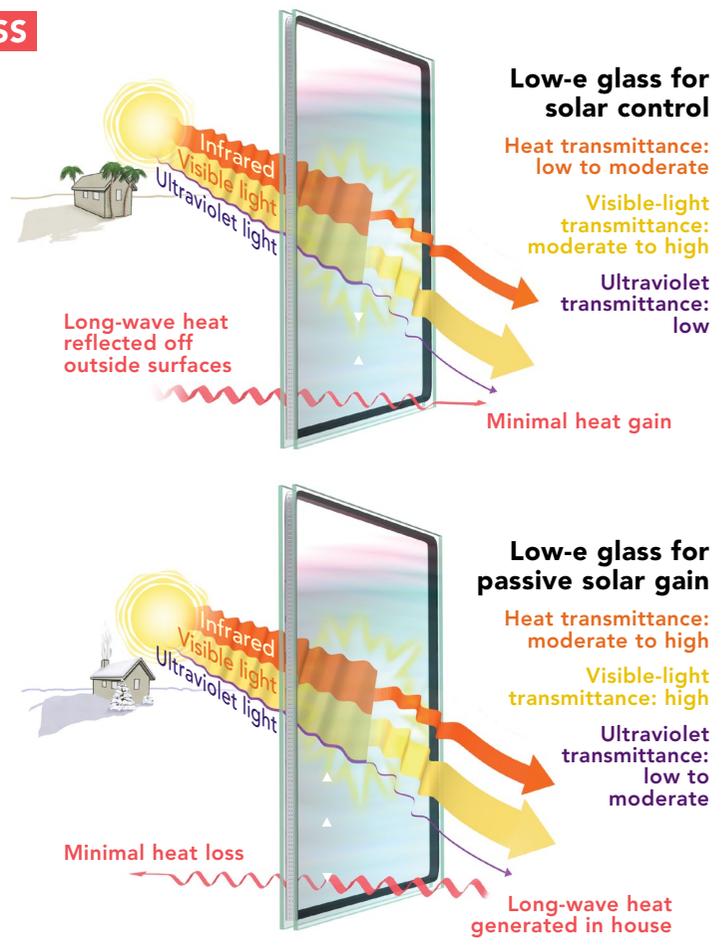
INSWING COMPOSITE SILL



OUTSWING COMPOSITE SILL

UPGRADED GLASS

Low-e coatings in heating climates and a low SHGC (solar heat gain coefficient) in cooling climates are a good start, especially on doors with a large percentage of glass. Even better is to choose the glass that's best for the elevation. Low-e coatings on north-facing doors and low-SHGC coatings on west-facing doors is the general rule, but site-specific conditions can affect those recommendations.



Product photos this page: courtesy of Therma-Tru. Photo top: Dan Cutrona. Drawings: Toby Welles, WowHouse.