



DOOR TO DOOR

Choosing a door is never an open-and-shut case. Learn what you need to know when buying new exterior doors, from style and material to energy efficiency and safety. TEXT **JEAN BURROWS**

Doors swing between style and function—they should be attractive enough to make a good first impression on someone entering your home, but they also need the strength and durability to keep your house safe and energy-efficient for years to come. Material is not the only thing to consider; framing, proper installation and weatherstripping matter as well. Read on to find out what you need to know about your options and how to incorporate them into your home.

Material world When choosing a door material, keep in mind factors such as energy rating, durability and maintenance requirements.

Solid wood is a classic choice for exterior doors, but it shouldn't be the automatic choice. Unless it's protected by an overhang or storm door, wood can shrink and expand with changing temperatures, resulting in warping, cupping and splitting. Paint and stain finishes have to be reapplied on a regular basis, and even more often on doors directly exposed to the sun.

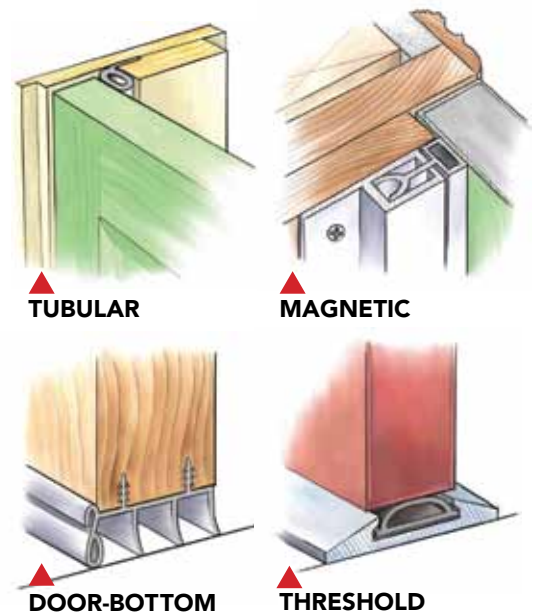
When compared to solid-wood doors, fiberglass doors and wood-wrapped steel doors are more durable, don't warp and don't require the same level of maintenance. Fiberglass doors can be made with a realistic wood-grain pattern and are often pigmented to provide colour,

although some units can be painted or stained. While dents or scratches in wood and steel can be filled, sanded and refinished, fiberglass doors are dent-resistant.

Fiberglass doors are guaranteed from 10 to 20 years, compared with 10 to 12 years for steel doors, depending on the manufacturer. These warranties typically cover problems with delamination (the separation of the fiberglass or steel cover from the door frame) and the seal around any glass panes. Most wood doors, meanwhile, have a one-year warranty against extreme warping, dents and scratches caused by manufacturing defects.

Even though a new steel door can be had for less than the cost of either wood or fiberglass, these doors are prone to denting and can rust if the finish becomes damaged.

Different door types have different R-values, the measure of thermal resistance determined by the length of time it takes for heat to flow through an insulating product. The higher the R-value, the better the insulation. Wood doors, for example, have a lower R-value compared to metal or fibre-glass doors. If you want to improve the energy efficiency of your home, choose an exterior door with a higher-rated insulating core and covering material (see "Cheat Sheet to Entry Doors," p. 70), and keep in mind that as soon as you add a glass insert, R-value drops. »



SEAL THE DEAL



A well-sealed door helps keep that AC chill inside your home, not leaking out.

Weatherstripping and caulking also eliminate drafts and help protect the door against moisture damage. You can test your door's air seal by running your hand around the door jamb to feel for a draft.

While a new pre-hung exterior door comes equipped with weatherstripping, there are other options for sealing new or existing slab doors:

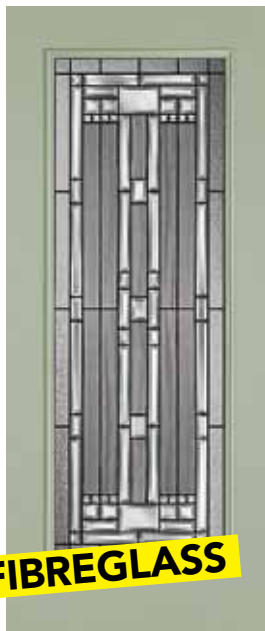
- **TUBULAR VINYL** weatherstripping consists of a vinyl tube set into a metal strip that's nailed to the door jamb. The strip is flexible enough to fit around even a badly warped frame.
- **MAGNETIC OR SPRING-LOADED** weatherstripping consists of metal strips attached to the door and the door frame that interlock when the door is closed.
- **DOOR-BOTTOM** weatherstripping is a U-shaped metal or vinyl strip that is attached to the bottom of the door; flexible rubber strips provide the air seal.
- **THRESHOLD** weatherstripping is a raised seal attached to the threshold (the section of the door frame under the door).
- **STORM DOORS** are often installed in front of the entry door to protect it from the elements, and to add an insulating layer between the inside and outside.



PLAY IT SAFE

To protect your home against break-ins, all entry doors must comply with these specs from the National Building Code:

- Wood doors must be solid-core (not less than 1 3/4 inches thick), or stile-and-rail construction. (Panels on stile-and-rail doors must be 3/4 inch or thicker, and total panel area must not be more than half the area of the door.)
- Entry doors must be equipped with a deadbolt.
- Doors must be installed so that hinges and pins cannot be removed from the outside when the door is closed.
- Solid blocking at lock height must be used on both sides of the door between the jamb and door frame.
- Hinges and strike plates should be fastened with wood screws penetrating at least 1 1/4 inches into the wood frames.
- Main entrance doors without transparent glass or a side-light should have a viewer.



FIBREGLASS



STEEL



WOOD



CHEAT SHEET TO ENTRY DOORS

FIBREGLASS

CONSTRUCTION: Fiberglass skin laminated onto a wooden frame with a polyurethane-foam core

PROS: Embedded wood-grain pattern when stained gives the appearance of a wood door ■ Glass panels are incorporated as the door is being made; the polyurethane foam bonds to the glass, forming a watertight seal ■ Doesn't warp ■ Guaranteed 10 to 20 years ■ Very dent-resistant

CONS: Can shatter upon impact ■ More expensive than steel

THERMAL VALUE: R-12 to R-15

STEEL

CONSTRUCTION: Steel skin bonded onto a wooden frame and polyurethane- or polystyrene-foam core; wood-wrapped with wood veneer added over the steel and high-density foam core

PROS: Paint or stain option ■ Factory-primed for painting ■ Choice of stamped panels or simulated wood grain ■ Resistant to break-ins ■ Guaranteed 10 to 12 years ■ Dents/scratches can be sanded, filled and refinished

CONS: Lightweight skins dent more easily than thicker, more expensive options ■ Require regular maintenance of stain or paint ■ Can rust if dents aren't filled and repaired

THERMAL VALUE: R-10 to R-12

WOOD

CONSTRUCTION: Have a frame of stiles and rails (horizontal and vertical members) ■ **Solid or flush doors** are covered with a wood veneer, hard-board or laminate ■ **Stile-and-rail doors** have wood panels or glass between the horizontal and vertical members

PROS: Choice of veneers, including pine, fir, oak and mahogany ■ Paint or stain option ■ Can last many years if maintained

CONS: Guaranteed as little as one year ■ Require regular maintenance of staining or painting ■ Can warp if not maintained

THERMAL VALUE: Solid R-4, stile and rail R-6

"Exterior doors with windows provide natural lighting for the interior of the house, the ability to see outside and a more decorative look," says Pat Hunter, president of Comfort King, a window and door company in Ottawa. "The glass used is sometimes even triple-glazed or comes with energy-efficient options like low-E coating and argon fill. But when you're strictly concerned about maximum energy efficiency, a solid door with no glass provides the highest insulating value."

For doors with window panes, look for thermal glass with R-values of R-2 to R-8, which means they are more energy-efficient and that they'll be less likely to conduct heat.

The cost of wood exterior doors varies from \$3,000 to \$12,000, depending on the manufacturer and how they're built. Fiberglass doors ring in between \$500 and \$2,000, and the price for a steel door ranges from \$200 to \$3,500. On the other hand, you won't get a wood-wrapped, steel-clad door for less than \$2,000. Once glass is added, the price goes up depending on the amount of glass and the complexity of the design.

Doors are sold either as a slab (just the door), or as a pre-hung unit (the door is supplied hanging in its own frame). The frame (side and top jambs) is fitted into the rough opening. Hinges attached to the frame and the door hold it in place. Exterior doors sit on a threshold or sill, a wooden plate that is usually covered by metal to prevent rotting and that contains a line of weatherstripping to complete the thermal seal.

Pre-hung doors are often used in new construction, when there is no existing door frame, or following extensive renovations, when the door frame has been removed to allow new drywall to be installed. It can also be easier to replace damaged or warped frames with a pre-hung unit. They're a great choice when replacing exterior doors, as they're already equipped with weatherstripping.

Pre-hung doors are not a foolproof selection, however. They can be cumbersome and require two installers to lift and fit them into the wall opening. And the installer still needs to have a certain amount of skill to shim the door unit (add levelling strips of wood at the top and sides of the frame) >>

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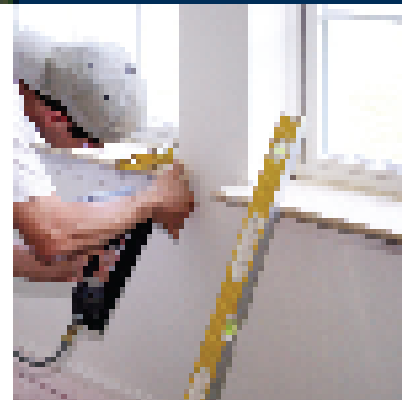
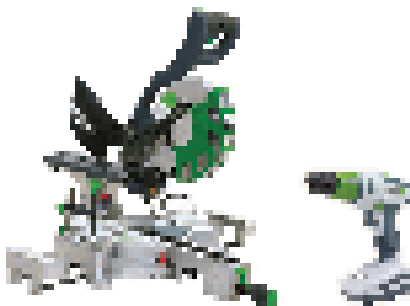
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CUSTOM TOUCH



Custom doors come in two varieties. Semi-custom doors can be tailored to the homeowner's taste, with the client choosing from a variety of colour, window, finish and design combinations for a door that isn't off the assembly line, but isn't fully custom, either.

If you want to front the cash for a one-of-a-kind door to complement a unique or custom-built home, completely custom-made may be worth the extra price (from \$1,200). These doors open up a variety of material and style possibilities, from woods like Douglas fir and hemlock, to ornate scrollwork, antique hardware, imported glass and high-tech locks.

A semi-custom door might take one to four weeks to be delivered, while it generally takes six weeks for delivery of a custom door. So be sure to build the extra delivery time and cost into your build or renovation plans and budget.



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so that the door hangs straight and opens smoothly. If this step is done incorrectly, the door won't swing or latch properly.

Slab doors are usually more labour-intensive to install because they require holes to be drilled for the hinges and hardware before they're ready to be hung in the frame. But this can be a less expensive way to go if you're swapping out an old door for a new one.

Door meets home Even a quality door can be compromised by poor installation, so hire a professional who can get the job done right. Most window and door companies have qualified installers, and big-box building stores can refer you to certified professional installers; both can quote you a price that includes installation.

If you have an existing door frame that's out of square, or if the opening needs to be modified to accept the new door, a professional can adjust the opening and reframe so that the door hangs true. Check whether you'll need a permit for this; changing the size of a door opening may require one if it classifies as a structural change.

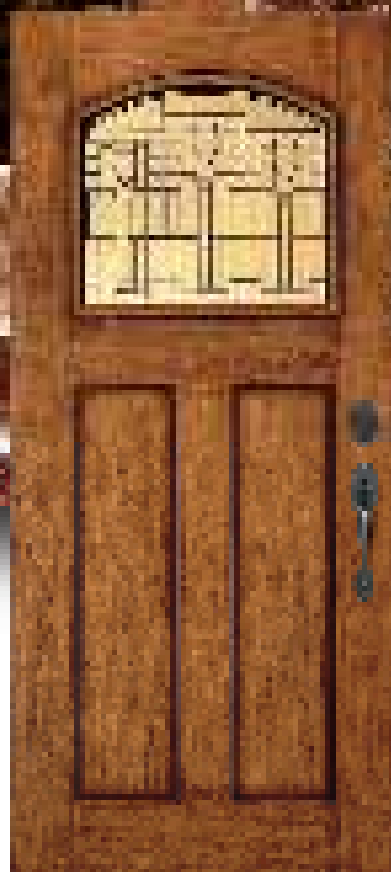
If there is water damage to the door, the framing and even the surrounding structure may need to be replaced before the new door can go in. Installation can sometimes cost as much as the door itself.

A well-built door should have a 30-year-plus life expectancy, according to the Homeowner Protection Office, a branch of B.C. Housing. But for any door, annual maintenance is critical. Because doors are subject to so much wear and tear from daily use, you should inspect the condition of the door and its components at least once a year.

During your check, inspect the seal around glass panes and re-caulk as necessary to prevent air and moisture infiltration. Replace dirty, damaged or worn-out weatherstripping to maximize the thermal seal. Clean and lubricate moving parts (such as hinges) to ensure that they continue to function smoothly. Examine the finish—if it's flaking or fading, or if the grain in a wood door is raised, it's time to reapply paint or stain.

With proper installation and maintenance, your door should welcome family and friends for years to come. □

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