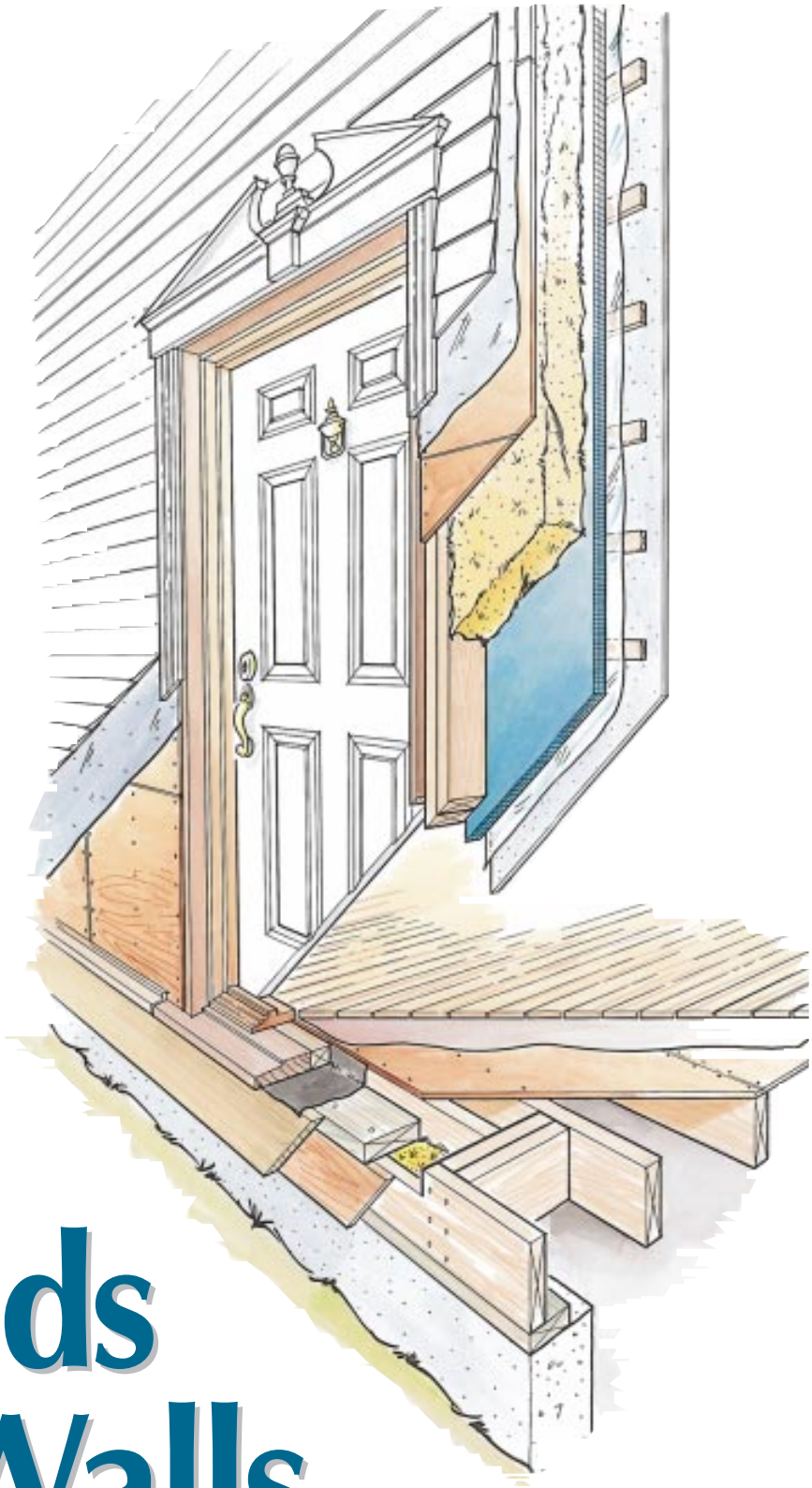
Jambs & Thresholds For Fat Walls

Details for extending door sills and jambs in extra-wide walls

by Lee McGinley



Most windows and doors are manufactured to fit the 4 1/2-inch-thick walls that were the norm 20 years ago. Since the early '80s, when 2x6 exterior wall studs became commonplace, units designed to fit 6 1/2-inch-thick walls have also been made available. But the exterior walls of today's houses often include additional materials — a layer of rigid insulation, a double layer of 5/8-inch fire code drywall between the house and an attached garage, resilient channels to reduce sound transmission — that add another inch or more to the wall thickness.

This isn't much of a problem with windows, because they can be mounted flush with the exterior sheathing, with extension jambs applied on the inside (see "Window Trim for Thick Walls," 8/96). Entry doors, however, must be installed toward the inside of the opening; otherwise, the door won't swing much past 90 degrees before it stops against the jamb. But in a fat wall, a door with standard 6 9/16-inch jambs mounted flush with the drywall leaves both the jambs and the sills short of filling the opening.

Outswing doors solve this problem, but create several others. For one thing, the screen door has to be mounted on the inside. This means that on warm summer evenings when it's time to lock up for the night, opening the screen door lets any insects that have congregated on the screen into the house. In addition, fallen tree branches from storms or high snowdrifts can make

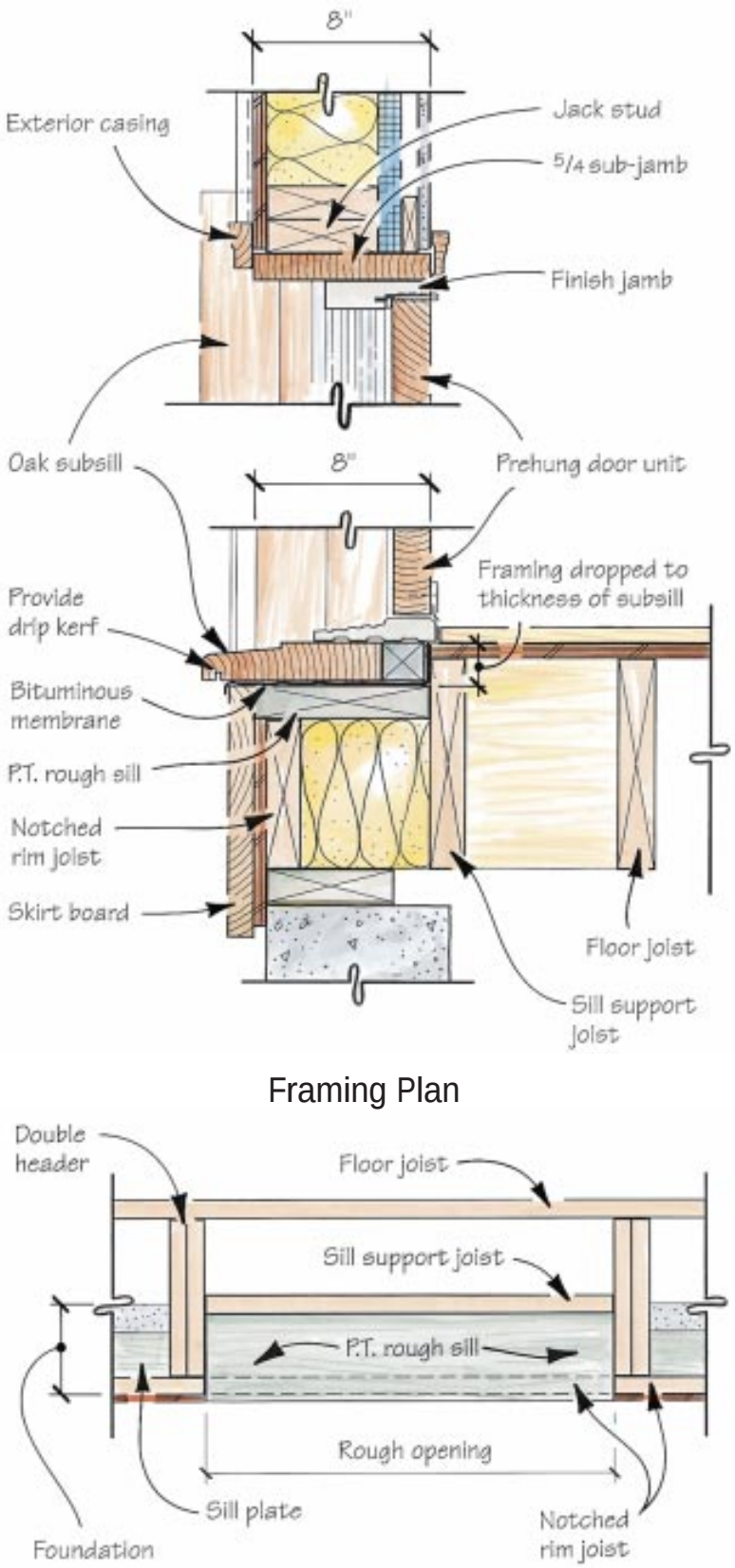


Figure 1. A stock oak threshold for an outswing door makes a good sub-sill for a door installation in a fat wall. Head off and drop the floor under the door opening to make up for the added thickness of the sub-sill. In most cases, you can add extension jambs to the outside of the door unit to fill the opening. With extremely thick walls, build sub-jambs and fasten them to the door, then install the entire assembly as a unit, as shown above.

outswing doors hard to open.

Sliders also solve the fat wall problem, but they aren't practical for frequent use as a main entry. Center-hinged patio doors and entrance doors with sidelights will also work, because the hinged panel can open 180 degrees and overlay the fixed panel. But these doors take up more space in the entry. Finally, a custom millwork shop can fabricate a jamb to fit any wall thickness. This can be costly, however, and may still leave you with the problem of installing weatherstripping.

Stock Solutions

While one of the above solutions may fit a given project, most of the time contractors will be installing stock entry doors. Unfortunately, few manufacturers of inswing doors offer jamb and sill options for walls thicker than $6\frac{1}{2}$ inches. I found two manufacturers who provide jambs up to $7\frac{1}{4}$ inches deep; one — Therma Tru — who offers solutions up to $9\frac{3}{4}$ inches; and two — Weather Shield and Madawaska Doors — who offer standard solutions for even thicker walls (see "Wide Jamb Door Manufacturers," next page).

Therma Tru offers a range of options for standard doors and those that must meet fire code. Both their primed wood jamb and 90-minute two-piece split steel jamb have maximum jamb widths of $9\frac{3}{4}$ inches. A 90-minute expandable steel frame will accommodate wall thicknesses to $7\frac{9}{16}$ inches. Self-sealing aluminum and oak adjustable thresholds are available in widths to match.

Weather Shield has several options for inswing doors. Jambs are available in wood or extruded aluminum, and each style comes with a choice of three threshold profiles: low-profile hardwood, high-profile hardwood, and a low-profile aluminum suitable for barrier-free access. All doors start with a $4\frac{9}{16}$-inch jamb, but Weather Shield will build custom jambs up to 12 inches wide (the company claims it has built jambs as wide as 24 inches). Extruded sill extenders are also available.

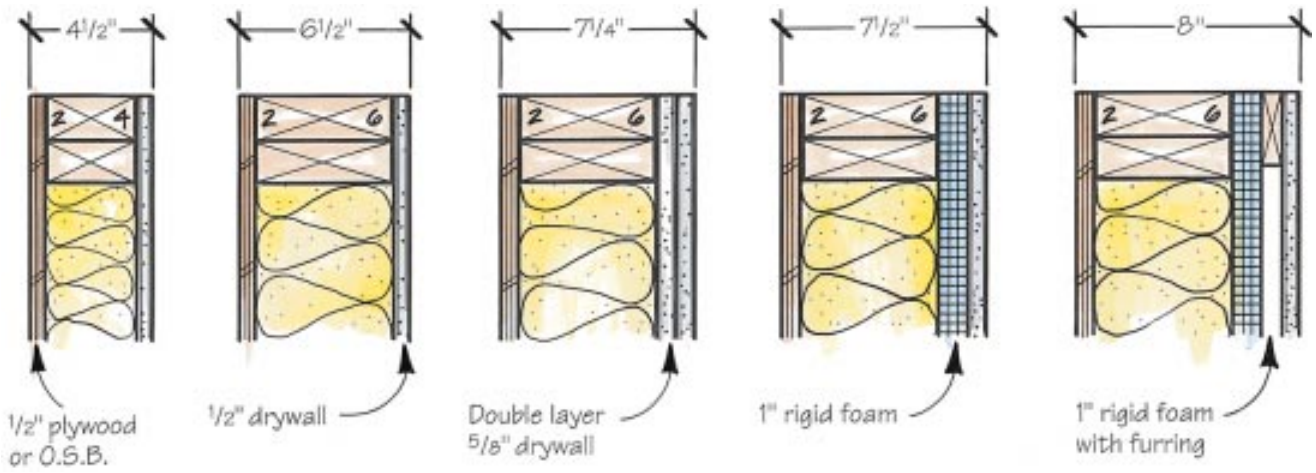
Madawaska Doors manufactures custom wood doors and jambs in many con-

Wide-Jamb Door Manufacturers

	Standard Jamb Width	Maximum Jamb Width	Materials Supplied	Options	Comments
Andersen North Bayport, Minn. 800/426-4261 www.andersenwindows.com	4 9/16″	7 1/4″	Snap-in jamb extensions	Oak & aluminum ramped sill extenders	Vinyl casings available in brick mold and flat profiles
Madawaska Doors, Inc. Barry's Bay, Ontario 800/263-2358 www.madawaska-doors.com	Custom	Unlimited	Glued-up factory jamb	Radius jambs and other custom jamb configurations	Adjustable oak thresholds full width of jamb; wood jambs only
Pella Pella, Iowa 800/847-3552 www.pella.com	Custom	7 1/4″	Oak threshold milled to receive aluminum or wood sill	Clad trim accessories; two historical brick mold profiles	Available in Architect & Designer series, but not ProLine
Therma-Tru Maumee, Ohio 800/843-7628 www.thermatru.com	6 9/16″	9 3/4″	Choice of wood or fire-rated jambs	Adjustable oak sill or self-sealing, self-adjusting sill.	Local distributor builds thick jambs; interchangeable doors
Weather Shield Medford, Wis. 800/222-2995 www.weathershield.com	Custom	12″	Choice of wood or aluminum jambs and three threshold profiles	Flexichron-finished trim with masonry clips	Only manufacturer with clad solution wider than 7 1/4″

Note: Check with manufacturers about options not listed in catalogs. Some manufacturers evaluate special orders on a job-by-job basis.

Typical Standard & Fat Wall Configurations



figurations, including, for example, doors with a radius on top. As a custom manufacturer, they commonly make jambs as wide or wider than 14 inches. Door units are available as entrance or patio doors with optional sidelites and transoms. Clad jambs and fire-rated doors are not available. You can also order oak thresholds with adjustable door sweeps or aluminum thresholds with sill extensions.

Field Solutions

When a stock or custom solution doesn't fit the schedule or the budget, there are a number of ways to modify the door, the opening, or both in the field.

Sub-sills. While it's possible to replace the stock sill with a wider custom sill, you will probably void the door warranty. The easiest workaround is to build a custom wood threshold or sub-sill on which you can rest the factory unit, sill and all (see Figure 1). Oak thresholds are stock items in most lumberyards, although you may have to cut off or plane down the rabbeted stop. Use an out-swing threshold — the profile is much easier to modify in the field.

Most oak sill material already has horns, but they may not be deep enough to fit the wall thickness you're working with. In this case, purchase a sill that's longer than the rough opening and cut custom horns to fit. Stock sill material should also have a drip kerf on the bottom near the nosing.

The 1 1/2 to 2 inches the sub-sill material adds to the height of the threshold creates too much of an obstacle in the

Custom Metal Jamb Liner

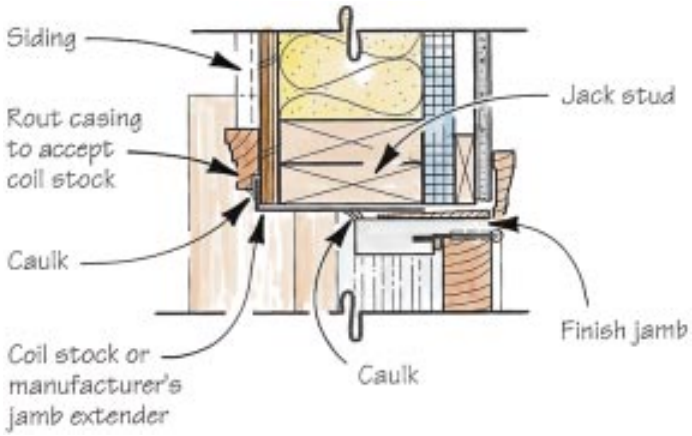


Figure 2. For a clean return, wrap metal coil stock around the jambs and header at the rough opening. To keep the reveal even, the rough opening must be plumb and square, and the door unit must be centered in the opening. The gap between the door jamb and the coil stock should be less than 1/4 inch and can be caulked or covered with molding.

doorway, so you'll have to modify the framing. Whether the rim joist runs parallel or perpendicular to the floor joists, head off the opening and drop the floor in the area under the sub-sill. Use a small piece of self-adhering bituminous membrane to waterproof the bottom and sides of the dropped section. The sub-sill should sit flush with the entry subfloor when fastened in place; it can sit higher, but not so much that any underlayment and finish flooring won't cover it.

Sub-jambs. With the sub-sill in place, the entry door unit can be shimmed and fastened in the opening as usual and extension jambs applied to the outside. With exceptionally thick walls, however, it's easier to build a sub-jamb and fasten it to the factory jambs before installing the door. The rough opening will have to be wider and taller, depending on whether you use 1-by material or 5/4 stock. Rip the sub-jambs to width, prime all four sides and both ends, then screw the sub-jambs to the door unit. When you install the assembly in the opening, you will need to use longer nails through the doubled-up jambs, and extra-long screws to fasten the hinges to the framing.

Coil stock. Wrapping the rough opening with metal coil stock produces a clean result (Figure 2). For a consistent reveal, make sure the rough opening is plumb and level, and install the door equidistant from both sides. A standard rough opening should leave a space less than 1/4 inch around the sides and top of the door, which can be filled with caulk or covered with molding.

Steel Frames for Fat Walls

Some local building codes require fire-rated jambs as well as fire-rated doors between living areas and attached garages. This narrows the choices when dealing with thick walls.

Adjusta-Fit. Benchmark Doors (General Products Co., 3000 Mine Rd., Fredericksburg, VA 22404; 800/755-3667; www.benchmark.hw.net) makes a split, steel frame called Adjusta-Fit that accommodates walls up to 12 3/4 inches thick. The unit consists of a 16-gauge base frame with prehung door, complete with preinstalled vinyl threshold, and can be installed immediately upon arrival at the job site. The closure frame is 22-gauge steel, and has a deep slot which allows for final adjustment to the wall thickness. A full-size extruded aluminum sill slips into a slot in the vinyl threshold; the factory will rip the sill extension to your dimensions. A 1/2x4-inch barrier-free threshold is available.

Snap-on metal trim is optional. Wood trim can be applied by aligning the molding nails with the mounting slots in the frame. (Check with your local code official to determine if wood trim is allowed on a fire-rated steel jamb.) Adjusta-Fit frames come with a powder-finish primer, which tones down the "commercial" look of this product. Benchmark offers a wide range of door slabs, or your local distributor can substitute the fire-rated door of your choice. Single doors are sized from 2/0 to 3/6 in width and 6/0 to 7/2 in height; a double door option is sold in widths from 4/0 to 7/0.

Split-fire drywall frame. Stanley Doors (480 Myrtle St., New Britain, CT 06050; 248/528-1400) distributes the Split-Fire Drywall Frame, a knocked-down frame with a choice of four trim kits that accommodates wall thicknesses to 8 1/16 inches. The frame is fabricated from 20-gauge white-primed steel, and can be reversed for outswing applications. The two-piece jamb interlocks using retainer clips. Two fire-rated door styles are available, flush and six panel; door sizes are limited to 2/8 x 6/8 and 3/0 x 6/8. Accessories include aluminum, thermal break inswing and outswing thresholds that come fitted and screw-mounted to the prepunched frame. Steel exterior trim in a flat casing profile is available up to 8 1/16 inches wide.

Stanley's Masonry Frame is suitable for masonry construction where frame installation typically occurs before wall erection. It comes with a low-profile aluminum saddle designed for field installation.

Accessories. For custom applications where you may not need a prehung door unit, both Pemko (P.O. Box 3780, Ventura, CA 93006; 805/642-2600) and Zero International (415 Concord Ave., Bronx, NY 10455; 800/635-5335) manufacture extruded metal sill extensions and interlocking thresholds, as well as weatherstripping, special hinges, and other accessories designed primarily for commercial applications.

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