Flattening Walls

Use these simple techniques to bring out-of-square, out-of-plumb walls into plane

by Rick Castillo

I work as a finish carpenter in the Santa Barbara, Calif., area. Although some of my finish work has included installing the cheap, faux-walnut panels found on the walls of mobile homes and basements, I've also had the pleasure of working with intricate hardwood paneling and ornate frame-and-panel wainscoting. On those occasions, I've had to use a couple of tricks to prepare the out-of-true walls to receive the paneling.

Spot Check

It's crucial to thoroughly check the floor, walls, and ceiling of the room for level, plumb, and square. I start at the floor and use a builder's level or water level to locate the highest point in the flooring. Because I've been caught before, I also make sure the other trades have properly nailed off all of their work. If the floor framing has been exposed to the elements for any length of time, it's quite possible that some nails have worked loose and the subfloor has moved. Also, loose drywall will throw off your measurements, especially in the corners.

Benchmark. The first step is to locate and mark the high point in the floor; this will be the benchmark for all vertical measurements. Too often an inexperienced carpenter will start to install paneling at the low point of the room and discover on rounding the corner that the bottom rail of the frame-and-panel assembly has to be tapered for the tops to meet at the corner.

The next step is to confirm that all of the door and window jam heights are uniform and are at the same elevation from the benchmark. If the doors and windows are all in the proper relationship to one another, paneling around them will flow much faster and look much better. Again, the builder's level works best for this job.

I then use a tape to compare horizontal distances between sets of doors and pairs of windows to make sure they are also uniform.

Crowns and valleys. I examine the walls for crowned studs and bows using a 6-foot level held horizontally on edge. By sliding the level across the studs, you can quickly locate the high spots and find any large curves in the wall. As I move around the room, I power-plane any protruding studs to bring them back into plane with adjacent studs. Finally, I check the ceiling to find the lowest point.

Box Within a Box

The most serious defect, whether it's the uneven floor, bowed wall framing, misaligned doors or windows, or a low ceiling corner, determines the next step. The goal is to establish a new plane for the paneling. In essence, I am laying out and creating (with the aid of shims) a surface that forms a perfectly flat and square box just touching the inside points of the actual out-of-square, out-of-plumb, curved-and-skewed existing room.

Once I establish the new planes, I mark the floor with a chalk line, then transfer the line up to the walls using shims nailed to the studs. For instance, if two of the four walls are leaning inward and a third has a bow in it that curves away from the center of the room, I have three new "margins," as I call them, marked on the floor. I then transfer the lines up the walls by shimming out portions of the wall to these new planes. Once I've established the new "box," I can figure out an accurate layout for the paneling.

Grounding on Two Screws

Furring the walls to the new margin lines is time-consuming and tedious. To speed the process, I use partially driven drywall screws as a ground for my 6-foot level to create straight and plumb walls. First, I drive a drywall screw near the sole plate and adjust it out to the chalk line. I then drive another screw at a point on the stud 5 feet or so above the first screw and make minor adjustments in or out so my level is plumb when pushed against both the screws. The goal is to transfer a perfectly plumb line from the control line on the floor up the face of the wall. It then becomes a matter of simply filling in the space between the level and the wall with shims. The furring can be done much faster because you are working to the edge of the level instead of a plumb line. I simply insert two shims from opposite sides until they touch the level, remove the level, and shoot them with a nail gun.

More screw tricks. The drywall screw technique is also useful when installing a coffered ceiling. The approach is the same as with a vertical wall except you are dealing with a horizontal plane. You can also use the same trick to true up a twisted structural post when wrapping it with finished lumber. ■

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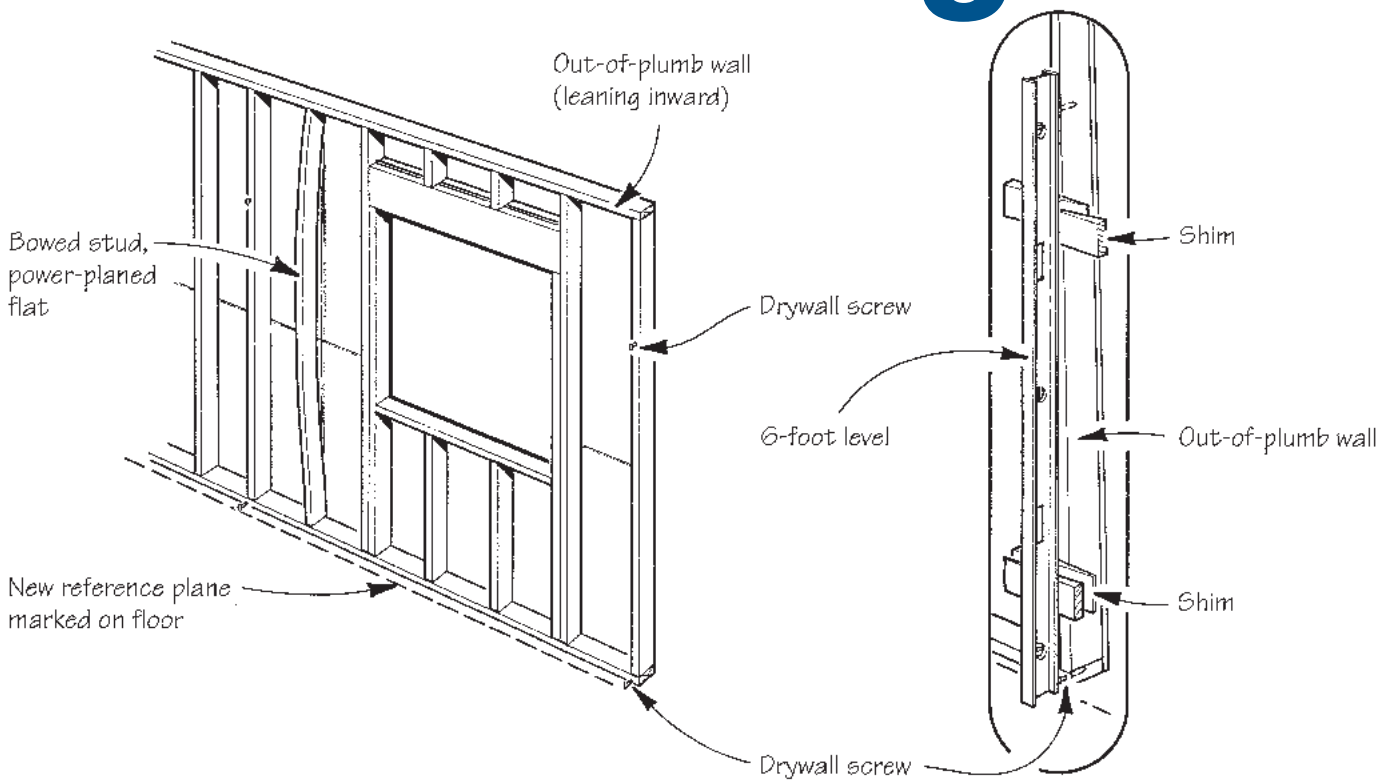
for Paneling



To determine whether a wall is flat, the author uses a 6-foot level as a straightedge (left photo). He trims protruding studs with a power plane. He then snaps a reference line on the floor representing the new wall plane (illustration). He drives a drywall screw into the sole plate, stopping the head even with the reference line on the floor. A second screw higher on the same stud is adjusted until the 6-foot level reads plumb as it rests against the two screws (middle photo). Then, using the level as a straightedge, he slips shims behind it and nails them off (right photo). This transfers the reference plane up each stud, creating a perfectly flat and plumb backing for finish panels.