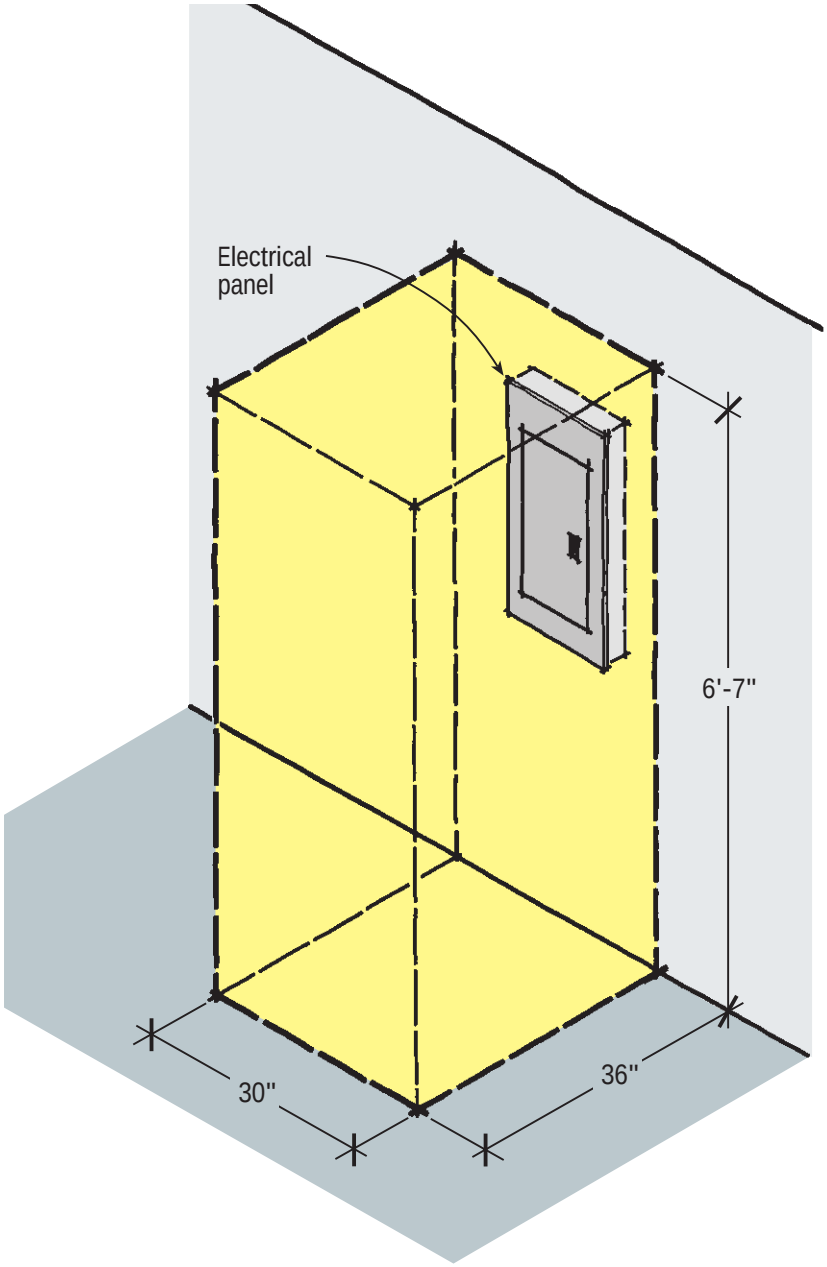
Does Panel Location Matter?

Q. *In a new house I am building, I would like to locate the electrical service panel under a counter. This would put the top of the panel at a height of about 34 inches. Is there a reason this shouldn't be done?*

A. *Master electrician Rex Cauldwell responds:* There are more reasons not to do this than I can cover in this limited space. First of all, you cannot put the panel under anything. You cannot put it over anything. You cannot put it next to anything. There must a clear space in front of the panel for an electrician to stand. The space must be kept clear for at least 3 feet in front of the panel, and for 30 inches left to right in front of the panel. There must be at least 6 feet 7 inches of headroom, measured from the floor to the ceiling. The main breaker can be no higher than 6 feet 7 inches above the floor.

In your case, locating the panel under a counter would require an electrician to work on his or her knees when working in the panel. For this reason alone, the inspector would probably fail you.

Required Clear Space Around Panel



Preventing Wind Washing of Attic Insulation

Q. *Since ventilated attics can be breezy, doesn't the wind rob heat from the insulated ceiling? Would it help to install housewrap on top of the R-38 fiberglass batt insulation? If the client wanted a storage area, I could install plywood over the housewrap. Similarly, would it help to have housewrap on the back of second-floor kneewalls, which I typically insulate with R-24 batts?*

A. *Don Fugler, senior researcher at Canada Mortgage and Housing Corp., responds:* Let's answer the easy question first. In my opinion, you could put housewrap on the back side of the second-floor kneewalls in a well-ventilated attic. This would reduce wind washing of the insulation. The installation is roughly in keeping with the standard practice of using housewrap on exterior surfaces.

As for the attic floor, I would not put a housewrap and plywood over the insulation. DuPont, the manufacturer of Tyvek, advises that their Homewrap is not recommended for horizontal applications.

I prefer board sheathing to plywood for the attic floor. Plywood has a relatively low moisture permeance, similar to that of painted drywall, so there could be moisture problems on the underside of the plywood. Boards would be more moisture permeable, would provide ade-

quate wind protection, and would make a suitable floor for storage.

Same Height Risers Required by Code

Q. *I'm building an exterior stairway from a deck to grade. Is there a building code requirement that the risers of an exterior stairway all be the same height?*

A. *Corresponding Editor Paul Fisette responds:* Most building codes, including the Massachusetts Building Code, BOCA, and the Life Safety Code, require that the variation in the depth of adjacent treads, and in the height of adjacent risers, not exceed 3/16 inch. In any flight of stairs, there should be no more than 3/8 inch difference between the largest and smallest riser, and the same rule holds for treads. There are a couple of exceptions: 1) where the bottom riser adjoins a sloping public way, walk, or driveway that has an established grade and serves as a landing, and 2) on stairways serving as aisles in assembly seating. In those cases, the bottom riser may be wedge-shaped if necessary.

As far as I know, there is no reason to think that an inspector would treat exterior stairs differently from interior stairs with regard to dimensional uniformity.

Paint vs. Stain on Clapboards

Q. *I plan to install radially cut spruce clapboards on a new house and want to stain them with a white semitransparent or opaque stain. What type of finish appearance should I expect, and how often will the finish need to be renewed? Although stained siding looks better to me than painted siding, I know that some people say that stain is "just thinned paint."*

A. *Bill Feist, a wood finishes expert in Middleton, Wisc., responds:* Semitransparent stains are most effective on roughsawn and weathered wood because more finish can be applied. The best exterior house stains are usually described as semitransparent, penetrating, and oil- or alkyd-based (solvent-borne). The better alkyd-based penetrating stains contain a fungicide (preservative or mildewcide), an ultraviolet light stabilizer, or a water repellent. Check the label for these important ingredients.

The alkyd-based solvent-borne stains actually penetrate the wood surface to a degree, and do not form a surface film like paint does. Thus, they don't totally hide the wood grain and will leave a soft, flat appearance. They will not trap moisture that may encourage decay. Since they penetrate and don't form a film like paint does, the stains cannot blister or peel even if moisture penetrates the wood. Alkyd-based stains normally only require a light cleaning with a stiff bristle brush and water before refinishing.

Latex-based (waterborne) stains are also available, but they do not penetrate the wood surface as do their oil- and alkyd-based counterparts. These are essentially "thinned paints." On spruce clapboards, a latex stain probably won't perform as well as an oil- or alkyd-based stain, and could also be more difficult to refinish.

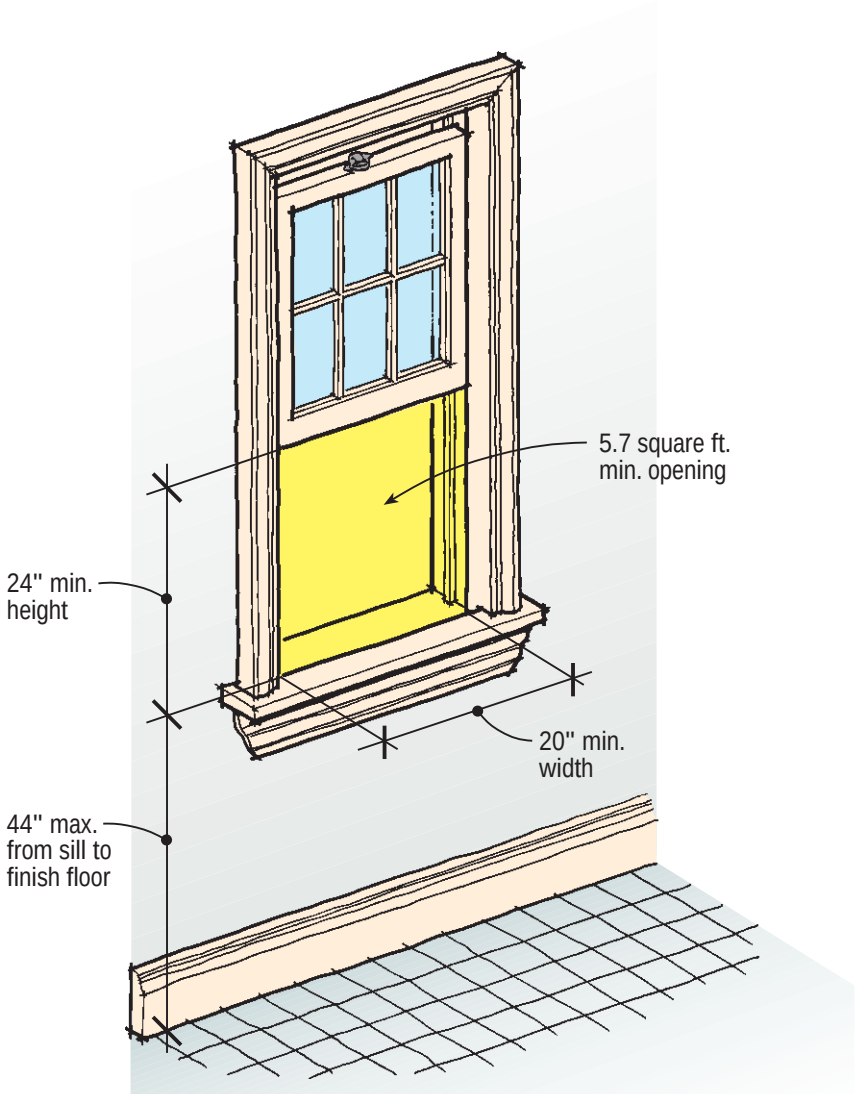
How long the stain will last depends on weather exposure and the roughness of the wood. When used on new smooth-planed siding that is fully exposed to the weather, semitransparent penetrating stains generally last only about two to three years. When refinished after weathering, a smooth-planed siding should accept two coats of stain, and the finish will usually last much longer than the first application.

Since a rough surface will usually accept two coats of stain, even on the first application, it is preferable to a smooth surface. Stain on roughsawn siding may last six to eight years, depending on the amount of exposure. However, such durability often requires applying the stain at a rate of 100 to 150 square feet per gallon, a much greater amount than usually required for paint, which is typically applied at a rate of 400 to 450 square feet per gallon.

Upstairs Window Rules

Q. *I know that the sill of an egress window in a second-floor bedroom must be no*

Egress Window Minimums



higher than a certain distance from the floor to allow for easy escape. But what if it's a tall window that is only 12 inches off the floor? Is this a code violation?

A. *Kelly Reynolds responds:* All three model codes limit the maximum height of the sill to 44 inches. There is no minimum distance that a window must be from the floor, even for second-story windows. However, if the window extends to within 18 inches of the floor, it must either be safety-glazed or have a bar or other physical barrier to prevent someone from falling into the glazing.

To meet code, the open area of an egress window must have a minimum width of 20 inches and a minimum height of 24 inches, plus the opening must be a minimum of 5.7 square feet. Note that a 24x20-inch window does not meet code, because it creates only a 3.3 square foot opening. To comply, the window open area would need to be at least 24x34 inches to equal 5.7 square feet.

Kelly Reynolds is principal of Kelly P. Reynolds & Associates, a firm specializing in code interpretation and plan review, with offices in Chicago and Phoenix.

GOT A QUESTION? Send it to On the House, *JLC*, 932 West Main St., Richmond, VT 05477; or e-mail to *jlc@bginet.com*.