Letters

Countertop Bolts for Stair Rails

In the article "Installing an Over-the-Post Handrail" (4/06), Jed Dixon uses an interesting rail bolt I've never seen before. Is it possible to get the supplier's name?

Bill Tanner
North Haledon, N.J.

Author Jed Dixon responds: Those are Knape & Vogt tight-joint fasteners, usually sold for fastening countertops together from underneath. I've used them for years as rail bolts.

They're available from cabinet-hardware suppliers who carry the KV line of drawer slides.

Which Comes First, Membrane or Drip Edge?

In light of the numerous listed standards (such as the "NRCA Roofing and Waterproofing Manual" and ASTM) and of the fact that all major roofing-shingle manufacturers disagree with your opinion concerning the proper placement of the underlayment and drip-edge flashing, how do you justify the January *Q&A* on this topic?

Aaron Miller
Garland, Texas

Author Paul Fisette responds: I believe I explained my reasoning for using the detail I described, although there are definitely different opinions on how this should be done.

The Asphalt Roofing Manufacturers Association, for instance, provides details in its technical bulletin "Preventing Damage From Ice Dams" and advises roofers to extend underlayment over the drip flashing at the eaves by ¼ inch (see www.asphaltroofing.org/pdf/tb_215.pdf). But the product specs for Grace Ice & Water Shield tell you the opposite.

If you feel bound to a particular manufacturer's warranty, you should follow the specific guidelines provided by that manufacturer.

Also, I encourage builders to follow the locally enforced code. Where a local code indicates a specific eaves detail, builders should follow the code. But based on roof performance, I stand by the details I outlined in the Q&A.

Theory vs. Practice

I am a college professor who teaches courses in engineering technology and technical physics to students in several majors, including Construction Management. Therefore, I was pleased and impressed that Dave Yates used Boyle's law and provided numerical values in his response to the question about protecting water heaters with expansion tanks (*Q&A,* 3/06). Overall, the content was valuable and informative.

I do want to note one correction. When pressure is used in equations like Boyle's law, absolute pressures — not gauge pressures — are required to be mathematically correct. Therefore, the P2 gauge pressure for the first example is 184 psi, not 168 psi, as stated. Likewise, the P2 gauge pressure for the second example is 283 psi, not 250 psi. These differences don't affect the outcome of the examples in terms of the concepts, applications, and advice Dave Yates provided. However, there may be situations encountered by readers in which using the correct pressure values in calculations involving Boyle's law and similar equations is of critical importance.

Allen Zimmerman
Ohio State University
Wooster, Ohio

Author Dave Yates responds: Professor Zimmerman is absolutely correct regarding the use of absolute pressures in the classroom or for technical papers. There is, however, a stark contrast between classroom theory and real-world conditions. The gauges hvac technicians use don't register in absolute pressures; I wanted my numbers to reflect what they'd be seeing in the field. As a teacher at a local technical college, I use both gauge and absolute pressures in discussing Boyle's law and how it relates to thermal expansion.

Thanks for bringing this to the readers' attention.

KEEP 'EM COMING!

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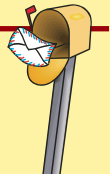

Letters

Acoustically Dead Ducts

Good article on sound control ("Innovations in Sound Control") in your March issue; Bonnie Schnitta did a great job covering a complex issue.

However, when it comes to ducts, she's a little off-base. The purpose of duct wrap is thermal, not acoustical. Because the internal metal surface of ductwork transmits noise, you should use duct board or duct liner for acoustical purposes.

Tom Newton
CertainTeed Corp.
Valley Forge, Pa.

Author Bonnie Schnitta responds: You are probably confusing the duct wrap shown in the article with standard thermal duct wrap. The material in the photos, as stated in the text, is actually an acoustic barrier — a dense material designed to stop sound.

Insulation of any type may absorb sound, but it does not stop sound. This is illustrated in the sound transmission class (STC) chart on page 111 of the article; note that adding fiberglass insulation to a 2x4 wall assembly increases the STC rating by 2; that is, one can count on insulation to provide an additional 2 to 5 dB of transmission loss.

The material shown in the article has an STC of 29; that is, it stops roughly 29 dB. If a duct is located in the ceiling of a media room, but runs only from the boiler to a bedroom, wrapping it with a barrier will inhibit sound from entering it. Wrapping the kitchen exhaust duct will also prevent kitchen noise that enters the duct from entering the bedroom via the wall the duct passes through.

You are correct that metal ducts and other similar conduits, due to their reflective hard surfaces, will carry noise for long distances. The acoustic principle is the same one that allows whales to transmit their songs for long distances under water. Thus it's a common problem for a duct to carry sound from a media room or kitchen (through the exhaust duct) to a bedroom.

That's why we strongly recommended in the article that the inside of the duct be lined with an absorber. This allows the sounds that enter the duct at a vent to be absorbed — if the duct and absorber are long enough — before they reach a quiet room like a bedroom or study.