

Cooling vs. Dehumidification

The graph in Figure 1 of the article “Air Conditioning for Humid Climates” (10/04) is misleading. The caption of the original figure, from a 1999 publication, indicated that it represented the annual sensible and latent loads for cooling *ventilation* air — that is, the annual load to cool one scfm of 100 percent outside air down to space conditions. The article implies that these are annual *room cooling* loads for one scfm of air. But 95 percent of residential systems process only return air, not 100 percent outdoor air. The outside air load comes from return duct leakage if the return leak is in the attic or crawl-space, or from infiltration. The statement that “on a hot, humid day in a house with a properly sized 5-ton cooling system, 3 tons of that capacity might be working to dehumidify the air, while 2 tons are working to actually cool it” is just plain wrong.

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Sheathing Not Water-Repellent

In December’s Q&A, editor Don Jackson stated that the IRC (2003) does not require a vapor barrier behind brick veneer when a 1-inch air space is provided between the plywood or OSB sheathing and the brick. I’m afraid Mr. Jackson got it only partially correct. The IRC does allow the vapor barrier to be deleted, given the 1-inch air space, in accordance with Table R703.4, but only when a “water-repellent sheathing” is used (footnote m). There are a number of sheathing materials I would consider water-repellent, but plywood and OSB are not among them. These materials are more water absorbent than repellent unless they have been treated with a water-repellent coating.

As a general rule, we require a vapor

barrier over plywood or OSB sheathing when brick veneer is being installed. If a builder could provide sufficient information to convince me the plywood or OSB sheathing he was using was water-repellent, I would have to allow it. To date, that hasn’t been an issue, because the builders recognize the importance of the vapor barrier in keeping moisture out of the wall assemblies.

Thanks for your excellent publication.
Arthur E. Berkley, CBO
Director of Inspections
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Editor Don Jackson responds: Thanks for your comments. Your letter points up how confusing these issues and the code itself can be. First, to clarify, “vapor barrier” — or “vapor retarder,” as the IRC calls it (R318) — usually refers to the warm-side membrane (typically 6-mil poly) installed to keep water vapor out of wall and ceiling cavities. The code uses the term “weather-resistant sheathing paper” (R703.2) to refer to housewrap and felt paper installed over exterior sheathing.

What I said in my original response was that while the IRC doesn’t require the building paper in the case you mention above, both the Brick Industry Association and the APA recommend it and it shouldn’t be left out.

As for the code definition of “water-repellent,” check R604.3, which reads: “Wood structural panels marked Exposure 1 or Exterior are considered water-repellent sheathing under the code.” But I wouldn’t change your policy based on this.

It’s a somewhat moot discussion, anyway, because rarely do you see a full 1-inch cavity in residential brick veneer work. Even if you did, leaving off the building paper would still be a bad idea, as most everyone — except perhaps the IRC — agrees.

Smaller Is Greener

According to “Strictly Green in Vermont” (*In the News*, 12/04), Vermont Builds Greener is the only green-building program with a house-size factor. That is not true: The Earth Craft Program, which is used in Atlanta and is about to be adopted by the Blue Ridge Home Builders Association in Charlottesville, Va., has a three-step point award. Houses between 2,200 and 2,500 square feet get two points; houses between 1,800 and 2,100 square feet get four points; and houses under 1,800 square feet get six points.

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Manufactured Stone

The article on manufactured-stone veneer (12/04) highlights a key issue for the building industry. Regardless of the material, no cladding system is durable if improperly installed. In every instance where the author found a problem, the culprit was not the cladding but missing or inadequate flashing, improper treatments around windows and doors, incorrect transitions from one material to another, or damaged or incorrectly installed weather-resistant barriers.

With four decades of experience in the manufactured-stone veneer industry, we know that the author’s point is correct: Without exception, adherence to building codes and good building practices prevents moisture problems. Manufactured-stone veneer, when properly installed, can be a high-performance cladding that adds beauty and durability to any structure.

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Sub-Slab Moisture Membrane

In November 2004 *Products*, you outlined a way to stop seepage by using Delta-MS air-gap membrane under the slab. The featured technique, which requires a “waste” slab, is used only in unusually severe moisture conditions.

The standard method is simpler and costs less; no waste slab is needed. The Delta-MS can be laid directly on the gravel substrate, with seams overlapped by 6 inches and taped with vapor tape. When the regular floor slab is poured on top, the seams are also sealed by compression. Combined with Delta-MS on the perimeter walls, this technique provides good moisture protection.

The cost of the membrane is around 40 cents per square foot.

Tom Fallon, Vice President
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Efficient Fireplaces

I enjoyed Katie Hutchison’s observations about fireplaces (*Design*, 1/05). I take issue, however, with the statement that a Rumford design is efficient. While it will radiate more heat back to the occupants than a standard firebox design, it’s far from efficient. The same is true of a standard fireplace. Both fireplace types lose huge amounts of the warmest air in the building to the draft. If the damper is left open after the fire is out, the heat loss may well exceed the heat gain from the fire.

A better solution would be a zero-clearance fireplace with glass doors and an outside air kit. Better still is a wood stove or fireplace insert. Probably the most efficient is a masonry heater, of the type used in Northern Europe, Scandinavia, and Russia. They use small-diameter wood burned at extremely high tempera-

tures. This ensures complete combustion, with very little uncombusted material. The heat is stored in a massive masonry structure, which emits it slowly into the building. These aren’t cheap, and should be designed by someone with experience in their design, but they can approach 70 percent efficiency.

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KEEP ‘EM COMING!

Letters must be signed and include the writer’s address. *The Journal of Light Construction* reserves the right to edit for grammar, length, and clarity. Mail letters to *JLC*, 186 Allen Brook Lane, Williston, VT 05495; or e-mail to jlc-editorial@hanleywood.com.

