

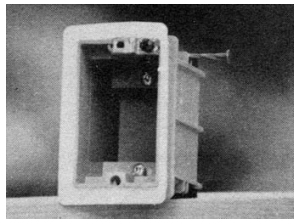
Airtight Electrical Boxes

by Clayton DeKorne

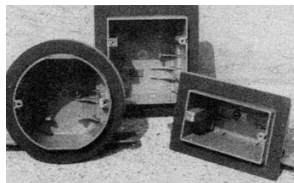
The Journal's pick of curious, interesting and useful products.

Two plastic electrical boxes made by R&S Vapour Seal Systems and Nu-tek Plastics, may simplify sealing around electrical outlets and ceiling boxes.

The R&S Vapour Seal System is designed for sealing the electrical box to a plastic vapor barrier. The vapor barrier can be run right across the face of these boxes and X-cut inside each box. A plastic ring is then slipped over the box face and snapped into place against a small flange. A piece of closed-cell foam covers each of the power line openings to help seal the cable penetration. The manufacturer recommends stripping the cable back about an inch and stabbing the wires



R&S Vapour Seal Systems



Nu-tek Plastics

through, rather than slitting the foam. These boxes also have two features that would be useful on any plastic box: screw-down cable connectors and an accessible grounding buss on the outside edge. These boxes are approved by the Canadian Standards Association (CSA) which is not always accepted by local U.S. ordinances, so check with your official. A UL listing has been applied for, but has not yet been approved. As of this writing, only single duplex wall and ceiling boxes are available, but ganged outlet boxes will be available soon. For more information, contact R&S Vapour Seal Systems, RR #2, Boyers Rd., Keswick, ON L4P 3E9, Canada; 416/476-5336.

The Nu-tek Plastics box is made to seal the electrical box to the drywall without a plastic vapor barrier. A foam-covered flange surrounds the perimeter of the box. When the drywall is installed, it compresses the foam, sealing the box to the drywall. The drywall must be cut accurately around the box to form a tight seal. As with the R&S box, the line openings on these boxes are covered by foam. But the cable is held in place by a hinged plastic tab, and in place of a sleeve-and-nail to install the boxes, Nu-tek uses a predrilled mounting tab along one side of the box. These boxes are also CSA-approved and a UL listing is pending. Nu-Tek currently makes a ceiling box and both one- and two-gang wall boxes. For more information, contact Nu-Tek Plastics, Inc., #2 4703 51st St.,

Delta, BC V4K 2W1, Canada; 604/946-6662.

Wet-Spray Rockwool



The FATS (Fire, Acoustic, Thermal System) insulation is a wet-spray technique for blowing rockwool insulation. Like wet spray cellulose, the insulation is blown in open wall cavities and installs easily around plumbing and electrical lines without creating voids or compressing the batts. After the insulation is blown in, the walls are "scrubbed" with an electric roller brush to clean the overspray off the face of the stud wall. However, FATS insulation reportedly needs less binder than most cellulose systems, so the drying time is reduced. The manufacturer claims a 3 1/2-inch-thick wall cures in 24 hours, and an 8 inch-thick wall in 48 hours. The manufacturer also claims an R-value of about 3.5 per inch. And the rockwool blows in at about a 4-pound density, which could help reduce air infiltration through the wall. The sound ratings are comparable to fiberglass insulated walls, but the fire ratings are higher. A single stud wall assembly with single layers of normal-core 1/2-inch drywall reportedly has a one-hour fire rating. For more information, contact American Rockwool, P.O. Box 880, Springhope, NC 27882; 800/334-0394.

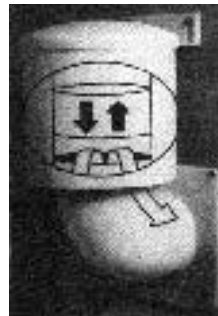
Structural Stress-skin Splice



The spline that joins the new Advantage structural stress-skin panel is itself a long, narrow, stress-skin panel. Compared to using a conventional double-spline, this one-piece insulated spline looks stronger and should be faster to install. And, because it is relatively simple, it may be easier to seal when the crane is breathing down your neck. To join panels between floors, the manufacturer is also working on a horizontal boxed-beam that is let into the panels along the plate lines. The panels

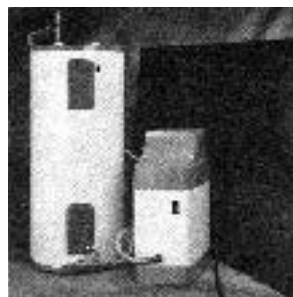
themselves are constructed with a structural-grade adhesive and come in 4- or 8-foot widths with either EPS or polyisocyanurate foam cores and a variety of interior and exterior facings. For more information, contact Atlas Industries, 6 Willows Road, Ayer, MA 01432; 800/343-1437 or 800/332-1002.

Draftless Dryer Vent

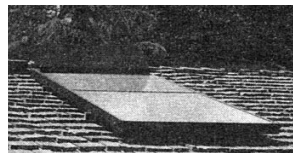


The Positive Closing Dryer Vent may be a practical alternative to leaky, louvered vents. This ABS plastic vent includes a canister on an upturned elbow that fits over a standard 4-inch vent hole. Inside the canister is a "shuttle-cup" that rides up to allow blowing air to escape. The cup falls down to seal the opening when the dryer is shut off. The seal is not completely air-tight, but the configuration should limit air leaks due to wind and pressure differences. A "spring-assist" model is available for low-volume or low-pressure exhausts. For more information, contact Heartland Products International, P.O. Box 777, South Kathryn Road, Valley City, ND 58072; 800/437-4780.

Solar Domestic Hot Water



Solar Boiler



Copper Cricket

Two new solar domestic water heaters—the Solar Boiler and the Copper Cricket—promise good reliability and yet can be installed for less than \$3,000.

The Solar Boiler is a "drainback" system, which means that when the sun hits the collectors, a sensor turns on the pump to bring fluid (a combination of water and antifreeze) to the collectors to be heated. The fluid then returns by gravity to a heat exchanger and is circulated back to the collectors.

The Solar Boiler's principal innovation is the Life-Line—a small-diameter

nylon cable that contains the fluid supply and return lines and the control wiring in one flexible, easy-to-snake package. Tubing connections are made with compression fittings. This replaces the insulated, soldered copper lines of a conventional system and simplifies retrofit installations.

The best feature of the Solar Boiler, however, is its price: two 28-square-foot collectors with a 60-gallon tank can reportedly be installed for about \$2,350. For more information, contact Thermo Dynamics Ltd., 81 Thornhill Drive, Dartmouth, NS, B3B 1R9, Canada; 902/468-1001.

The Copper Cricket is a passive system that works with the collector installed on the roof and the storage tank in the basement. It has an external heat exchanger called the Solar Pad which makes it adaptable to retrofit applications. The Copper Cricket works like a coffee percolator. The collector is filled with a water-and-methanol solution. When the sun heats the collector, the fluid boils in the tubes, and slugs of hot fluid are pushed by the steam bubbles into the header at the top of the collector. The hot fluid then runs down the header to the heat exchanger, where the heat is transferred into the domestic water supply.

The major feature of this system is that it uses no power, and has no moving parts or controls to fail. Currently, it is only available with a single collector (about 39 square feet). The Copper Cricket costs \$1,880 without a storage tank; a complete installation is estimated at about \$3,000. For more information, contact Sage Advance Corp., 1001 Bertelsen Rd., Suite A, Eugene, OR 97402; 503/485-1947.

Polyurethane Caulk



Polyurethane has long been recognized as a superior exterior caulk because it is unaffected by moisture, doesn't shrink when cured, is stable enough to bridge large gaps, and is flexible enough to absorb dimensional changes.

Polyurethane also seems to form a more aggressive bond than most water-based caulks, yet it is easier to apply than butyl. And, unlike silicon, it can be painted.

Until recently, however, polyurethane caulk has been a special order item at most lumber yards and therefore relatively difficult to get. Macco Adhesives has introduced Super Poly, a polyurethane rubber caulk that should be available wherever Liquid Nails is sold. We tried a sample and it performed similar to other polyurethane caulks, bonding well initially to concrete, wood, polyethylene sheeting, and aluminum flashing. And, for what it's worth, Super Poly has a 50-year warranty against shrinkage and failure. For more information, contact Macco Adhesives, 925 Euclid Ave., Cleveland, OH 44115; 800/634-0015. ■