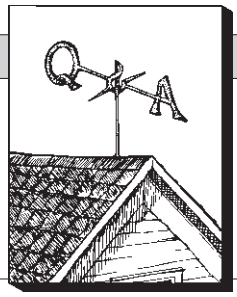
Wiring Behind Drywell



by Hank Spies

Q. *We use foam insulation on the interior and then use horizontal strapping to create a wiring space. Are there any code problems with this approach? How about where the non-metallic-sheathed cable must cross the strapping?*

A. Section 33-4 of the National Electric Code requires that the wire be at least 1 1/4 inches behind the face of the stud to prevent it from being accidentally penetrated by nails. The cable can run through a notch in the face of a framing member if it is protected by a steel plate at least 1/16 inch thick.

This regulation would prohibit the detail you describe unless the cable were in rigid conduit (EMT tubing is too thin). One option might be to use 2 x strapping, flat-wise, to create a 1/12-inch space for the wiring. Alternately, you could eliminate the strapping altogether and run the wiring behind the rigid insulation — through holes drilled in the studs.

Mud Down the Drain

Q. *Can rinsing drywall joint compound down the drain while cleaning off tools and buckets lead to problems in plumbing traps or septic systems?*

A. It should cause no problem as long as the quantity of joint compound is reasonable and the water used to wash it down the drain is plentiful. The material does not form a film in the drain pipes, and the solids are fine enough to remain in suspension in a reasonable water flow. The amount of solids that might remain in the septic tank would be quite minor by comparison to its capacity.

Lumber vs. Synthetics

Q. *With all this new high-tech material being used in the building trades, one can really get lost. For example, with floor joists, what are the pros and cons of plywood I-beams, floor trusses, and the old stand-by, 2x dimension lumber?*

A. This is a subject for a book, but basically the problem is one of cost and availability of materials. The 2x dimension lumber now marketed may be quite expensive in the structural grades and lengths required for many applications, or it just may not be available. By using materials such as floor trusses, plywood-web I-beams, glulam beams, etc., the defects can be cut out of the lumber, and the shorter pieces can be used to make structural members. In the case of plywood and other laminated materials, the defects are randomly distributed during the lay-up of the veneers, producing greater strength and stiffness than would be possible in natural lumber. In nearly every case, these products were developed to solve some problems of availability, cost, or convenience. Depending on your location and type of construction, you'll probably find some good uses for "manufactured lumber."

The article "Engineered Lumber" in the February 1987 issue of New England Builder covers the subject well. While that issue is out of print, copies of articles in back issues are available for $1.50 per page.

Leaky Stone Foundations

Q. *I am working on a 100-year-old house with a stone foundation. The foundation is sound, but it leaks. Is there a preferred method of repair?*

A. The best way to prevent leakage is to dig down to the footing all the way around the house and install a footing tile that drains to a sump drywall, or daylight, according to the grade and soil type. A drainage membrane with a filter fabric should be installed against the foundation to conduct any water reaching the foundation down to the tile. The stone is probably too rough for a waterproofing membrane to be effective. Take care to properly grade the surface so all water coming off the roof drains away from the foundation.

Clogged Footing Drains

Q. *Is it true that footing drains can clog up within a few years from fines in the backfill? What type of backfill should be used? How can I ensure that the drains will stay clear?*

A. Yes, some soil types can cause clogging of footing drains. Sometimes the drains do not clog and the soil is pumped out from beneath the footing. Fine sands, silt, and loess seem to be the worst offenders. In the worst case that I have found, a drain line and sump pump installed by a basement dewatering contractor pumped 4 1/2 tons of silt out into the street before the footing cracked and the house fell into the hole. Several types of filter fabrics are available, depending upon the particle size of the soil. A knitted nylon "sock" is often used over corrugated plastic drainage tubing to filter out fine sands. The tubing is available from the manufacturer with the sock already installed in most areas where this is a problem. Other non-woven polyester filter fabrics area viable for use with finer particles. These filter fabrics may be wrapped around the drainage tubing or used to cover a clean, coarse gravel backfill to keep the soil from washing into the drainage layer. The best backfill is clean, coarse gravel, because it allows any water nearing the foundation to drop to the drain without contacting the basement wall. ■

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