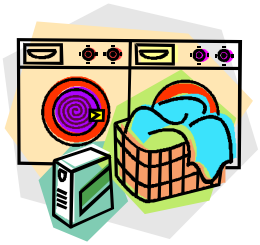
DPIS Engineering, LLC
The Builder's Solution

DPIS Newsletter

I've been trying hard to get back to sending only one newsletter every 8 weeks, but due to the volume of regulatory changes, I will probably be on a 4 week schedule through the end of the year. My narcissism sometimes prevents me from crediting all of the folks who help me stay on top of things, but needless to say I couldn't survive without a ton of help. Some of the regular contributors from the home-building side are Llewel Walters of Lennar, David Walton of Trendmaker, Jack Rogers of Newmark, and Randy Lee with Ashton Woods. They are constantly prodding me for explanations of codes and regulatory changes. In many cases it takes hours of research on my end, just to answer the question. In most cases, these lively debates will result in a good topic for the newsletter or the radio show. At the very least, I always end up learning something.

My own team at DPIS is also under-recognized. Neal and Joe log way more hours in the code books than I do. If I give the right answer, it is usually because my staff has done the research for me. Vince Lombardi said "People who work together will win, whether it is against complex football defenses, or the problems of modern society." I thank God every day to be a small part of such an awesome team here at DPIS. Please feel free to send me your ideas for topics that need to be discussed in our newsletter.

Dale Phillips



I. Laundry Rooms

Architectural trends over the past decade have placed many laundry rooms in the center of the building envelope. While aesthetically pleasing, this concept is antithetical to modern codes. It is becoming virtually impossible to meet the IRC requirements unless the Laundry Room is located on an exterior wall. The two major compliance issues are combustion air and dryer exhaust. The issue of combustion air is moot when gas is not provided to the laundry room.

II. Combustion Air

The standard formula for calculating the required volume of combustion air is prescribed in Section G2407.5.1 of the 2006 IRC. The minimum required volume for a room is 50 cubic feet for each 1,000 Btu/h rating of the appliance. If we assume an average gas dryer has a 22,000 Btu/h input rating, our laundry From Subject Received Size rosielorraine@comcast.net [SPM:CF?] 67 Mystic Arbor Place, The Woodlands, TX 77382 - French Doors @ the Lorraine Residence Mon 8:15 AM 4 MB room would need at least 1100 cubic feet of combustion air. The typical 6X10 utility room will not work under this scenario. However, section G2407.5.3.1 allows us to combine spaces if the re-

II. Combustion Air *Continued from page 1*

In addition, the bottom of the door to the utility room must be at least 3 inches above the finished floor. Another method that is acceptable in the 2006 IRC is prescribed in Section G2407.5.2. If the air infiltration rate of a structure can be determined, the required volumes may be reduced. We need three components to make this method work. First we must assume that the dryer is fan assisted (most are). We must also have a source of supply air in the room from the HVAC system. Finally we must have at least a 50 CFM exhaust fan that operates when the appliance is functioning. Under this method, the 6X10 utility rooms would meet the combustion air requirements without adding jumper ducts.

III. Dryer Exhaust

Section G2439 of the 2006 IRC sets forth the requirements for clothes dryer exhaust. The specific section that deals with the duct length is G2439.5.1. Dryer exhausts (electric and gas) are also covered in section M1502.6. The end result is that we are limited to 25 feet in total length with reductions for bends. Although booster fans are not prohibited, their installation does not effect the maximum length requirements.

Upon first glance, there appears to be some flexibility added to the 2006 IRC in the form of the 2007 IRC Supplement. Supplements are usually published within the first year of a code's release. The purpose of a Supplement is to include newly approved changes and to make any necessary corrections. In the Supplement, M1502.6 has been changed to allow a maximum 35 feet for the dryer exhaust duct. However, G2439.5.1 remains the same – 25 feet maximum length.

How can this be? Is there such a blatant contradiction in the code? Not really. Section M1502.6 is in the chapter labeled "Exhaust Systems". This chapter deals with general exhaust system requirements for both electric and gas powered appliances. Section G2439.5.1 is in the "Fuel Gas" portion of the code and takes precedence whenever the equipment in question is fueled by natural gas.

In most cases a municipality will adopt the code supplements as soon as they are published. In this case, if the supplement is adopted, then we can assume that we are allowed 35 feet (maximum) for an electric dryer exhaust. For gas dryers, we are still limited to 25 feet.

Dale Phillips

NEC

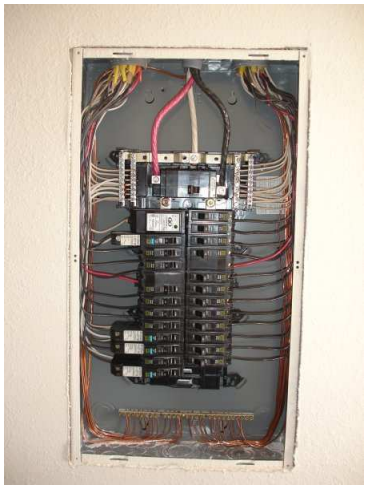
312.5 Cabinets, Cutout Boxes, and Meter Socket Enclosures

In the Greater Houston area, electricians have traditionally allowed nonmetallic cables to enter a metal cabinet without first entering an 18 inch nipple (residential applications). However, this method does not meet the exact letter of the code. DPIS will begin enforcing the requirement for the minimum 18 inch nipple on January 1, 2009. No nipple is required if all of the wires are clamped as they enter the box. If a nipple is used, it must meet all of the prescribed requirements in the attached NEC commentary.

II. NEC *Continued from page 2*

Conductors entering enclosures within the scope of this article shall be protected from abrasion and shall comply with 312.5(A) through (C).
(A) Openings to Be Closed Openings through which conductors enter shall be adequately closed.
(B) Metal Cabinets, Cutout Boxes, and Meter Socket Enclosures Where metal enclosures within the scope of this article are installed with messenger supported wiring, open wiring on insulators, or concealed knob-and-tube wiring, conductors shall enter through insulating bushings or, in dry locations, through flexible tubing extending from the last insulating support and firmly secured to the enclosure.
(C) Cables, Where cable is used, each cable shall be secured to the cabinet, cutout box, or meter socket enclosure.

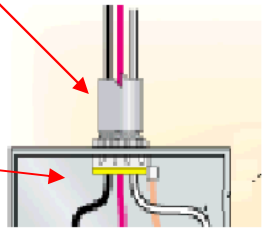
Individual cable clamps or connectors are required to be used with only one cable per clamp or connector, unless the clamp or connector is identified for more than a single cable.



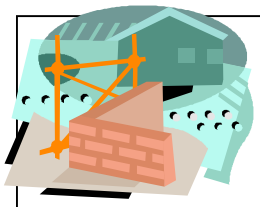
The NEC prohibits the installation of several cables bunched together and run through a knockout or chase nipple.

The NEC does allow an exception.
This exception allows multiple nonmetallic cables to enter the top of a surface-mounted enclosure through a nonflexible raceway sleeve or nipple. These sleeves or nipples are permitted to be between 18 in. and 10 ft in length. However, if the nipple length exceeds 24 in., the ampacity adjustment factors of 310.15(B)(2) apply and all of the following apply.

a. Each cable is fastened within 12 in. of the end
b. The raceway extends directly above the enclosure and does not penetrate a structural ceiling
c. A fitting is provided on each end of the raceway to protect the cable(s) from abrasion and remain accessible after installation.
d. The raceway is sealed or plugged at the outer end
e. The cable sheath is continuous through the raceway and extends into the enclosure beyond the fitting not less than 1/ 4 in.
f. The raceway is fastened at its outer end
g. Where installed as conduit or tubing, the allowable cable fill does not exceed that permitted



Neal Patrick



NEW REQUIREMENT FOR GEOTECHNICAL INVESTIGATION REPORTS

As of January 1, 2009, DPIS Engineering will only accept soil analyses in accordance with sections 5.1 and 5.2 of the *Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soil, Post-Tensioning Institute, May 2008.* Reports containing post-tension design values based on the 2nd edition or "1996 method" will no longer be accepted unless the document is dated prior to January 1, 2009.

The *2006 IRC R403.1.8 Foundations on Expansive Soils* refers to section *1805.8* of the *2006 IBC* which references the *PTI Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils.* The user of the standard is referred to *Design of Post-Tensioned Slabs-on-Ground, 3rd Edition with 2008 Supplement*, published by the Post-Tensioning Institute, for background and interpretational information to clarify its application.

"The 3rd edition contains a major revision in the determination of geotechnical design parameters, and extensive editorial revision and clarifications. The revisions are provided to clarify or guide the designer in the applicability of this design procedure and its limitations." *Design of Post-Tensioned Slabs-on-Ground, 3rd Edition.*

Dale Phillips

Please stay in touch. I am very interested in topics for the Better Home Show 700 KSEV AM Saturdays 8 AM to 11 AM. If you have suggestions, please email me - dale@dpis.com.