

## **Carbon Monoxide Alarms, a New Code Requirement**

On March 9, 2011, the 2009 Michigan Building, Residential and Energy Codes took effect. Permit applications submitted on and after March 9, 2011, for all construction projects requiring permits, will have to follow the requirements of the 2009 codes. There are a number of changes that inspectors, building contractors, architects and designers, and permit holders in general will have to learn as the spring construction season begins. One of those new requirements of the code will have an effect not only those constructing new residential buildings, but also those planning to remodel or add on to an existing residential structure.

Carbon monoxide (CO) alarms will now be required to be installed in accordance with section R315 of the 2009 Michigan Residential Code (MRC). This is a new section in this code cycle. Section R315 of the 2009 MRC contains 3 sub-sections that provide the code requirements for the installation of these alarms. The 3 sub-sections state the following information:

**R315.1 Carbon monoxide alarms.** For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages.

**R315.2 Where required in existing dwellings.** Where work requiring a building permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel-fired appliances exist, carbon monoxide alarms shall be provided in accordance with Section R315.1.

**R315.3 Alarm requirements.** Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

Following the guidelines of R315.1, all new residential buildings are required to be provided with CO alarms if there are fuel fire appliances within the building, and/or when a garage is attached to the building. Fuel fire appliances include furnaces, boilers, water heaters, gas cooking appliances, gas dryers, gas fireplace equipment, etc.

Existing residential buildings will also be required to be updated with CO alarms as noted in Section R315.2. When a construction project is done on an existing building, and that project requires a building permit, CO alarms are now required to be installed. This requirement applies to all construction projects that require a permit for alterations, remodeling and/or additions, even if all of the work involved is on the exterior side of the building.

So where are these alarms supposed to be located? The CO alarms are to be located outside of, but in the immediate area of the bedrooms. Typically, immediate vicinity is considered within 20 feet of the bedroom area. Depending on the layout of the sleeping areas of the building, multiple alarms may be required. Here are some examples of different house layouts where single or multiple CO alarms could be required. In a single story home, with all of the bedrooms located at one end, the code will require just one CO alarm at the bedroom end of the building. A single story home with bedrooms located at both ends will typically need at least 2 CO alarms. A two story home, with a bedroom on the main floor, and others on the second floor, will require at least 2 CO alarms.



CO alarms come in a variety of types. There are wall and ceiling mounted units that look similar to a smoke alarm. These units can be battery powered or hardwired electric with a battery back up. There is also an electric type, some with a battery backup, that plug directly into an electrical outlet. The only requirement of the code is that the CO alarm comply with UL 2034. Look for the UL listed label on the alarm to verify its compliance with the UL 2034 standard.

While these alarms will add to the cost of construction, that cost is very minimal, especially when compared to the life that it could save in the event of a CO leak in a building. A plug in the outlet unit can be purchased for as little as \$20 at local hardware and building supply stores.

The codes provide us with the minimum requirements for construction. These requirements are put in place to provide a minimum standard of safety in the buildings that we live in, work in and play in. Working together, contractors, homeowners, permit holders and inspectors can ensure code compliant construction projects in our communities. Feel free to contact your local building code office with any code questions. Your local building code department is your best source of building code information available.

*U:\Handouts\2009 MBC - MRC\Word versions\Carbon Monoxide Alarm Requirements  
Code information from 2009 MRC Updated 3/17/2011*