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## Codes Review Newsletter

### August 2021



#### Options for Existing Buildings

By: Chris Bainbridge, Director of Codes Enforcement

Creative reuse of existing buildings has become popular in recent years and the State Fire Marshal's Office receives hundreds of plans for renovations, additions or changes of occupancy to existing buildings each year. Many designers are not aware that the state has adopted the 2012 International Existing Building Code (IEBC). This code is a valuable tool that encourages the use of existing buildings while protecting public safety without

unnecessarily increasing construction costs. It provides alternative approaches to remodeling, repairs or alterations of existing buildings.

Rehabilitation of an existing building is often cost-prohibitive because compliance with all the requirements for new construction could require extensive changes that go well beyond the value of the building or the original scope of work. To accomplish this, and to make the rehabilitation process easier, the IEBC has options for controlled departure from full compliance with the International Codes dealing with new construction while maintaining basic levels for fire prevention, structural and life safety. Those options are the prescriptive compliance method, the work area compliance method and the performance compliance method.

Designers should consider utilizing these alternatives any time they are working to rehabilitate an existing building. The provisions of this code may save the building owner time and money and result in safe and happy customers.

#### Seismic Requirements for Sprinklers

by: Rickey Cottrell, Plans Examiner

Fire sprinkler systems are particularly susceptible to damage from the earth's movements and require special provisions to ensure the system remains functional in an emergency. Section 9.3 of NFPA 13 gives requirements to protect piping against damage where it is subject to earthquakes. A most-often-missed element in new sprinkler installations is the clearance at the floor slab or a rigid wall of block, brick, or concrete. The following information can be used to help you better understand the current code requirements including the minimum clearances. The fire protection engineer should address the clearance requirements in their design intent so that the sprinkler contractor has clear direction in development of the sprinkler shop drawings.

In those areas where earthquakes may cause buildings to move, sprinkler pipe and tube must be protected from physical damage. The potential for shifting walls, floors, slabs or other rigid elements may result in shearing the sprinkler pipe with catastrophic consequences.

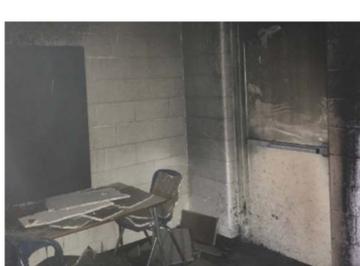
The size of the clear space required around sprinkler pipe depends upon the pipe or tube size passing through the construction element:

Pipe or Tube Size	Hole Diameter
1 to 3-1/2 inches	2 inches larger than pipe or tube
4 inches or larger	4 inches larger than pipe or tube

No clearance is required if:

- the pipe or tube passes through gypsum wallboard or similar construction materials that will fail before the pipe, as long as the penetration is not through fire-resistive rated construction;
- flexible couplings are located within 1 foot of each side of the structural element;
- horizontal pipe runs perpendicularly through successive joists or studs that form a wall or floor/ceiling assembly; or
- nonmetallic pipe that has been shown to have flexibility greater than or equal to the performance of flexible couplings within 1 foot of the structure.

The opening around the pipe or tube may be filled with a flexible material such as mineral wool, insulation materials or mastic. If the opening occurs in a fire-rated assembly, the hole must be filled with an approved fire stop system or device meeting ASTM E 814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops, or UL 1479, Standard for Safety for Fire Tests of Through-Penetration Fire Stops.



#### Decherd Elementary School Fire Contained

At 11:00 p.m. on July 8th, a fire broke out in the E Wing of Decherd Elementary School in Franklin County. The fire appeared to be an electrical fire that ignited combustibles near the room's door.

As designed, the fire alarm detected the fire, set off an alarm and called out to the Decherd Fire Department. The classroom door was fire-rated, and the door closers kept the door shut while the latch prevented it from opening, helping to keep the fire contained to the area of origin. While there was significant damage to E Wing, including 12 classrooms, the rest of the school was undamaged due to the operation of the fire rated doors. Additionally, there were no injuries during the incident as it occurred outside of school hours.

This is yet another case of building codes helping to reduce the loss of property and enabling the school to recover from the fire more quickly.



#### Employee Spotlight: Reza Kheshti

Kheshti

Reza Kheshti is a Plans Examiner II with the Codes Enforcement Section of the State Fire Marshal's Office. He holds a Bachelor of Science in Architectural Engineering and has worked for the State Fire Marshal's Office since 1989. For over three decades, his service as a plans examiner has enhanced the effectiveness of the Codes Enforcement Section to ensure that buildings in Tennessee

are safe.

Reza is a member of the Rutherford County Beekeeper's Association and enjoys operating his Murfreesboro farm and orchard using sustainable methods.

#### Job Openings

The following jobs will post for 2 weeks in the coming months. Here is a link to create an account, set up notifications and apply: [Apply Here \(tn.gov\)](#).

Building and Fire Inspector 1: Conduct inspections for new and existing buildings under State Fire Marshal's Office jurisdiction. Based in McMinn and surrounding counties.

Administrative Services Assistant 2: Perform administrative duties including customer support, creating performance reports, updating and creating forms and assisting with technology improvements.

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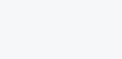
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