

Tall Buildings and Sprinklers - Exceptions are recognized

By Ron Buchholz S&B Division Deputy Administrator,
and J.B. Smith, Commercial Buildings Program Manager

Some people believe Wisconsin law requires the installation of an automatic fire sprinkler system for all buildings over 60 feet in height. It does not. Besides the obvious exception regarding those buildings in existence prior to the creation of the law in 1974, the law provides for other exceptions. Let us explain.

Section 101.14 Stats, "Fire Inspections, prevention, detection, and suppression," has a requirement that administrative rules provide for

sprinkler protection of some buildings that are over 60 feet in height. In the current version of the Wisconsin Commercial Building Code, Comm 61-65, provisions regarding sprinkler protection and the 60-foot trigger are not included. Instead, a note in the code references the provisions of the law.

Although the strategy of using code reference notes works for most technical

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You need to be able to trace some plumbing pipes

By Lynita Docken, S&B Plumbing Program Manager,
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This year, Wisconsin's legislature passed and Governor Doyle signed Act 425, which impacts water purveyors, municipalities, and plumbing and utility contractors. The legislation requires

that when non-metallic building sewers (including sanitary, storm, and private interceptor main sewers) and water services (including private water mains) are installed, the sewers and services must be accompanied

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- National Fire Protection Assoc. Data · Between 1999-2002, there were 114,000 reported home fires associated with cooking equipment every year, resulting in an annual 290 deaths and 4,380 injuries.
- Unattended cooking is the leading cause of home cooking fires.
- Three in 10 reported home fires start in the kitchen - more than any other place in the home.
- Two out of three reported home cooking fires start with the range or stove.

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Safety and Buildings Division, August, 2006

<http://commerce.wi.gov/SB/SB-CodeCouncils.html#Commercial>

To keep track of the progress of possible Comm 61-65 Commercial Building Code revisions ...

For instance, there's a letter to council members describing the code revision consideration of fire sprinkler rules, accompanied by a survey of various U.S. states sprinkler thresholds.



Tracing plumbing pipes

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by a means of locating the underground pipe.

The law becomes effective for new installations on December 31, 2006. The language is located in Section 182.0715(2r) of the statutes. (This does not pertain to private onsite wastewater treatment system laterals. It is limited to laterals that connect to sewer and water facilities.)

Previously, when excavations were planned, Diggers Hotline or a similar service marked buried utilities. This marking rarely included buried water services or building sewers, as these are frequently plastic and because excavations are rarely at the depth of the sewer and water piping.

Dangerous situations were sometimes created when a building sewer was split or punctured when underground gas lines were installed using trenchless technology. When plumbers were cleaning a sewer affected by root intrusion (allowed by the punctured or severed pipe), the gas pipe was broken by the drain-cleaning auger. Gas entered the basement through the sewer. Explosion!

Since there are no mandatory requirements for tracer wire included in the Wisconsin Plumbing Code, here are suggestions for compliance with the new statute.

+ Tracer wire is normally specified as 10 to 14 gauge (most commonly 12 gauge) solid copper wire with a plastic coat to prevent corrosion.

There are other options such as tracer tape or copper-coated steel wire. In all cases the conductive metal is protected by a plastic coating.

+ Tracer wire may be taped to plastic water or drain pipe. It is never connected to gas piping. When it is attached, the tracer is secured to the pipe every 6 to 20 feet and at all bends. Spacers are installed to keep tracer wire from contacting gas pipe. Some instructions call for the tracer to be located under the pipe, but most allow it to be placed on top. Do not wrap tracer wire around a pipe, as this could stress and break the tracer wire during backfilling.

+ Tracer wire installation requires access points at least every 300 feet. At access points the tracer wire is brought up to grade with valve boxes, clean outs, manholes, vaults, or other covered access devices. When running tracer wire up at curb stops, put the wire outside the box, so the tracer wire doesn't get tangled or torn when the valve is turned.

+ Splices in tracer wire should be made with split bolt or compression-type connectors. Wire nuts shouldn't be used. A water-proof connection is necessary to prevent corrosion.

+ Testing of tracer wire continuity after installation is a good idea.

+ If you're installing a pipe using a boring or jetting tool, tracer wire can be pre-installed in conduit, installed concurrently with the pipe or blown in after the pipe is installed.

+ If the tracer wire is ever broken, it should be replaced or repaired so that continuity is preserved.

For more information on this issue, contact any plumbing plan reviewer or plumbing consultant listed on page 7 of this WCCR.

S&B Plumbing Water Calculations Computer Software on a CD

Sold by the state Document Sales agency. Call 800-362-7253, or email docsales@doa.state.wi

For information on how the software works, contact one of the Plumbing Plan Reviewers listed on page 7 of this WCCR.

The installation of tracer tape in a trench.



Tall Buildings and Sprinklers

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provisions of the law, that is not the case in this situation. By referencing the statutes without specific rules, we inadvertently dropped the flexibility that is intended by the law. The law requires the department to create rules for high-rise buildings that require the installation of “such fire detection, prevention or suppression devices as will protect the health, welfare and safety” of people frequenting the building or structure. The law speaks to commercial buildings exceeding 60 foot in height and includes language to assure an exception for open parking structures within commercial buildings over that height.

Even though the rules providing other exceptions are not firmly in place, we must still remain reasonable and consistent in our application of the law.

Over the years, the Safety and Buildings Division has approved numerous petitions for variance allowing the omission of sprinkler protection for other types of tall buildings that are not “open parking structures,” provided code equivalency was established. Those included, among others, power plants and paper mills. The petitions regarded the types and sizes of the

special machinery or equipment warranting the large heights, as well as the equivalent safety measures proposed. Special safety provisions pertinent to fire protection associated with those types of uses provide an equivalent level of life safety to that of an automatic fire sprinkler system. We will continue to accept and evaluate petitions on their merits.

The allowance of omitting sprinkler protection in some types of buildings is also supported by the current code under adopted International Building Code sections 503.1.2 and 903.2. These sections indicate some types of buildings are not to be limited in height or area when the building requires “large areas and unusual heights to accommodate craneways or special machinery and equipment.”

S&B intends to clarify the high-rise sprinkler requirements as they relate to power plants and other similar structures within the next general update of Comm 61-65, which is currently being worked on, with expectation of completing revisions by the summer of 2007.

If you have questions on this subject or would like to learn more about the code update project, feel free to contact James B. Smith, jsmith@commerce.state.wi.us, or 608-266-0251.

Safety and Buildings
Division commercial
building **plan review
scheduling** is on the
Internet,
<http://commerce.wi.gov/SB/SB-DivPlanReview.html>

email groups

There are email groups set up for individual S&B programs. Sign-up to receive occasional messages on program topics of interest to you: <http://www.commerce.state.wi.us/SB/SB-DivEmailSignup.html>



Info about status of a plan review: <http://www.commerce.state.wi.us/SB/SB-DivReviewStatusSearch.html>

Remember some fire protection plans need review

Effective January 1, 2005, Comm 61.30 requires fire protection system plans for all R-2 occupancies be submitted to the state, or a delegated agent, for plan review.

The following fire detection, prevention and suppression systems, features and components need to be submitted:

- Alternate Fire Suppression Systems
- Atrium Fire Protection Systems
- Automatic Fire Sprinkler Systems
- Fire Alarm Systems
- Manual-Wet Sprinkler Systems
- Standpipe and Hose Systems

Occupancies requiring fire protection plan:

- Educational Group E
- Institutional Group I-1 and Group I-3
- Mercantile Group M exceeding 50,000 square feet which contain a combined use of retail area and rack storage
- Residential Group R-1 and R-2
- High rise buildings - public buildings exceeding 60 feet in height (See page one article.)
- State owned buildings except hospitals and

nursing homes (reviewed by DH&FS)

- All buildings containing an Atrium, as defined by IBC 404.1.1, regardless of occupancy

The following municipalities are delegated agents and perform plan review of fire detection and suppression systems:

- City of Appleton
- City of Burlington
- City of Madison
- City of Milwaukee
- Village of McFarland

Municipal fire departments or building departments can conduct required plan reviews upon becoming recognized as a Fire Protection Review Agent.

If you have questions, contact a fire protection plan reviewer listed on page 7 or email fireprotech@commerce.state.wi.us.

Municipalities interested in agent plan review authority may contact Henry Kosarzycki, S&B's agent monitor, 608-212-0138.

Fax or email various technical code questions to:

- Amusement Rides, Rope/Ski Tows 608-283-7419 healthsafetech@commerce.state.wi.us
- Boilers and Pressure Vessels 608-283-7420 sbboilertech@commerce.state.wi.us
- Building and Plumbing Products 608-283-7407 productech@commerce.state.wi.us
- Commercial Buildings, Comm 61-65 608-283-7402 bldgtech@commerce.state.wi.us
- Electrical 608-283-7418 electrictech@commerce.state.wi.us
- Elevators 608-283-7411 elevatortech@commerce.state.wi.us
- Fire Prevention Program Forms 608-283-7412 fireforms@commerce.state.wi.us
- Fire Protection Systems 608-283-7405 fireprotech@commerce.state.wi.us
- Gas Systems 608-283-7420 sbboilertech@commerce.state.wi.us
- Licenses, Certifications, Registrations 608-283-7400 madisoncred@commerce.state.wi.us
- Manufactured/Mobile Homes 608-283-7401 manf-homes@commerce.state.wi.us
- National Fire Incident Reporting 608-283-7412 NFIRS@commerce.state.wi.us
- One- and Two-Family Dwelling Code 608-283-7409 udctech@commerce.state.wi.us
- Plan Submittal Questions planschedule@commerce.state.wi.us
- Plumbing, Cross Connection Control 608-283-7403 plbgtech@commerce.state.wi.us
- Private Onsite Wastewater Treatment 608-283-7404 powtstech@commerce.state.wi.us
- Public Sector Employee Safety 608-283-7419 healthsafetech@commerce.state.wi.us
- Public Swimming Pools 608-283-7406 pooltech@commerce.state.wi.us
- Welding 608-283-7420 sbboilertech@commerce.state.wi.us



Two plumbing consultants cell phone numbers changed

Don Hough, Plumbing Consultant and
Commercial Pool Inspector, northwest
Wisconsin, 715-558-2690

Don Oremus, Plumbing Consultant and
Commercial Pool Inspector, northeast
Wisconsin, 715-482-0293

BlazeMaster SDR-13.5 no longer requires plumbing product approval

BlazeMaster SDR-13.5 CPVC piping
conforming to ASTM F-442 does not require
individual plumbing product approval from the
Safety and Buildings Division. Even though the
product is labeled with a pressure/temperature
rating of 175 psig at 150 degrees F, information
has been submitted that shows the piping meets
pressure/temperature requirement of 100 psig at
180 degrees.

The compliance to the 100 psig at 180 degrees
code required pressure/temperature rating is
determined by use of the following formula that is
nationally accepted by the piping industry.

$$PR = (2 \times HDB \times DF) / SDR - 1$$

Where:

PR = Pressure Rating at 180 degrees F

HDB = Hydrostatic Design Basis 1250 psig @
180 degrees F (TR-4)

DF = Design Factor of 0.5 (DF for CPVC pipe
materials used in water distribution applications)

SDR = Standard Dimensional Ratio of 13.5 per
ASTM F442

Therefore:

$$PR = (2 \times 1250 \times 0.5) / 13.5 - 1$$

$$PR = 1250 / 12.5$$

$$PR = 100 \text{ psig @ } 180 \text{ degrees F}$$

Look for Internet plumbing
plan review scheduling to
begin in August. For more info,
watch [http://commerce.wi.gov/
SB/SB-PlumbingProgram.html](http://commerce.wi.gov/SB/SB-PlumbingProgram.html)

Commercial Buildings Plan Review Resources

To **schedule** a plan review appointment for
commercial/multifamily buildings (only
commercial buildings): [http://Commerce.
wi.gov/SB/SB-DivPlanReview.html](http://Commerce.wi.gov/SB/SB-DivPlanReview.html)

Info about **next available** commercial building
review appointment: [http://www.commerce.
state.wi.us/SB/SB-DivDailyDoc.html](http://www.commerce.state.wi.us/SB/SB-DivDailyDoc.html).

Commercial Buildings Delegated Municipalities

Some municipalities in Wisconsin have authority
to do building or fire protection plan review,
inspections, and otherwise carry out code-related
functions as delegates of the Department of
Commerce. For further information, and a list
of current delegated municipalities, see the S&B
WebSite: [http://www.commerce.state.wi.us/SB/
SB-CommercialBuildingsDelegatedMunicipalities.html](http://www.commerce.state.wi.us/SB/SB-CommercialBuildingsDelegatedMunicipalities.html).

Codes, Codes, Codes

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are on the Internet: [http://www.commerce
.state.wi.us/SB/SB-DivCodes.html](http://www.commerce.state.wi.us/SB/SB-DivCodes.html).

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Other Telephone Contacts

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