



# OBOA

ONTARIO BUILDING OFFICIALS ASSOCIATION

# Journal

Building Knowledge & Community

## BUILDING STRONGER RELATIONSHIPS

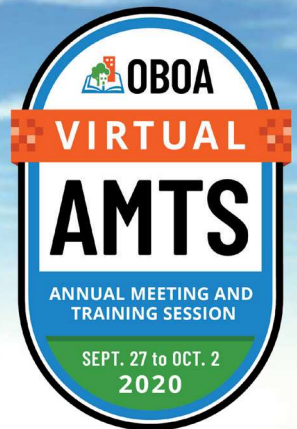
*Kathleen Kurtin* PAGE 30

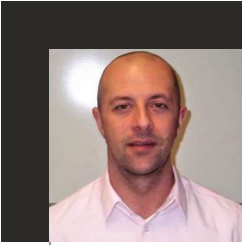
## QUATTRO'S CORNER

*Andrew Quattrociochi* PAGE 13

## NEGLIGENT INSPECTION OF NEGLIGENT CONSTRUCTION WHO IS LIABLE?

*Andrea Taylor* PAGE 15





**Andrew Quattrociochi,**  
Deputy Chief Building Official,  
Township of Oro-Medonte

## COMBUSTIBLE PIPES IN NON-COMBUSTIBLE BUILDINGS

Yup, it's that time again — back at it for another fun and exciting "Quattro's Corner." For this edition, we will be taking a closer look at combustible pipes in non-combustible buildings. This is a subject I always get questions on — specifically, when do the flame spread rating (FSR) of not more than 25 and smoke developed classification (SDC) of not more than 50 come into play? To help me break all of this down, I have teamed up with IPEX, one of Canada's largest plastic pipe manufacturers, and IPEX's Regional Engineer, Kevin Yong-Ping, P.Eng.

Let's get to some of the basics.

The Ontario Building Code, Division B, Part 3 (specifically section 3.1.5.) sets out the requirements for a building or part of a building that is required to be of non-combustible construction and states:

### 3.1.5.1. NONCOMBUSTIBLE MATERIALS

(1) Except as permitted by Sentences (2) to (4) and Articles 3.1.5.2. to 3.1.5.25., 3.1.13.4. and 3.2.2.16., a building or part of a building required to be of noncombustible construction, shall be constructed with noncombustible materials.

Section 3.1.5.16: Combustible Piping Materials further explains the requirements that must be met in order for combustible pipe to be installed:

### 3.1.5.16. COMBUSTIBLE PIPING MATERIALS

(1) Except as permitted by Sentences (2) and (3) and by Clause 3.1.5.2.(1)(d) and Article 3.1.5.22., combustible piping and tubing and associated adhesives are permitted to be used in a building required to be of noncombustible construction provided that, except when concealed in a wall or concrete floor slab, they,

(a) have a flame-spread rating not more than 25, and

- (b) if used in a building described in Subsection 3.2.6., have a smoke developed classification not more than 50.
- (2) Combustible sprinkler piping is permitted to be used within a sprinklered floor area in a building required to be of noncombustible construction.
- (3) Polypropylene pipes and fittings are permitted to be used for drain, waste and vent piping for the conveyance of highly corrosive materials and for piping used to distribute distilled or dialyzed water in laboratory and hospital facilities in a building required to be of noncombustible construction, provided,
  - (a) the building is sprinklered
  - (b) the piping is not located in a vertical shaft, and
  - (c) piping that penetrates a fire separation is sealed at the penetration by a fire stop that has an FT rating not less than the fire-resistance rating of the fire separation when subjected to the fire test method in CAN/ULC-S115, "Fire Tests of Firestop Systems", with a pressure differential of 50 Pa between the exposed and unexposed sides, with the higher pressure on the exposed side.

To me,

Sentence 1(b) is one of the most important hints or clues when trying to figure out part 1 of our question. Combustible piping must meet an FSR of 25 and an SDC of 50 when used in high buildings (for example, IPEX has System XFR, and there are other plastic manufacturers that make similar products for drain/waste/vent [DWV] applications). So for some of the bigger municipalities in Ontario: heads up! And for some of the smaller municipalities: chill out!

The only other time combustible piping is required to meet both the FSR 25 and SDC 50 requirements is when the piping is installed in a plenum space as per Sentence 3.6.4.3.(1), which states:(1) A concealed space used as a plenum within a floor assembly or within a roof assembly need not conform to sentence 3.1.5.15.(1) and Article 6.2.3.2 provided,

(a) all materials within the concealed space have a flame-spread rating not more than 25 and a smoke developed classification not more than 50.

That's it! So stop thinking that all residential and ICI small and large buildings require a combustible pipe to meet the FSR 25 and SDC 50 requirements. Most inspectors just assume if it's non-combustible construction, it needs both. Not only are you incorrect, but you're also costing the plumbers and owners of these buildings more unnecessary money! So the next time you're on a site that's non-combustible construction, ask yourself these questions:

## QUATTRO'S CORNER CONT'D

Is the pipe material combustible? Am I in a high building with combustible pipe? Do I see combustible pipes in a plenum? If you answer "no" to questions 2 and 3, then the combustible pipe needs to meet only the FSR 25 requirement (for example, System 15 for DWV applications). It's that simple!

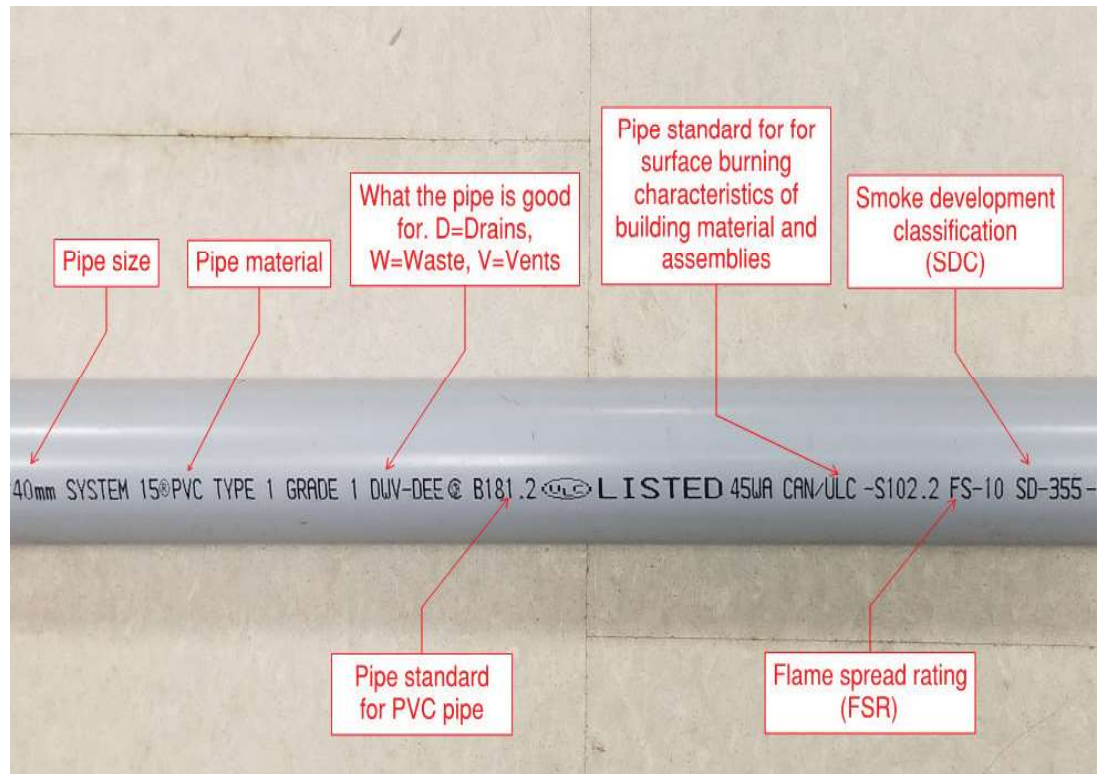
The same goes for PEX water piping. The majority of manufacturers who make PEX piping meet both of these requirements. My best advice would be to verify at plans review and at inspection. The labelling on PEX piping is similar to DWV pipes; the only difference is that PEX piping will have standard-grade hydrostatic ratings known as PPI. The PPI indicates pressure ratings at specific temperatures.

As far as standards go... Well, the list is long:

- ANSI/NSF 14
- ANSI/NSF 61
- ASTM F876
- ASTM F877
- ASTM F1960
- ASTM F2023
- ASTM E84
- CAN/ULC S102.2
- ASTM E119/UL 263
- CAN/ULC S101
- ASTM E814/ULC S115
- AWWA C904
- CSA B137.5

CSA B214'll let you do the research on that! I know I'm not allowed to play favourites, but plastic piping has come a long way, and installation for plumbers tends to be much quicker than other alternative products. That's just my opinion, just like these articles I write. They are my interpretation, and I figure this is a good spot to put one of my favorite clauses in:

The local authority having jurisdiction can accept either an applicable Acceptable Solution in Division B, or an applicable Alternative Solution that will achieve the level of performance required by the applicable Acceptable Solution in respect of the Objectives and Functional Statements attributed to the applicable Acceptable Solutions in Supplementary Standard SA-1.



Under the Building Code Act, the local municipality is the authority having jurisdiction for enforcing the Act and its Regulations, and the permit applicants should contact the appropriate local official with respect to any specific proposal or an existing building construction related matter.

Sorry, I just had to.

Thanks for reading and, as always,

Agent Q signing off! ■

*Andrew Quattrociocchi CBCO is the Deputy Chief Building Official for the Township of Oro-Medonte, Past Director for the Ontario Plumbing Inspectors Association, Chairperson for the Simcoe County OBOA Chapter, Plumbing Instructor for the Ontario Building Officials Association and licensed Plumber with over 15 years of experience*