



July 18, 2007 (Updated April 8, 2015)

Jason Ryckman
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EMAIL: jryckman@casa-firesprinkler.org

Dear Jason:

**RE: SPRINKLER PROTECTED WINDOW SYSTEMS
FIRE RATED ASSEMBLY – NATIONAL BUILDING CODE OF CANADA
LRI FILE 16446**

This letter is provided in response to your request for an overview of the roles and responsibilities of persons involved in the design process relating to the above noted subject.

A sprinkler protected window system is comprised of a window system (frame and glazing) and a wet sprinkler system.

The 2010 National Building Code of Canada (NBC) requires openings within fire rated walls to be protected by closures in accordance with Subsection 3.1.8. The NBC does not specifically address sprinkler protected window systems as a closure within a fire-rated wall assembly. Individual Provincial Building Codes are required to be reviewed to determine specific requirements for the applicable jurisdiction which may differ from the NBC.

However, Underwriters' Laboratories of Canada (ULC) provides a test method and installation guidelines for a sprinkler protected window system, ULC/ORD-C263.1 "Sprinkler-Protected Window Systems". Complete assemblies which satisfy the ULC/ORD-C263.1 may be suitable for use within a fire rated assembly. NFPA 13 "Installation of Sprinkler Systems" and Fire Sprinkler Manufacturer Specifications also provide guidelines to be used in conjunction with ULC/ORD-C263.1.

There are three primary components associated with the design of a sprinkler protected window system:

1. Determination of fire separations and closures within the building, the ratings required for these assemblies, and their location,
2. The design of the window/glazed wall assembly, and
3. The associated sprinkler system design.

The Building Designer (i.e. architect or engineer) of the project is responsible to determine all fire separations (i.e. fire-resistance rating, assembly type, and location). Where a sprinkler protected window system is proposed, the building designer would determine the required locations of glazing assemblies, the design of the glazing, and how the glazing system functions within adjacent assemblies, including items such as the dimensions, type and thickness of the glazing and the framing system.

The Engineer that is responsible for the design of the building sprinkler system would be responsible for the design of the sprinkler system used to protect the sprinkler protected window system, including items such as the hydraulic calculations and required sprinkler head location(s). The shop drawings for these sprinklers may be the responsibility of an Engineer engaged or employed by the sprinkler contractor.

Both design team members are required to individually ensure that their portion of the design work will satisfy ULC/ORD-C263.1, NFPA 13, Fire Sprinkler Manufacturer Specifications, and applicable Building Codes.

Sincerely,
LRI ENGINEERING INC.



Elias Frechette
Technical Consultant

Reviewed by,
LRI ENGINEERING INC.



Lisa Miller, C.E.T.
Senior Associate