Model CWS and WS window sprinklers Frequently Asked Questions

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The TYCO® Model CWS and WS window sprinklers are specific application sprinklers that are UL Listed to help protect glass as alternatives to fire-rated glass. For more information on window sprinklers and other aesthetic sprinkler solutions, visit www.tycofpp.com/aesthetic-fire-sprinkler-solutions.

Why must a window sprinkler be used instead of a standard sprinkler to protect a window?

Window sprinklers are designed to provide full protection for the entire window. The spray pattern wets the full pane of glass from corner to corner, leaving nothing dry. Standard sprinklers are designed to protect floors and wall areas. While they may wet windows, they are not designed to spray an even coat of water. This means they cannot provide protection equivalent to that of a two-hour fire rated wall assembly as a window sprinkler is designed to do.

What are the installation differences between the Model CWS and Model WS?

Model CWS sprinklers are designed to be installed hidden within the ceiling (0 to 4 inches above the top of the glass and 6 to 12 inches away from the glass) whereas the Model WS sprinklers are designed to be installed directly in front of the glass (up to 4 inches) and below the top of the glass (1 to 4 inches).

Can I use the window sprinkler on sloped, curved or operable glass?

No. The window sprinkler is designed for flat, vertical surfaces. It would not provide full coverage of a pane if used on sloped or curved glass, resulting in an interruption of the full, corner-to-corner coating of water the sprinkler is designed to provide to create a two-hour rated assembly.

Should a window sprinkler be used on every pane of glass?

A window sprinkler is intended to be installed on each pane of glass if the pane is separated by a vertical mullion. The sprinkler's water distribution will stay within the vertical barriers and provide protection to that window only.

If the panes of glass are separated or framed using butt joints, a window sprinkler is not required for every pane. In installation, each sprinkler should be spaced a minimum of 6 feet apart and a maximum of 8 feet apart.

When can a pony wall be eliminated?

A pony wall can be eliminated when the building owner determines other methods to keep combustible materials two or more inches away from the window, and their methods are found acceptable by the local Authority Having Jurisdiction.

When a window sprinkler is used with specific glass products that are alternatives to a fire-rated assembly, a pony wall might not be necessary.

A pony wall can also be removed if a window sprinkler is used with FireLite Plus WS glass, a specific type of fire-rated glass. TYCO® window sprinklers have been specifically tested and UL Listed along with FireLite Plus WS glass. Other than the use of FireLite Plus WS glass, some method for physically separating fire hazards from the protected glass must be undertaken.

Other than Firelite Plus WS, what types of laminated glass can be protected by window sprinklers without the use of a pony wall?

Firelite Plus WS is the only laminated glass that has been specifically tested and UL Listed in combination with TYCO® window sprinklers to be utilized without a pony wall. Other laminated glasses may work similarly; however, because they have not been tested and listed along with TYCO® window sprinklers, they are not recommended for use without a pony wall.

When protecting atriums, do both sides of the glazing require window sprinklers?

The Model WS is intended to preserve the integrity of the glazing when exposed to small fires in close proximity to the glazing, it could be reasonable to omit the Model CWS or WS where such fires cannot occur. An example of such a situation is where a piece of glazing communicates with an atrium from an office or conference room at one of the above floors. One could argue that on the office/conference room side, there is the chance of a small fire occurring near the glazing. But on the atrium side, since the glazing is not near the floor, the chance of such an occurrence is low. In a circumstance such as this example, the local Authority Having Jurisdiction (AHJ) may approve the omission of the Model CWS or WS on the atrium side of the glazing. Contact your local Johnson Controls representatives for questions on how you can discuss this application with your AHJ.

What is the minimum distance between adjacent sprinklers on inside corners (when glass meets at a 90 degree angle?)

The minimum spacing requirements as defined in the Concealed Window Sprinkler and Window Sprinkler Technical Datasheets should be adhered to under this condition.

What is the best way to utilize window sprinklers so that it blends in with the design?

The Model CWS utilizes a flat plate concealed design that is intended to be hidden within the ceiling directly (6 to 12 in.) in front of and even with or (4 in.) above the top of the glass.

A baffle or soffit may be constructed to hide exposed window sprinklers; however the guidelines of the Technical Datasheet pertaining to the sprinklers location from the glass and the ceiling it is mounted in must be adhered to.

Additionally, the baffle may not interfere with ceiling level sprinklers protecting the room, and all obstruction guidelines for the room sprinklers should be adhered to according to the applicable fire code.

What is the cost benefit of using a window sprinkler?

Let's take an example of a glass window assembly that's 8 feet wide by 13 feet tall, or 104 square feet. Assuming an approximate cost of 2-hour rated glass uninstalled is $90 per square foot, the total cost for the glass would be $9,360.

As an alternative, if you use tempered glass, the average cost per square foot is $25 uninstalled. In addition, a window sprinkler is required on both sides of the glass and two window sprinklers cost around $1,000 uninstalled. Therefore, the final price of a tempered glass window with two window sprinklers is $3,600.

Comparing the two options, using the window sprinkler with tempered glass would save more than 62% in material costs. As the number of windows increases, the potential cost savings for the project can be even greater.

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