



Overview of Flexible Sprinkler Retrofit Analyzer

A free Excel based tool to evaluate the impact of adding flexible drops to an existing system

Compliance Services and Assessments, LC has been committed to helping code enforcers and contractors achieve code compliance since 2002. This is primarily through our installer qualification exams and photo ID cards.

In addition to evaluating installers and seminars, CSA has developed an Excel based software tool to help jurisdictions and contractors evaluate the impact of retrofitting an existing sprinkler system with flexible sprinkler drops when the system may not have been originally calculated for such drops.

Previously AHJ's may have required contractors to completely re-calculate a sprinkler system before they would allow flexible drops to be incorporated, such as in a retrofit or tenant improvement. Although it is true that some brands and configurations of flexible drops can impact a system upwards of 13+ psi, it is also true that some brands and configuration may have less than a 2 psi impact.

Another consideration involves how many bends may be incorporated in a particular installation. A product may be listed to allow up to 8 bends, which if the AHJ is basing evaluation on the worst case, could result in excessively high friction loss values. When in reality, the contractor is limiting the installation to 3 bends (more realistic).

Armed with better information, it is possible for the contractor to clearly identify their intent without preparing detailed shop drawings, and for the AHJ to feel comfortable in accepting such approach.

This tool provides this feature.

Many AHJ's already require a minimum safety margin in their calcs, such as 10 psi. Using our calculator the AHJ can verify that flexible drops can be installed within their safety margin without requiring anything beyond the Retrofit Analyzer report.

With this tool, a jurisdiction can allow copies of past calculations to demonstrate there was an adequate safety factor, or a jurisdiction may establish that as long as the impact is 3 psi or less, as established by the Retrofit Analyzer report, no calculations are required. It is up to the AHJ to accept the report or require additional calculations for every project.

The Retrofit Analyzer can be downloaded free at www.CSAexams.com under the Contractor and AHJ links.

CSA is not supported by nor indorses any particular brand of flexible hose. However, CSA does endorse making appropriate decisions based on actual conditions and products to be used.

Analyzer report is copyright of CSA 2017

FLEXIBLE SPRINKLER RETROFIT ANALYZER
 Used to evaluate the impact of adding flexible drops to an existing system.
 Enter information into Green and Yellow fields.

Project and contractor information

Project Name: _____ Date: _____
 Project #: _____ If applicable Permit #: _____
 Project Address (street, city, st, zip): _____

User entered values

Installing Contractor: _____
 Contact Person: _____ Phone: _____
 Brand of Flexible hose to be used: _____ Model: _____
 Equivalent UL length of 1" Schedule 40 pipe: (Attach mfg. data sheet.) 24 ft Allowed bends: 3
 Common equivalent lengths for existing drops: No Credit Taken for Existing Drops Credit taken in ft (will be subtracted from flex): 0 ft

Customize your header / footer

User can edit some notes such as default safety margin used by AHJ

Length per sprinkler: 14.0 ft x width: 14.0 ft = 196 ft²
 Gpm/ft: 19.6 psi loss per ft: 0.125
 Total additional psi required for hose selected: 3.01 psi

Option to take credit for existing arm-over drops

Enter safety margin below: _____
 Safety: _____ psi
 Some jurisdictions may allow default value for hydraulic systems.

Calculated with Hazen-Williams

User can edit some notes such as default safety margin used by AHJ

Margin required by the AHJ: _____
 Note: When using existing hydraulic calculations, they must be relevant for the same zone/riser and the same floors remote area.

Confirmation in green of acceptable safety margin, red if not acceptable

Based on the information provided for the flexible hose indicated: **FRICITION FOR HOSE SELECTED IS TOO HIGH** ← Results
 Warnings (if applicable): **VALUE FOR SAFETY MARGIN IS MISSING**

Contractor certification

I hereby attest that the information represented in this form is accurate and represents the worst case conditions for the flexible drops to be used in the project indicated.
 Contractor Signature: _____ Date: _____
 Accepted by: _____ Date: _____

AHJ acceptance with note box

Notes: _____
 This tool has been developed by CSA as a tool in assisting jurisdictions and contractors evaluate the impact of adding flexible sprinkler drops to hydraulically calculated systems. This tool uses simple calculations recognized by standards such as NFPA 13. Pipe Schedule systems require new calculations. No guarantee or warranty is expressed or implied in the use of this tool. User assumes risk.

Compliance Services and Assessments, LC
 Evaluating Fire Protection Installer Qualifications
 "Without assessments, all you have are assumptions!"
 www.CSAexams.com | info@CSAexams.com | (501) 712-1272

Actual form may vary

Density: 0.10 gpm/ft Flow per sprinkler: 19.6 psi loss per ft: _____
 Total additional psi required for hose selected: 4.39 psi

In the field below, click on pull-down arrow and select the source used to establish the existing systems safety margin: _____ Enter safety margin below: _____
 Default value allowed by the AHJ: _____ Safety: _____ psi
 Note: When using existing hydraulic calculations, they must be relevant for the same zone/riser and the same floors remote area. Some jurisdictions may allow default value for hydraulic systems.

If calculations were used for establishing safety factor, provide information below and attach copy of calculations.
 Date of the calculations: _____ Name of project calculated: _____

Based on the information provided for the flexible hose indicated: **FRICITION FOR HOSE SELECTED IS TOO HIGH** ← Results
 Warnings (if applicable): **VALUE FOR SAFETY MARGIN IS MISSING**

I hereby attest that the information represented in this form is accurate and represents the worst case conditions for the flexible drops to be used in the project indicated.
 Contractor Signature: _____ Date: _____

Total additional psi required for hose selected: 4.39 psi

In the field below, click on pull-down arrow and select the source used to establish the existing systems safety margin: _____ Enter safety margin below: _____
 Default value allowed by the AHJ: _____ Safety: _____ psi
 Note: When using existing hydraulic calculations, they must be relevant for the same zone/riser and the same floors remote area. Some jurisdictions may allow default value for hydraulic systems.

If calculations were used for establishing safety factor, provide information below and attach copy of calculations.
 Date of the calculations: _____ Name of project calculated: _____

Based on the information provided for the flexible hose indicated: **FRICITION FOR HOSE SELECTED IS TOO HIGH** ← Results
 Warnings (if applicable): **VALUE FOR SAFETY MARGIN IS MISSING**

I hereby attest that the information represented in this form is accurate and represents the worst case conditions for the flexible drops to be used in the project indicated.
 Contractor Signature: _____ Date: _____

Tells user if psi loss is greater than safety margin

Form checks and alerts to missing information