WILL A SPRINKLER SYSTEM PAY FOR ITSELF IN RATE SAVINGS?

Properly engineered automatic sprinkler protection has many selling points including increased underwriting desirability, lower fire insurance rates and, of course, superior fire protection. However, other things being equal, the owner's interest still comes down to: How much is it going to cost me? Will the sprinklered system actually pay for itself in insurance premium savings?

The Specific Commercial Property Evaluation Schedule (SCOPES) of the Insurance Services Office (ISO) does include provisions for rating both properties protected with automatic sprinklers and non-sprinklered properties. Sprinklered rates will vary based upon several factors including construction type, occupancy hazards, whether the sprinkler system is supervised and has a central station, remote, proprietary or local alarm service, and whether the water supply is a single or dual source. The standard sprinkler system is assigned a grading of 100 points. Any deficiencies from standard are deducted from those 100 points and affect the rate accordingly.

To illustrate, let's assume that a typical metal building system has a single source water supply sprinkler system and is assigned a grading of 90. Also, for this example, assume that only local alarm service is provided.

If we then compare the metal building system examples used in MBMA Insurance Bulletin No. 5 with the same building sprinklered, we have the following:

	Building Rate		Contents Rate	
Building	Non-Sprinklered	Sprinklered	Non-Sprinklered	Sprinklered
Metal building system (glass fiber insulation or composite foam core assemblies meeting slow burning requirements)	1.08	0.285	1.400	0.373
Metal building system with 1- or 2-hour fire resistive wall construction	0.39	0.154	0.692	0.220
Metal building system with unprotected or unlisted foam core panels	1.55	0.370	1.605	0.475

Properly engineered automatic sprinkler protection:

- Increases underwriting desirability
- Lowers fire insurance rates
- Offers superior fire protection

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Let's now assume values for these buildings and contents and compare annual premium costs.

Building	Building Value	Contents Value	Non-Sprinklered Premium	Sprinklered Premium	Annual Premium Savings
Metal building system (glass fiber insulation or composite foam core assemblies meeting slow burning requirements)	$500,000	$325,000	$9,950	$2,637	$7,313
Metal building system with 1- or 2-hour fire resistive wall construction	$500,000	$325,000	$4,199	$1,216	$2,983
Metal building system with unprotected or unlisted foam core panels	$500,000	$325,000	$12,966	$2,746	$10,220

Obviously, the higher the building value, the greater the dollar savings will be for sprinklered buildings. In other cases, installation of a sprinkler system in a metal building may produce a lower annual insurance cost than a competing non-sprinklered class of building. The key question is this: Does the addition of a sprinkler system allow you to compete in terms of building price, as well as insurance cost, both in the first year and subsequent years?

Payback time for the investment required by the sprinkler system must also be considered. In the example above, here is how long it would take to pay for the sprinkler system investment.

Building	Sprinkler	Annual Premium Savings	Years to Payout
Metal building system (glass fiber insulation or composite foam core assemblies meeting slow burning requirements)	$31,250	$10,070	3 1/2
Metal building system with 1- or 2-hour fire resistive wall construction	$31,250	$3,658	8 1/2
Metal building system with unprotected or unlisted foam core panels	$31,250	$13,270	2 1/2

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Of course, pay back would depend on other factors such as method of financing, interest rates, depreciation method, taxes, etc.; but the sample does show that sprinkler protection will pay for itself in a reasonable period of time in some cases. In other cases, sprinkler protection must be justified by the increased protection of assets.

These comparisons are based on generally applied insurance evaluation principles as of the date of publication. Some local building and/or fire codes require sprinkler systems in certain structures. The building owner's design professional must determine and specify applicable local requirements.

For purposes of this example, we have assumed the internal sprinkler system to cost $1.25 per square foot. These costs vary and can be materially higher in locations with poor public water supply. Costs for connection to the public water supply would be additional.

What is ISO?

***The Insurance Services Office**, Inc. (ISO) is a subsidiary of Verisk Analytics, and provides data, underwriting, risk management and legal/regulatory services.*

Sprinkler protection can affect the maximum square footage permitted by the building code for different applications. See MBMA's *Fire Resistance Design Guide* for details.

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