Magna COATINGS

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Case Studies
Elimination of Sprinkler Systems in Concealed Spaces

Many building codes will allow the elimination of sprinklers if proper materials are used to limit flame spread on combustible surfaces. **SafeCoat Latex** is such an approved material.

Many buildings are required to have sprinklers under National, Provincial and Civic Codes. If sprinklers are mandatory, under any of these codes, they are required in many unoccupied and concealed spaces. When required, they are to be installed as outlined in the **NFPA 13** guidelines. However, these guidelines include exceptions. In concealed spaces 4-4.4.1, Exception Number 8 reads: **"When the exposed surfaces (in concealed spaces enclosed wholly or partly by exposed combustible construction) have a flame spread rating of 25 or less and the materials have been demonstrated not to propagate fire in the form in which they are installed in the space, (sprinklers may be exempted in that space)."**

The construction of a church showed the potential for cost saving with the use of fire retardant-coated materials. In this example, the city officials had approved the use of Oriented Strand Board (OSB) as the roof sheathing for the church.

After the building was completed to lock up, an inspector questioned why sprinklers were only installed in the occupied spaces. He noted that the design called for an open-web truss system that left a 508 mm (18 inch) deep space between the upper surface of the insulation and the underside of the roof sheathing, forming a large concealed space. This concealed space was a potential fire hazard.

The architect, contractor and owner were now faced with the cost of installing a dry sprinkler system in this unheated space. The initial estimates were approximately $35,000.
As an alternative to sprinklers in concealed spaces, **NFPA 13 "Standard for the Installation of Sprinkler Systems"** permits the use of a surface flame spread rating of 25 or less on all exposed combustible materials within the concealed spaces.

If the designers, contractors or permits department had been aware of the availability of a sprayed-on, single coat finish, which offered a flame spread rating of 25 or less, they could have reduced this expense.

The cost of coating OSB or plywood with **one coat** of **SafeCoat Latex** would have increased the initial cost of the sheathing by 35 to 40 cents per square foot. With 5,575 square meters of roof, the **SafeCoat System** would have been between $20,000 and $24,000, **a savings of up to $15,000 over the sprinkler alternative**. As an added bonus, this cost saving includes additional savings associated with reduced maintenance and certification required of a sprinkler system over its expected service life.

One of the most common complaints voiced about pressurized sprinkler systems in an unheated space is the expense incurred in the event of a leak. If air or anti-freeze escapes from the system, water will fill the pipes. This water may freeze, cracking the pipes and causing leaks. The cost of removing the wet insulation and repairing water damage to ceilings, carpets and structure is exceptionally high.

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