



Quantum Chemical

**SafeCoat®**  
Fire Retardant Coatings  
*Fire Protection Simplified!*

## CASE STUDY - School Fire: Upper Hay River

---

The Upper Hay River School is a building located in Hay River, Northwest Territories. Construction on the school began in 1996. It is a combustible wooden structure with a plywood roof deck (surrounded by a metal skin), and a pitched wood roof truss, containing a concealed space above the main structure. The school was scheduled to open in 1997.

Under the NFPA 13, the concealed space is required to have sprinklers installed, or it requires a Flame Spread Rating (FSR) of less than 25. The Fire Commissioners Office agreed that **SafeCoat® Latex** could be used in accordance with NFPA 13, since **SafeCoat® Latex** provides a FSR of less than 25, and there would be nothing in the attic space that could propagate a fire.

**SafeCoat® Latex** was chosen in lieu of a fully dry pipe sprinkler system because:

- After application, **SafeCoat® Latex** requires no maintenance.
- **SafeCoat® Latex** was price competitive with sprinkler systems.
- The site had insufficient water for the sprinkler system.
- The area is remote, and adequate fire protection services were not available.

In April 1997, a fire broke out while the school was being inspected prior to occupancy. The inspection was performed by Neil Campbell, Office of the Fire Commissioner for the Government of Canada. It involved a four (4) hour test of the emergency generator. After approximately two hours of operation, the generator exhaust pipe ignited the edge of the opening cut in the roof, and a fire broke out.

The Commissioner concluded that the fire was caused because the work done by the contractor installing the emergency generator was sub-standard. The Commissioner stated "the fire proofing contractor was offsite when the emergency generator contractor had cut the hole and therefore the edge that was cut was not covered with **SafeCoat®**." The edge of the plywood deck which was not covered with **SafeCoat® Latex**, charred to a depth of four inches and burned the paint off the exterior metal roof.

Mr. Campbell indicated that there "was more smoke than anything, and the plywood was charred into the edge where the emergency generator contractor had cut the hole. The emergency generator contractor had to remove the exhaust pipe since it couldn't be installed in the attic space, but had to be installed in a separate flame-rated shaft."

Mr. Campbell contacted Quantum Technical Services Ltd., dba as Quantum Chemical, to relay his findings and "how impressed he was with **the SafeCoat®** product." **SafeCoat® Latex** performed as intended and saved water damage, which would have resulted from sprinkler operation. In his opinion, **SafeCoat® Latex** prevented a major fire.

**SafeCoat® Latex** is an effective passive fire containment system. If a conventional sprinkler system had been used as a fire containment method, the fire would have spread much further, since it started in an area where the sprinkler would not have covered effectively. In addition to fire damage, excessive water and smoke damage would have also occurred.