

Case Study: BlazeMaster® CPVC... The Best Choice for High Rise Hotel Fire Sprinkler System Retrofit

The decision to retrofit a fire sprinkler system at the 20 story Ramada Inn Plaza Suites Hotel in downtown Pittsburgh, Pennsylvania was prompted by the passage of the Hotel/Motel Fire Safety Act of 1990-Public Law 101-391. This legislation requires all federal employees traveling on official business to stay in fully sprinklered hotels. Without fire sprinklers the hotel could not participate in the federal employee market. According to Jesse Koch, chief engineer for Elmhurst Corporation who owns and manages the property "the decision to retrofit was made in January 1995 with a target completion date of February 1996. Completion by this date would allow the property to be listed in the Federal Register as a fully sprinklered hotel to accommodate federal employees on travel."



Photo 1



Photo 2

Originally built in 1950 as an apartment building, it has undergone several renovations creating building nuances that would make the retrofit an even more difficult project. While the installing mechanics were fully trained in March 1995 by Bill Sisto, Noveon's Regional Consultant to the fire sprinkler industry, installation did not start until August 1995 due to delays in obtaining code variances. According to Jesse Koch "the entire floor, but due to the time compression it was decided to install the sprinkler system between 8:00 a.m. when the guest checked out and new guest check in at 3:00 p.m. In that time frame the room had to be draped with drop cloths (photo 1) the hangers, pipes and sprinkler heads installed, new plaster on lath installed and the room cleaned. We were able to do this because the BlazeMaster® Fire Sprinkler System installs so quickly and easily allowing us to maintain a 95% occupancy rate."



Photo 3

According to Jim Davidson, Jr., P.E. of Triad Fire Protection Engineering Corporation, Springfield, Pennsylvania who designed the system, "because of concerns with hidden construction details and the requirement by hotel management to make the installation look as if it were installed as part of the original construction process (photo 3) it was decided to use pendent heads in all dwelling units. This required a piping material with enough flexibility that could be installed with only a 2' X 2' opening in the plaster on lath ceilings. BlazeMaster® CPVC pipe fits this requirement. (photo 4) However, in the corridors the piping was concealed behind one-hour fire rated constructed soffits because of structural steel beams obstructing the path of the sprinkler feed mains." (photos 5 and 6)



Photo 4

"There were other limiting requirements that had to be considered such as a limited area for storage of sprinkler pipe and fittings." Jim Davidson said. "The use of BlazeMaster® pipe and fitting materials, because it is so light in weight, allowed the facility to use the third floor roof a lay down area for the pipe and fittings." (photo 7)



Photo 5

Jim Davidson added, "one of the problems to overcome was the movement of material from the storage area to the floor of installation. The use of steel pipe would have required maximum pipe lengths of 8 feet instead of 15 feet in order to move the material in the service area elevator up to the floor of installation and would have hindered other hotel service operations. The use of BlazeMaster® pipe allowed for the use of a "man powered" system using a roof mounted pulley. Additionally, the ability to move the pipe through window openings without taking the hotel rooms out of service for a clean up produced savings in both manpower required and hotel cost attributed to clean up operations. The use of

CPVC Fire Sprinkler Systems

ips



Photo 6



Photo 7



Photo 8



Photo 9

BlazeMaster® pipe and fittings saved at least four man weeks in the movement of material alone. (photo 8)

Jim Davidson concluded that "the use of BlazeMaster® CPVC pipe and fittings allowed the hotel to maintain a maximum occupancy rate for the duration of the installation, the flexibility of making construction changes in the field, the ability to change the location of the retrofit work to suit hotel occupancy on a day to day basis, the use of the third floor roof for storage of materials handling and transport to the floor of installation (photo 9) the use of in-house construction and maintenance staff and the hotel realized a substantial savings in the cost of installing the BlazeMaster® Fire Sprinkler System."