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Pressler Forensics, Inc.



### Sprinkler System Failure

Sometime before midnight on October 15, 2004, a fire began on the 34th floor of the East Tower of the Parque Central, a 56-story government office building in Caracas, Venezuela, and South America's tallest high-rise. Fortunately, the building was unoccupied at the time, except for a handful of security personnel who evacuated safely.

Despite the fact that a sprinkler system had been installed in the Parque Central, the fire did more than \$250 million in damage and burned the structure's contents from the 34th floor to the 50th. Why? Because, as previous inspections revealed, the sprinkler system had not been properly tested or maintained, thus it wasn't in a working condition. The building designers said local fire alarm panels weren't connected to a building-wide panel and the standpipe system was inoperable at the time of the fire.

Past history and performance shows that this fire could have been controlled quickly by a standard wet-pipe sprinkler system. The fire department's chances of controlling the fire at the floor of fire origin would have increased if the standpipe system had been working. This fire highlights the importance of periodic inspection, testing, and maintenance of fire protection systems, as well as the importance of strictly following manufacturers' installation instructions.

### Piping Failures: Causes and Cures

Many modern non-metallic, plastic piping systems provide better corrosive protection from age old piping problems. Consult Thomas Pressler or Joe Cook at Pressler Engineering for more information on this subject.

**Corrosion** - Corrosion is the deterioration of a material due to interaction with it's environment.

**Pitting Corrosion** - Pitting corrosion is localized corrosion that occurs at microscopic defects on a metal surface.

**Erosion** - A strictly mechanical form of corrosion that is caused by friction.

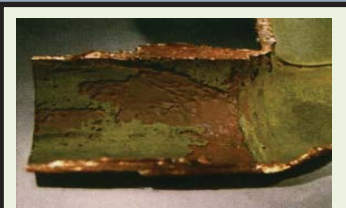
**Galvanic Corrosion** - An extremely common problem for areas where brass or copper is joined by steel.

**Stray Current** - Stray current corrosion results from sources outside the influence of the pipe and it's environment.

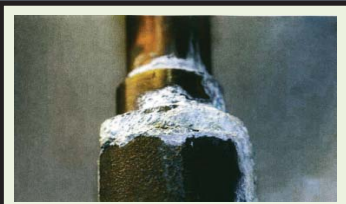
**Diffusion** - In solids, diffusion is the spontaneous intermingling of the particles of two or more substances.

**Brittle Fracture** - Rapid run of cracks through a stressed material.

**Localized Corrosion** - particulate deposits settle along the inside of pipe, which produces deep deposit pitting.



Pitting Corrosion



Galvanic Corrosion



Localized Corrosion

18702 North Creek Parkway, Suite 213

Bothell, WA 98011

Phone: (425) 485-3002 Fax: (425) 485-8114 [www.PresslerEng.com](http://www.PresslerEng.com)