

FIRE HAZARD POTENTIAL PETROLEUM AND HAZARDOUS MATERIAL SPILLS -- A 4 YEAR NATIONWIDE STUDY -- 1988 THROUGH 1991

Designers of sanitary sewers, storm drains and culverts must be cautious when selecting the kind of pipe to use for their projects. Certainly immediate needs are considered, such as size, strength, hydraulic capacity, etc. Physical properties are equally important and must be considered when designing any project.

One such physical characteristic that must be considered is the pipe's ability to withstand potential damage from fire and/or explosions due to volatile material getting into the pipeline.

Accidental spills of petroleum products and hazardous materials occur frequently in the United States. In the four year period from 1988 through 1991, there were a total of 26,001 hazardous material spills on U.S. Highways, of which 11,946 (46%) were of a flammable or explosive nature. During the four year period, there were 43 deaths resulting from flammable or explosive spillages. Not included in the 11,946 flammable and hazardous spills, but included in the remaining 14,055 spills, are aggressive solutions that could seriously affect plastic products.

The U.S. Department of Transportation (DOT) publishes an annual statistical summary of all hazardous material spills in the United States. The following summary is for the years 1988 through 1991:

	Total Flammable or Explosive Spills	Deaths	Damages (in dollars)
1988	2,351	18	\$14,200,791
1989	2,592	7	8,033,036
1990	3,152	8	14,149,451
1991	3,851	10	24,259,374
TOTAL	11,946	43	\$60,642,652

An example of the effects of a hazardous spill occurred in Sacramento, California early in the morning of February 13, 1991, when 8,000 gallons of gasoline spilled from an over-turned tanker truck.

Ten minutes after the spill, fire and explosions erupted, causing manhole covers to be blown into the air and fire to sweep through the backyards of homes. Four homes were destroyed, three people injured, residents evacuated for nearly a day, PVC plastic pipes melted and corrugated steel pipes burned beyond repair. In addition to this, toxic clean-up crews removed contaminated soil from the accident site.

There are numerous spills resulting in fires and explosions throughout the nation. This is not an uncommon occurrence.

CONCLUSION

Use only a non-combustible pipe material for projects where petroleum or hazardous materials might enter the system. This would include sanitary sewers serving industrial areas, storm drains and culverts for freeways and highways.