

U.S. test results

Reinforced Concrete Pipe

There was no ignition or smoke generation of the concrete during the test. Upon completion of the test and removal from the tunnel, it was observed that the first four foot section of pipe was slightly darkened and had a network of surface checking on the inside surface as a result of rapid heating. The remaining 20 feet of pipe appeared sound and no checking or spalling was apparent.

Corrugated Steel Pipe with Asphalt Lining and Coating

The asphalt on this material proved to be highly flammable, producing a flamespread value of 80 and a smoke density of 860. The asphalt lining and coating melted and dripped to the tunnel floor and burned long after the gas burners were shut down. All of the asphalt was consumed and the pipe sagged about six inches in the first section.

Corrugated Steel Pipe with Polymeric Lining and Coating

The lining on this sample, a PVC formulation, ignited just 17 seconds into the test and produced a flamespread value of 35 and a smoke density factor of 580. The lining was consumed for 14 feet and scorched the remaining ten feet.

Corrugated Aluminium Pipe

There was no ignition of the aluminium during the test, but smoke was observed, resulting in a smoke density factor of 35. The first section of pipe sagged, and several areas melted within three feet of the flame source.

Ribbed PVC Sewer Pipe

The PVC ignited in 52 seconds and produced a flamespread value of ten and a smoke density factor of ten. After two minutes under flame, the sample was sagging to the tunnel floor in one area, and, at five minutes, the entire section had collapsed.

PVC Sewer Pipe

The solid wall PVC burned differently from the ribbed PVC in that it ignited more quickly and produced much more smoke. Flamespread and smoke density values were 20 and 330, respectively. This sample also collapsed to the floor after two minutes and ten seconds.

ABS Composite Pipe

This pipe material burned rapidly and totally leaving little more than the lightweight concrete filler after the test was completed. The high flamespread value of 260 is attributable to the tremendous fuel capacity of the ABS in this sample. Smoke density was also substantial at 435.

Ribbed Polyethylene Pipe

The polyethylene pipe sample was consumed totally during the tunnel test, generating a flamespread of 60 and a smoke density factor of 820. The sample lost strength and sagged to the tunnel floor where it burned long after the gas jets were closed down.