ASTM E 814 (UL 1479)
Fire Tests of Through-Penetration Firestops

During this testing process, the firestop system (material) is evaluated using three specific sets of criteria. These include:

- Fire exposure
- Temperature data
- Hose stream test

Fire Exposure data is merely how long a firestop system can prevent fire from passing through the system to the non-fireside of the test assembly. Once a flame is discovered on the non-fireside, the test is stopped and then assigned an "F-rating" by rounding down to the last completed hour (as long as the system passes the hose stream part of the test – see below). Common ratings include 1, 2, 3 or 4-hours.

During the tests, a standard time/temperature curve is followed:

1000 °F at 5 minutes

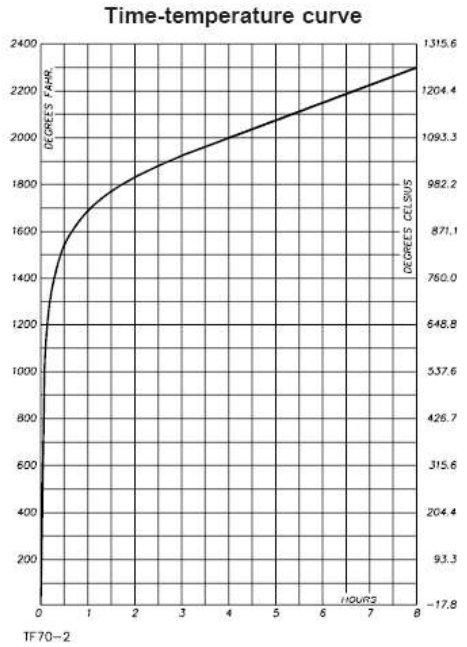
1300 °F at 10 minutes

1550 °F at 30 minutes

1700 °F at 1 hour

1850 °F at 2 hours

2000 °F at 4 hours



To put this into perspective, a group of fire marshals studied a fire that burned for more than 19 hours at the One Meridian Plaza in Philadelphia, and the temperature never exceeded 1500 °F. This is an indication that the current standard is adequate.

Temperature Data is taken throughout the test by thermocouple readings on the non-fireside of the test assembly. These readings determine what the "T-rating" of the system will be. The T-rating is the time for the temperature of the unexposed surface of the firestop system or any penetrating item to rise 325 °F