
Fire detection, warning, control and intercom systems—Methods of test

Method 2: Heat sensitivity testing of Type E heat detectors

1 SCOPE

This Standard sets out the method for determining the alarm state temperature of a Type E heat detector. (See performance requirement in the appropriate device Standard.)

2 PRINCIPLE

The detector is immersed in warm water or oil, which is heated at a controlled rate until the detector enters an alarm state. The temperature of the liquid at that time is recorded.

3 APPARATUS

The following apparatus is required:

- (a) A bath containing water or oil (see Clause 4(b)).
- (b) A heat source capable of heating the liquid in the bath at a controlled rate not exceeding 0.5 K per minute.
- (c) A means of agitating the liquid in the bath.
- (d) A thermometer with an accuracy of $\pm 0.5^\circ\text{C}$.
- (e) Suitable monitoring equipment capable of indicating an alarm state of the detector.

4 PROCEDURE

The procedure shall be as follows:

- (a) Connect the detector to the monitoring equipment.
 - (i) For detectors with alarm state temperature ratings of 80°C or lower, completely immerse the sensing element of the detector in a bath of water.
 - (ii) For detectors with alarm state temperature ratings in excess of 80°C , completely immerse the sensing element of the detector in a bath of oil having a flashpoint exceeding the test temperature of the detector.
- (b) Place the thermometer in the bath so that the sensing element of the thermometer is held level with the sensing element of the detector.
- (c) While agitating the liquid in the bath, raise the temperature of the liquid at a convenient rate to a point not less than 15% below the temperature rating of the detector in degrees Celsius.
- (d) Continue to heat the liquid in the bath at a rate not exceeding 0.5 K per minute until the detector enters an alarm state, or until a temperature 10% above the rated temperature of the detector, in degrees Celsius is reached.