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Australian Standard®

Automatic fire detection and alarm sytems—Methods of test for actuating devices

Method 13: Corrosion test

1 SCOPE. This Standard sets out the method for subjecting the actuating device to a corrosive atmosphere. (See performance requirements in the appropriate device Standard.)

2 PRINCIPLE. The actuating device is exposed to a specified corrosive atmosphere. The actuating device is subsequently checked for changes in sensitivity and insulation resistance.

3 APPARATUS. A corrosion apparatus which consists of an exposure chamber made from suitable impervious material (e.g. glass) containing appropriately sealed holes for gas inlet, gas outlet and fan shaft, etc. as required. The dimensions of the chamber shall be appropriate to the apparatus under test but are not critical provided the gas concentrations are maintained as specified. The gas supply to the chamber shall be from compressed gas cylinders of commercial grade SO_2 and CO_2. The gas supply lines shall include valves to control flow. Gas shall be supplied through flow meters and a suitable timing device shall be used to measure gas volume. A plastics platform shall be used in the chamber to support the actuating device at a distance of 30 ± 5 mm above the water level. A fan shall provide air movement in the chamber.

4 PROCEDURE. The procedure shall be as follows:

(a) Connect leads of approximately 100 mm to each terminal and mount the actuating device in its normal orientation inside the exposure chamber.

NOTE: The leads are intended for subsequent testing, and their ends may be sealed to prevent deterioration.

(b) Expose the actuating device to a moist carbon dioxide-sulphur dioxide-air mixture in the closed chamber for a period of 240 h at a temperature of 23 ± 5°C. On the first through fourth and seventh through tenth days, an amount of carbon dioxide equivalent to 1.0 ± 0.1 percent of the chamber volume plus an amount of sulphur dioxide equivalent to 0.5 ± 0.05 percent of the chamber volume is to be introduced. Prior to each introduction of new gas-air mixture the chamber shall be thoroughly purged. On the fifth and sixth day of the exposure period the chamber is to remain closed and no purging or introduction of gas is to be provided. A small amount of water (10 mL/0.003 m^3 of chamber volume) is to be maintained in the bottom of the chamber for humidifying the atmosphere.

(c) Remove the actuating device from the test atmosphere and allow to condition in 23 ± 2°C and 50 ± 10% relative humidity for not less than 24 h prior to conducting the insulation resistance test.

5 ASSESSMENT. The actuating device shall be assessed for its capability to undergo subsequent testing. Detachment of leads does not constitute a failure provided leads can be subsequently attached in the normal manner.

6 REPORTING OF RESULTS. The following shall be reported:

(a) Information identifying the actuating device.

(b) Test report in accordance with the requirements of AS 1603.

(c) Reference to this test method.

STANDARDS AUSTRALIA