The Institute for Interconnecting and Packaging Electronic Circuits
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IPC-TM-650
TEST METHODS MANUAL

Number	
2.5.31	
Subject	
Current Leakage (Through Overglaze Films)	
Date	Revision
12/87	
Originating Task Group	
N/A	

1.0 Scope This test procedure is to determine the current leakage through overglaze films by application of current flow across two electrodes and measurement of the amperage developed.

2.0 Applicable Documents None

3.0 Test Specimens This test specimen shall consist of a thick film conductive electrode applied to the surface of a 51 mm x 51 mm [2.0 in x 2.0 in] nonporous ceramic substrate. The electrode shall be round, with a 60 mm [2.4 in] area and have a tab or contact area approximately 6 mm [0.24 in] wide extending 20 mm [0.8 in] from the perimeter of the electrode. The overglaze film shall be applied over the electrode to extend at least 5 mm [0.2 in] beyond the edge of the electrode and cover a minimum of 10 mm [0.4 in] of the electrode tab.

4.0 Apparatus

4. 1 One 10-volt DC source

4.2 One normal NaCl solution made with distilled or deionized water

4.3 One glass container

4.4 One platinum foil electrode

4.5 An ammeter with a range of 0-1000 microamperes

4.6 Suitable clamps, clips, fixtures and wires for supporting samples and making electrical connections

4.7 One stirring device

4.8 The test solution shall be one normal NaCl solution made with distilled or deionized water. The solution shall be contained in a glass container of chemical laboratory quality.

5.0 Test

5.1 Procedure

5.1.1 Partially immerse the test specimen vertically into the salt solution with the electrode facing the center of the container and the tab pointing upward.

5.1.2 A minimum 5 mm [0.2 in] of the portion of the tab is to be covered by the overglaze and should extend above the solution surface.

5.1.3 Support the specimen along the top edge with a fixture or clamp. Partially immerse the platinum foil electrode into the salt solution facing the electrode on the test specimen 12 to 50 mm [0.5 to 2.0 in] apart.

5.1.4 Connect the positive terminal of a 10 volt DC source through the ammeter to the platinum electrode.

5.1.5 Connect the negative terminal of the voltage source to the exposed portion of the thick film electrode tab on the test specimen.

5.1.6 There should be no clamps, clips, fixtures or wires in contact with the salt solution.

5.1.7 The salt solution should be stirred gently during the test.

5.2 Evaluation After the voltage has been applied between two electrodes for 5 minutes, the current flow indicated by the ammeter is recorded.