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

Number	
2.3.8.1	
Subject	
Flammability of Flexible Printed Wiring	
Date	Revision
12/88	
Originating Task Group	
N/A	

1 Scope This test method exists to determine the degree of flame resistance of flexible printed wiring.

2 Applicable Documents None

3 Test Specimen

3.1 Flexible printed wiring being evaluated

4 Equipment/Apparatus

4.1 A laboratory hood, totally enclosed, with a heat resistant glass window for observing the test, shall be used. The exhaust fan shall be turned off during the test, but may be turned on periodically between tests to clear out fumes and residuals. A clamping device shall be provided within the test chamber so that the specimen will hang freely and offer appropriate exposure per 5.2.

4.2 There shall be provision for remote position within the chamber of a lighted Bunsen burner.

4.3 Bunsen burner and fuel a supply having a heat of combustion of 1000 BTU/0.03 cubic meters. The referee fuel shall be methane.

4.4 Dry, absorbent surgical cotton

4.5 Stop watch, reading in seconds

5 Procedure

5.1 Test

5.1.1 Specimens to be tested shall be conditioned in standard ambient laboratory conditions for a minimum of four hours prior to testing.

5.1.2 The specimen shall be clamped to the clamping device in a manner that will expose the most susceptible portion of the sample to the Bunsen burner flame (e.g., a portion of the sample without coverlayer). The dry, absorbent surgical cotton shall be placed below the burner and the portion of the sample to be exposed to flame. The edge of the sample to be exposed to flame shall be at a height 25 mm greater than the height of the burner, as shown in Figure 1.

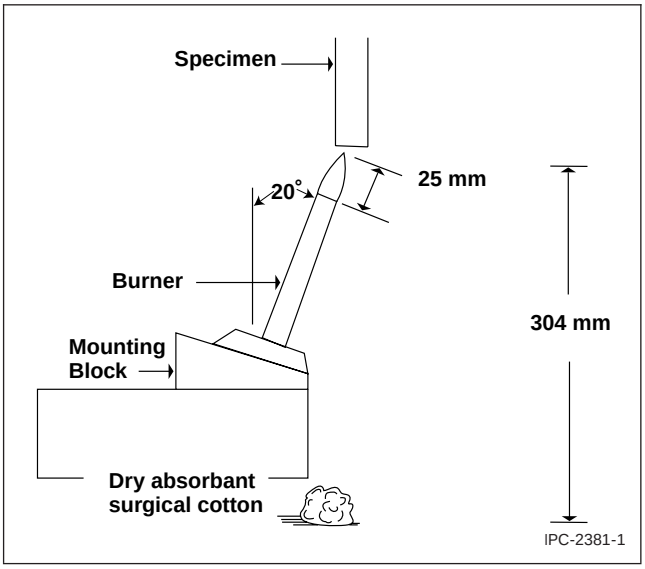

Figure 1

5.1.3 The Bunsen burner shall be lit and the flame adjusted to a non-luminous cone of 25 mm. The lit burner shall be positioned under the exposed portion of the sample, using the remote positioning device described in 4.2, allowing the flame to impinge upon the sample. After impingement of five seconds, the flame shall be removed using the remote positioning device. If ignition of the sample occurs, start the stopwatch and record the time of burning after removal of the Bunsen burner.

5.2 Evaluation

5.2.1 Non-Burning (NB) If the sample does not ignite after two attempts, it is judged non-burning by this test.

5.2.2 Burning (B) If the sample ignites and burns to the clamp, burns longer than 10 seconds, or drips particles that cause ignition of the dry, absorbent surgical cotton under the sample, it is judged burning by this test.

5.2.3 Self-Extinguishing (SE) If the sample ignites but extinguishes within 10 seconds, does not burn to the clamp, and does not drip particles that ignite the dry absorbent, surgical cotton under the sample, it is judged self-extinguishing by this test.