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

Number	
2.4.48	
Subject	
Spitting of Flux-Cored Wire Solder	
Date	Revision
1/95	
Originating Task Group	
Solder Alloy Task Group (5-24c)	

1.0 Scope This test method provides a measurement of the spitting characteristics of flux-cored wire and ribbon solder.

2.0 Applicable Documents

J-STD-006 Requirements and Test Methods for Electronic Grade Solder Alloys and Fluxed and Non-fluxed Solid Solders for Electronic Soldering Applications

3.0 Test Specimen One five meter length of the J-STD-006 flux-cored wire or ribbon solder (may be cut into several smaller lengths for convenient handling).

4.0 Apparatus

4.1 One laboratory stand with soldering iron support clamp and metal support ring or tray with a suitable hole in center.

4.2 One 20 by 20 cm piece of aluminum foil with 11 ± 0.5 mm diameter hole in center.

4.3 One small metal tray with suitable hole in center, for catching molten solder running down off of the soldering iron tip.

4.4 One soldering iron with a clean chisel point which has been coated with solder and wiped clean.

5.0 Test Procedure

5.1 Preparation for Test

5.1.1 Using additional pieces of solder identical to the test specimen, determine the flux content of the flux cored solder in accordance with IPC-TM-650, Test Method 2.3.34.1 and expressed in percentage units (%F).

5.1.2 Set up test configuration as shown in figure 1. The soldering iron should be positioned so that its tip extends approximately 6 mm through the aluminum foil.

5.1.3 Weight the aluminum foil (P1) and place it on the laboratory stand tray/ring so that the 11 mm hole is centered around the tip of the soldering iron.

5.1.4 Weight the solder sample (W1).

5.1.5 Turn on soldering iron and allow the tip temperature to stabilize.

5.2 Test

5.2.1 Apply the solder sample to the heated soldering iron tip approximately at an even rate, 1 cm at a time, keeping the soldering iron tip temperature steady.

5.3 Evaluation

5.3.1 Weight the stub(s) of the solder specimen not melted in the test (W2).

5.3.2 Weight the aluminum foil containing the spattered flux (P2).

5.3.3 Calculate the percent weight of spattered flux as follows:

Percent by weight of spattered flux =

$$\frac{(P2 - P1)}{F \times (W1 - W2)}$$

6.0 Notes

6.1 Safety Observe all appropriate safety precautions.

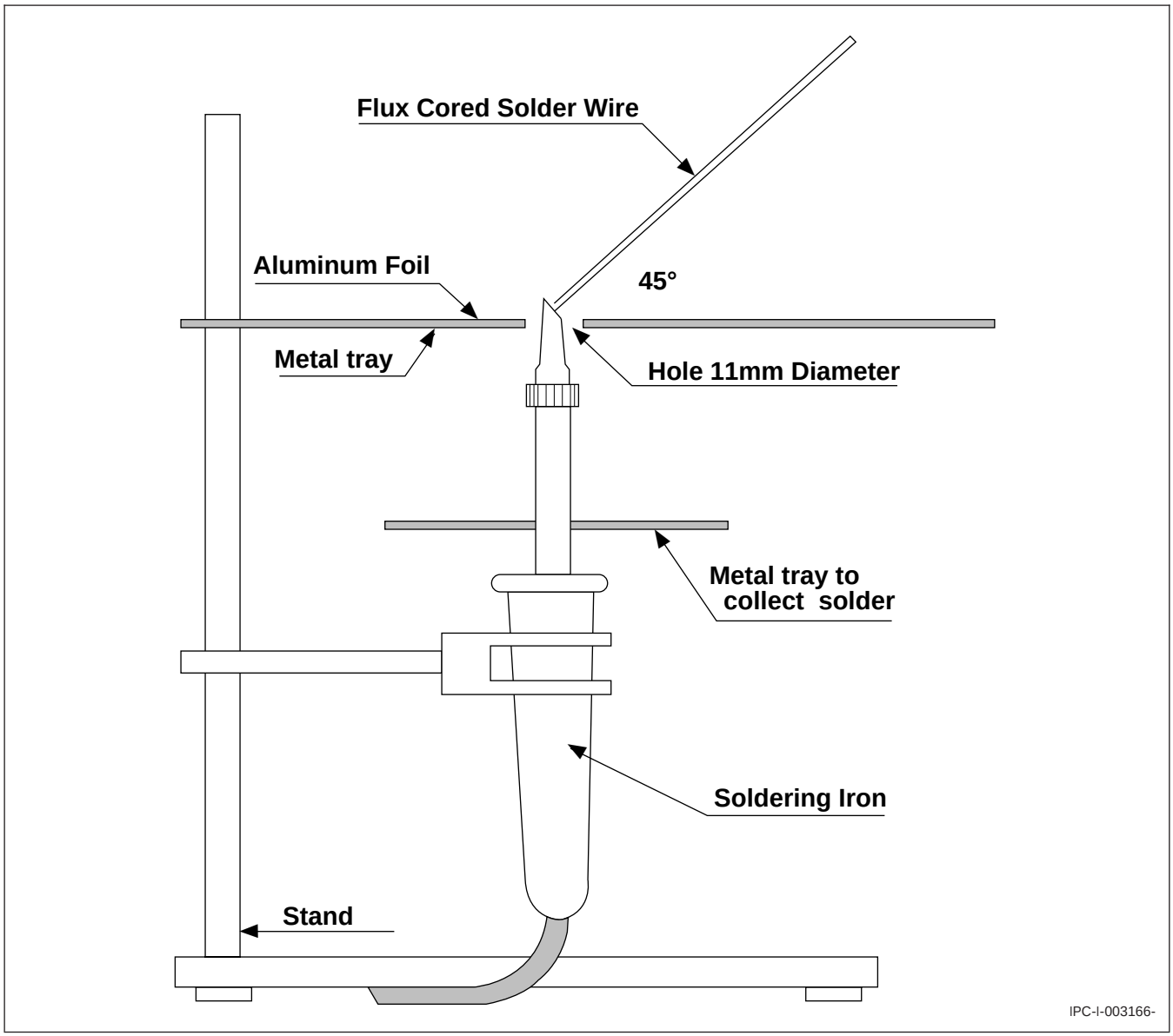

Figure 1 Test apparatus for spitting test