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IPC-TM-650
TEST METHODS MANUAL

Number **2.5.33.4**	
Subject **Measurement of Electrical Overstress from Soldering Hand Tools - Shielded Enclosure**	
Date **11/98**	Revision
Originating Task Group **Manual Soldering Task Group (5-22c)**	

1 Scope The following information is a supporting document in support of Method 2.5.33. The test methods within this group of procedures can be falsely influenced by radio frequency interference and electromagnetic interference from lighting and equipment found in the workplace and testing area. To avoid these influences, the leakage and transient tests should be performed in a screen room. In lieu of a screen room, this test method has been provided to make a low cost shielded enclosure, which should provide adequate shielding for the performance of these test procedures.

2 Applicable Documents.

ANSI/J-STD-001 Requirements for Soldered Electrical and Electronic Assemblies.

3 Test Specimens None required

4 Equipment/Apparatus Only general guidelines are provided. The enclosure can be made from readily available materials obtainable from any hardware store or lumber yard. Dimensions may be adjusted up or down to accommodate equipment to be tested. Experience has shown that best results will be obtained with a full length piano hinge across the back of the lid. The lid should be secured in the closed position with a metal, cam-type locking mechanism. The screening material from the lid should contact the material covering the sides to ensure a complete seal.

In addition to information on the enclosure, Section 6 also includes information on the filtered AC power module and test electrode mounting that should be incorporated into the local design to achieve best performance.

5 Procedure No construction procedure is provided. Each local activity should construct the enclosure to meet their specific needs based on the information in Section 6.

6 *Notes*

6.1 Shielded Enclosure High measuring impedance is used so as not to load down the signal being generated by the UUT. Because a high measuring impedance is used, there's a threat that transients emanating from sources other than the UUT might be displayed. To prevent the apparatus from picking up ambient EMI/RFI, the UUT is placed inside a ''benchtop'' shielded enclosure. Filtered AC line voltage is available from within.

Some construction suggestions are given in 6.2 and 6.3.

6.2 Basic Enclosure Although Figure 1 illustrates wire mesh walls, sheet metal walls also work. Metals other than copper or brass may be used. If mesh is used, it should be 6.5 mm or tighter weave. Whatever metallic materials are used, continuity across seams and to the lid should be ensured.

Figure 2 suggests a way for mounting to an AC power entry.

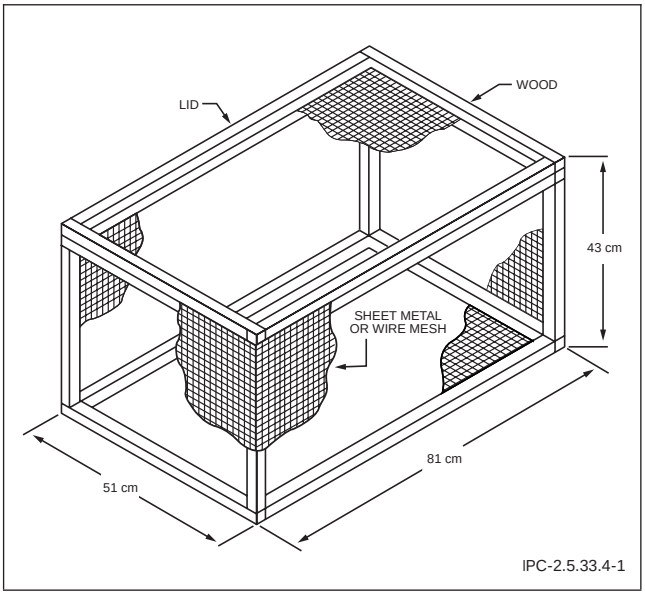

Figure 1 Enclosure Construction Suggestion

6.3 Test Electrode The test electrode (see Figure 3) is shown mounted to the sidewall of the enclosure to facilitate connection of test equipment to the UUT. Moving this structure entirely into shielded enclosure and providing an access port through which test cables may be routed will slightly increase the construction cost, but will also serve to better isolate the test setup.

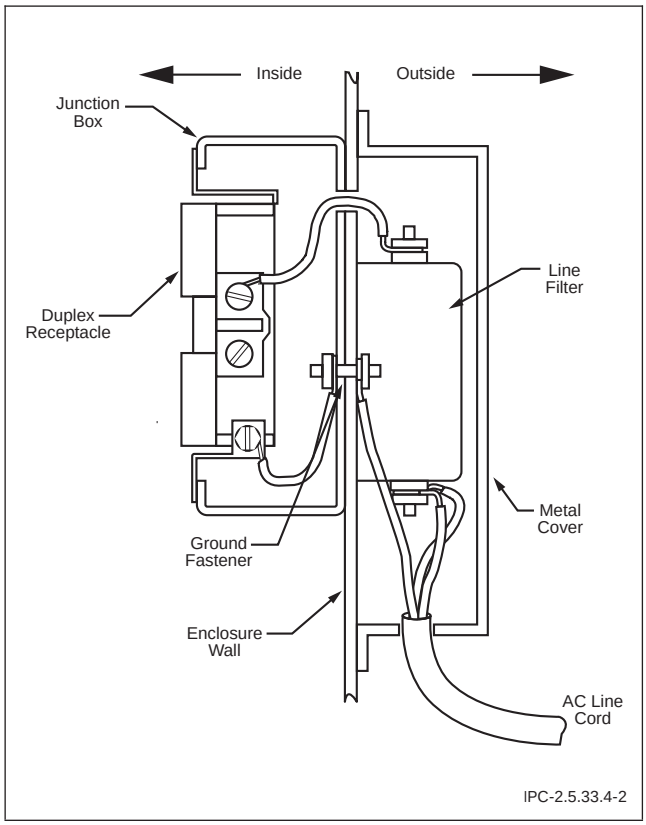

Figure 2 AC Power Entry Mounting Suggestion

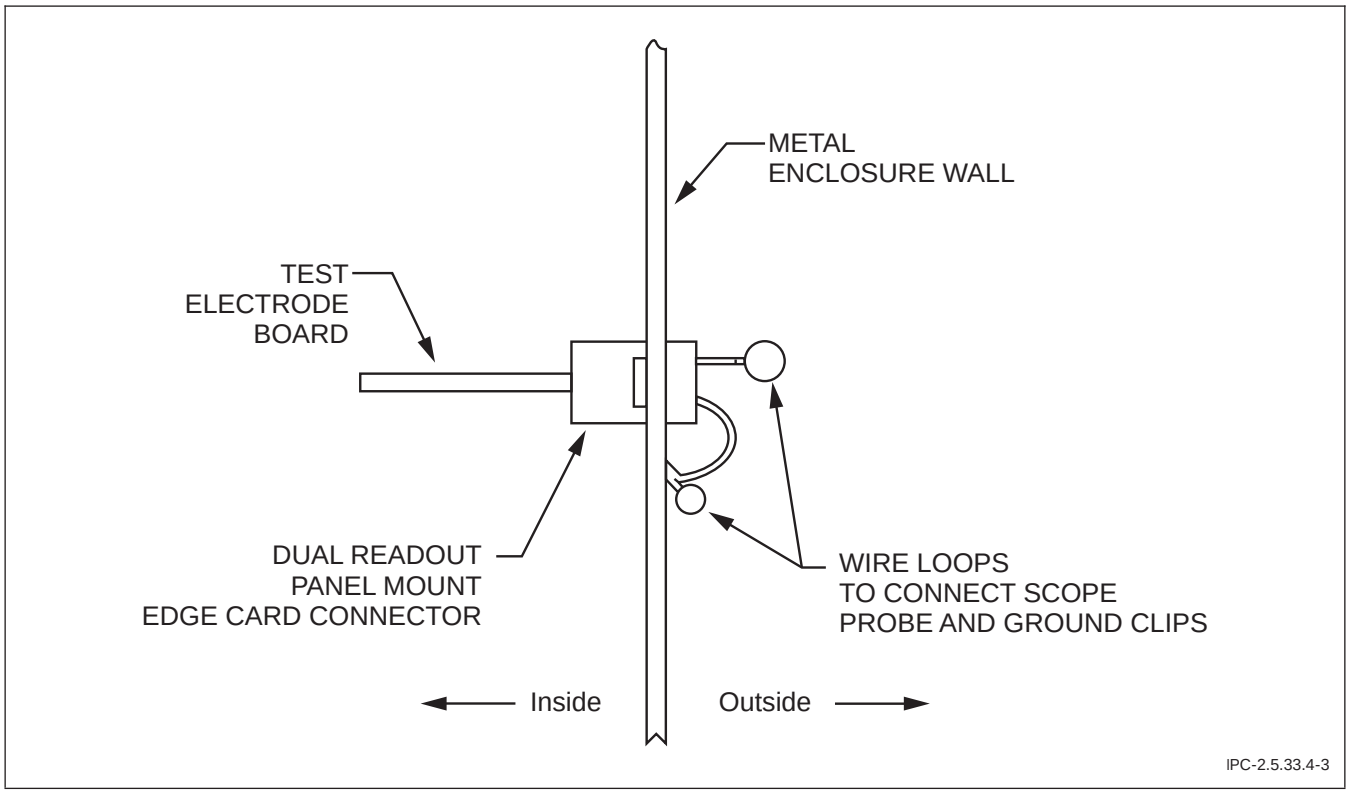

Figure 3 Test Electrode Mounting Suggestion