



How to test bonds » Lead integrity » MIL-STD-883 method 2004.7 lead integrity

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1. PURPOSE

This test is designed to check the lead plating of flexible and semi-flexible leads which might reasonably be expected to occur from a lead form operation.

Note: Additional plating adhesion accept/reject criteria may be flowed down by the specified plating specifications.

2. APPARATUS

Attaching devices, clamps, supports, or other suitable hardware necessary to apply the bending stress through the specified bend angle.

3. PROCEDURE

Each flexible or semi-flexible lead to be tested shall be subjected to a 90° bend. Any number or all of the leads of the test device may be bent 90° simultaneously. Each lead shall be bent 90° in one direction in the same plane without lead restriction. Leads may be bent 90° by performing a lead form operation.

1. Direction of bend

Test leads shall be bent in the normal lead form configuration.

2. Procedure for pre-formed leads

When normally straight leads are supplied in a pre-formed condition, then this test condition shall not apply.

3. Procedure for flexible and semi-flexible leads (e.g., flat packs and axial-lead metal-can devices)

1. Flexible leads

Flexible leads shall be bent in the middle of the lead through an arc of at least 90°, unless otherwise specified.

2. Semi-flexible leads

Semi-flexible leads shall be bent in the middle of the lead through an arc of at least 90°, unless otherwise specified.

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XYZTEC Netherlands

J.F. Kennedylaan 14-B
5981 XC Panningen
Netherlands ([map / route](#))
Tel: +31-77-3060920
Fax: +31-77-3060919
sales@xyztec.com
support@xyztec.com

Other offices

- Germany
- Taiwan
- Thailand
- United Kingdom
- USA: California
- USA: Massachusetts
- [Distributors](#)

Bond testers

- Condor *Sigma*
- Condor *Sigma Lite*
- Condor *Sigma W12*
- Condor *150HF*

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4. Failure criteria

When examined using magnification between 10X and 20X after removal of the stress, any cracking of the lead plating which results in flaking, peeling or blistering or the crack can be peeled back with a sharp instrument (i.e. knife) shall be rejected.

4. SUMMARY

The following details shall be specified in the applicable acquisition document:

- a. Bending arc, if other than that specified.
- b. Procedure, if other than that specified.
- c. Number and selection of leads and procedure for identification, if other than that specified.



XYZTEC designed a special work holder for lead integrity testing. It is available for the Condor Sigma and Condor Classic platforms. Shown here is the Condor Sigma version.

End of 2004.7

Previous page: Test condition D - Solder pad adhesion for leadless chip carrier and similar devices

XYZTEC Netherlands

J.F. Kennedylaan 14-B
5981 XC Panningen
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