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**General Requirements for Testing**

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**1. SCOPE****1.1. Content**

This specification covers the general requirements for testing, unless otherwise specified in the referencing documents. The contents of this specification comply with the latest editions of EIA 364-18 and IEC 60512-1.

**1.2. Applicable Documents**

The following documents form a part of this specification to the extent indicated herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the reference document, the reference document shall take precedence.

**A. Tyco Electronics Specifications**

- 102-4: Quality Specification (Gage/Instrument Calibration Control, Procedure For)
- 123 Series Environmental Specifications, as applicable

**B. Commercial Documents**

Material Safety Data Sheets (MSDS), as applicable

**2. TEST CONDITIONS****2.1. Room Ambient Atmospheric Conditions**

Measurements shall be made within the following room ambient atmospheric conditions:

- Temperature: 15 to 35°C
- Atmospheric Pressure: 650 to 800 Torr (mm of mercury)
- Relative Humidity: 25 to 75%

**2.2. Standard Conditions**

When measurements are mathematically corrected to a standard condition the following shall apply:

- Temperature: 20°C
- Atmospheric Pressure: 760 Torr (mm of mercury)
- Relative Humidity: 50%

**3. SAFETY AND HEALTH**

Do not perform tests involving hazardous materials or equipment unless the operator is fully trained in handling hazardous materials and knowledgeable of the appropriate precautions necessary to handle these materials and equipment. Appropriate safety and health representatives should be consulted for any other prerequisites or proper procedures prior to performing such tests. The safety and environmental procedures to observe, include, but are not limited to, the following items:

- MSDS which meet the minimum requirements of the OSHA Hazard Communication Standard have been obtained for all chemicals used both in cleaning and testing.

- The operator has reviewed the MSDS and becomes familiar with appropriate precautions for handling corrosive and toxic materials.
- All necessary safety equipment is available including a properly functioning, well lighted fume hood, eyewash station/ shower, large sink with running water, acid resistant gloves and apron, chemical goggles and acid spill kit.
- All chemicals have been properly labeled and stored in accordance with OSHA and EPA Regulations.
- Arrangements for proper storage and disposal of chemicals have been made in accordance with 123 Series Environmental Specifications.
- Always wear safety glasses when soldering. When working with the tensile machines and other places where there is a possibility of flying objects or spattering coverall goggles shall be worn.
- Use ear protection when entering the vibration room when the vibration shaker is operating.
- Report broken equipment and tools to the supervisor immediately for repair or replacement.
- Anyone working with any type of hazardous testing should isolate the area by utilizing safety ropes and stands when not in a dedicated room.
- When using equipment which generates heat, be certain that adequate ventilation is available to prevent damage to equipment and also reduce the possibility of fire hazards.
- Testing that involves high temperatures, such as current overloads, shall be suspended in air or placed on a piece of heat and fire resistant material (not asbestos).
- When working with exposed circuits greater than 50 volts, the area shall be isolated and warning signs posted. There shall be additional personnel in the immediate area.
- If after reviewing and providing for the above items there are any questions, contact your immediate supervisor.

#### 4. INSTRUMENTATION CALIBRATION REQUIREMENTS

Calibration system shall conform with the requirements of Quality Specification 102-4. Accuracy of instruments and test equipment used to control, measure or monitor test parameters shall be verified. Calibration standards shall be traceable to the National Institute of Standards and Technology (NIST).

#### 5. EXAMINATION OF PRODUCT

When initial and final examination of product is specified in the Product Specification or referencing document, the criteria indicated herein shall apply.

##### 5.1. Description

###### A. Visual Inspection

All visual inspection shall be performed by the unaided eye, corrected to normal vision. The use of magnification, polarized light, or other indications are not permitted, unless explicitly required by the referencing document. Visual inspection shall include inspection of the following features as a minimum as applicable.

- Workmanship
- Marking
- Finish
- Color (comparison with applicable color standards or specimens)
- Evidence of roughness, grooves, waves, scratches, furrows, holes, pores, depressions, crests, scales, cracks, burrs, flash, etc.
- Foreign material in and on the surface
- Loosened and detached parts

B. Dimensional Inspection

Dimensional inspection shall be performed using suitable measuring tools and measuring equipment having an accuracy of at least  $\frac{1}{4}$  the tolerance for the variable being measured. Dimensional inspection shall include compliance to the outline dimensions indicated on the Customer Drawing, or a Certificate of Conformance accompanying the specimens.

5.2. Requirements

A. Initial Examination of Product

Initial examination of product shall consist of visual inspection per paragraph 5.1.A. and dimensional inspection per paragraph 5.1.B.

B. Final Examination of Product

Final examination of product shall consist of visual inspection only per paragraph 5.1.A.

**6. DOCUMENTATION**

Test documentation shall contain a minimum of the following:

- Title of test
- Specimen description
- Test equipment used and date of calibration if not internally traceable
- Fixturing, if any
- Data
- Room ambient temperature and humidity where applicable
- Observations
- Test procedure used
- Name of operator
- Date of test