

INSPECTION IN-PROCESS AND FINAL QUALITY ASSURANCE

1.0 SCOPE:

The purpose of this procedure is to document mandatory inspection points and to ensure compliance to Project Requirements.

2.0 REFERENCE DOCUMENTS:

NHB 5300.1 (3A-1) Requirements for Soldering Electrical connections.

NHB 5300.4 (3G) Requirements for Interconnecting Cables, Harnesses and Wiring.

NHB 5300.4 (3H) Requirements for Crimping and Wire Wrapping.

NHB 5300.4 (3J) Requirements for Conformal Coating and Staking of Printed Wiring Boards and Electrical Assemblies.

MIT DOCUMENTS:

99-01003 Electrostatic Discharge (ESD), handling of Parts and Equipment.

99-02003 Calibration Procedure for Measuring and Test Equipment.

Applicable drawing, at the current revision.

C.S.R.Procedures, if listed on the drawing.

Applicable Assembly Work Order (AWO).

Applicable Configuration Tracability List.

Applicable schematic.

3.0 INSPECTOR REQUIREMENTS:

Current certification in the following: NHB 5300.4 (3A1), (3G), (3H), (3J) and Rework Repair and Modification.

Training in Electrostatic Discharge MIT #99-01003

4.0 TOOLS:

Microscope, 3x to 10x.
Vernier, calibrated.
ESD Station and strap
Meter, calibrated
U.V. light

5.0 GOVERNMENT SOURCE INSPECTION:

The Government has the right to inspect any part, subassembly, or contract end item. The Government representative shall be given 48 hours advanced notice, before material is ready for inspection.

6.0 QUALITY ASSURANCE:

Visual inspections (100%) are mandated by NASA.
Acceptance is dependent on all of the following:

6.1 GENERAL:

Verify that the Assembly Work Order (AWO) has been signed by three managers.

Verify that the AWO accompanies the assembly being inspected.

The assembly must be done in the correct sequence.

A supervisor's approval is required to **skip** a step.

6.2 IN PROCESS INSPECTION:

6.2.1 ELECTRONIC PARTS:

Assure that each part is correctly identified, reference the Configuration Tracability List.

An incorrect or damaged part shall be returned to Bonded Stock for replacement, using the Return Policy Form.

Verify that all polarities are correct. Refer to the drawing.

Assure the project's requirements of NHB 5300.4 (3A1) and NHB 5300.4 (3J), including, but not limited to tinning, gold removal, mounting, lead form, stress relief, solder, cleanliness, staking and conformal coat, are satisfied.

6.2.2 MECHANICAL HARDWARE:

Assure that hardware is correct. Refer to Configuration Tracability List.

Incorrect or damaged hardware shall be returned to Bonded Stock for replacement, using the Return Policy Form.

Verify that torque tools are calibrated, per 99-02003.

Parts shall be torqued before soldering, per AWO.

6.2.3 CABLES:

Verify correct wire, contacts & connectors, per the CTL.

Wrong or damaged parts shall be returned to Bonded Stock for replacement, using the Return Policy Form.

To assure compliance with NHB 5300.4 (3G) & (3H) verify all of the following (where applicable):

All strands are free of damage, refer NHB 5300.4 (3A1).

Tinning, gold removal, and solder meet NHB 5300.4 (3A1).

Crimp is correctly located, per NHB 5300.4 (3H).

Crimp is indented correctly, per NHB 5300.4 (3H).

Crimp tool, meter and pull tester are calibrated.

Verify that Destructive Pull Tests were performed and recorded. Record the force and locations of each break in the Tensile Test Log.

Refer to Drawing and NHB 5300.4 (3H) for marking criteria.

Verify connections using a meter and schematic.

All connector pins shall be push tested to assure proper seating into the connector body, refer NHB 5300.4.

7.0 DISCREPANCIES:

Any deviation from either the AWO, Drawing or the NASA criteria shall be discussed with the technician and fabrication supervisor.

7.0.1 PROCEDURE:

If a discrepancy is caused by a change to the process, the AWO must be revised. Affix a red rejection stamp to the Fault Log, until a change has been made. A blue stamp shall interlock the red stamp upon acceptance, date.

7.0.2 SPECIFICATION:

If a discrepancy is a deviation from the Drawing or any of the specifications, affix red rejection stamp to the Fault Log, date, and proceed to 7.1, or 7.4 as applicable.

7.1 REWORK AUTHORIZED:

Rework shall be done in accordance with the AWO and applicable Drawings and Specifications.

7.2 SUCCESSFUL REWORK:

On completion of rework, part will be re-inspected. All MIT and NASA requirements must be satisfied. Blue acceptance stamp must interlock the red rejection stamp, date.

7.3 UNSUCCESSFUL REWORK:

In the event of unsuccessful rework, this shall be indicated on the Fault Log, also on MIT's Non Conforming Material's Report #99-02004. Notify the Q.A. Manager or the Project Manager, as to the need for dispositioning of the part.

7.4 REWORK DECLINED:

If the Fabrication Supervisor declines rework, initiate MIT #99-02004, Non Conforming Material Report. The Q.A. Manager or Project Manager shall be informed, as to the need for dispositioning of the part.

7.5 MATERIAL REVIEW BOARD:

Parts shall be segregated in a locked cabinet, pending the decision of the MRB.

Parts shall be processed according to the decision of the Material Review Board. These parts do not have to meet the NASA criteria. Specific conditions may be allowed by MRB that would not be approved under ordinary circumstances..

The NMR will be closed out, accordingly.

The AWO will be updated to reflect the board's action.

Blue acceptance stamp shall interlock with red, if determined that the part may be used as is, or that the repair meets the specific criteria of the MRB.

8.0 FINAL INSPECTION:

Assure that the AWO is completely filled out.

Assure that the AWO mixing log (for chemicals) is complete.

Assure that the mate/demate log is complete, reference NHB 5300.4.(3H).

Assure that any.E.C.O.'s have been incorporated.

Assure that all fault log items have been satisfied.

Assure that all parts are correct, per drawing.

Assure that all parts shows no sign of damage.

Affix a blue acceptance stamp and date to the AWO.