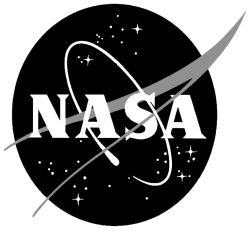
National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland
20771



Reply to Attn of: 300 February 25, 2010

TO: Brian Hughitt, Manager Quality Assurance, OSMA, NASA HQ

FROM: Jeannette Plante, Manager NASA Workmanship Standards Program, Code 300, NASA GSFC

SUBJECT: Recommendation to Adopt J-STD-001DS.1 for NASA Soldering

The NASA Workmanship Standards Program has confirmed that the IPC J-STD-001DS.1, Joint Industry Standard, Space Applications Electronic Hardware Addendum to J-STD-001D Requirements for Soldered Electrical and Electronic Assemblies, contains a requirements set that meets or exceeds that provided by both NASA-STD-8739.2, Workmanship Standard for Surface Mount Technology, and NASA-STD-8739.3, Soldered Electrical Connections. The Program has also confirmed that the training courses offered by the IPC* for the J-STD-001DS.1 meet NASA's needs for soldering operator, inspector, and local trainer certification. The Workmanship Standards Program recommends that the J-STD-001DS.1 be adopted with the caveats shown below, and that NASA-STD-8739.2 and NASA-STD-8739.3 are retired for new Programs and Projects. The Workmanship Program also recommends that the caveats shown below are written into the NASA Quality Policy, NPD 8730.5, in order to ensure that these conditions are flowed down to applicable contracts and subcontracts. The recommendation and caveat language has been coordinated with all members of the NASA Workmanship Standards Technical Committee and has unanimous concurrence.

Recommended language for addition to NPD 8730.5:

1. Section 4 REFERENCES.

Change: h. NASA-STD-8739.2, Workmanship Standard for Surface Mount Technology.
i. NASA-STD-8739.3, Soldered Electrical Connections.

To: h. IPC J-STD-001DS Amendment 1, Space Applications Electronic Hardware Addendum to J-STD-001D Requirements for Soldered Electrical and Electronic Assemblies
i. Not used.

2. ATTACHMENT A, paragraph 3.b.

Change: b. Electrical, electronic, and electromechanical parts workmanship standards (see paragraphs 4.g through 4.l of this NPD).

To: b. Electrical, electronic, and electromechanical parts and workmanship standards (see paragraphs 4.g through 4.l of this NPD).

(1) The applicable version of reference 4.h of this NPD shall be that which has been most recently released and published by the IPC regardless of the fact that the "D Amendment 1" revision is specifically named here.

(2) Chapter 10 of reference 4.h shall not apply. Reference 4.g shall take precedence for all polymeric applications Workmanship requirements.

- The reason for this caveat is to allow the use of the soldering requirements contained in reference 4.g while providing additional time to ensure that all critical requirements of NASA-STD-8739.1 are adequately represented in reference 4.g and that practicum training in polymeric applications is made available.

(3) Workmanship instructors, operators, and inspectors must be certified by the supplier. The minimum requirements for operator, inspector, and instructor certification are:

a. For operators and inspectors only: successful completion of a NASA-approved training program which is repeated biennially.
b. For instructors only: IPC CIT (certified IPC trainer) certification which is repeated biennially. IPC MIT (certified master IPC trainer) certification is also acceptable.
c. Vision screening (see (4) below) which is repeated biennially.
d. Continuous competency.
e. For operators and inspectors only: continuous occupation. Continuous occupation is defined as having a gap in activity of no more than 6 months without a reassessment of competency either through retraining or supervisor assessment.

(4) Both the IPC Modular and non-Modular training courses for the J-STD-001DS are considered NASA-approved training courses, either of which can be used to satisfy the requirement of (3)a. above for all Programs and Projects. Suppliers are responsible for determining how they will meet the training requirement for operators and inspectors; whether through the IPC course offerings or through a locally developed training program. The supplier certification records shall include the training program used and latest date of successful completion of training. IPC training certifications will not be accepted as direct substitutes for supplier personnel certifications.

(5) Programs and Projects shall establish requirements for review and approval of the use of operator and inspector training programs other than those offered by the IPC named in (4) above. Suppliers shall be required to make the training program available for review.

(6) Vision screening shall consist of:

a. Far Vision. Snellen Chart 20/50.

b. Near Vision. Jaeger 1 at 355.6 mm (14 inches), or reduced Snellen 20/20, or equivalent

c. Color Vision. Ability to distinguish red, green, blue, and yellow colors as prescribed in Dvorine Charts, Ishihara Plates, or AO-HRR Tests

These tests shall be conducted by a certified ophthalmologist or optometrist, or a technician certified by an ophthalmologist or optometrist to be able to successfully perform these tests and evaluate results.

(7) Legacy Program, Project, and Contract requirements that invoke NASA-STD-8739.2 and NASA-STD-8739.3, by virtue of their predating the "A" (dated 2010) revision of this policy, may allow the use of the J-STD-001DS.1 with all of the caveats stated in this section (section ATTACHMENT A, paragraph 3.b.) without waiver. New Programs, Projects, and Contracts established after publication of the "A" revision of this policy must apply J-STD-001DS.1 with all of the caveats stated in this section instead of NASA-STD-8739.2 and NASA-STD-8739.3. Use of NASA-STD-8739.2 and NASA-STD-8739.3 on new Programs, Projects, and Contracts shall be allowed only by waiver approval.

* IPC is a registered trademark name for the industry association formally called IPC — Association Connecting Electronics Industries (reference www.ipc.org).