2.2.1 Cleaning, Local

Printed Board Type: R/F/W/C
Skill Level: Intermediate
Conformance Level: High
Revision: E
Revision Date: May 8, 2001

OUTLINE
Surface contaminants can significantly effect soldering, bonding, coating and the electrical characteristics of printed board and assemblies. This procedure outlines the cleaning methods for circuit boards and assemblies.

ACCEPTABILITY REFERENCES

IPC-A-610 7.0	Cleanliness

PROCEDURE REFERENCE

1.0	Forward
2.1	Handling Electronic Assemblies
IPC7721 2.2	Cleaning

NASCWPNS Final report for NON-ODS cleaning of electronics and avionics report of October 1, 1995.

LIMITATIONS

1. The ability of solvent based cleaning solutions to remove flux residue containing polyglycols should be assessed since not all solvent based cleaning solutions will remove polyglycols.

2. A deionized water rinse should follow IPA/DI cleaning except that a water rinse for double sided circuit boards with plated through holes may not be required.

3. Potable (drinking) water should not be used as a final rinse due to the potential of contaminating the circuit board assembly with chlorine, fluorine and halides.

4. When automated cleaning is used for assemblies that have been conformally coated, it is important that the cleaning process is compatible with the type of coating used and with any unsealed components. The coating should be checked to ensure that the coating will not be degraded by the cleaning process.

TOOLS & MATERIALS
Black Light
Brushes
Cleaner, Aqueous or Semi-Aqueous
Containers
Gloves
Isopropyl Alcohol (IPA)
Oven
Wipes

PROCEDURE

CAUTION
Use clean gloves during this entire operation.

NOTE
To reduce solvent volumes, mixtures of IPA with water and IPA with solvent are available in pressurized containers. The propellants are HFC's. These containers may be fitted with a bristle brush spray attachments for additional cleaning action.

1. Clean the board in an Aqueous or Semi-Aqueous cleaner, or pour approximately 10 ml per 4 square inches of effected area.

2. Scrub the board vigorously with a continually wet soft bristle brush for 10 seconds.

Related Information
- Base Board Repair and Rework
- BGA Component Rework and Site Modification
- Circuitry and Plated Hole Repair
- Coating and Marking Rework
- Engineering Changes including Jumper Wires
- Gold Edge Contact Repair and Replating
- SMT and BGA Pad Repair
- SMT and Through Hole Component Rework

3. Rinse the area with 10 ml per 4 square inches of clean Isopropyl Alcohol to effectively remove all potentially harmful residues.
4. Handle the board by the edges and blot the excess Isopropyl Alcohol with clean, lint free cloth
5. Examine board visually for cleanliness. The use of a black light will help detect contaminants that will fluoresce.
6. Dry boards in oven, if desired.
7. If the boards or assemblies are to be stored before use or coating, remove them from the oven and allow to cool until they can be handled. Place the boards or assemblies into self sealing bags with packages of desiccant.

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