



Build quality and enhance communication with this comprehensive program ...

IPC-A-600

Acceptability of Printed Boards Training and Certification Program

For years, IPC-A-600 has set the standard for PCB workmanship quality with its comprehensive acceptance criteria for target, acceptable and nonconforming conditions on bare printed boards. PCB manufacturers and assemblers alike rely on this internationally recognized document to improve their understanding of printed board quality issues as well as help enhance communication with their suppliers and customers. This makes IPC-A-600 one of the most widely used standards ever published by IPC, and a natural choice for certification.

Photo courtesy of
Electronics Yorkshire

Choose from Two Tiers of Instruction

- **Certified IPC Application Specialist (CIS)** training focuses on what line workers, operators, inspectors, engineers and buyers need to know to inspect or make acceptance/rejection decisions regarding bare boards. Course fee covers: classroom training and an exam, a copy of the standard and certification.
- **Certified IPC Trainer (CIT)** training provides expanded information and materials to prepare individuals to deliver Certified IPC Application Specialist (CIS) training. Trainers and quality supervisors are excellent candidates for instructor training, as are engineering and manufacturing supervisors. Course fee covers: classroom training and an exam, certification and comprehensive materials for preparing and delivering CIS training.

Why earn IPC-A-600 certification?

Certification in this industry-developed and approved IPC program helps build your employees' understanding of critical quality assurance/visual acceptance criteria for unpopulated printed circuit boards. In addition, it shows your customers that your company is committed to continuous improvement of its operations and product quality. Both the CIT and CIS programs provide individuals with a portable credential that represents their understanding of IPC-A-600.

Training Modules

CIT training prepares the instructor to teach all of the CIS modules. However, in CIS training only Module 1 is a required element. Other modules may be covered based on your company's specific needs.

- Printed board product classifications and acceptance criteria
- Base material surface and subsurface conditions, such as measling/crazing
- Solder resist coverage over conductors and registration to lands
- Conductor width and spacing and annular ring requirements
- Dielectric material criteria for etchback, voids and resin recession
- Plated-through hole requirements for copper plating thickness, voids, nodules and cracks
- Acceptance criteria for flexible, rigid-flex and metal core printed boards

CIT Program Extras

To help assure CIT candidates' future success as trainers, the CIT program also includes:

- How to establish and maintain the integrity of the certification program
- Steps to effectively use the lesson plan and materials
- Tips on inspection
- Essential trainer skills

Training materials provided to CITs include:

- Instructor guide with lesson plans, reference material and training guidance
- A printed board sample showing external characteristics, such as conductor width, conductor spacing, annular ring and solder resist registration
- A copy of IPC-A-600, *Acceptability of Printed Boards*, plus IPC-A-6012, *Qualification and Performance Specification for Rigid Printed Boards*
- Written tests with answer keys
- A CD-ROM with visual aids and electronic copies of training-support forms



Photo courtesy
of PIEK

Make an investment in continuous improvement and quality enhancement today — with the **IPC-A-600, Acceptability of Printed Boards Training and Certification Program!**

"It has always been difficult for inspectors to identify anomalies associated with bare printed circuit boards, especially those who are unfamiliar with the bare board manufacturing process. The worst thing a company can do is accept defective product because of ignorance, and then place valuable components on a defective board only for it to fail in the end. Through IPC-A-600 certification, our employees have a clear understanding of the criteria so they can make the correct accept and reject decisions. They also know the correct technical language for communicating their findings to each other and to their superiors, vendors or customers. Knowledge is very powerful — both for the individual and for the company's bottom line."

Julia Markardt, CIT
Technical Trainer
Harris Corporation

"Having credentials that support our staff's ability to accurately assess whether fabs are acceptable or not is helpful for audit purposes, but certification has many other benefits. Through IPC-A-600 certification, we can ensure that people throughout key support areas have the knowledge they need to properly assess material up front. This leads to several opportunities for cost savings: It reduces the need for engineering support on acceptable product; allows us to focus on improving timelines for material requiring rework; and, because the material is moving in a more timely manner, lets us address financial recovery in vendor-fault situations before the defective material is out of warranty. In addition, it helps decrease WIP cycle times by allowing prompt and accurate assessments."

Steve Tomosvary
Supplier Quality Engineer
Celestica International Inc.