

IPC MARKET RESEARCH

Study of Quality Benchmarks for the Electronics Assembly Industry 2019



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Strengthening & Advancing Electronics Manufacturing Globally



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***Detailed results include demographics, averages, medians (50th percentile), 25th percentile and 75th percentile data. Each set of detailed results includes the subjects listed on the following two pages.**

MEASUREMENTS COVERED IN THIS STUDY

Production

- Percent of components placed that were:
 - SMT
 - PTH
- Inventory accuracy as a percent of components on hand:
 - SMT components
 - PTH components
- Product types produced (percent of responding companies)

Quality Control

- Percent of products utilizing assembly inspection methods:
 - Automated optical inspection (AOI)
 - Automated x-ray inspection (AXI)
- Percent of products utilizing electrical assembly test methods:
 - In-circuit test (ICT)
 - Manufacturing defects analyzer (MDA)
 - Flying probe
 - Boundary scan
 - Final functional test
- Average first-pass yields:
 - In-circuit test (ICT)
 - Manufacturing defects analyzer (MDA)
 - Flying probe
 - Boundary scan
 - Final functional test or final inspection
- Average yields at final inspection
- Internal yields of key processes:
 - Surface-mount
 - Wave solder
 - Selective solder
- Defect rate in defects per million opportunities (DPMO):
 - At testing
 - At final inspection
- Facility's yield or DPMO targets
- Percent of companies utilizing selected quality control methods
- Frequency with which companies evaluate SPC control limits
- Average cost of poor quality (COPQ) as a percent of gross sales:
 - Rework
 - Scrap
- Percent of responding OEMs that use or accept reworked boards
- Percent of responding EMS companies' customers that accept reworked boards

Customer Satisfaction

- Measurement system in place to assess the customer satisfaction (percent of responding companies)
- Rate of customer returns in parts per million (PPM)
- Rate of customer-returned items that failed as percent of units shipped:
 - Zero KM (Infant mortality, dead on arrival)
 - Within 1-year warranty
 - After 1 year
- Average rate of on-time deliveries to customers



Supplier Performance

- Track supplier performance (percent of responding companies)
- Percent of on-time deliveries from PCB suppliers
- Percent of on-time deliveries from component suppliers
- Lot reject rate as a percent of orders received from suppliers

Certification

Percent of responding companies that have received, are in process of obtaining, and have no plans to obtain the following certifications:

- ISO 9001
- ISO 14001
- ISO 13485
- AS 9100
- IATF 16949
- TL 9000
- QSO 80000
- FDA 820 registration
- ITAR
- UL safety certification
- IPC Qualified Manufacturer List (QML)
- IPC Qualified Product List (QPL)
- Others