Study of Quality Benchmarks for the Electronics Assembly Industry 2019

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Strengthening & Advancing Electronics Manufacturing Globally

TABLE OF CONTENTS

*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