

13004 Defect Prevention Tools

Background

This 2-day course introduces the key defect prevention tools required to support Advanced Product Quality Planning (APQP) and the Production Part Approval Process (PPAP) in the aerospace industry. Based on the 13004 reference manual, the course covers how to effectively use Process Flow Diagrams, PFMEAs, Control Plans, and Reference PFMEAs to improve product quality, reduce risk, and meet customer and regulatory requirements.

Learning Objectives

By the end of the course, participants will be able to:

- Understand the purpose and role of defect prevention tools within APQP and PPAP.
- Apply the principles of PFDs, PFMEAs, Control Plans, and Characteristics Matrices.
- Use Reference PFMEAs to streamline the creation of part-specific PFMEAs.
- Build Control Plans directly from risk-based analysis.
- Recognise best practices and common challenges in tool deployment.
- Align defect prevention efforts with AS13100 and AS9145 expectations.

Agenda

Day 1

- Introduction to Defect Prevention & APQP
- Overview of Quality Tools
- Design FMEA & its Link to PFMEA
- Process Flow Diagrams & Characteristics Matrix
- Process FMEA – Structure & Risk Scoring

Day 2

- Reference PFMEAs – Creation & Usage
- Control Plans – From PFMEA to Shop Floor
- Case Studies & Practical Applications
- Common Pitfalls & Lessons Learned
- Q&A, Summary & Next Steps

Additional Information

- Duration: 2 Days
- Format: Trainer-led (in-person or virtual)
- Audience: Engineers, Quality Teams, Project Managers
- Standards: RM13004, AS13100, AS9145, AS9100