

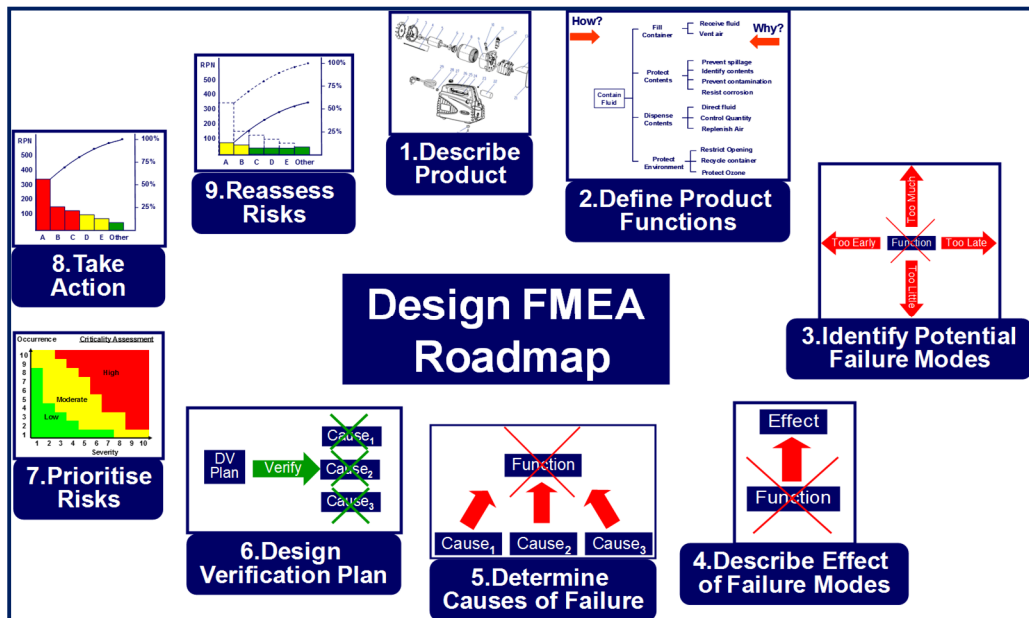


## Design Failure Mode and Effects Analysis (DFMEA)

### Learning Objectives

At the end of this course you will be able to:

- Recognise the need to prevent problems rather than react to them
- Conduct an FMEA on a new design to identify potential problems
- Prioritise potential problems using the Criticality and Risk Priority Number
- Use the Design FMEA to develop a Design Verification Plan
- Understand the need to implement corrective actions to mitigate risk
- Recognise the differences between Design FMEA and Process FMEA



### 9.00 Start

Introduction to FMEA

- purpose
- timing and applicability
- outputs

Step 1: Describe the product

- Project scope (Boundary Diagram)
- Historical information (past FMEAs, product failures etc)
- Current information

Workshop 1 – Boundary diagram

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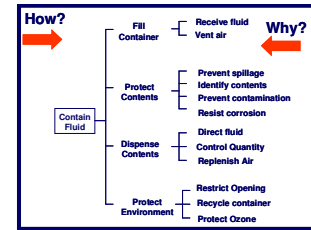
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Step 2: Define product functions

- Verb + Noun structure
- How/Why function tree

**10.30 Coffee (20 minutes)**

Workshop 2 – Function Tree



**2. Define Product Functions**

Steps 3 & 4: Failure modes and effects

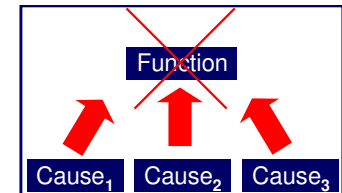
- Identify Potential Failure Modes (Failure to function)
- Identify Effects of Failure
- Rank severity of effect (Severity rating)

Workshop 3 – Failure modes and effects

**12.30 –13.15 Lunch**

Step 5: Cause of failure

- Identify Potential Causes of Failure
- Rank likelihood of cause (Occurrence rating)

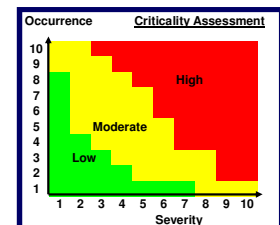


**5. Determine Causes of Failure**

Workshop 4 – Cause of failure

Steps 6 & 7: Design verification Plan and prioritise risks

- Identify methods to prevent cause
- Identify methods to detect cause/failure
- Rank effectiveness of design verification (DV rating)
- Prioritise risks using criticality and Risk Priority Number



**7. Prioritise Risks**

Workshop 5– Design verification

**15.00 Coffee (20 minutes)**

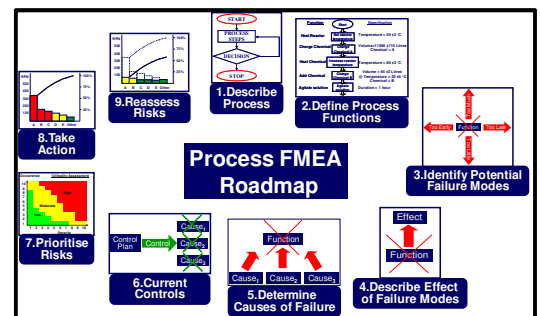
Steps 7 & 8: Act and Reassess risks

- Identify actions (before product release) to reduce risk
- After action taken review ratings

Workshop 6 – Action to reduce risk

Overview of Process FMEA

- Steps in process FMEA
- Key differences to DFMEA
- Process controls replace Design Verification



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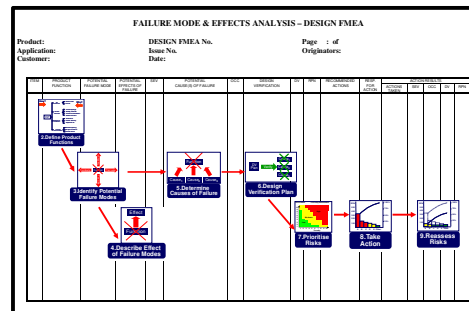


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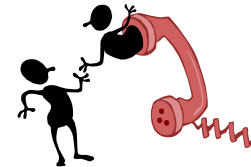
## Implementing FMEA

- Who should conduct the FMEA?
- When should the FMEA start/finish?
- Key success factors
- Common mistakes

## 17.00 Close



The course can be organised to focus more on Process (PFMEA) or Design (DFMEA) depending upon the client requirements. The training can also be extended to allow more time to work on company applications.



This course is supported by our free telephone/email helpline.

Some feedback from previous FMEA courses:

*"Very good training"*

*"Excellent instructor, made the content interesting"*

*"Clear, good facilitation of workshops"*

*"Very useful and will be used"*

*"Easy to follow, good examples, an enjoyable course"*

*"Very well facilitated training"*

*"Thorough and concise with definitions and examples"*

*"Clearly instructed, use of workshops proved useful to get practical experience of applying the FMEA first hand (simple examples)"*

*"Good course, failure investigation discussion was valuable"*

*"Very useful course, participation aided learning"*

*"Great training thanks"*

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