

PROCESS FAILURE MODE AND EFFECTS ANALYSIS (PFMEA) AIAG & VDA

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AIAG & VDA PFMEA Seven-Step Approach



Risk analysis is an important step in the product development process to ensure safety. The THORS *Process Failure Mode and Effects Analysis (PFMEA) AIAG & VDA* course equips the learner with the knowledge needed to develop a PFMEA to optimize a process using the seven-step approach. This visually engaging and interactive course also explains the various FMEA types, PFMEA assumptions, PFMEA levels, and PFMEA maintenance along with a case study illustrated by a real-world scenario.

Credit Hours **2.0**

Learning Objectives

- Identify the objectives and benefits of the AIAG & VDA PFMEA methodology.
- Explain the FMEA types, PFMEA assumptions, and PFMEA levels.
- Illustrate the seven-step approach to developing an AIAG & VDA PFMEA.
- Understand the various elements of a PFMEA template.
- Define the steps for PFMEA maintenance.
- Apply real-world industrial scenarios to create a PFMEA using the seven-step approach.

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 - Step 4: Failure Analysis
 - Step 5: Risk Analysis
 - Step 6: Optimization
 - Step 7: Results Documentation...

I. PFMEA Development Process (continued)

- PFMEA Template
 - Records Retention
 - PFMEA Maintenance
- ### II. Case Study
- Step 1: Planning and Preparation
 - Step 2: Process Structure Analysis
 - Step 3: Function Analysis
 - Step 4: Failure Analysis
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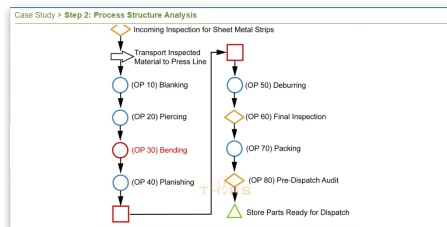
PFMEA Development Process > PFMEA Seven-Step Approach > Step 5: Risk Analysis > Risk Evaluation > Severity (5)

Severity rank is selected based on the severity effect on the following:

- The possible effect on the end user
- The possible effect on the user at the shop-to-plant or customer's plant
- The possible effect on any subsequent manufacturing operations in the plant

Note: The severity ranking table is a common ranking table widely used by manufacturing industries. This table can be modified to best suit the customer requirements.

5	Effect	Impact to Your Plant	Impact to Shop-to-Plant (When Known)	Impact to End User (When Known)
10	High	Failure may result in an acute health risk, safety risk, or a combination of both, for the manufacturing or assembly worker.	Failure may result in an acute health risk, safety risk, or a combination of both, for the manufacturing or assembly worker.	Affects safety operation of the vehicle, other vehicles, or a combination of both, the health of the driver or passenger or road user or pedestrians.
9		Failure may result in an in-plant regulatory non-compliance.	Failure may result in an in-plant regulatory non-compliance.	Results in non-compliance with regulations.
		100% of production run affected.	Impacts include line shutdown greater than full production shift, ship shipment possible, field issue or rework/shipment required.	



STEP 7: RESULTS DOCUMENTATION

Step 2: Structure Analysis		Step 3: Function Analysis		Step 4: Failure Analysis	
Process Step	Process Step Element	Function of the Process Step	Product Characteristics	Failure Effects (FE)	Process Mode and Priority Step
Blanket Production Line	Operator 30 Blanking Machine 60 mm diameter 60 mm	Operator 30 Blanking Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line
	Operator 20 Piercing Machine 60 mm diameter 60 mm	Operator 20 Piercing Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line
	Operator 30 Bending Machine 60 mm diameter 60 mm	Operator 30 Bending Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line
	Operator 40 Planishing Machine 60 mm diameter 60 mm	Operator 40 Planishing Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line
	Operator 50 Deburring Machine 60 mm diameter 60 mm	Operator 50 Deburring Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line
	Operator 60 Final Inspection Machine 60 mm diameter 60 mm	Operator 60 Final Inspection Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line
	Operator 70 Packing Machine 60 mm diameter 60 mm	Operator 70 Packing Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line
	Operator 80 Pre-Dispatch Audit Machine 60 mm diameter 60 mm	Operator 80 Pre-Dispatch Audit Machine 60 mm diameter 60 mm	Blanket Production Line	Blanket Production Line	Blanket Production Line



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