What is 8D?

8D
(Eight Disciplines) is a method used to identify, correct, and eliminate chronic problems and recurring deviations

- Uncover the issues related to a particular problem
- Design an intervention plan
- Evaluate the outcome
- Implement permanent and lasting corrections
- Works best in teams tasked with solving a complex problem with identifiable symptoms

Critical to eliminating deviations and improving customer satisfaction

Components of 8D

D0 Go see and capture issue and Voice of the Customer

D1 Plan & build the appropriate team

D2 Describe & define the problem

D3 Identify and implement a temporary fix to the problem

D4 Identify and eliminate the root cause

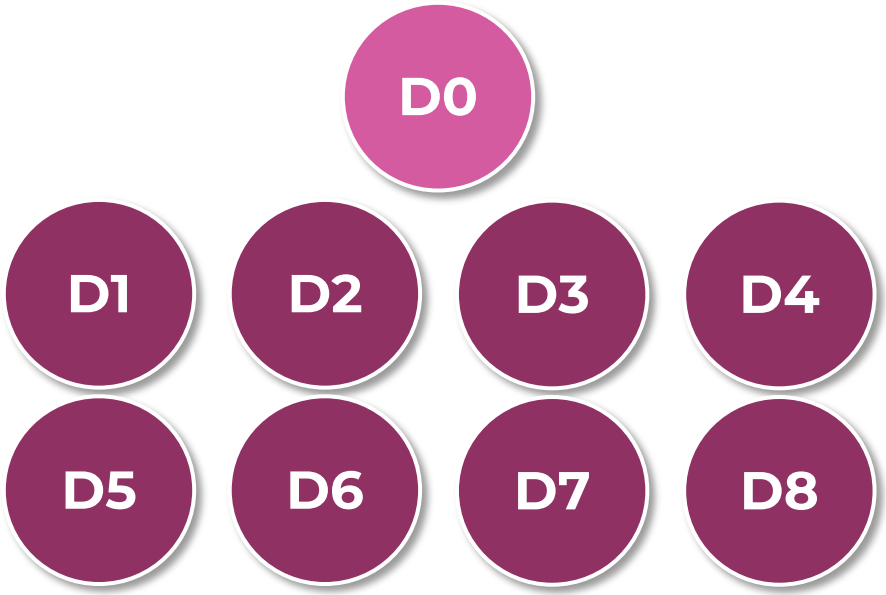
D5 Verify the solutions and identify the leading candidate

D6 Implement the permanent solution

D7 Prevent recurrence and create sustainability

D8 Congratulate and celebrate the team

Discipline 0: Planning the 8D process to ensure success



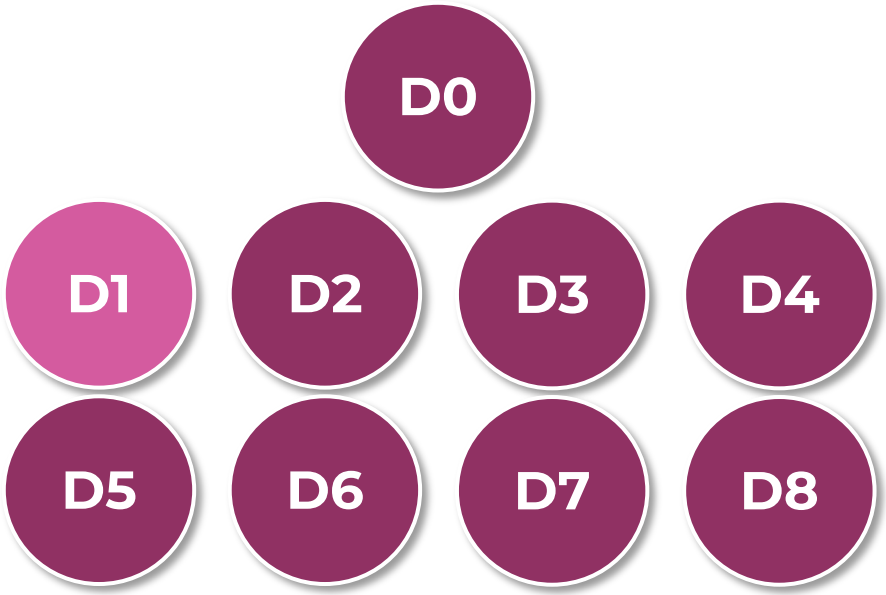
- ☐ **Go and see the nonconformance to determine the exact deviation and gather data**
- ☐ **Define the symptom - what is the customer experiencing?**
- ☐ **Notify all internal and external customers affected**
- ☐ **Determine if an 8D is the best approach to the problem**
- ☐ **Log the problem into the appropriate system**

TOOLS TO USE

Pareto Analysis
Voice of the Customer
Critical to Quality Requirements
Check Sheets
5-Why Analysis

Investigate the actual problem and decide if an 8D is appropriate

Discipline 1: Build the appropriate team



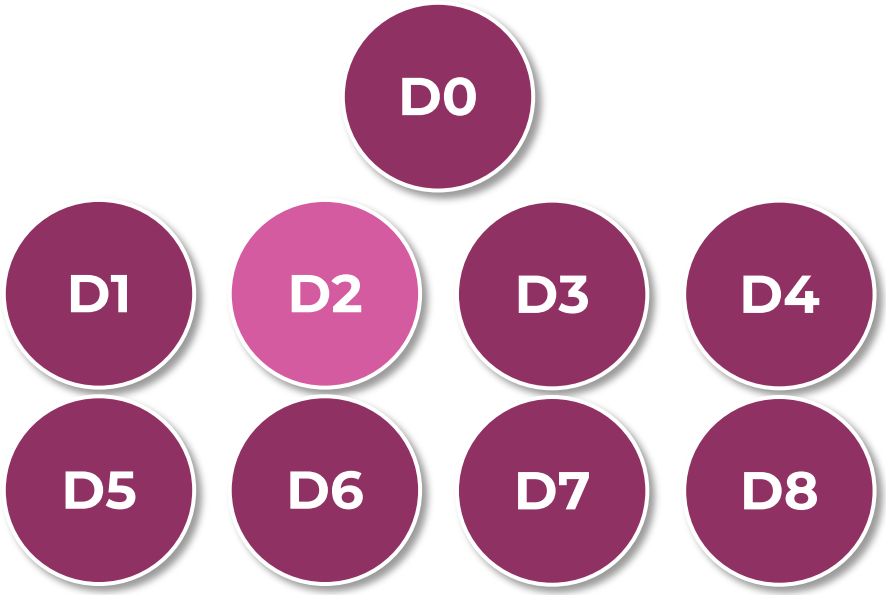
- ☐ **Identify the functions (knowledge and skills) required to solve the problem and implement corrective action**
- ☐ **Secure an engaged champion**
- ☐ **Meet with the team to determine roles, rules, scope, timetable, and deliverables for the project**
- ☐ **Document names, roles, and contact information**

FUNCTIONAL TEAMS

Operations
Product Engineering
Quality
Manufacturing Engineering
Materials
Continuous Improvement

Assemble a leader, subject matter experts, and any 8D expertise available

Discipline 2: Describe the problem (what are you trying to solve?)



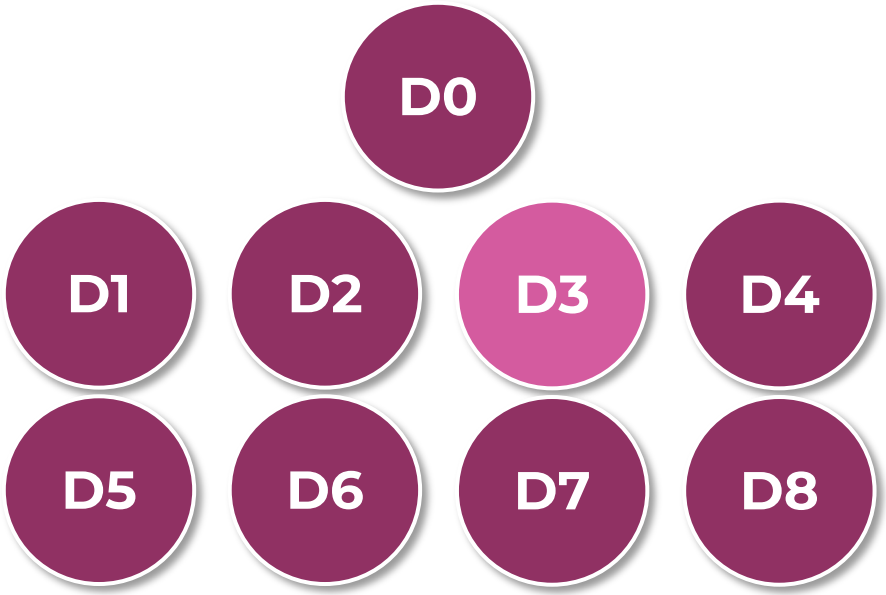
- ☐ **Gather data using a timeline to capture key events**
- ☐ **Identify how the problem was discovered**
- ☐ **Write a problem statement; make sure you know "What problem you are trying to solve"**
- ☐ **Specify the problem in terms of what, where, when and extent**
- ☐ **Identify the impact on the customer**
- ☐ **Identify all parties involved**

TOOLS

5 Why
Process Mapping
Value Stream Mapping
Run Charts & Control Charts
Pareto Analysis
Capability Studies

Start to quantify the problem: What? Where? When? Extent?

Discipline 3: Implement a temporary fix (mitigation)



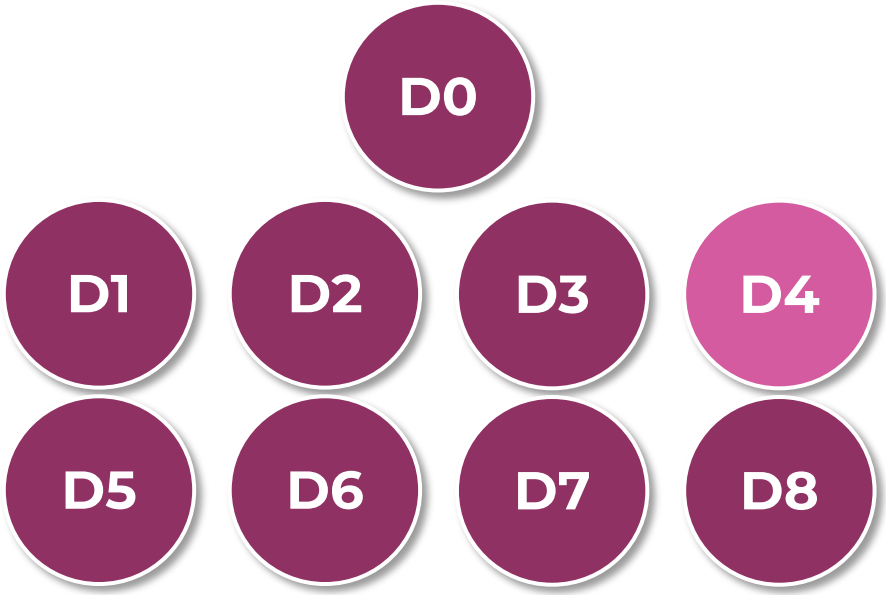
- ☐ **Perform a lot-trace exercise through the supply chain**
- ☐ **Locate all defective products & provide evidence compliance**
- ☐ **Collect data on the certified material (time, date, rejections)**
- ☐ **Identify other products at risk**
- ☐ **Issue a quality alert**
- ☐ **Measure & track how effective the containment actions are**
- ☐ **Determine requirements to end the containment**

TOOLS TO USE

Process map
Value Stream Map
SIPOC
Measurement System Analysis
Pareto and Trend Charting
Brainstorming Sessions

Isolate customers from the effects of the problem until a permanent corrective action is in place

Discipline 4: Identify and eliminate root cause



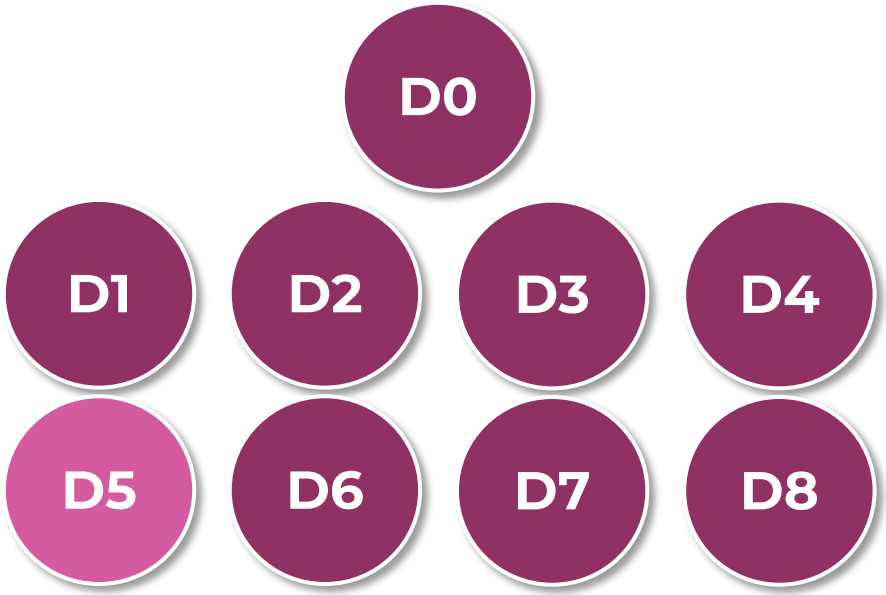
- ☐ **Use the toolbox to identify and eliminate possible causes for why it happened and how it was delivered**
- ☐ **Verify each suspected cause against the problem description and test data**
- ☐ **Repeat until the root cause is known and verified**

TOOLS TO USE

Cause & Effect Diagram
Control and Run Charts
Analysis of Variance (ANOVA)
Fault Tree and Shainin Method
3x5 Why

Identify likely causes, then verify the root cause through testing

Discipline 5: Verify the solution



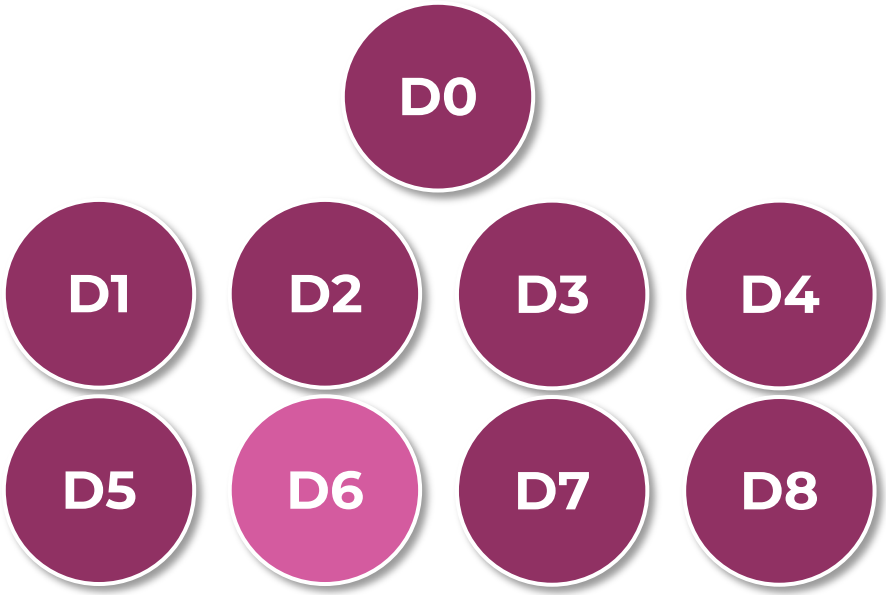
- ☐ **Identify possible corrective actions and consider the error-proofing methods available**
- ☐ **Evaluate the effort, risk, costs, and trade-offs using a decision matrix, then select the corrective action that offers greatest potential**
- ☐ **Test the effectiveness of the corrective action and prove with data: Does it address the root cause?**

TOOLS TO USE

- Pugh Matrix (selection)
- ANOVA
- Regression Analysis
- Scatter Plots
- Boxplots
- Design of Experiments (DOE)

Confirm the corrective actions, resolve the problem, then define contingencies based on risk

Discipline 6: Implement a permanent solution



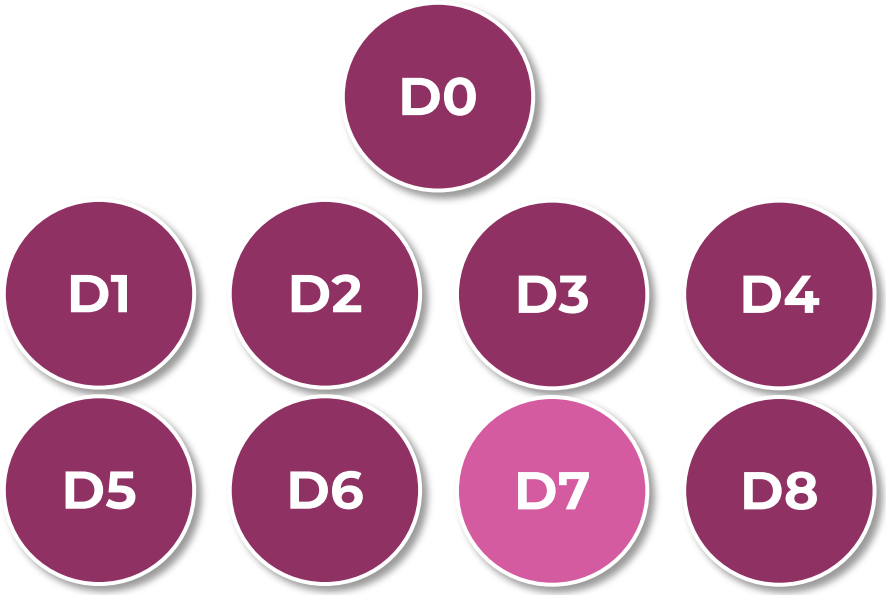
- ☐ **Select a corrective action owner and target completion date for the implementation**
- ☐ **Verify the availability of resources needed to implement the plan**
- ☐ **Involve the champion**
- ☐ **Implement the countermeasure in all areas potentially affected**
- ☐ **Perform on-site verification of the Process Controls (go & see)**

TOOLS TO USE

Graphical Schedule
Histogram
Run & Control Charts
Capability Analysis
Check Sheets
Boxplots / Hypothesis Testing

Implement corrective actions and ongoing controls to ensure the root cause is eliminated

Discipline 7: Prevent recurrence of the problem



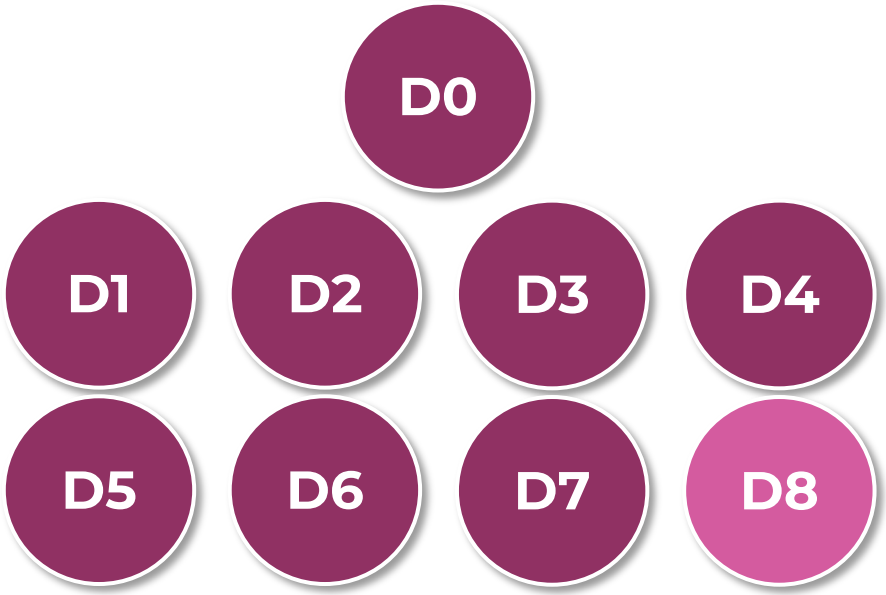
- ☐ **Identify systematic changes necessary to prevent recurrence**
- ☐ **Identify documents that must be updated, a responsible owner, and an expected completion date**
- ☐ **Identify a corrective action owner in other facilities at risk**
- ☐ **Communicate to standardize the necessary changes**
- ☐ **Consult with champion for sharing best practices**

TOOLS TO USE

Quality Alert
Failure Mode & Effect Analysis
Process Flow Diagram
Control Plans
Operator Work Instructions
Audits

Modify systems, practices, and procedures to prevent recurrence

Discipline 8: Recognize and celebrate team success



- ☐ **Formally close the 8D in all areas where it was logged (D0)**
- ☐ **Document lessons learned**
- ☐ **Identify ways to recognize the team**
- ☐ **Acknowledge outstanding individual effort**
- ☐ **Execute team recognition**
- ☐ **Release the team**

TOOLS TO USE

Certifications
A3 Documentation
Human Resource System
Learning Management System

Close the issue and recognize the collective efforts of the team

Summarizing 8D

WHEN TO USE

- Customer product nonconformance
- Problem best described by ”object-defect”
- Common cause variation

WHEN NOT TO USE

- Special cause variation (use another method)

TYPICAL TOOLS TO USE

- Voice of the Customer
- Cause & Effect Diagram
- 5 Why
- Process Mapping
- Value Stream Mapping
- Control Charts
- Measurement System Analysis
- Control Plans
- Design of Experiments
- Pareto Analysis
- ANOVA
- Histogram