

PNEUMATIC TIRES: TIRE DEFECTS

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Learning made Simple, Visual, and Interactive

The Pneumatic Tires: Tire Defects course is designed to provide learners in the tire industry, including original equipment manufacturers (OEMs), salespeople, distributors, suppliers, and tire service personnel, and any other interested individuals with a basic understanding of pneumatic tire defects. Through helpful animations and interactives, learners are introduced the manufacturing defects and the operational and functional defects that affect tires after sales.

Credit Hours **2**

Learning Objectives

- Understand the different manufacturing defects and how they can occur.
- Identify the various types of defects that occur during manufacturing.
- Recognize the potential factors that may cause operating and functional defects to occur.
- Describe the differences between each type of operating and functional defect.

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I. Manufacturing Defects

- Inadequate Design
- Inadequate Control of Humidity
- Inadequate Preparation of the Tread Undersurface
- Drryness or Less than Required Tackiness of Components
- Wetness or More than Required Tackiness of Components
- Inadequate Venting of Evaporable Solvents
- Inadequate and Uneven Cure Inputs
 - Cure Input
 - Factors Affecting Cure Inputs
 - Preventing Inadequate and Uneven Curing
- Air Entrapment between Plies and Belts
- Uneven Cutting of Ply Edges
- Uneven Calendering
- Uneven Frictioning
- Improper Application of Release Agents
 - Inside Surface of a Tire
 - Outside Surface of a Tire
 - Tire Mold
- Inner Liner Damage during Tire Building and Curing
- Poor Splicing of Joints during Production
- Unskilled and Poor Inspection
- Careless Workmanship
- Improper Equipment
- Poor Equipment Maintenance
- Uneven Heating or Cooling of Tools
- Tire Mold and Curing Defects
 - Misaligned Molds
 - Molds with Blocked Spew Venting Holes
 - Dirty Molds
 - Damaged or Malfunctioning Bladders
 - Undercure

- Failed or Inadequate Post Cure Inflation

- Contamination
- Liner Markings on Plies
- Use of Substandard Raw Materials Due to Cost Compulsions
- Use of Over-Aged Components
- Improper Process Control
- Uncontrolled Use of Rework Materials

II. Operating and Functional Defects

- Road-Related Factors
- Tire-Related Factors
- Installation-Related Factors
- Tube-Related Factors
- Flap-Related Factors
- Valve-Related Factors
- Rim and Wheel Related Factors
- Vehicle-Related Factors
- Drive Factors
- Miscellaneous Factors

