

Principles of Winding and Slitting

About the Seminar

Winding and slitting are an integral process in the manufacturing and converting of nearly all web materials. The objective of this seminar is to give you the fundamental knowledge to deliver quality rolls to your customers.

The mechanics of winding, winding technologies and important material properties will be presented. The two types of wound roll structures will be defined and how they impact your aged through-roll properties. Root cause and recommended solutions for wound roll defects will be provided.

Six slitting technologies will be described and how they are used. The fracture mechanics of slitting will be explained. The root cause and recommended solution for the most common slitting defects will be provided. The geometry, metallurgy and hardness of knives and anvils will be presented. Strategies for regrinding will be offered. The options for positioning knives will be shown.

Trim systems are required for most slitting and winding process. Design recommendations will be provided for pneumatic conveyance of trim. A survey of trim winding equipment will be offered. Web paths to optimize both will be presented. Trim choppers and static build up will be discussed. Three proven methods for collecting trim will be described.

Who Should Attend

Anyone who works with winding and slitting will benefit from this course. This includes lead operators, maintenance, engineering, quality, product developers and process designers.

Knowledge of wound roll structures will benefit process engineers, quality control, and product developers. Knowledge of winding and slitting technologies best suited for a specific web process will benefit capital project teams and purchasing. Packaging, storage, and shipping will enable supply chain improvements. Best practices and knowledge of safety considerations benefit everyone.

Benefits of Attending

- ▶ Give you the fundamental and practical knowledge to solve quality and productivity challenges
- ▶ Understand the pros and cons of competing winding and slitting technologies
- ▶ Study proven best practices to improve bottom line results and avoid future pitfalls
- ▶ Knowledge to document your wound roll structure to understand your aged through-roll properties
- ▶ Understand how existing equipment can be modified to extend its useful life
- ▶ Root cause and recommended solutions for the most common wound roll and slitting defects
- ▶ Fundamental knowledge to consistently deliver quality rolls to your customer

Concepts Covered

- ▶ Winding
- ▶ Slitting
- ▶ Trim Systems



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Course Syllabus

DAY 1

Winding

- Overview
- Objectives
- Quality
- Challenges
- Material Properties
- Eight Winder Types
- Coreshafts vs Chucks
- Shaft Handling
- Material Properties
- Tension, Nip, & Torque
- Wound On Tension
- Winding Mechanics
- Wound Roll Structures
- Wound Roll Metrics
- Packaging
- Storage
- Shipping
- Roll Defects, Root Cause, Solutions
- Best Practices
- Safety
- Process Health
- Drives & Controls
- Maintenance
- Engineering
- Computer Models

DAY 2

Slitting

- Overview
- Objectives
- Quality
- Defects
- Safety
- Fracture Mechanics
- Six Slitting Technologies
- Knife and Anvil Geometry
- Metallurgy & Hardness
- Process Design
- Positioning
- Shear Slitting – Key factors
- Best Practices

Trim Systems

- Overview
- Objectives
- Defects
- Safety
- Web Path
- Pneumatic Conveying
- Trim Choppers
- Static
- Trim Winders
- Trim Collection