

Principles of Web Handling and Winding

About the Seminar:

The Principles of Web Handling and Winding three-day seminar provides a complete understanding of these key converting fundamentals, covering the materials, equipment, and process factor knowledge to solve any web handling or winding problem.

Web handling principles apply across any roller-transported manufacturing process, helping to improve productivity and reduce waste during production with papers, films, foils, nonwovens, textiles, belts, or any thin, continuous material. The seminar will cover key web handling topics in-depth beginning with material properties, tension control, roller design, nipped processes, web position control, and wrinkle prevention. The winding portion of the session covers all aspects of winding, including the physics and process of winding, roll quality, and winder design, control and operations

Who Should Attend:

This seminar is directed toward technical, production and operations employees of any level with a need to understand the fundamentals of web handling, winding and roll quality. These principles can be applied across all products, from bath tissue to steel foil.

Attendees will be provided with practical and proven solutions based on best practices and physics to eliminate waste from tension variations, web breaks, bagginess, scratching, misalignment, wrinkles, and roll defects. If you are looking to optimize, upgrade or replace your web handling equipment, this seminar will review the design options available in tension control, guiding, rollers, and winders, reviewing the mechanics and best practices of each.

Benefits of Attending

- ▶ Understand what material properties are important to web handling
- ▶ Quickly map out the tension control system of any process and identify causes of tension variations
- ▶ Learn best practices of driven and idler roller design, including traction limits and alignment requirements
- ▶ Learn what cause webs to shift apply the knowledge for better guiding, less wrinkling, and effective spreading
- ▶ Diagnose and eliminate roll and winding-related web defects.
Learn why some products are inherently more difficult to wind than others
- ▶ Develop a plan to find best winding conditions for any product

Concepts Covered

- ▶ Introduction to Web Handling
- ▶ Tensioning
- ▶ Rollers, Traction, and Flotation
- ▶ Nipped Systems and Laminating
- ▶ Tracking, Wrinkling, Spreading, Guiding
- ▶ Winding, Winders, and Wound Rolls



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Course Syllabus

Introduction to Web Handling

- ▶ Web Properties
- ▶ Thickness Profile
- ▶ Tension-Elongation
- ▶ Curl and Bagginess

Tensioning

- ▶ Speed, Length, and Diameter
- ▶ Why Tension and How Much?
- ▶ What is a Tension Zone?
- ▶ How is Tension Created?

Rollers, Traction and Flotation

- ▶ What is a Roller?
- ▶ Why/How are Rollers Aligned?
- ▶ When Does a Roller Slip?

Nipped Systems and Laminating

- ▶ What Creates Pressure and Pressure Variations in a Nip?
- ▶ How are Nipped Systems Designed?
- ▶ What are the Best Practices of Lamination?

Tracking, Wrinkling, Spreading, Guiding

- ▶ What Causes Web Shifting?
- ▶ What Causes Wrinkling?
- ▶ How Do Spreaders Work?
- ▶ How Do Web Guides Work

Winding, Winders, and Wound Rolls

- ▶ Defining Winding Success
- ▶ Material Properties (Web and Core)
- ▶ Starting a Roll: Roll Transfers
- ▶ Managing Initial Contact (Nip or Gap)
- ▶ Driving a Roll (Center vs Surface)
- ▶ Winder Tensions and Torques
- ▶ Slip Shaft Winding
- ▶ Defects
 - ▶ Wound-In Pressures and Stresses
 - ▶ Roll Edge Alignment
 - ▶ Transverse Variations (Gauge Bands, Bagginess)
 - ▶ In-Roll Buckling
- ▶ What Determines Wind-Ability?
- ▶ How is Winding Optimized?