



MACHINE ASSESSMENT SERVICES

From Unwinding ... to Converting



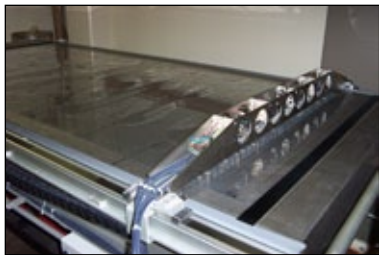
Optimization and TJWalker + Associates process development experts present Machine Assessment Services. Our mission is to develop data driven knowledge of your process and equipment, leading to accurate and effective solutions to your unique challenges

What sets us apart from the rest?

- 120 YEARS OF PROCESS DEVELOPMENT INTELLECTUAL PROPERTY (IP) INCLUDING OVER 50 ACTIVE PROCESS / APPARATUS PATENTS
- WORLD-CLASS ENGINEERING TEAM
- EXTENSIVE MODELING AND MEASUREMENT CAPABILITIES
- MULTI-MILLION DOLLAR FULL-SCALE AND PILOT FACILITIES

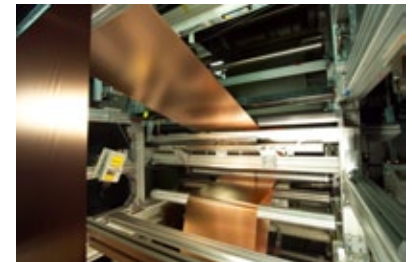
Modeling Capabilities:

- ✓ Winding: high speed, thermoelastic, viscoelastic, web effects, wound roll integrity & web imperfections
- ✓ Machine web tension profile: steady-state tension losses including acceleration related effects



- ✓ Web tension transients: web path design, control selection
- ✓ Air conveyance: device design, system performance
- ✓ Roller traction: performance, roller/web surface design
- ✓ Finite element analysis
- ✓ Drive control and stability
- ✓ Stock roll control and stability
- ✓ Accumulator transients

- ✓ Translating roller transients
- ✓ Thermal transient modeling
- ✓ Stock roll heating/cooling
- ✓ Casting wheel thermal behavior
- ✓ Air system transient modeling
- ✓ Control system design, behavior and tuning



Process Expertise

- Machine Speed-Ups
- Web Wrinkling, Creasing, Weave
- Web Winding
- Lamination
- Slitting
- Web Guiding and Registration
- Aqueous and Solvent Coating Technology
- Gauge Control
- Electrostatics
- Tension Control
- Drying
- Micro Replication
- Surface and Formulation Science
- Air Conveyance
- Product / Process Quality Issues
- Control system Design
- Process Analysis, Troubleshooting and Development

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