



MapleSim™ Web Handling Library

The MapleSim Web Handling Library expands the modeling scope of MapleSim to easily simulate roll-to-roll processes, helping you manage tension across spans, optimize the web speed and reduce web slippage.

Using this add-on library to [MapleSim](#), you can model the dynamics of web such as paper, textiles, metal foils, and plastic films passing through web handling and converting systems, and view enhanced 3-D visualizations of your line performance.

Use the Web Handling Library to add fidelity to your machine models by including nip rollers, dancers, accumulators and more.

MANAGE tension
and slippage

LOWER costs and
development time

SIMULATE R2R
converting processes

The MapleSim Web Handling Library contains a variety of specialized components that can be customized to suit your specific system, representing the web material properties and the motion of the rollers.

Features include:

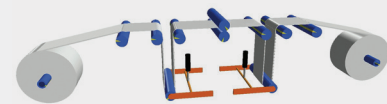
- **Winding and unwinding drums, various rollers and roller combinations (pull, idler, vacuum, nip)** to capture your system layout.
- **Accumulators and various dancer mechanisms.**
- **Predict the onset of slippage** and simulate the effects of slipping web on rollers.
- **Model web spans** to predict tension and strain in the web material.
- **Emulate load cells** considering roller weight and transient dynamical effects.
- **Clutch, torque brakes, motors and actuators**, using various MapleSim libraries.

Highlights

- **Create web handling systems-based models** using components such as nip rollers, idlers and wind/unwind drums, and view performance under a variety of web speeds and material thicknesses.
- **Incorporate realistic behaviors** of roll-to-roll systems, including web properties, wrap angles, web slippage and bearing loads.
- **Explore systems with 3-D visualizations** that show web flow and system tensions using force arrows and color mapping.

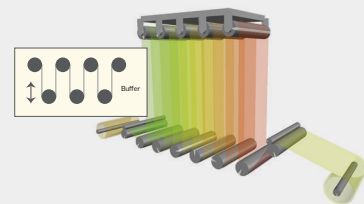
Tension Control

Line & Roller Configurations | Tension Control Strategies
Web Properties Before & After Converting Treatment



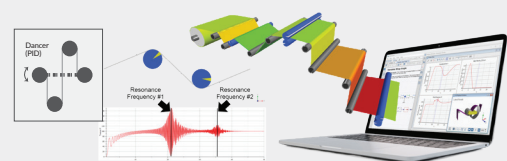
Winding/Handling Operations

Stop/Start Optimization | Iterative Design Testing
Maximizing Web Line Speed



Diagnostics & Predictive Maintenance

Identifying Resonance/Vibration | Tuning Actuator Responses
Monitoring for Anomalies | Reducing Downtime



Are you facing challenges with modeling your roll-to-roll systems? **We can help!**

Contact the [Maplesoft Engineering Solutions team](#)



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