



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, reduce web slippage, and test web line control strategies.

Using this add-on library to [MapleSim](#), you can model web materials such as paper, textiles, metal foils, and plastic films passing through web handling and converting systems, and generate 3-D simulations of your web line during operation.

The MapleSim Web Handling Library includes a variety of specialized components that can be used to model the dynamics of your web line under realistic operational conditions.

EXPLORE tension
and slippage

TEST solutions to web
product quality issues

SIMULATE R2R
converting processes

Features include:

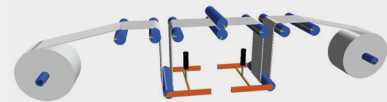
- **Winding and unwinding drums, various roller designs (driven, idler, vacuum, nip)** to capture your system layout.
- **Accumulators and various dancer mechanisms.**
- **Predict the onset of slippage** and simulate the effects of tension on the web line.
- **Emulate load cells** considering roller weight and transient dynamical effects.
- **Correctly size clutches, brakes, motors and actuators**, using various MapleSim libraries.
- **The Drives and Controls sublibrary** provides components and settings for engineers to design and validate tension control loops.

Highlights

- **Easily create systems-based models of roll-to-roll systems** using components such as nip rollers, idlers and wind/unwind drums, and view performance under a variety of web speeds and material parameters.
- **Incorporate realistic behaviors** of handling and converting processes including sagging spans, stepwise winding, wrap angles, web slippage and bearing loads.
- **Explore systems with 3-D visualizations** that show roller rotation and bearing reactions using arrows and color mapping.

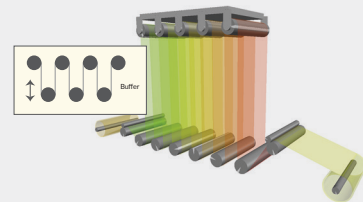
Tension Control

Nip & Dancer Setpoints | Tension Control Strategies
Model Tension Fluctuations Over Time



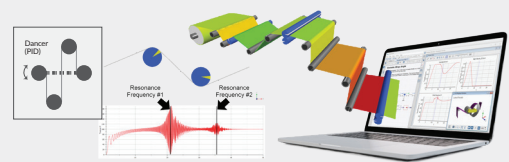
Winding/Handling Operations

Stop/Start Optimization | Iterative Design Testing
Simulate Changes of Web Speed



Supports Simulation-based Engineering

Identifying Resonance/Vibration | Verifying Actuator Responses
Virtual Platform for Testing Without Downtime



Get started with modeling your roll-to-roll systems. **We can help!**

Contact the [Maplesoft Engineering Solutions team](#)



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