

AFX for Wood Construction

AFX for Wood Construction is an extension library for PTC Creo's Advanced Framework Extension (AFX), designed to simplify and automate wood framing in residential and light commercial construction models.

Overview

This library adds a comprehensive set of standard wood framing components to Creo AFX, including:

- Dimensional lumber (studs, posts, beams) in all standard sizes
- Engineered components (LVLs, I-joists, laminated beams)
- Trim, mouldings, and finish-grade lumber
- Foundation elements (sills, columns, footings, cinder blocks)
- Roofing, stair parts, and decorative elements
- Pre-built skeleton models for rapid top-down assembly

All components are fully parametric and configurable, supporting efficient design changes and robust model updates. The library supports advanced modeling workflows, such as top-down skeleton-driven assemblies, copy geometry propagation, and parametric patterning (e.g., studs at 16" on center).

Key Features

- **Standard U.S. wood framing parts** with realistic profiles and metadata
- **Fully parametric assemblies:** change key house dimensions and the framing updates automatically
- **Smart connectors:** joist hangers, brackets, nail plates, fasteners
- **Pre-made assemblies:** stud walls, rafters, fences, skeletons, and more
- **Helper guides:** correct framing for windows, doors, and complex openings
- **Panels & finishes:** plywood, siding, flooring, roofing, and insulation parts
- **Decorative and specialty items:** ceiling medallions, trim, ironwork, bookcases

Usage

Typical workflow:

1. Start with a skeleton model to define the building shape, roof, and floor plans
2. Use AFX to propagate key geometry into subassemblies
3. Assemble and pattern library components as needed (studs, joists, trim, etc.)
4. Update main skeleton dimensions to drive all related geometry
5. Generate plans, sections, and bills of material directly from the parametric model

Requirements

- PTC Creo 11.0 or later
- Advanced Framework Extension (AFX) license
- Windows (inches-based units)
- [Installer script coming soon]

Installation is manual

- Store the afx-wood folder on your computer
- Configure the AFX setting CUSTOMIZATION_PATH to point to this location:
- Set CUSTOMIZATION_PATH to something like c:/ptc/afx-wood
- Restart Creo

Roadmap

- Add more door and window types, decorative and structural elements
- Expand support for stairs, ironwork, and specialty framing
- Improve installer and external library management
- Documentation and user guide
- Open source release for community contribution

Status

The library is in active development. Most standard framing elements are complete. Upcoming work includes expanded window/door options, panel materials, and automation tools. An installer script is provided to patch the Creo AFX module for library integration.

Note: This is a work in progress. Contributions and feedback are welcome. Read the DEVELOPERS.md guide and more automation tools.