

# COMPARE LAMINATES

Using Laminate Maker Software



## Build and Model Your Laminate and Quickly Evaluate Material Options

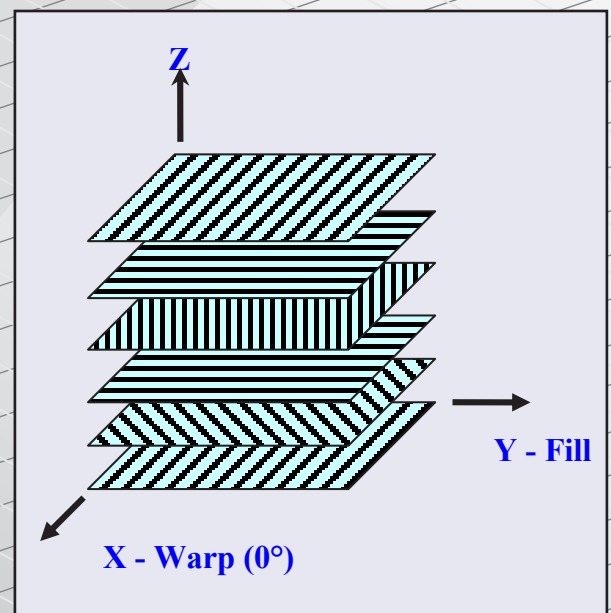
Combine stitched fabrics (knits), woven roving fabrics, chopped strands (mat) and core materials. Use Multiple layers and choose the resin content.

### LaminateMaker calculates

- **Laminate Weight**, accounting for different resin contents.
- **Glass Fiber Volume**
- **Fiber Weight**
- **Deflection** under one of 3 loading situations:
  - 3 Point bending.
  - Panel with uniform pressure.
  - Panel with center load.
- **Laminate cost** when you input your material costs

### LaminateMaker helps you to understand the difference in expected cost, weight and stiffness for:

- **Processes:** Hand lay-up and vacuum infused laminates.
- **Fiber Orientation:** Mat vs. multi-directional materials.
- **Material Type:** Cored vs. solid.
- **Fiber Content:** High vs. low glass content



DISCLAIMER: for comparison only, not for design, no warranty expressed or implied.

The LaminateMaker calculator is based on "Laminated Plate Theory". The material properties are calculated for different resin content based on Stress Partition micro-mechanics.

U.S.A.

Ask your friendly local sales representative about fabric constructions and your specific needs.

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# Laminate Maker Software

**Build Laminates layer-by-layer**

**Print for future reference.**

**# Plys, fiber content, and fiber cost can be applied to all layers to save time, or layer-by-layer for detail.**

**Run more than one copy, compare side-by-side.**

**Resin cost is used to calculate laminate material cost.**

The screenshot shows the 'Laminate Maker' software window. The 'Input Laminate' section includes a 'Resin Cost (\$/lb)' field set to 1.00, a '# Groups (10max)' field set to 5, and a table for material selection. The table has columns for '# Plys', 'FC %', and 'Fiber Cost'. Below this is the 'Laminate Properties' section with fields for Thickness (in), Weight (psf), Mat. Cost (\$/sqft), S.G., Fiber Weight, and Fiber Volume. The 'Deflection Calculation' section has radio buttons for 'Beam - 3 Point Bending', 'Plate SS - Center Load', and 'Plate SS - Uniform Pressure', along with input fields for Length (in), Width (in), and Pressure (psi). The 'Center Deflection (in)' is calculated as 0.0614. A disclaimer at the bottom states: 'For comparison purposes only, NOT for design, no warranty expressed or implied!'.

# Plys	FC %	Fiber Cost
1	40	1.25
1	50	1.43
5	50	2.10
2	50	2.73
1	50	1.33

**Up to 15 different materials.**

**Drop-Down menus for easy material selection.**

**Laminate Thickness, Weight & Cost account for proper fiber content and fabric, layer-by-layer.**

## VIDEOS:

See step by step videos at:

[fiberglassindustries.com](http://fiberglassindustries.com)

**Date for printed record**

**Fiber cost for each material**

**Fiber content for each material**

**Number of layers for each material**

**Fiber content and fiber volume fraction, weighted average for the entire laminate.**

**Orthotropic modulus values calculated using stress partition micro-mechanics and laminated plate theory**

**Calculate deflection for a variety of situations.**



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