**Laminate Bends**

**INTRO:**

**What are we bending:** billet

**What is a Laminate Bend:** demonstrate

**Ways to bend a billet:**

laminate, steam

Point out laminate/steam bends on rocker, cradle

**Other bending methods / materials:**

How to bend a board - laminate, steam

Laminate example - piano

Bandsaw

Segment bend

**Advantages of laminate over steam:**

Holds its shape better

Retains shape over time

Stronger

**Disadvantages of laminate:**

Seams / Glue lines - Why we care

Astethics

How they expose when sculpting

**Other steam issue:**

Difficult to do a compression bend on a complex curve

Requires clear straight grain

Requires air dried wood

**THE NUTS AND BOLTS:**

**Wood Selection:**

Species - pretty much any species

Quarter sawn, flat sawn, rift sawn

Desired asthetics

Quarter sawn stronger

Clear(ish)

Straight grain(ish)

**Seams / Glue lines:**

Grain matching - color

Clamping

**Cutting laminates:**

**Table saw:**

Cleaner surface - good rip blade

More waste - poorer grain / color matching

Thin kerf blade can help

**Bandsaw:**

Less waste - better grain / color matching

Less clean surface

Must joint / sand / hand plane

**How Thick:**

As thick as possible

1/16 - ⅛ (5/64)

Wood species - flexibility

Experiment

**How wide:**

Wider than finished width - + 1/8

**How long:**

Longer than finished length

Length of outside curve

**Choreograph**

**Hash marks on Billet**

Line up

Mistakes when cutting

**Gluing:**

**Form:**

Material - solid wood, sheet goods

Holes for clamps

Aluminum

Start stop marks

Wax

**Caul:**

Thinner than lams

Shape - outside diameter

Material - laminate, solid wood, sheet goods

Wax

**Adhesive:**

Tightbond - color

Hide glue - less creeping

Urea-Formaldahide Resin

**Choreograph:**

**Spreading:**

Fielder’s choice

**Clamping:**

Squeeze clamps - for side pressure

F clamps or C clamps

Lots

Keep them plumb - laminates like to slide around

Tighten - lots

Cleanup squeeze out - as can be done

Dry time - 24 hours

**Jointing:**

I’m ok with cleaning glue on the jointer

Keep square

**Planing:**

I’m ok with cleaning glue on the planer

Spin curved pieces as they pass thru