From the Atelier: The Art of the Leather Stacked Heel

Precision Calculation and Construction for Custom Lasts

The Bespoke Philosophy: Why We Build Our Own Heels

In the world of bespoke shoemaking, every shoe last is a unique creation. Each one possesses a specific heel height and, critically, a distinct "wedge" angle—the subtle curve and slope of the heel seat.

While ready-made plastic or wood heels are available, they rarely satisfy the precise requirements of a custom last. You may find a pre-made heel with the correct height, but if the wedge angle does not align with your specific last, the shoe will lack balance. This misalignment creates significant issues in wearability, ranging from instability to profound discomfort.

Furthermore, industrial components are often sold in quantities impractical for the independent atelier.

For these reasons, in my courses at **Shoemaking Courses Online**, we reject the shortcuts of ready-made components. We build our heels by hand, ensuring a flawless integration with the unique geometry of the shoe last.

The Superior Material: Vegetable Tanned Leather

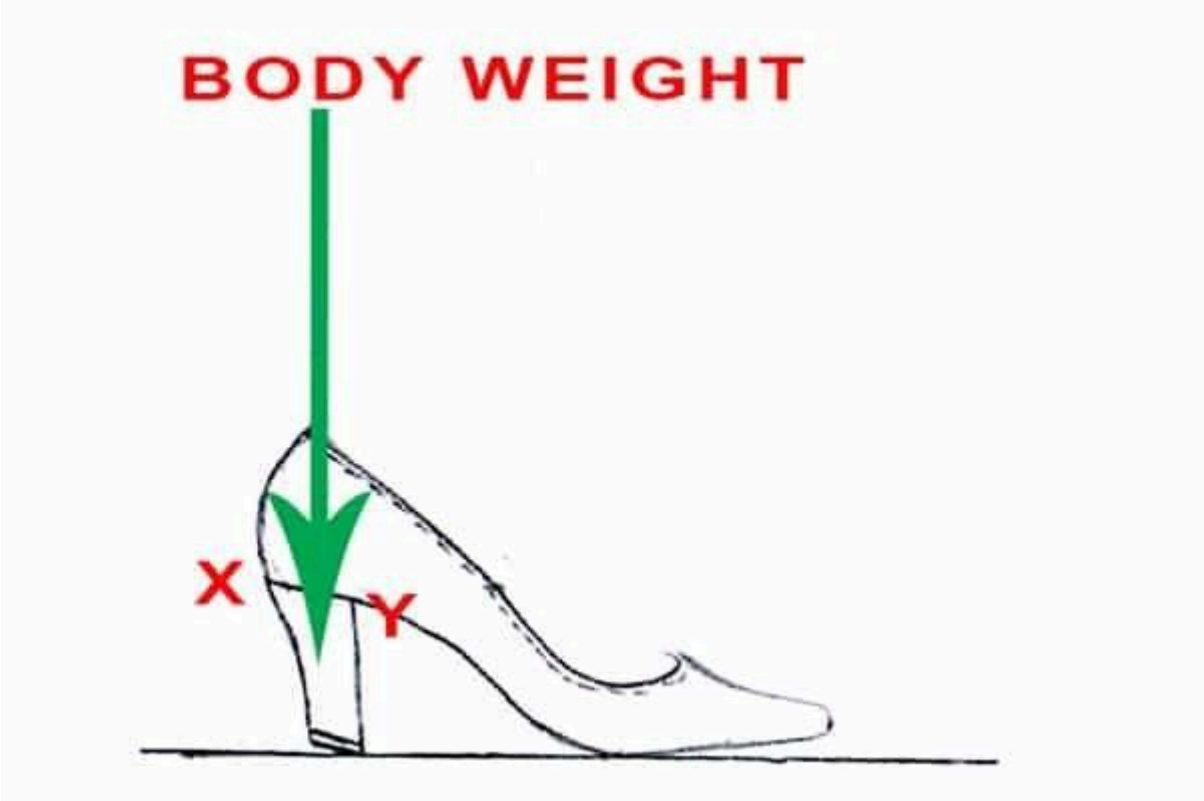
To achieve the highest standard of quality and durability, we construct our "stacked heels" exclusively from Vegetable-Tanned Leather.

- **Accessibility:** High-quality leather is readily sourceable in the specific quantities needed for bespoke work.
- **Workability:** This material responds beautifully to hand tools, requiring no heavy industrial machinery.
- **Customization:** Leather allows the maker to sculpt and layer the heel to the exact millimeter and angle required by the design.

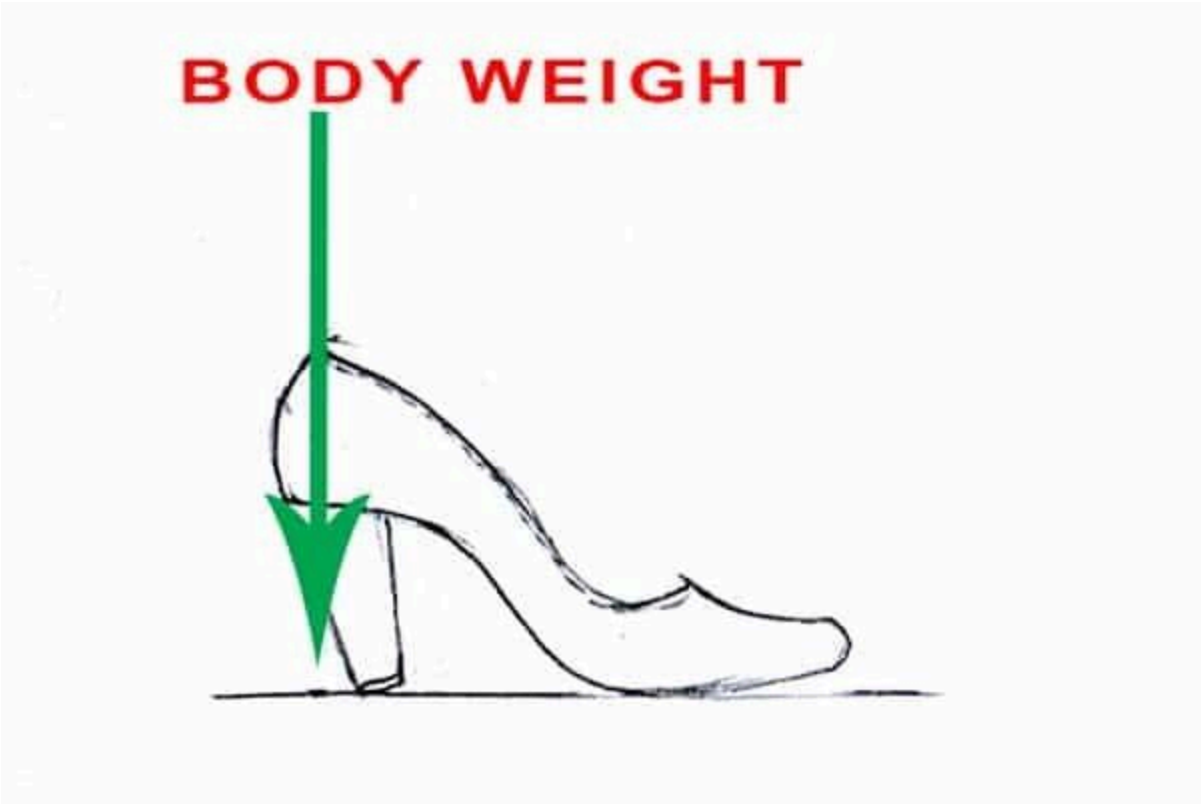
The Importance of Precision Calculation

Before a single layer is cut, the heel height must be calculated with absolute precision. If the construction does not perfectly mirror the curve and elevation of the shoe last, the fit will be compromised:

1. Instability (Sliding): If the heel is too low or the angle too shallow, body weight shifts forward. This forces the foot to slide down, causing the sides of the shoe to gap unsightly.



2. Imbalance (Pinching): If the heel is too high or the angle too steep, body weight shifts backward. This pushes the heel of the shoe away from the foot, creating a gap or causing the topline to bite into the wearer's heel.



To prevent these errors, the artisan must determine the exact number of leather lifts required to support the last correctly.

The Atelier Method: Calculation and Construction

Use this precise method to determine the exact number of leather lifts (layers) required for your stacked heel.

Step 1: Establishing the Toe Spring

Every shoe last features a "toe spring"—the intentional upward curve at the toe. To measure the heel height accurately, this curve must be preserved during measurement.

- **The Technique:** Place a standard pencil under the toe of the lasted shoe (or the bare last). This elevates the toe, simulating the shoe's correct stance on the ground.

Step 2: Measuring the Vertical Height

The goal is to find the precise vertical distance from the heel seat to the ground.

- **The Technique:** Position a ruler or square at a strict 90-degree angle to the surface behind the heel. Measure the vertical distance from the ground to the edge of the heel seat (the bottom surface of the last).

The Data: This measurement is your **Heel Height (A)**.

Step 3: Calculating the Layers

With the total height established, we calculate the material requirements.

The Formula:

$$N = A / B$$

- **A** = Total Heel Height (measured in Step 2)
- **B** = Thickness of the Vegetable Tanned Leather
- **N** = Number of layers required

Example:

- Heel Height (**A**) is **20mm**.
- Leather Thickness (**B**) is **5mm**.
- Calculation: $20 / 5 = 4$.
- Result: You need **4 layers**.

Step 4: The Compression Allowance

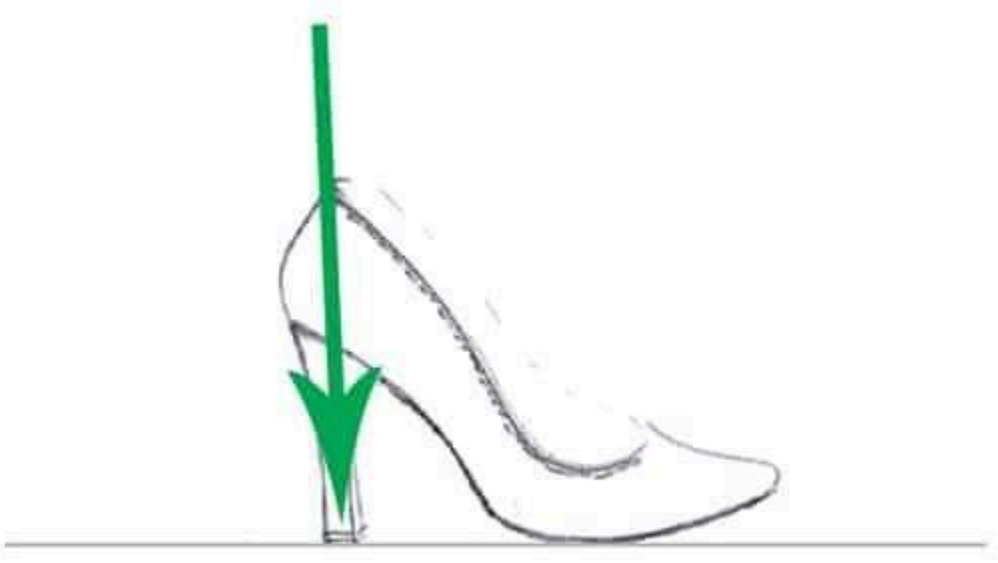
The construction process involves hammering, nailing, and sanding, which naturally compresses the leather fibers and reduces the stack's height.

- **The Rule:** Always cut **one extra layer** to compensate for this compression. In the example above, the atelier would prepare 5 layers, not 4.

Step 5: Sculpting the Angle (Skiving)

Leather layers are naturally flat, while the bottom of a shoe last is curved. To ensure a seamless bond:

- **The Technique:** Skive (taper) the edges of the leather lifts to mirror the angle of the heel seat. This ensures the heel stack flows naturally from the curve of the shoe last, creating a solid, gap-free foundation.



Final Note

By constructing heels from vegetable-tanned leather, the shoemaker eliminates the compromises of mass-produced components. Through the application of the precision calculation (N = A / B), we ensure that every pair of shoes is not only beautiful but structurally sound and perfectly balanced.