



This document outlines best practices for the acclimation and installation of decorative wood box beams to ensure optimal performance and longevity. Proper procedures are essential to prevent issues such as warping, cracking, and gaps.

Acclimation

Acclimation is a critical step to allow wood beams to adjust to the environment in which they will be installed. This minimizes movement and stress after installation.

Key Acclimation Guidelines

- **Environmental Control:**
Ensure the installation area has a stable temperature and humidity level that mirrors the conditions during normal occupancy. This typically means temperatures between 60-80°F (15-27°C) and relative humidity between 30-55%.
- **Duration:**
Acclimate beams for a minimum of 72 hours, and preferably longer (5-7 days), especially in environments with significant temperature or humidity fluctuations from the storage location.
- **Storage:**
 - Store beams flat on a level surface to prevent warping.
 - Place spacers or "stickers" between beams to allow for air circulation on all sides.
 - Keep beams in the room where they will be installed, or an adjacent room with similar conditions.
 - Avoid direct sunlight, drafts, or proximity to heat sources (e.g., HVAC vents, radiators).
- **Packaging:**
Remove wrapping/packaging to allow the wood to breathe and equalize moisture content with the ambient air.

Installation

Careful installation is crucial for the aesthetic and structural integrity of decorative box beams.

Pre-Installation Checks

- **Substrate Preparation:**
Ensure the mounting surface (ceiling or wall) is clean, dry, level, and structurally sound. Address any unevenness or damage prior to installation.
- **Layout Planning:**
 - Measure and mark the exact locations for each beam.
 - Use a laser level or chalk line to establish straight and consistent lines.
 - Account for any light fixtures, sprinklers, or other ceiling penetrations.



Installation Steps:

1. Mounting Boards/Cleats:

- Install solid wood mounting boards or cleats securely to ceiling joists or wall studs. These will serve as the primary attachment point for the box beams. Kiln dried fir is the best recommendation for cleat materials. Do not use green lumber for cleats, shims, or blocking.
- Use appropriate fasteners (screws, structural adhesives) that are long enough to penetrate well into the framing.
- Ensure cleats are plumb and level and provide a snug fit for the inside of the box beam, and also Hewn recommends a minimum of a 1/4" shim space to allow for movement throughout the changes in season. Please note that different regions of the country will experience different temperatures and levels, and each project is different.

2. Beam Placement:

- Carefully lift and position each box beam over the pre-installed mounting cleats.
- Ensure the beam sits flush against the ceiling or wall.

3. Fastening:

- Secure the box beams to the mounting cleats using screws or appropriate fasteners.
- For an invisible finish, screws can be counter-sunk and covered with wood filler, or strategically placed where they will be concealed (e.g., on the top surface if visible only from below).
- If using adhesive in addition to fasteners, ensure it is a high-quality construction adhesive suitable for wood.

4. Joining Beams:

- When joining multiple beams end-to-end, ensure a tight, seamless fit. Hewn beam joints are quality checked on a flat table in our shop before they are packaged. If the seam shows a gap, there may be an issue with the ceiling.
- Use wood glue and additional fasteners, (e.g., pocket screws, biscuits) when necessary, to reinforce joints.

5. Finishing Touches:

- Hewn offers color matched screws when needed.



When installing decorative wood box beams over existing gluelam or steel beams, specific considerations are necessary to ensure proper attachment and structural integrity.

- **Attachment Points:**
 - For gluelam beams, you can typically fasten mounting boards or cleats directly into the gluelam using appropriate wood screws or structural adhesives. Ensure fasteners are long enough to achieve sufficient penetration without compromising the gluelam's structural integrity.
 - For steel beams, direct fastening is not possible. You will need to install a secondary wood framing system (e.g., furring strips or blocking) securely attached to the steel beam. This can be achieved using self-tapping metal screws, specialized clips, or welding (if permissible and performed by a qualified professional). The box beams will then be attached to this wood framing.
- **Pre-Drilling:**

When fastening into gluelam, pre-drilling pilot holes can prevent splitting, especially near edges or ends. For steel, pre-drilling is essential for self-tapping screws.
- **Fastener Type:**

Use fasteners designed for the specific materials you are joining. For gluelam, structural wood screws are suitable. For steel, self-tapping metal screws or bolts with appropriate washers are required.
- **Load Bearing:**

Ensure that the existing gluelam or steel beams are capable of supporting the additional weight of the decorative box beams. While decorative beams are relatively light, it's always good practice to consider the overall load.
- **Leveling and Shimming:**

Gluelam and steel beams can sometimes have slight irregularities. Use shims as needed to ensure the mounting surface for the box beams is perfectly level and plumb, providing a seamless aesthetic. **A minimum of 1/4" shim space is recommended to avoid issues from material contracting as it continues to acclimatize to the space.**
- **Thermal Expansion:**

Steel beams can expand and contract with temperature changes. While decorative box beams are not directly load-bearing in this scenario, consider any potential movement and how it might affect the long-term appearance of the installation. **Ensure there is adequate shim space for movement if necessary.**
- **Concealment:**

Plan the fastening method to ensure that all fasteners are concealed for a clean finish, Hewn's color matched fasteners are available to accommodate this when a screw or nail is needed.

Post-Installation Care

- **Environmental Monitoring:**

Continue to maintain stable environmental conditions (temperature and humidity) in the room to prevent wood movement.
- **Regular Inspection:**

Periodically inspect the beams for any signs of movement, cracking, or gaps, especially during seasonal changes. Over heating the room with heaters and/or a fireplace can cause the beams to crack in extreme conditions.



Following these best practices will contribute to a successful and long-lasting installation of decorative wood box beams.

****Hewn Elements assumes no liability for improper installation, misuse of the product, or any damages, injuries, or losses resulting from the use of these instructions. Failure to follow proper installation practices may result in product failure or damage. Always verify measurements, structural support, and fastening methods prior to installation.***