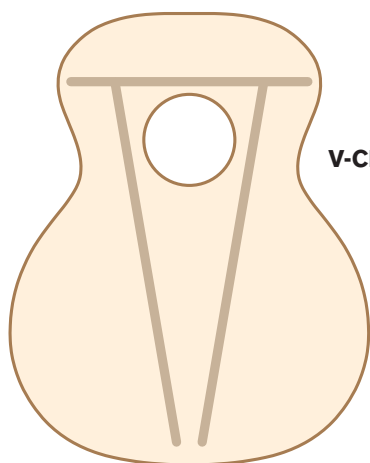


Taylor Bracing Patterns: Understanding Telegraphing

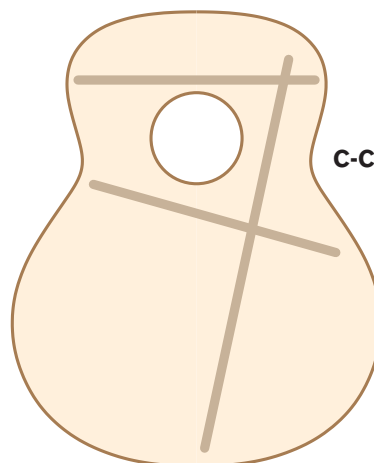
How Taylor bracing patterns respond to adverse humidity conditions

In this document, we explain the various bracing patterns used by Taylor Guitars, how they work structurally and sonically, and how they react to adverse humidity conditions. One related aspect we also address for each pattern is the occurrence of what guitar makers describe as telegraphing – when the braces underneath the top create a visible pattern outside the top when viewed in certain light conditions.

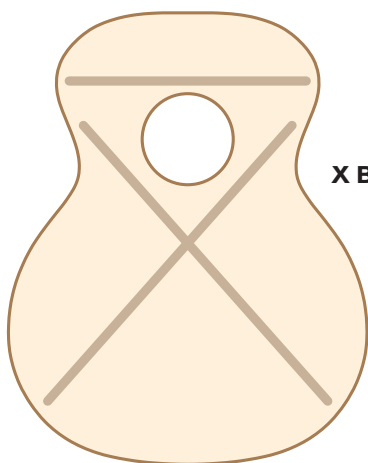
Bracing Types



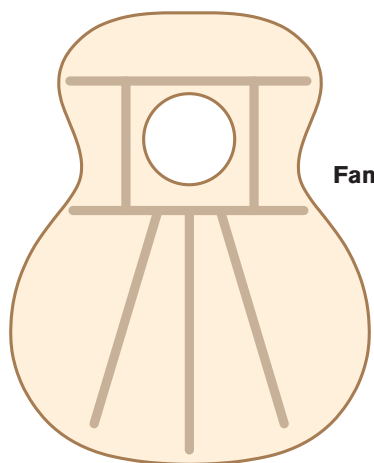
V-Class® Bracing



C-Class Bracing



X Bracing



Fan Bracing

V-Class Bracing

Structural/Sonic Performance:

The introduction of Taylor's patented V-Class bracing architecture marked a major shift away from traditional steel-string bracing patterns (i.e., X bracing). Instead of arranging the main support braces as a criss-crossed X, two braces are positioned in a longitudinal V formation (in the direction of the top grain and strings) with the top of the V splayed along either side of the soundhole. The arrangement adds stiffness lengthwise, while smaller fan braces extending out from the lower part of the V control the flexibility across both sides of the lower bout.

By allowing the soundboard to flex naturally while maintaining rigidity lengthwise along the center, the V-Class pattern helps enhance both the volume and sustain. It also creates a more orderly response from the soundboard. As a result, up and down the fretboard, notes are full, true and consistent, with more pitch accuracy and harmonic agreement with each other. As a design platform, the V-Class framework has been further adapted for different Taylor body styles and tonewood pairings to infuse each guitar model with a more distinctive sonic personality.

How they react to humidity changes:

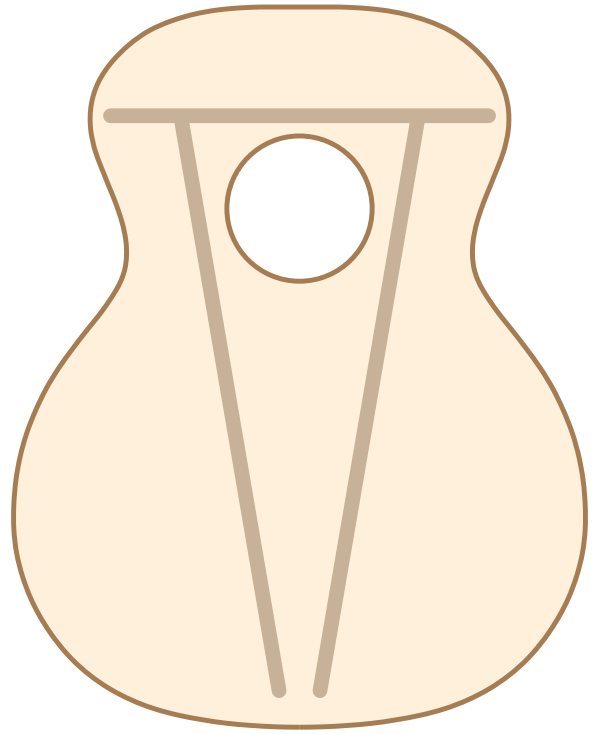
V-Class top bracing is more stable than a traditional X brace in adverse humidity conditions. The top does not dip and swell noticeably like an X-braced guitar. The top wood will still change with humidity changes, but will have less effect on the height of the strings over the fretboard. As humidity levels become progressively worse, you'll see dips or swelling on either side of the braces and in the space between the braces.

Telegraphing note:

Brace telegraphing on a V-Class guitar is more apparent since the braces are close to running parallel with the top grain and may even appear when the guitar is in ideal humidity conditions.

Pros: The guitar's playability is nearly unaffected when humidity levels fall far outside the recommended range.

Cons: With little change in playability occurring as an indicator of humidity range, it's more important than ever to monitor humidity levels with a digital hygrometer in the case or wherever the guitar is stored as extremes of temperature and humidity can negatively affect the function of other components of the guitar.



C-Class Bracing

Structural/Sonic Performance:

Developed for the smaller Grand Theater (GT) body shape (derived from the curves of Taylor's larger Grand Orchestra body), Taylor's proprietary C-Class bracing leverages some of the foundational, tone-enhancing ideas behind the V-Class design to boost the volume and sustain. Featuring an asymmetrical, cantilevered design (thus the "C" in C-Class), this unique architecture emphasizes the lower frequencies to produce a surprisingly powerful bass response from the smaller body. The overall sound is sweet, focused and responsive, with a tonal output that sonically punches above its weight class.

How they react to humidity changes:

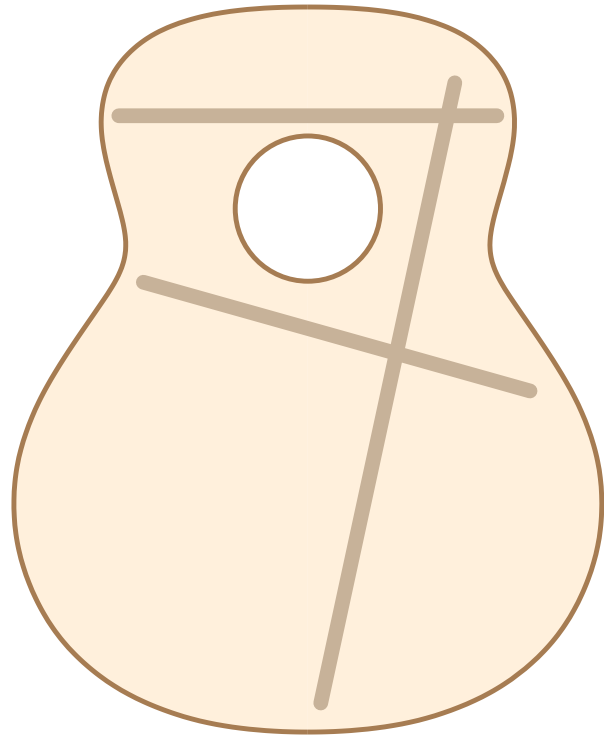
C-Class top bracing stays quite stable in adverse humidity conditions. The top does not dip and swell over its width and length like an X-braced guitar. The top wood is still swelling and shrinking, but the height of the strings above the fretboard remains fairly stable. As humidity levels become progressively worse, you'll see dips or swelling on either side of the single large top brace.

Telegraphing note:

Brace telegraphing on a C-Class guitar is expected since the braces are close to running parallel with the top grain and may even appear when the guitar is in ideal humidity conditions. A ripple or bulge will appear behind the bridge as the top wood swells and shrinks with humidity changes, but this is an expected function of the design.

Pros: The guitar's playability is nearly unaffected when humidity levels fall far outside the recommended range.

Cons: With little change in playability occurring as an indicator, it's more important than ever to monitor humidity levels with a digital hygrometer in the case or wherever the guitar is stored.



X Bracing

Structural/Sonic Performance:

The “X” pattern provides a continuous flow of strength from the upper bout to the lower bout and across the body, adding rigidity despite having a soundhole interrupting the top (which creates a weak spot that can allow the string tension to produce distorted movements in the soundboard). Taylor’s interpretations of this traditional bracing style have been adapted and refined to articulate our preferred voicing flavors and to produce pleasing volume, sustain and responsiveness, with signature clarity and balance across the tonal spectrum.

How they react to humidity changes:

X-braced guitar tops will rise and fall with humidity changes. In an environment under 45% Relative Humidity, the wood will begin to shrink, and the dryer it gets, the more it will shrink. A healthy guitar has a slightly arched top that will flatten out and eventually dip below the perimeter of the body when it gets dry. This pulls the strings closer to the fretboard, lowering the action and causing the strings to buzz. If the guitar goes unchecked, left in this state to continue drying, the top will eventually crack.

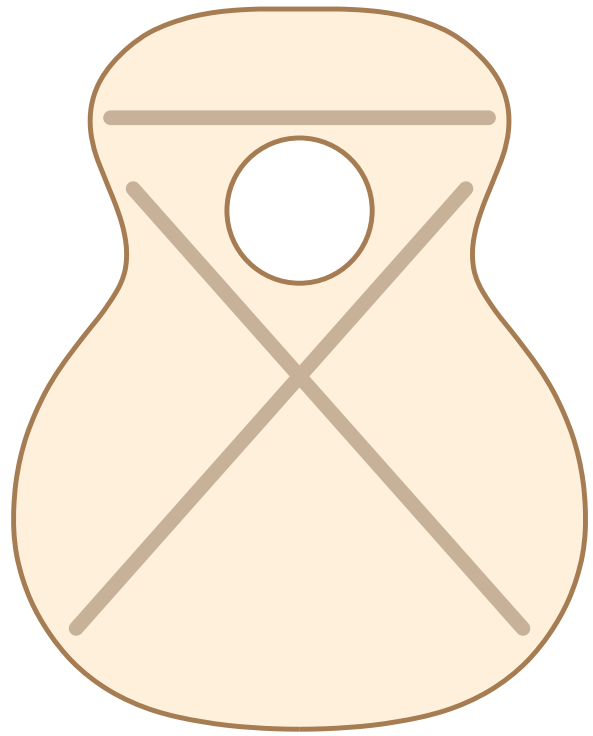
In an environment over 55% RH, the top will swell, raising the strings higher off the fretboard, making the slight top arch more pronounced and making the guitar difficult to play.

Telegraphing note:

There is little visual brace telegraphing because the braces run across the wood grain of the top. When overly dry or humid, the top will typically appear to be sunken or swollen between the braces.

Pros: The change in action is an indicator that something is wrong. Those who play regularly will notice this and take corrective measures to stabilize the humidity level before major repairs are needed.

Cons: The action moving with humidity changes can cause playability issues that can take several weeks to correct. Top cracks can be costly to repair structurally and may be noticeable even after repaired.



Fan Bracing (Nylon-String Models)

Structural/Sonic Performance:

Fan bracing is a completely different bracing style used on our nylon-string models. It was inspired by patterns used by classical guitar builders. Because nylon strings generate less tension and energy, a nylon-string guitar typically has a thinner top and much lighter bracing. Fan bar styles come in different arrangements, and we use both five-bar and three-bar patterns. The three-bar pattern (used for Academy, 100 and 200 Series nylon-string models) is a unique Taylor design that chief designer Andy Powers adapted from his ukulele designs. It produces a signature Taylor nylon-string voice: clear, open, responsive to a light touch, and long on sustain.

How they react to humidity changes:

Fan-braced guitar tops will rise and fall with climate changes. In an environment under 45% RH, the wood will begin to shrink, and the dryer it gets, the more it shrinks. A healthy guitar has a slightly arched top that will flatten out and eventually dip below the perimeter of the body when it gets dry. This pulls the strings closer to the fretboard, lowering the action and causing the strings to buzz. If the guitar goes unchecked, left in this state to continue drying, the top will eventually crack. When subjected to a high-humidity environment, the top will swell across its width, raising the string height making the guitar more difficult to play.

Telegraphing note:

Brace telegraphing on a guitar with fan bracing is expected since the braces are running close to parallel with the top grain and will likely appear even when the guitar is in ideal humidity conditions.

Pros: The change in action is an indicator that something is wrong. Those who play regularly will notice this and take corrective measures to stabilize the humidity level before major repairs are needed.

Cons: The action moving with humidity changes can cause playability issues that can take several weeks to correct. Top cracks can be costly to repair structurally and may be noticeable even after repaired.

