



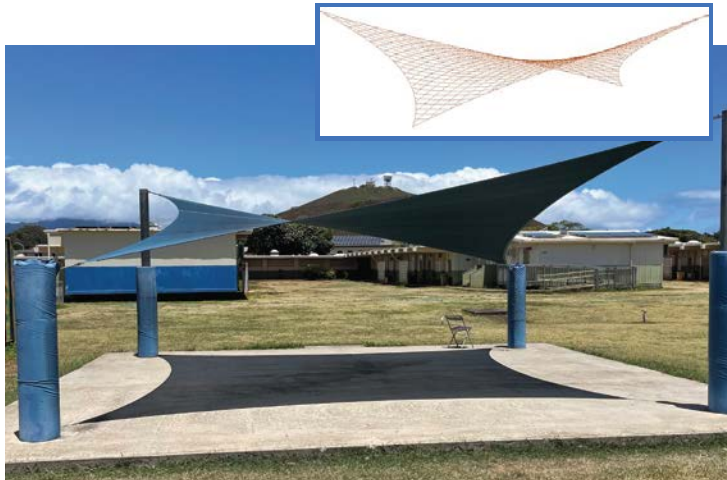
TROPICAL J's INCORPORATED

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TENSILE

Made in Hawai'i. Made for Hawai'i.

Tension structures also known as tensile structures are characterized by the tensioning of a fabric membrane. A membrane is a heavy duty industrial vinyl fabric that is stretched between points. It is not stretched over a frame like a canopy. You'll recognize tensile projects as they are normally fabrics that have a twist or a cone shape. Stretching the fabric in this manner creates an anticlastic shape, in which the fabric is being pulled in opposite directions and the cover becomes stable. This is called an anticlastic state and the easiest way to picture this of a saddle or a 4 point shade sail. Tropical J's does not install any 3 point shade sail projects.



Shade sails or tensile products are a great way to get shade overhead without a lot of steel or Aluminum framing. However in a commercial application these products require permits as the DPP mandates that anything overhead and over 300 square feet that covers more than 50% of the sky needs a permit. A permit will require that the property

is allowed to have additional covered floor space and that the product will meet or exceed a set wind speed. As of 5/12/22 that wind speed is 130 mph. In order to show this, a design/engineering is required to determine the size of the cables in the fabric perimeter, the working loads of the turnbuckles in the corner, the size of the posts or frame that support the fabric, the quantity, diameter and embed depth of the hardware anchoring the structure and the size of the footings that the anchors are into.

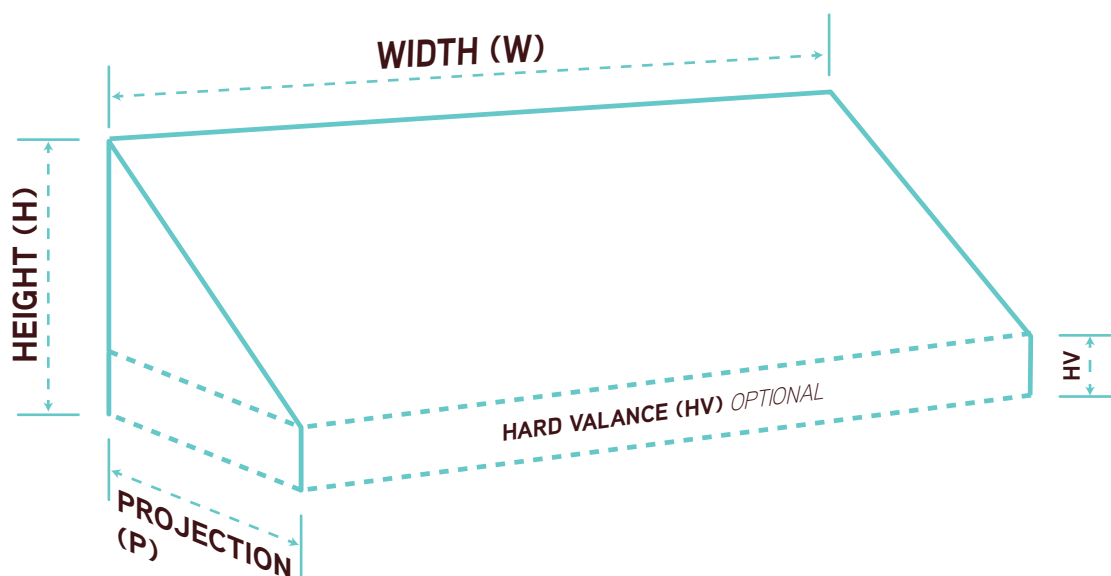
These sizes are determined by designing the fabric in 3D software, and then running a plugin that simulates the fabric in a 130 mph wind scenario. The forces that are generated at the points of attachment are then given to a structural engineer who interprets these loads as sizing for the supporting structure. These calculations and sizing are required for the permitting process and to be able to quote the project. Talk to your salesman about how we price these projects.





SIZING

All awnings are made to order



WIDTH This is how wide the awning is. If the awning is covering doors or windows, we usually try and give at least a few inches of additional width. We typically give at least 1" of space on either side if the awning is going into a space.

HEIGHT The total height of the awning including the hard valance. There's really no restrictions here, we've manufactured some really tall awnings in the past.

PROJECTION Awnings usually don't project more than 5' off a building. At 5' they may require a post. The introduction of a post turns an awning into a canopy which has serious permit implications. Awnings over doors should give you ample room to do what you need to do while its raining.

HARD VALANCE The hard valance adds a touch of class and provides a space for graphics. An awning does not need a hard valance.



SHAPES

Other shapes and styles are possible. Explore our project gallery online for inspiration and your salesman will help bring your vision to life.



Standard



Barrel



Dome





FRAME

In 10-15+ years from now, when the fabric needs to be replaced, you will be glad that you went with a reputable manufacturer. We try to use aluminum to avoid rust altogether, but there are situations when steel is required, typically for strength. In either case, our weld department primes all welds the day of welding to prevent rust and corrosion. All tubes are mitered and/or welded closed. We do not leave tubes open ended for salt and iron to get carried in by our tradewinds. We have been recovering our awnings for many years and continue to evolve our techniques and processes to provide the best protection from Hawaii's harsh environment. Our frames are manufactured to within 1/8" tolerances to lifesize prints if needed. We take great pride in our work.



Aluminum



Aluminum

Aluminum is normally a better choice for an awning frame because of its inability to rust and lighter weight for handling. It can corrode, but corrosion is usually not as destructive as rust.

Galvanized Steel



Galvanized Steel

Steel is typically used when an awning frame requires strength. In that case we always use galvanized or stainless steel. If plates or tabs are required, they are always 304 or 316 stainless plate.



PAINT

Our paint preparation process begins in our weld department, where all welds receive priming and frames undergo a light sanding before entering our paint booth. Our painter applies a high solids epoxy primer base coat followed by two-part urethane enamel topcoat. Our topcoat is available in high gloss white or high gloss black. Custom colors and matching available.





FABRICS

Commercial buildings require fire retardant fabrics. The two main categories are acrylics and vinyls.

Acrylic



Acrylic Fabric

Acrylic weaves are manufactured using solution dyed yarns. The water repellant yarns are woven together and the fabric is water repellant but not waterproof.

Pros:

- Woven yarns so it has that fabric aesthetic

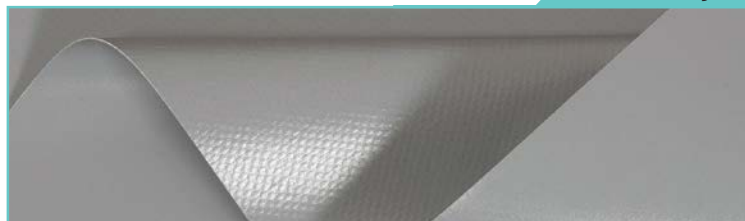
Cons:

- Typically not fire retardant
- Can accumulate dirt easier because of the weave
- Fabric welding not as reliable
- Woven so water repellant, not waterproof
- Adhesive vinyl graphics not a good option

Serge Ferrari
Premium Partner group

Soltis
Proof 502

Vinyl



Vinyl Fabric

Vinyl fabrics have an interior weave that is coated top and bottom with a PVDF coating. The coating makes them shinier than acrylics. We recommend Serge Ferrari's Soltis Proof 502, a great 10 year warranty fabric available in 40 colors.

Pros:

- Inherently fire retardant
- Possible to heat weld main panels together
- 100% Waterproof
- "Self Cleaning" because the surface is so smooth
- Adhesive vinyl graphics easily applied

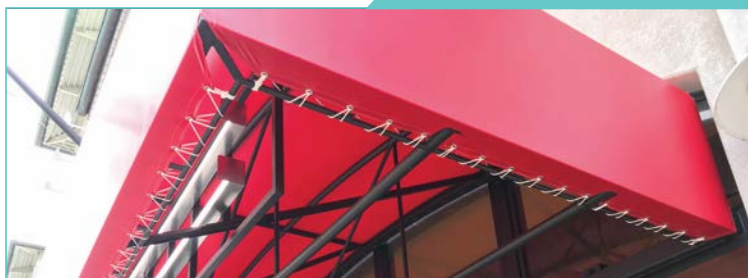
Cons:

- Satin sheen may not appeal to some customers



FABRIC ATTACHMENT

Lace



Lace

In this attachment style, the cover is manufactured with nickel plated brass grommets. The installers lace the cover to a tube welded to the awning called a lacebar. This is the appropriate connection for most fabric awnings with the intention of recovering in the future.

- Rope Material is double braided nylon
- Laceline available in black or white

Steel Stitch



Steel Stitch

In this attachment style, the fabric is stapled into a channel in the frame tubes. Once stapled in place, the extra fabric is cut off and a finishing strip is hammered into the gap to protect the stainless nails and hide the transition. This style is very clean and contemporary but may not be appropriate for larger awnings.

- Zip Strip available in 34 color options