

MPanel is the form-finding and patterning software for AutoCAD and Rhino

A Shade to Remember!

MPanel software was recently invited to assist with a workshop to design, produce and install a shade sail structure, hosted by Polyfab USA LLC. The focus of the workshop, a bright blue shade sail, was installed onto the Orange County Convention Center the day prior to the opening of the IFAI Expo 2010.



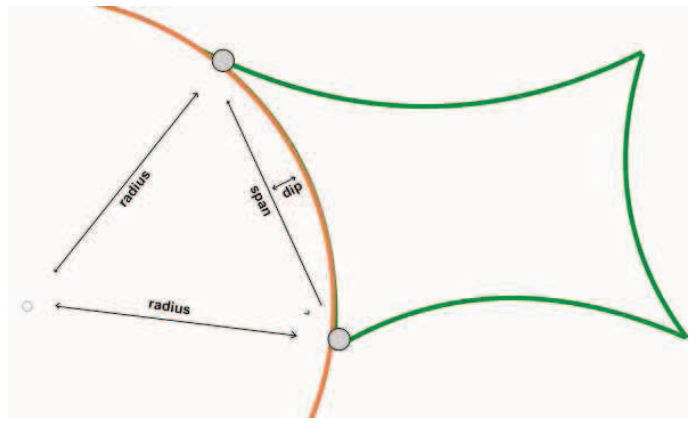
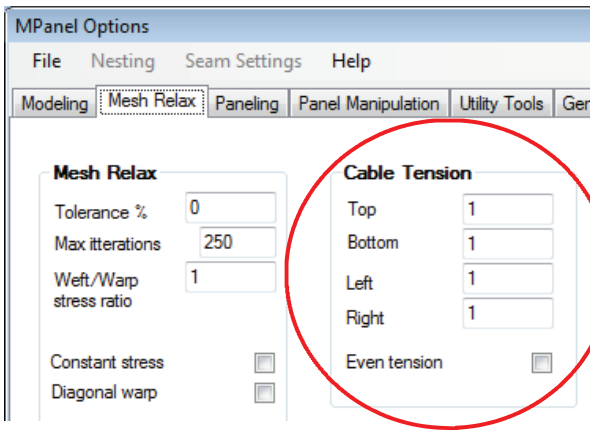
The shade sail was designed by Timothy Akes of CAD Effects (our US and the Americas representative, St. Louis, MO), using MPanel software, with assistance from MPanel's home office in Wales, UK. The structural engineering was handled by Gary D Foreman PE SE AIA PA of Ft. Myers, FL, using MPanel FEA (Finite Element Analysis).

Thanks to OCCC, permits and permission from Orange County were handled quickly. Jeremy Olson of Pioneer Awnings in Orlando, FL agreed to make and install the shade, and did a great job in a very short period of time. Polyfab USA donated the fabric, stainless steel shade sail hardware and shade sail edge webbing. W.L. Gore donated the color-matched Tenara thread.

The shade sail was installed the day before the workshop, so that workshop attendees could inspect the job, and the Expo attendees could see some of the capabilities of all of the products involved.

In the end, everyone learned a lot about the tools, processes and even the pitfalls that are associated with developing and installing shade sail structures. In return the OCCC got a shaded outdoor area and a flash of color that can be seen from many locations around town. All in all, it was a quite a team project that turned out great!

Technical Tip...Calculating Dip/Span Ratios



MPanel uses a modeling cable tension based on the model dimensions and the cable tension factor specified in the options. So to reduce the droop on a cable, we would specify a higher cable tension factor on that edge.

But the cable droop can also be specified as the "dip to span ratio", often expressed as a percentage. It is easy to convert between the two specifications using the following formula, and some example values are given for reference as well:

MPanel cable tension factor = $1 / 2 / \text{Sqrt} (2 * \text{dsr} - \text{dsr}^2)$ where dsr is the dip to span ratio.

Dip/Span ratio	Cable tension factor
5% (0.05)	1.6
8% (0.08)	1.3
10% (0.1)	1.15
13% (0.13)	1.0

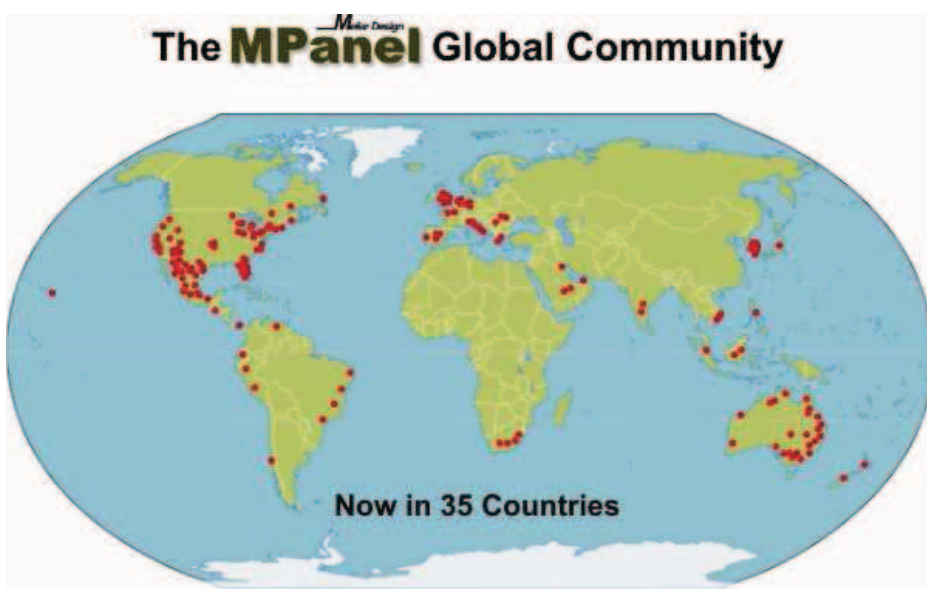
Also note that if the cables run freely around the corners (so they are not terminated at each corner) then we must design with the same cable tension on all edges. To achieve this in MPanel, we tick the box marked "Even cable tension", and use the same cable tension factor on each edge.

The Expanding World of MPanel

As the tensile fabric structure industry grows...so grows MPanel! Now with customers in 35 countries, MPanel is fast becoming the worlds leading software for the design and production of tensile fabric structures.

But structures are not our only line of work. MPanel is also great at helping with the design of Awnings, Shade Sails and Clearspan structures. We are equally at home in the Exhibit Design field, the Boat Cover industry, and Inflatable building design.

So whatever fabric structure industry you are involved in...MPanel can help!



IFAI Expo 2010 Highlights

One of the best things about the IFAI Expo for our MPanel Support Team is visiting with our customers face to face. It is great to see their recent projects and the many ways that MPanel is used. Our MPanel Outstanding Achievement Wall is always a great attention grabber! Below are some the the pictures that were taken during the 2010 event.



As always, please feel free to [contact us](#) with any questions that may arise as you use MPanel. Our friendly Technical Support Team members are available to answer your questions in a timely manner. Please also visit our website at www.mpanel.com to see more about our MPanel products.

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