



# 2012 **T-BOND MEMBRANE** Component Manual

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## MEMBRANE SAIL COMPONENTS

Contender Sailcloth is supporting the growing membrane sail market with a range of materials that allows sailmakers to create string sails without the associated risks of solvents in the workplace and the environment. Like the rolls of Polypreg Dacron and Superkote spinnaker cloth, our adhesive coated films and fibers are the raw materials our customers can use to make anything from a small dinghy sail up to a mega yacht inventory.

## T-BOND TECHNOLOGY

Our T-Bond adhesive has been used successfully for years in membrane applications and is specifically formulated for adhesion with polyester films. It is a flexible, high bond strength polymer with a melt point of 300° F (150° C). It has relatively high clarity, is UV stable, and incorporates an effective anti-mildew ingredient.

## T-BOND LAMINATION

Lamination technique and process settings are up to the sailmaker. We know that our components, when properly laminated with enough heat and pressure, provide an excellent bond with all elements within the laminate - fibers, taffetas, and films. Whether you use a vacuum or a heated roller or a combination, the critical feature, as with any lamination, is heat and pressure. It is vital that all components, including the underside, see enough heat to activate and flow the T-Bond. Heat energy promotes the bond strength so it is important to provide enough dwell time to drive the heat energy through the laminate. This is particularly important for large sails with thick heavy corner reinforcements.



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# T-BOND MEMBRANE FILM

Contender stocks a range of films coated with our T-Bond adhesive to give sailmakers the versatility to make the sail they want in terms of film and adhesive weight. Our films are supplied with a rugged 1.4 mil release liner to prevent blocking of the T-Bond adhesive during the application process. Our release liner is pigmented a tan shade to facilitate easier confirmation that the release film has been removed before lamination and to reveal any torn pieces of release accidentally left on the T-Bond film.

The melt point of the T-Bond adhesive is 150° C (300° F). It becomes tacky at a lower temperature but bond and flow properties are maximized at the higher temperature. The adhesive weight on our films has been tuned over several years to provide a careful balance between coverage, bond strength, and weight efficiency.

For high fiber density areas in the sail such as the head and clew or reef points, we also offer a 100% T-Bond GLUE FILM that is formed between two release liners. This glue film can be cut to shape for the area requiring a higher adhesive weight so the bond in the thicker corners of the sail can be assured without adding unnecessary adhesive cost and weight to the body of the sail. Simply cut the film to the required shape, peel off one of the release liners and press the glue film onto the fibers. Then peel off the top release liner and lay down the top skin. With vacuum and heat, the glue film will melt and flow into any voids to bridge the areas between the top and bottom skins.

Item Number	Description	Weight Grams/M <sup>2</sup>		
		Film	T-Bond	Total
MEM08A	.5 mil Film x 1.0 mil T-Bond	18	35	53
MEM08AB	.75 mil Film x 1.0 mil T-Bond	27	35	62
MEM08B	1.0 mil Film x 1.0 mil T-Bond	36	35	71
MEM08C	1.5 mil Film x 1.0 mil T-Bond	54	35	89
MEM12B	1.0 mil Film x 1.5 mil T-Bond	36	53	89
MEMGFILM	2.0 mil T-Bond Glue Film		70	70





# T-BOND FIBER REINFORCED FILM

For added stability, we offer our .75 mil film with an aramid X grid and the same X grid with a warp yarn. This fiber grid contributes to panel stability as well as tear and puncture resistance. By using these films on one of the membrane skins the sailmaker may be able to eliminate some yarns passes to increase machine efficiency. These fiber grids also add to the overall durability of the finished sail.

These X reinforced films are made in a 2 pass process that first coats the film and then puts a second T-Bond coating on top of the fibers. In effect this embeds the fibers into the T-Bond adhesive for improved bonding during lamination and easier handling.

The fiber is a 1000 denier Twaron offset at 45° on either side of the longitudinal axis of the film. In the warp version, we lay in 1 end every 1.25 cm (2 ends per inch) of the same Twaron 1000 denier. The added strength of the warp fiber makes this film suitable for heavier air sails like # 3's where impacts and flogging put stress along the leech of the sail.

Item Number	Description	Film	Weight Grams/M <sup>2</sup>		
			T-Bond	Fiber	Total
MEM08ABX	.75 mil Film x 1.2 T-Bond x Aramid X	18	46	14	78
MEM08ABXH	.75 mil Film x 1.2 T-Bond x Aramid X + Warp	18	46	25	89



# T-BOND FIBER REINFORCED FILM

# T-BOND TAFFETA

For increased durability for the cruising sailor, we supply a range of T-Bond taffeta components featuring various taffeta constructions on .75 mil film. These taffetas are calendered for a silky finish that is less prone to picking up dirt as well as being treated for mildew. The taffetas that are designed to be the outer skin of the laminate are all bonded to the film with a white TiO<sub>2</sub> pigmented adhesive to provide a very high level of UV protection for the fibers bonded in the laminate.

The T-Bond taffeta range features a wide selection of taffeta weights from 50x50 up to 150x150, all on .75 mil film. New for 2012 we are introducing a grey taffeta option made with solution dyed 150 denier fiber to provide consistent color and shading from edge to edge and lot to lot. This option is only available in the MEM08ABT style. We are happy to do special order colors providing sufficient volume to warrant a dye run.

Item Number	Description	Film	Weight Grams/M <sup>2</sup>		
			T-Bond	Taffeta	Total
MEM08ABTI	.75 mil Film x 50-50 taffeta x 1.0 mil T-Bond	27	36	62	125
MEM08ABTL	50-50 taffeta x .75 mil Film x 1.0 mil T-Bond	27	36	62	125
MEM08ABT	50-150 taffeta x .75 mil Film x 1.0 mil T-Bond	27	36	86	150
MEM08ABTH	150-150 taffeta x .75 mil Film x 1.0 mil T-Bond	27	36	135	198





