

North Sails 470 Spinnaker

Use of Spinnaker material for 470 Caution against spinnaker bursting

For the reasons explained below, North Sails Japan use polyester(poly) spinnaker cloth for 470 supplied by Teijin. Almost all the spinnakers that exist in 470 world fleet are built with this.

*all points are comparison to Nylon cloth

1. much less stretch
2. a lot lighter
3. much less water retention(weight) when it gets wet

The yarn of polyester exhibits less stretch, so if the pressure caused by impact of puff exceeds the breaking load, it will burst. This is because it is not elastic.

We use 0.75oz poly cloth as the standard cloth because the breaking load is about 20% stronger than 0.5 poly. Although 0.5 is good for the light wind, we never recommend to use 0.5 in more than 12 knots of wind simply because it has more risk of burst in breezy condition. (12 knots is very conservative, but we need it to be safe)

<The reason for burst>

1. Impact of the puff, especially when the boat is at low speed then speeds up quickly. i.e. After a nose dive or straight after flapping
2. After the leech tape was damaged by the stress or friction against shroud, spreader tip or another sharp edge when you hoist the spinnaker, the leech tape gets weakened, therefore its breaking load becomes a lot lower, so in this case it may burst without any impact in over 18knots apparent wind. This sometimes happens when sailing on a reach as the apparent wind increases a lot.
3. when the pressure exceeds the breaking load of the cloth

<Provision against burst of the spinnaker>

1. Taping well on all the sharp edges around spreader area.
2. Be sure to draw the guy sheet first when hoisting, and get the peak of the spinnaker to clear the spreader at the first pumping of hoist.
3. Using stretch sheet for the spinnaker halyard made of poly. It will work to reduce the impact of the pressure. And this is the best way to avoid bursting.
4. using Nylon cloth (a lot heavier)