Tip Wands - Proper Installation and Warranty Replacement

Proper Wand Installation

Proper installation and use of Wills Wing fiberglass tip wands can greatly extend the service life of the wands. Here are a few important things you should understand about your tip wands:

1) Although we use the most expensive S-glass high temperature pre-preg materials and the best available construction, these wands are not indestructible. In particular they are very susceptible to being damaged or broken by forceful contact with the ground, such as landing on a wing tip. Tip wands should be inspected regularly, and replaced when replacement is indicated.

2) When properly installed, and subject only to the normal flexing from loads occurring in flight, and during set-up and breakdown, the tip wands can be expected to have a reasonably long service life.

3) Proper installation means installing the wands with the same side facing forward for each flight. The reason for this is that the wand material experiences its highest stress relative to the material strength on the back side, or compression side of the wand, at the point where the wand exits the receptacle in the end of the leading edge. It is typical for the wand to develop small areas of stress in the material in this area. These can be seen as circumferential lines of whitish or lighter color, at a point about 4 5/8 inches from the large end of the wand. If these areas of stress are kept on the back side of the wand, they will generally not progress, and will not spread to other areas of the wand. However if the orientation of the wand is varied from one set-up to the next, areas of stress can be created around the entire circumference of the wand. These stressed areas then become susceptible to failure if placed on the front, or tension side of the wand. Henceforth, tip wands will have a label near the end that tells you which side is the back side of the wand – orient this side to the rear when installing the wand. (The back side of the wand is the side on the inside of the normal bow of the wand – the side that the wand lever lays against after the wand is fully installed and the lever has been cammed over.)

Warranty Coverage

Wills Wing warrants tips wands against failure in normal use for one year from the date the wand was put into service. Each wand is serialized with the month and year. Normal use means the normal loads and deflections that occur in flight, and during set-up and break down, when the wands are installed properly according to the instructions above. Normal use does not extend to the loads and deflections resulting from forceful impact on the wand, such as landing on a wing tip, or to damage caused by improper installation.

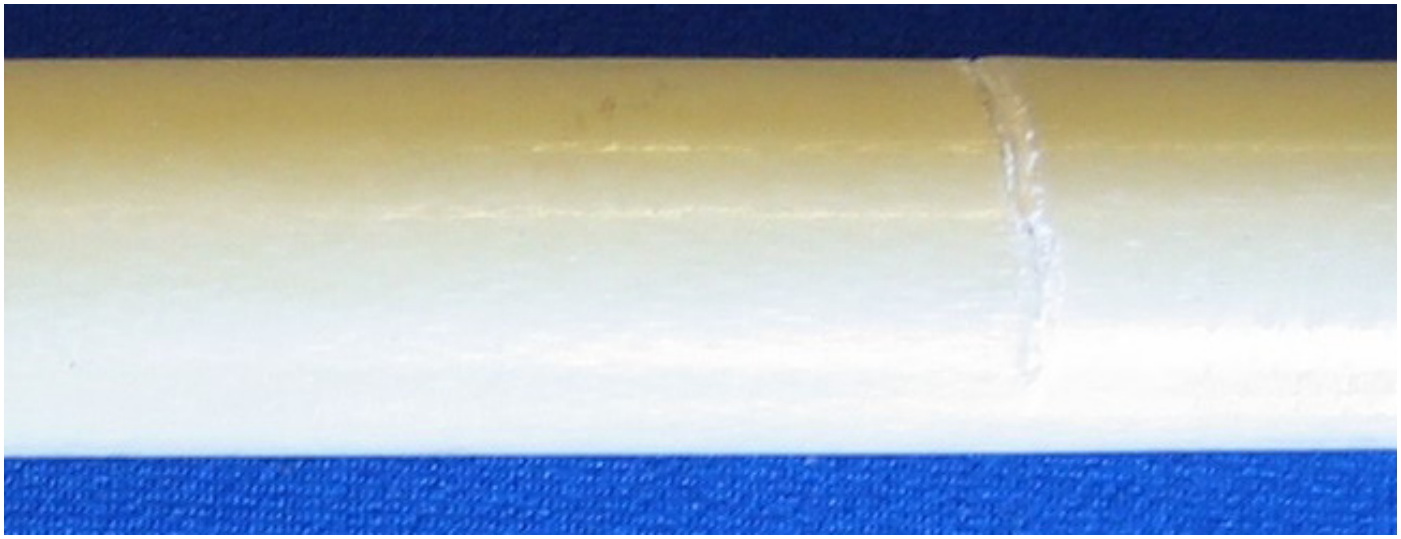
Failure means damage to the wand that is sufficiently severe that a total failure of the wand in further normal use is imminent. Note that it is normal for wands to acquire minor subsurface cracking or crazing that appears as circumferential lines of whitish or lighter color. By themselves, these visual indicators of stress in the material are not an indication of a failed wand. If there is no crack in the outer surface of the wand, or if there is only a minor surface disruption that is confined to one half of the wand circumference, with no significant cracking on the other half, the wand has not failed, and would not be expected to fail in normal use if properly installed.

If you have a wand that is under warranty, that you believe had failed in normal use, you have two options to exercise the warranty.

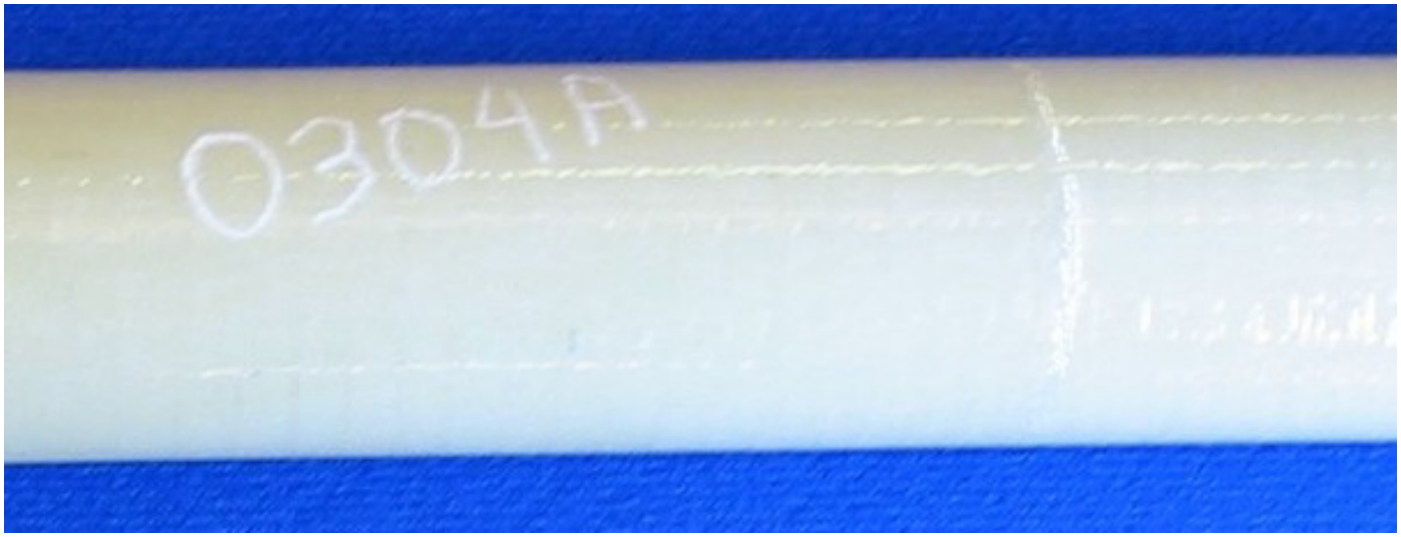
Option one is to return the wand to Wills Wing. If we determine that the wand has failed and is covered under the terms of the warranty, we will send you a new wand at no charge. If we determine that the wand has not failed, we will return it. If we determine that the wand has failed, but is not covered under the warranty, we will offer to sell you a replacement wand at 2/3 of the normal retail price.

Option two is to purchase a new wand, and then send in the wand you believe has failed after you receive your new one. You may purchase your replacement wand directly from Wills Wing, (and should do so if you think you may want a refund), or from your local dealer. If we determine that the wand you sent in has failed and is covered under the terms of the warranty, we will send you a new replacement wand at no charge. If you would prefer to receive a refund of your purchase price, we will do that if you so elect, and if you purchased the replacement wand direct from Wills Wing. If we determine that the wand has not failed, we will return it to you. If we determine that the wand has failed, but that the failure is not covered under the warranty, we will refund one third of your retail purchase price.

Below you will find examples of a failed wand and one that we would not consider to be failed. (Note that tests have shown that even the wand shown as failed below could be used without the expectation of a total failure if it were properly positioned with the damaged area on the back side.)



Failed Wand – Crack is .050" deep into surface



Not a Failed Wand – No surface crack or disruption; minor stress indication.