

# Assessing the Quality of a Secondhand Wing and what to Buy, new or second hand?

## A Tech Dummy Guide

One of the most frequently asked questions by students, new pilots, and even experienced pilots is, "How do I determine the longevity of my glider and do I buy a new or secondhand wing?"

### Manufacturer's Guidelines

While manufacturer specifications and recommendations provide a baseline, they typically apply to wing usage in perfect condition. Paramotor wings, constructed from high-performance non-porous fabrics, generally last around 300 hours (approximately four years) before they start to deteriorate, depending on usage and care.

### Real-World Observations

Service centres such as Walland Air in CT report finding wings that, despite being 15 years old, remain in mint condition, whereas some wings barely two years old are unairworthy. Factors affecting a wing's lifespan include not just air time but also ground handling and exposure to the sun.

Statistics from Aerofix indicate more failures in lines than in the fabric itself. Nova's Service Centre Austria has seen gliders with over 500 hours still in good condition, while others become worn out or unairworthy after just 150 hours.

### What to Buy?

Drawing from 20 years of industry experience and having witnessed the evolution of wing designs—from the first reflex wing in SA around 2004 to the latest technology in 2024—it's evident that significant design changes occur roughly every 4-5 years. Based on these timelines and manufacturer specifications, I offer the following guidelines:

- **New Wings**

For students, it's advisable to use school-provided wings for training. When purchasing, opt for a wing rated for students, from basic to high-end basic. This wing should last about three years before an upgrade is necessary, offering the latest and safest technology, and ensuring you know the wing's condition.

Product Comparison Table

	BEGINNER	INTERMEDIATE	ADVANCED	REFLEX	COMPETITION
Easy*					
MOXIEPWR <span>3NA</span>	██████████				
MOJO 2022	██████████	██████████			
KONA 3		██████████	██████████		
Sport					
Roadster 3		██████████		██████████	
SPYDER 3		██████████		██████████	
Speedster 3			██████████	██████████	██████████
Sirocco 3		██████████	██████████	██████████	██████████
Competition					
FREERIDE 3			██████████	██████████	██████████

Typical Manufactures Recommendation table. Note: As a student, you can train and fly a beginner wing only, even a High-end beginner wing is recommended for schools.

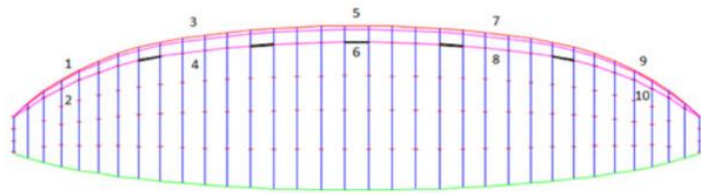
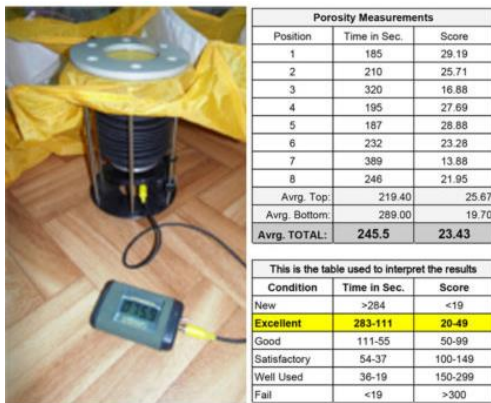
- **Secondhand Wings**

If you choose to buy a secondhand wing, consider the following:

The following table is based on fair use. As mentioned it is always recommended to get the second wing inspected before buying.

Age and Hours of Use:

- 1 year: 10-20 hours – 70% of new price – As certified by Inspector: as New
- 2-3 years: 50 hours – 50% of new price – As certified by Inspector: Very Good
- 3-4 years: 100 hours – 40% of new price - As certified by Inspector: Good
- 4-5 years: 150-200 hours – 30% of new price - As certified by Inspector: Fair
- 5-10 years: 200+ hours – 20% of new price - As certified by Inspector: Used



Paraglider Material Porosity Tester:  
Measures the material density in seconds

Condition and Inspection:

Wing older than 10 years or with a report Used/Heavily used I will not consider. Wings around 2-3 years old with high usage should cost about 30-40% of the new price and must pass a safety inspection from an approved service centre like Walland Air in South Africa.

As an instructor, I do not train students on secondhand wings older than two years without a proper inspection or certification.



Paraglider Line Tester :  
Measures the line length, and stretching.

# Factors to Consider When Choosing Your Wing

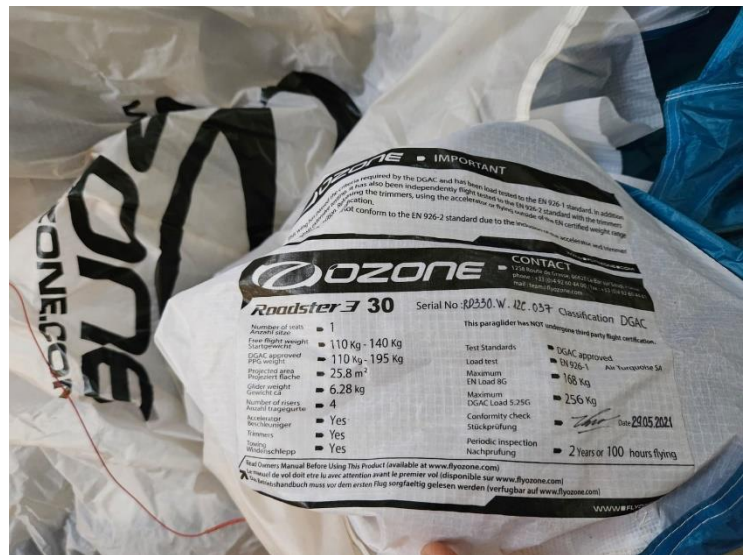
- **Loading:**

Lightly loaded wings react more slowly and less severely to collapses and in-flight events.

Higher-loaded wings are more pressurized, leading to less frequent but more severe collapses.

Weight Range:

Ensure you fall within the weight range of the wing. For high-altitude flying (e.g., Gauteng at 4800 feet ASL), aim for around 50% of the wing range. At sea level, use about 70-80% of the wing's range.



Example Wing Label and DGAC Approved PPG Weight Range: 110-195Kg for the specific wing

- **Instructors Recommendations:**

Always consult your instructor to choose a wing tailored to your application, needs, and budget. Every school will have its preferred brands. Not only because they might sell it but also because they got the experience on the wing. I can honestly say that most schools and dealers in SA sell top-range wings.

- **Maintenance and Care**

Proper care is crucial for the longevity of your wing. Heat and dampness, especially when combined, are the worst enemies of your wing's material and lines. Measure your wing's age by UV exposure, and avoid unnecessary sun exposure. Salt from sea air/water can damage the structure of the material, stitching, and lines.

## Conclusion

In summary, look after your wing, get it serviced and inspected yearly, and ensure any secondhand wing is suitable for your application, falls within your weight range, and is 100% airworthy and certified.

**Safe Flying!**

By "The Tech Dummy", Apex Adventures.

References:

XC Mag – 15 Jan 2022

Wallend Air Service Centre

Aerofix Service Centre

Nova's Service Centre