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F-ONE Foils Guide
2022

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The F-ONE Experience

We design foils since 2013 together with Charles Bertrand our in-house naval architect since day one. This guarantees a intelligible evolution in our developments and ranges.

We have designed this 2022 range in the most comprehensive way independently from any trends. This range is therefore perfectly coherent if you want to move from one foil area to another or from one program to another. Our range is exceptionally modular with our foils being adaptable on all of our masts whether there are carbon or aluminium.

To make your choice easier when facing the numerous foils and their different surface areas, we have decided that your first guide should be the choice of the foils aspect ratio, which will determine your riding program.

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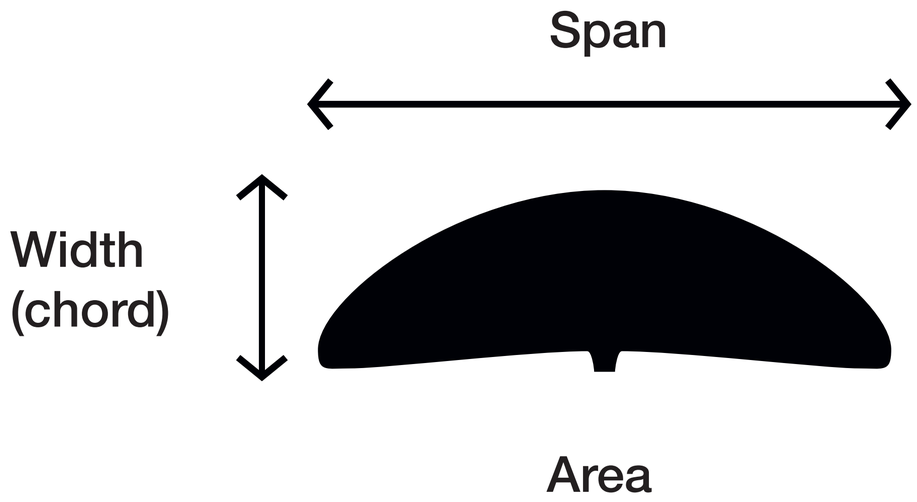
The Aspect Ratio

The Aspect ratio (AR) is key to understand the way we constructed our range of foils.

It is the ratio between the surface and its span.
AR = Span^2 / Area

The higher the AR of the foil, the better the performance and gliding ratio will be for an experienced rider.



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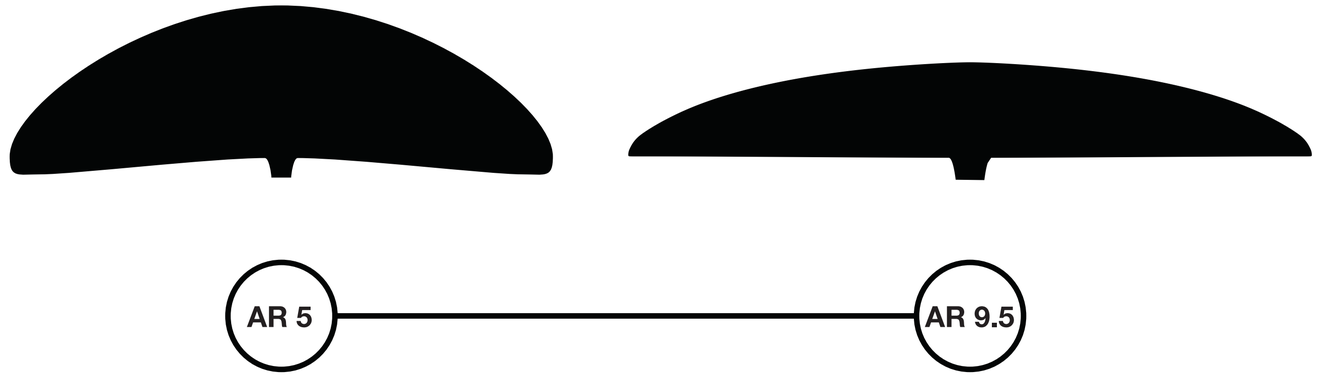
AR and range

We will classify our range of foils in 4 levels of AR in order to define a program for each foil:

AR 5	Accessibility- Take off
AR 6	Surf - Planing - Freestyle
AR 7.5	Downwind - Glide
AR 9.5	Downwind - Speed



How to choose a foil **according to its AR**

The higher the aspect ratio, the better the foil will perform, the further it will fly. It will require more minimum speed to start planing and develop lift.

An AR of 5 is the most accessible and recommended to learn how to foil.

The most versatile and best performing is the AR 6. Its medium span guarantees maneuverability for surfing and accessible pumping.

When you switch to an AR of 7, you increase your Vmax and glide further while free flying. On the other hand, the extra span penalizes the maneuverability.

The AR 9 is reserved for the experts. It offers incredible glide if you maintain sufficient speed. It also offers good maneuverability under 1000cm2.

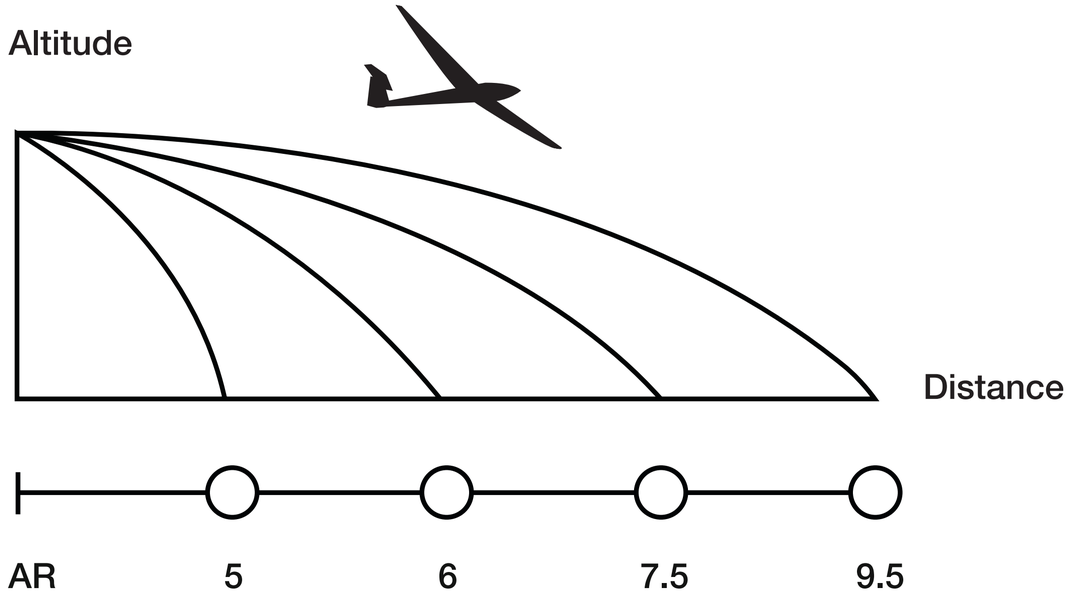
Glide Ratio

The Glide Ratio is the foil ability to travel forward with a minimum loss of altitude.

With the same starting speed, a foil with more glide will fly further.

It is therefore an great asset for downwinding.

For example:
The Eagle's AR 9.5 allows you to fly further than the Gravity's AR 5.



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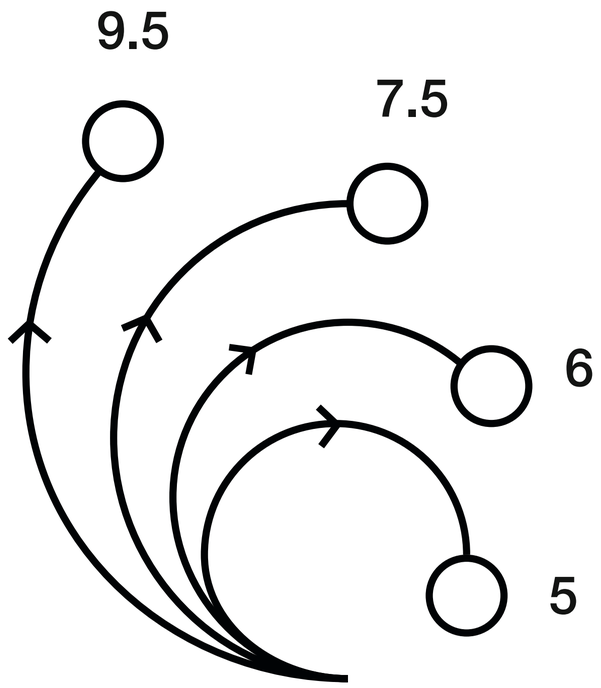
Turning Radius

It is how tight your can make the foil turn.

With equal areas, a higher aspect ratio will make wider turns.

For example:
A 1200 Seven Seas will have a wider turning radius than a 1280 Phantom.



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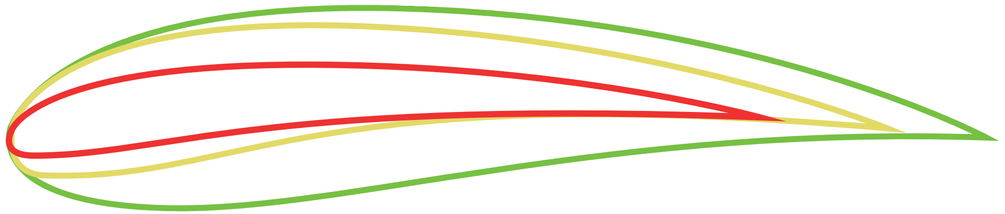
Profiles

We have designed our foil range with appropriate profiles according to the program / areas / aspect ratio of each foil. We are using three sorts of profiles:

- A « powerful profile » for the AR 5. It offers an easy and progressive take off.
- A performing profile which offers more glide for the AR 6.
- A fast profile for our highest AR 7,5 or 9 or for the smallest AR 6,5.

Powerful
Performing
Fast



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Common Misconceptions

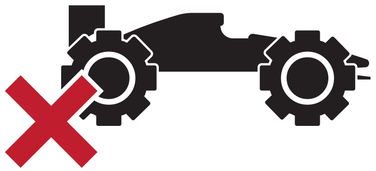
This combination of profile types and Aspect Ratio is essential to get the most out of each program and to remain versatile.

For each aspect ratio there is a range of appropriate areas, for example, it is difficult to make a AR 9 on a 2000 wing because the span would be too extreme.

It is possible to put big 4x4 wheels on a Formula 1 or vice versa and get a result but it will be too specific to really work in a wide range of conditions.

Adapted

Too specific



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Range finder

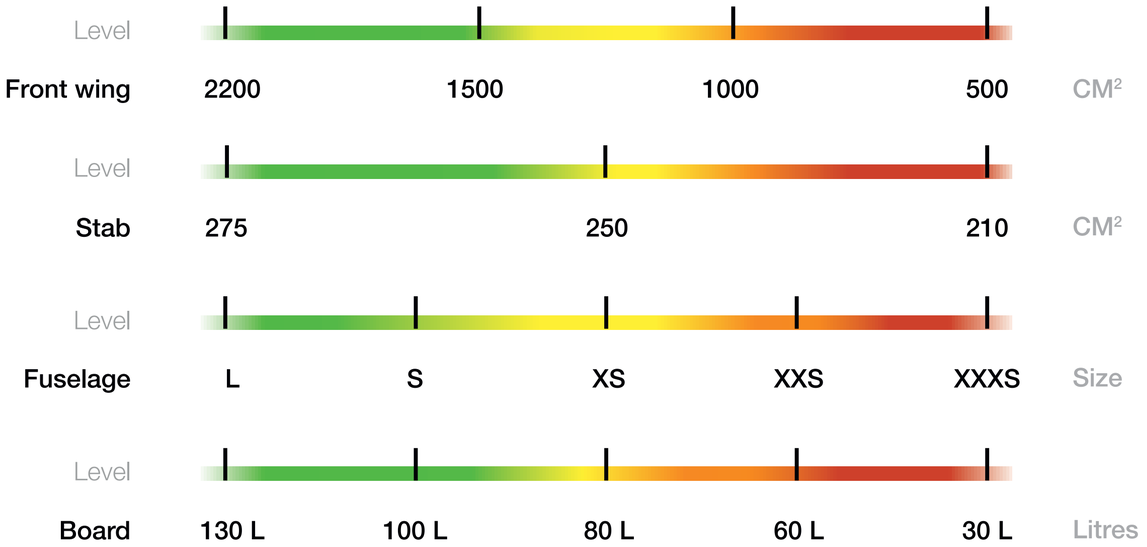
Our new foil range is divided in 3 groups: over 1500, 1000 to 1500 and the under 1000.

The range is extremely accessible, only the foils under 1000cm2 are reserved for experts.

Along with the front wing selections, you can choose your stab and fuselage size.

A shorter fuselage or a smaller stab will make for more speed and tighter turns.

Follow the colored chart to get the best from your gear.



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Find the foil
that fits your weight

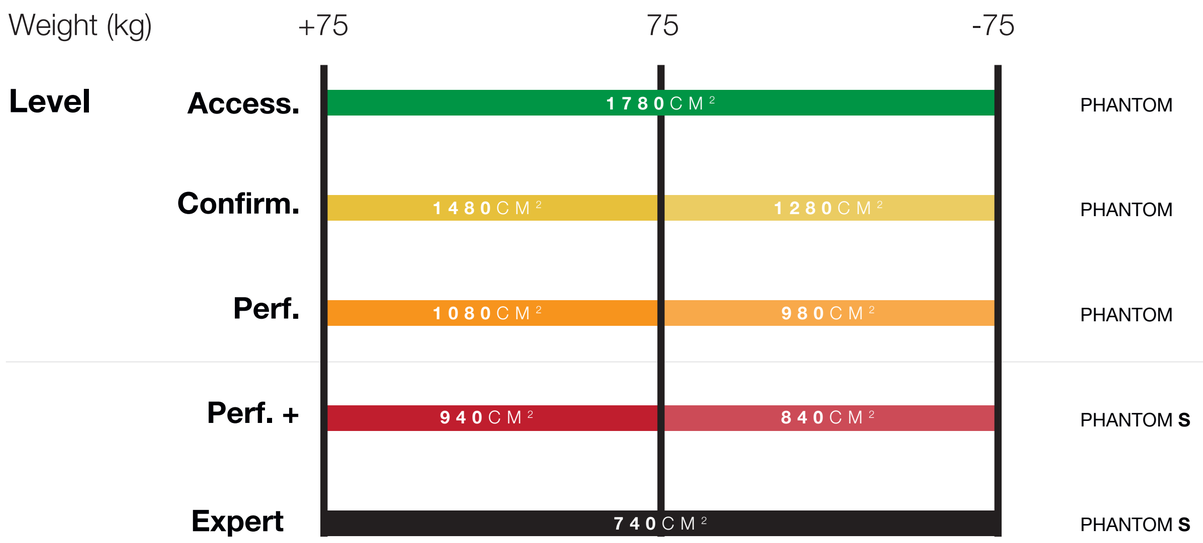
For each area there are conditions / laws of physics you should respect.

The rider's body size must be in accordance with the chosen foil area. A rider over 75kg will not get the same accessibility as a rider under 75kg for an equivalent foil area.

So the selection of the foil's area must be made following the rider's weight and level of practice.

For example:
I am under 75kg, therefore my Phantom quiver must be around 1280 - 980 - 840

*Example for the **Phantom & Phantom S** range*



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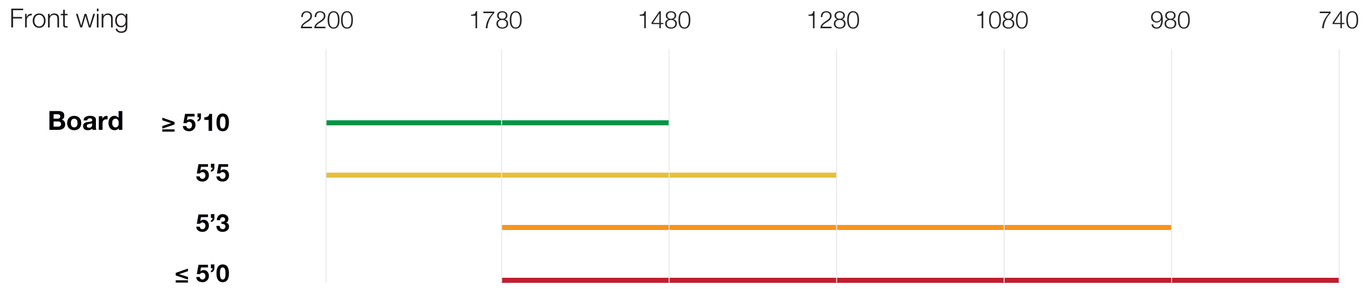
Match your board with your foil

In the same logic, the board size must be in accordance with the foil area.

For example:
I ride with a Rocket Wing 5’3, I can have a foil down to 980.

To use a Phantom S 840, I should rider have a Rocket Wing up to 5’0.

On the other hand nothing stops me from using a Rocket Wing 5’0 with a Phantom 1280.



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Hydrofoil range and programs

	FOIL	SIZE	ACCESSIBILITY	TAKE OFF	V max	SHORT TURNING RADIUS	WIDE TURNING RADIUS	POP / JUMP	DW / GLIDING RATIO
AR 5	GRAVITY	2200 1800	★★★★★	★★★★★	★	★	★★	-	-
AR 6	PHANTOM	1780 1480 1280 1080 980	★★★★	★★★★	★★★	★★★★	★★★★	★★★★	★★★
AR 6.5	PHANTOM - S	940 840 740	★★	★★	★★★★	★★★★★	★★★★★	★★★★★	★★★
AR 7.5	7SEAS	1400 1200 1000	★★★	★★★	★★★★	★★★	★★★★	★★★	★★★★
AR 9.5	EAGLE	990 890 790	★	★	★★★★★	★★	★★★★★	★	★★★★★

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