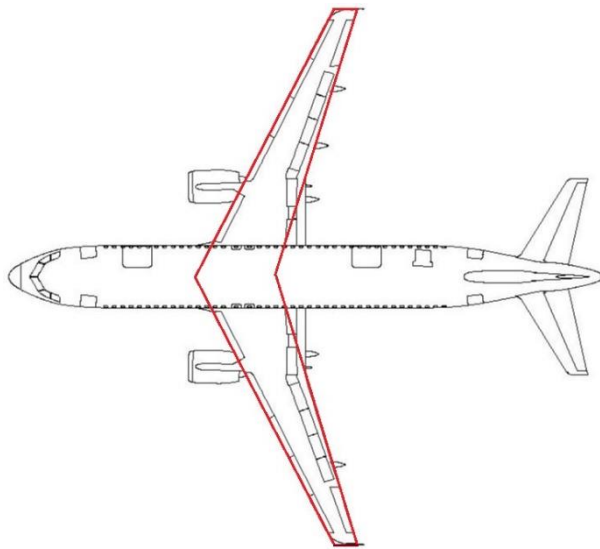


In order to make easier some aerodynamic calculations, lifting surfaces of complex geometry are converted to simple trapezoidal planform. This is done according to specific methods.

**List of methods:**

	Wing	Tails
Trapezoidal	x	x
Tip Based	x	x
ESDU	x	x
Airbus	x	
Boeing	x	

**Trapezoidal**

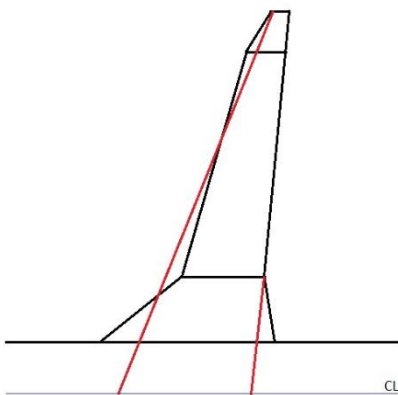


The method consists to extend the lines of the leading edge until it meets the centerline of the fuselage. And to do the same for the trailing edge.

$S_w$  computed from the contour formed by the red lines

For all types of aircraft

**Tip Based**



The method consists to define the equivalent wing planform with the same area and the same wing tip.

$S_w$  computed from the contour formed by the red lines

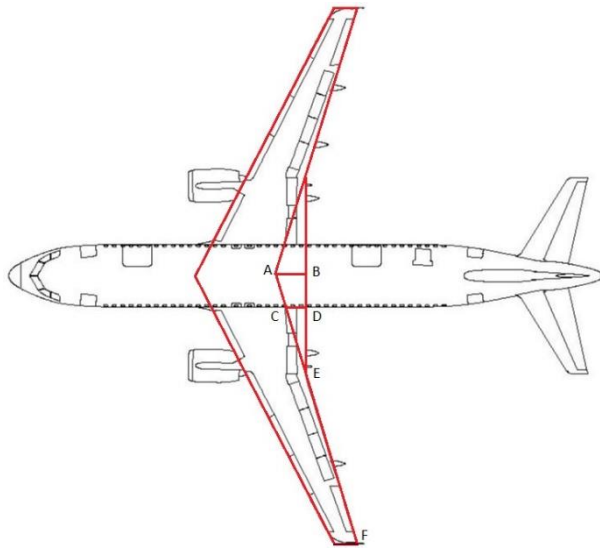
For all types of aircraft

**Set by default**

**ESDU**

The method to define the equivalent wing planform is described in the **ESDU Datasheet 76015** (Engineering Sciences Data Unit, <https://www.esdu.com>). This is valid for all types of aircraft.

**Boeing**

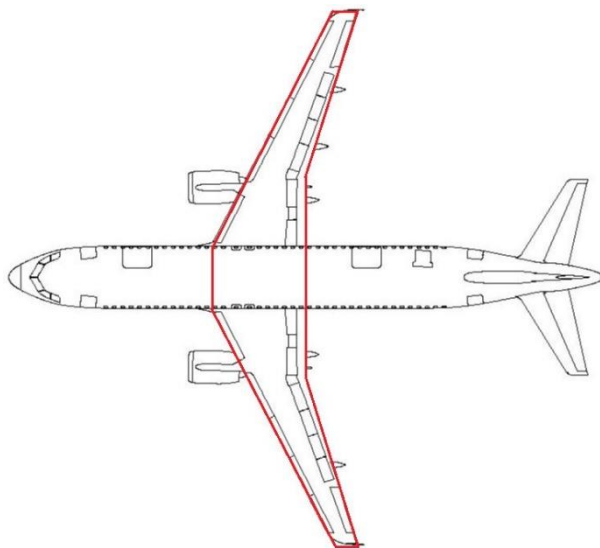


Wing area definition used by Boeing (called Wimpress).

$$S_w = S_{trapezoidal} + 2 \cdot (S_{CDE} + S_{ABDC} \cdot \frac{|CE|}{|CF|})$$

Specific to Boeing Airliners

**Airbus**



Wing area definition used by Airbus

$S_w$  computed from the contour formed by the red lines

Specific to Airbus Airliners