

# EXAMPLE CALCULATION

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## WIND CAPTURE:

The total lateral surface area of the vessel above the water line in  $m^2 \times 0.5$  (half the boat length)  $\times 0.75$  (correction factor) = Lateral wind capture surface area in  $m^2$ .

On the Beaufort scale, the following wind pressure is displayed in Kg per  $m^2$ .

Bf 4 -> 2.2 Kg  $p/m^2$

Bf 5 -> 4.4 Kg  $p/m^2$

Bf 6 -> 7.5 Kg  $p/m^2$

Bf 7 -> 12.0 Kg  $p/m^2$

## SITUATION:

A vessel with a length of 7 metres and an average height above the water line of 1.3 metres has a wind capture surface area of 9.1  $m^2$  + a superstructure and rigging with a surface area of 2  $m^2$ , making the total wind capture surface area for this vessel 11.1  $m^2$ .

Note: Include rigging and superstructure in surface area calculation

## EXAMPLE: Thrust pressure calculation in Kgf (kilogram force).

$11.1m^2 \times 0.5 \times 0.75 = 4.1625 m^2 \times$  Bf. factor 7.5 = 31.2 Kgf thrust pressure required for wind force up to 6 Bf.

Jet Thruster systems by Holland Marine Parts are available with thrust pressures varying from 30 to 90 Kgf. Based on the provided dimensions of the vessel a proposal is made in this module.

