



NSCV PART C SUB-SECTION 6A - INTACT STABILITY Alternative criteria for towing stability assessment

This document describes a solution that the National Regulator considers will achieve the outcome required by the applicable standard, within the limits of the service category of the vessel on which the solution is implemented. It is not the only solution that may achieve the required outcome.

Application

This equivalent solution is available to vessels engaged in towing in operational Areas A, B, C, D and E by means of a tow-rope where:

- The vessel being towed is likely to exceed twice the displacement of the towing vessel; or
- The drag of the tow at a speed of 3 knots exceeds the bollard pull of the vessel.

It excludes pushing operations and operations where a vessel tows by being lashed alongside.

Note: Many vessels arranged for towing by pushing or being lashed alongside will also, on occasion, tow by means of a tow-rope.

Current Requirement

Clause 6.6.3.2 of Part C6A Chapter 6G states that:

“A vessel that complies with the applicable criterion listed in Table 21 over the range of loading conditions during which the vessel is likely to engage in towing shall be deemed to satisfy the Chapter 6G criterion.”

Equivalent Solution and Guidance

For a towing vessel, the Chapter 6G criterion is deemed to be satisfied if the vessels meets the additional towing criterion contained within:

International Association of Classification Societies (IACS) Recommendation Rec.024: Intact Stability, as amended from time to time.

Note: at time of publishing these criterion are as follows:

- The residual area between a righting lever curve and a heeling lever curve developed from 70% of the maximum bollard pull force acting in 90° to the ship-length direction should not be less than 0,09 mrad. The area has to be determined between the first interception of the two curves and the second interception or the angle of down flooding whichever is less
- alternatively, the area under a righting lever curve should not be less than 1.4 times the area under a heeling lever curve developed from 70% of the maximum bollard pull force acting in 90° to ship-length direction. The areas to be determined between 0° and the 2nd interception or the angle of down flooding whichever is less.

The heeling lever curve should be derived by using the following formula:

$$b_h = \frac{0.7TH\cos\theta}{9.81\Delta}$$

where:

- b_h = heeling arm, in m
- T^h = maximum bollard pull, in kN
- H = vertical distance, in m, between the towing hook and the centre of the propeller
- Δ = loading condition displacement, in t.