HEEL TEST (SUSPENDED LOAD) MEASUREMENT REPORT

Guidance on conducting the test is at Annex A below

**Basic Data:**

|  |  |  |  |
| --- | --- | --- | --- |
| Vessel's Name: |  | Year of Build |  |
| Reg. (RSS) No.: |  | Fishing No.: |  |
| Date of test: |  | Fishing method: |  |
| Weather conditions: |  | Water conditions: |  |
| Name of person conducting test: |  | Signature of person conducting test: |  |
| If conducted at MCA inspection, name of surveyor |  | Signature of Surveyor |  |
| Breadth: |  m | Depth | m |
| Registered Length | m | Length Overall | m |

**Condition of vessel:**

|  |  |  |  |
| --- | --- | --- | --- |
| Fuel oil - Full: or empty  |  | Provisions - Full Y/N  |  |
| Water – Full or empty |  | Fishing gear stowed? Y/N | Where stowed? |
| Ice on board? Y/N  | If Yes - amount: t | Spare warps etc | Where stowed? |

Details of Fishing Gear and other loose equipment:

**Minimum Freeboards: To be measured with vessel trimmed upright (may require movement of loose gear or tank contents)**

|  |  |
| --- | --- |
|  Port | Starboard |
|  m |  m |

**Heeling Test:** Use an outboard derrick to lift a typical to normal fishing operation weight from the derrick

|  |  |
| --- | --- |
| Weight lifted |  **Kg** |
| Type of weight used |  |
| Method of measurement of Heel | Pendulum/Freeboard |

**Heel Test Results (see also example below)**

**By Pendulum:**

Angle of Heel = tan -1 $(\frac{deflection}{pendulum length} )$

Or

**By Freeboard measurement**

**Angle of Heel =**

**tan -1** $(\frac{mean change in freeboard from upright}{(\frac{b}{ 2} )} )$

**(b = breadth)**

|  |  |
| --- | --- |
| **Angle of Heel** |  |
| Freeboard Port |  |
| Freeboard Starboard |  |

The Vessel passes the test if the angle of heel does not exceed 7 degrees and in the case of a vessel with a watertight weather deck extending from stem to stern, the freeboard to deck is not less than 75mm at any point; or

if unable to meet the criteria above, the angle of heel may exceed 7 degrees, but should not exceed 10 degrees, if the freeboard in the heeled condition is in accordance with that required by Annex 8 of MSN1871 Amendment No.2 in the upright condition.

**If the vessel does not pass either of these requirements, the MCA must be contacted to discuss remedial action.**

FB Heel Test example:

L = 6m; B = 2m

Vessel upright: Fb = 400mm (Port & Stbd)

Weight on one side: Fb = 360mm & 440mm

Mean change in Fb = 40mm

$$\frac{Mean change in Fb}{\frac{b}{2}}=\left\{\frac{40}{\left(\frac{2000}{2}\right)}\right\}=0.04$$

$$tan^{-1}0.04=2.29°$$

# **ANNEX A - Conducting FV Heel Test**

The aim of the Heel test is to indicate whether significant modifications have been made to the vessel, its gear or gear handling arrangement or if the changes you have made to the vessel have significantly changed the vessels stability.

It is preferable to use components of the actual gear, lifted from a block in its highest & or furthest outboard location, to give a measurable heel angle such that the heeling test will relate directly to the vessels typical fishing operation. E.g. A beam trawler could lift one beam trawl from a horizontal derrick on one side, typically this will result in a heel angle of about 10°. Any increase in the trawl weight or derrick length, or decrease in the stability, will result in a larger heel angle.

The Heel test can be repeated to assess modifications to the vessel or to assess the effects of cumulative weight gain over time.

It is essential that the repeat test is conducted with the vessel arrangement and test weight being as close as possible to the previous test.

1. Arrange the vessel in the depart port condition, an empty hold, no ice and full tanks and stores are advised.
2. The vessel should be trimmed upright by movement of loose gear or tank contents.
3. The heel angle can be measured with a simple inclinometer, provided it enables a suitable level of accuracy.
4. Use an outboard derrick to lift a typical to normal fishing operation weight from the derrick.