

# SECTION 1

# GENERAL REQUIREMENTS

## 1 General

### 1.1 Application

#### 1.1.1 General

All yachts may be assigned class only after it has been demonstrated that their stability is adequate. Adequate stability means compliance with standards laid down with the requirements specified in the relevant chapters taking into account the yacht's size and type. See Tab 1.

#### 1.1.2 Approval of the Administration

Evidence of approval by the Administration concerned may be accepted for the purpose of Classification, if demonstrated that their requirements are at least equal to those defined in the relevant chapter of these rules.

## 2 Examination procedure

### 2.1 Documents to be submitted

#### 2.1.1 List of documents

For the purpose of the examination of the stability, the following documents are to be submitted:

- lines plan
- general arrangement plan. In addition for sailing yachts, a general arrangement plan showing the sails lowered on the rigging and masts
- capacity plan indicating the volume and position of the centre of gravity (coordinates X, Y, Z), of all compartments and tanks and the free surfaces
- hydrostatic tables or curves
- lightship particulars
- trim and stability booklet
- when applicable, damage stability calculations.

**Table 1 : Application**

Length	Navigation notation		
	Sheltered area	Coastal area	Unrestricted navigation
$L_{LL} \leq 24\text{m}$	Ch 3, Sec 2	Ch 3, Sec 2	Ch 3, Sec 2
$L_{LL} > 24\text{m}$	Ch 3, Sec 2	Ch 3, Sec 2	Ch 3, Sec 2 and Ch 3, Sec 3 (1)
(1) May be exempted from damage stability for yacht having the navigation notation <b>unrestricted navigation limited to 60 nautical miles</b> .			

#### 2.1.2 Documents for approval

The report of the inclining experiment, the trim and stability booklet and when applicable the damage stability calculations are to be submitted for approval.

#### 2.1.3 Provisional documentation

Provisional stability documentation based on the estimated lightship particulars should be submitted for examination.

#### 2.1.4 Final documentation

Final stability documentation based on the results of the inclining experiment or the lightweight check is to be submitted for examination.

When the difference between the estimated values of the lightship and those obtained from the inclining experiment or the lightweight check is less than:

- 2% for the displacement and
- 1% of the length between perpendiculars for the longitudinal position of the centre of gravity

and the determined vertical position of the centre of gravity is not greater than the estimated vertical position of the centre of gravity, the provisional stability documentation may be accepted as the final stability documentation.

## 2.2 Inclining experiment/lightweight check

### 2.2.1 Definitions

The following definitions are used in the present Chapter:

#### a) Lightship

The lightship is a yacht complete in all respects, but without consumable, stores, and crew and effects, and without any liquids on board except for machinery and piping fluids, such as lubricants and hydraulics, which are at operating levels

#### b) Inclining experiment

The inclining experiment is a procedure which involves moving a series of known weights, normally in the transverse direction, and then measuring the resulting change in the equilibrium heel angle of the yacht. By using this information and applying basic naval architecture principles, the yacht's vertical centre of gravity (VCG or KG) is determined

c) Lightweight check

The lightweight check is a procedure which involves auditing all items which are to be added, deducted or relocated on the yacht at the time of the inclining experiment so that the observed condition of the yacht can be adjusted to the lightship condition. The weight and longitudinal, transverse, and vertical location of each item are to be accurately determined and recorded. The lightship displacement and longitudinal centre of gravity (LCG) can be obtained using this information, as well as the static waterline of the yacht at the time of the lightweight survey as determined by measuring the freeboard or verified draughts marks of the yacht, the yacht's hydrostatic data and the sea water density.

**2.2.2 General**

The inclining experiment or the lightweight check is to be attended by a Surveyor of the Society. The Society may accept inclining experiment or lightweight check attended by a member of the Flag Administration.

After completion, the yacht is subject to an inclining experiment. In some particular cases as described in [2.2.4], the Society may accept a lightweight check.

**2.2.3 Inclining experiment**

The inclining experiment is required in the following cases:

- any new yacht, after its completion, except for the cases specified in [2.2.4]
- any yacht, if deemed necessary by the Society, where any alterations are made so as to materially affect the stability.

**2.2.4 Lightweight check**

The Society may allow a lightweight check to be carried out in lieu of an inclining experiment in the case of:

- a) An individual yacht, provided basic stability data are available from the inclining experiment of a sister ship and a lightweight check is performed in order to prove that the sister ship corresponds to the prototype yacht. In such case the Society is satisfied when the result of the lightweight check shows a deviation from the displacement of the prototype yacht not greater than 2%, and not greater than 1% of the length between perpendiculars for the longitudinal position of the centre of gravity. The final stability data to be considered for the sister ship in terms of displacement and position of the centre of gravity are those of the prototype
- b) On a case by case basis and subject to the agreement of the flag Administration, provided that:
  - a detailed list of weights, and the positions of their centre of gravity is submitted
  - a lightweight check is carried out, showing accordance between the estimated values and those determined
  - adequate stability is demonstrated in all the loading conditions reported in the trim and stability booklet.

**2.2.5 Detailed procedure**

A detailed procedure for conducting an inclining experiment is included in Ch 3, App 1. For the lightweight check, the same procedure applies except as provided for in Ch 3, App 1, [1.1.8].