

# INTERNATIONAL TEN RATER CLASS

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I N T E R N A T I O N A L   S A I L I N G   F E D E R A T I O N  
R A D I O   S A I L I N G   D I V I S I O N



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# INTERNATIONAL 10 RATER CLASS RULES 1997

## 1 GENERAL

### 1.1 Purpose of the Measurement Rules

1.1.1 The Ten Rater is a Development Class.

1.1.2 The intention of these class rules is to give the designer and builder the freedom in design and construction, within the scope of these class rules, to build and produce boats which rate no greater than 10 calculated by the following formula:

$$\text{Rating} = L \times S \times 8$$

where L is the measured waterline length given in 3.4.3

and where S is the total measured sail area of the largest rig given in 6.5.1.

1.1.3 Anything not specifically prohibited by these class rules is permitted.

### 1.5 Units of Measurement

1.5.1 Unless specified to a greater number of decimal places, measurements and calculated values shall be taken and recorded as follows:

Item	Units	Decimal places Measurement	Decimal Places Calculation
Length	millimetres	0	0
Measured waterline length	metres	3	-
Area	millimetres <sup>2</sup>	-	0
Total measured sail area	metres <sup>2</sup>	-	6
Rating	-	-	2

1.5.2 Maximum and minimum values shall be taken as absolute limiting values. Measurements shall not be rounded before comparison.

1.5.3 Calculated values shall be correctly rounded to the required number of decimal places before recording.

1.5.4 Any previously calculated value used in subsequent calculations shall be the correctly rounded recorded value.

## 3 HULL

### 3.1 General

3.1.1 The boat shall be a monohull.

### 3.2 Hull Shell

3.2.1 On every section below the waterline no point A shall be more than 3 mm below any other point which is on the skin girth between point A and the underwater centreline.

3.2.2 There shall be no hollows in the surface of the hull except:

- (a) 40 mm or more above the waterline
- (b) 15 mm or less from the centreline
- (c) hollows which do not exceed 1 mm in depth when checked with a straight edge of length 300 mm.

3.2.3 The forward 15 mm of the hull shall be made of elastomeric material. From the foremost point of the hull to the point where the bow profile is 45 degrees to the waterline, the thickness of elastomeric material shall not be less than 5 mm.

### **3.3 Identification Marks**

3.3.1 The boat shall carry, either painted, engraved or moulded in, the boat's national letters and registration number.

3.3.2 On the external surface of the hull or deck these marks shall be displayed clearly and legibly, with a minimum height of 20 mm.

### **3.4 Flotation and Waterline Length**

3.4.1 The waterline shall be established with the boat floating in fresh water in sailing trim and dry with the heaviest rig, including spinnaker and spinnaker boom in their normal positions if used.

3.4.2 Waterline denotes the water surface level remote from the hull.

3.4.3 The measured waterline length is the horizontal distance at the waterline between the inboard edges of the two waterline measurement marks placed as in 3.5.3 and 3.5.4.

3.4.4 The boat's waterline endings shall not fall more than 30 mm inboard of the inboard edges of the waterline measurement marks.

### **3.5 Measurement Marks**

3.5.1 Measurement marks shall be of a colour which contrasts strongly with the colour of the hull and shall be of uniform width between 2 mm and 6 mm wide.

3.5.2 A waterline measurement mark of minimum length 25 mm shall be placed near each waterline ending.

3.5.3 The aft edge of the forward waterline measurement mark shall be placed forward of the forward waterline ending.

3.5.4 The forward edge of the aft waterline measurement mark shall be placed aft of the aft waterline ending.

## **4 APPENDAGES AND BALLAST**

### **4.1 Appendages**

4.1.1 Appendages which join the hull more than 15 mm from the centreline and retracting appendages are not permitted.

4.1.2 No part of any appendage shall cut the water surface beyond the waterline measurement marks.

## **4.2 Ballast**

4.2.1 Ballast material shall not have a density higher than lead (11.3 kg/dm<sup>3</sup>).

## **5 RIG**

### **5.1 Spars**

5.1.1 The measured area of the spar(s) of the largest rig shall be found using Appendix 1.

5.1.2 Where the measured area of the spar(s) found in 5.1.1 does not exceed 10% of the maximum permitted sail area:

- (a) this area shall be used to calculate the total measured sail area.
- (b) the measured area of spar(s) of smaller rigs found using Appendix 1 shall not exceed the measured area of the spar(s) of the largest rig.

5.1.3 Where the measured area of the spar(s) found in 5.1.1 exceeds 10% of the maximum permitted sail area:

- (a) the measured area of the spar(s) used to calculate the total measured sail area shall be found using Appendix 2.
- (b) the profile of alternative spars shall fall entirely within the profile of the spar(s) of the largest rig.

5.1.4 A spar shall be considered to include any fitting that is faired into the spar.

5.1.5 One spar which does not exceed 22 mm in diameter is permitted to extend the *tack* and/or *clew* of each sail. These spars are not included in the total measured sail area.

5.1.6 The measured area of all other spars shall be found using Appendix 1 or 2 as appropriate and included in the total measured sail area.

5.1.7 Outriggers are permitted.

### **5.2 Fittings**

5.2.1 Fittings not faired in to a spar and no bigger than is reasonably required for their purpose shall not be included in the total measured sail area.

### **5.3 Measurement Bands**

5.3.1 Measurement bands shall be of a colour which contrasts strongly with the colour of the spar and shall be of uniform width between 2 mm and 6 mm wide.

## **6 SAILS**

### **6.1 General**

6.1.1 Sails shall be made and measured in accordance with the current 'ISAF Sail Measurement Rules', except where varied herein. Where a term defined or a measurement given in the ISAF Sail Measurement Rules is used in these rules it is printed in '*italic*' type.

6.1.2 Battens need not be removed from sails during measurement.

- 6.1.3 Hollows in the profile of a spar or sail shall be bridged with a straight edge of length 200 mm to determine the length of any cross width measurement. The largest cross width formed by the bridge shall be the recorded cross width.
- 6.1.4 Discontinuous attachments on a sail *luff* shall be disregarded for the purpose of measurement provided their total length, measured along the *luff*, does not exceed 10% of the length of the *luff*.
- 6.1.5 Where a sail is fitted with a bolt rope or sliders which is/are held in a recess in a spar, the sail shall be measured ignoring the bolt rope or the sliders in the recess.
- 6.1.6 The profile of alternative rigs shall fall entirely within the profile of the largest rig.

## 6.2 Headsails

- 6.2.1 The mid girth of a headsail, measured between the mid point of the *luff* and the *half leech point*, may exceed 50% of the length of the *foot*.
- 6.2.2 Forestays and jib tacks need not be fixed approximately in the centreline of the boat.

## 6.3 Spinnakers

- 6.3.1 Spinnakers are prohibited.

## 6.4 Identification Marks

- 6.4.1 Sails shall carry identification marks in accordance with the Sail Identification Marks Rules.
- 6.4.2 The class insignia shall be **10 R** with figures not less than the following minimum dimensions

Height	24 mm
Width	18 mm (except '1', 5 mm)
Thickness	5 mm
Spacing	5 mm

## 6.5 Sail Area

- 6.5.1 The total measured sail area is the area of the largest rig excluding: spars as in 5.1.5, rigging with a diameter of less than 2 mm and fittings as in 5.2.1.
- 6.5.2 The measured area of *soft sails* and spars shall be found using Appendix 1.
- 6.5.3 The measured area of solid sails or solid/*soft sail* combinations including *double luff sail*/spar combinations shall be found using Appendix 2.

Effective 1 June 1997.

Appendices 1 and 2 dated 1 June 1994 remain effective.

Certificate dated 1 June 1994 remains effective - ignore calculations after RATING.