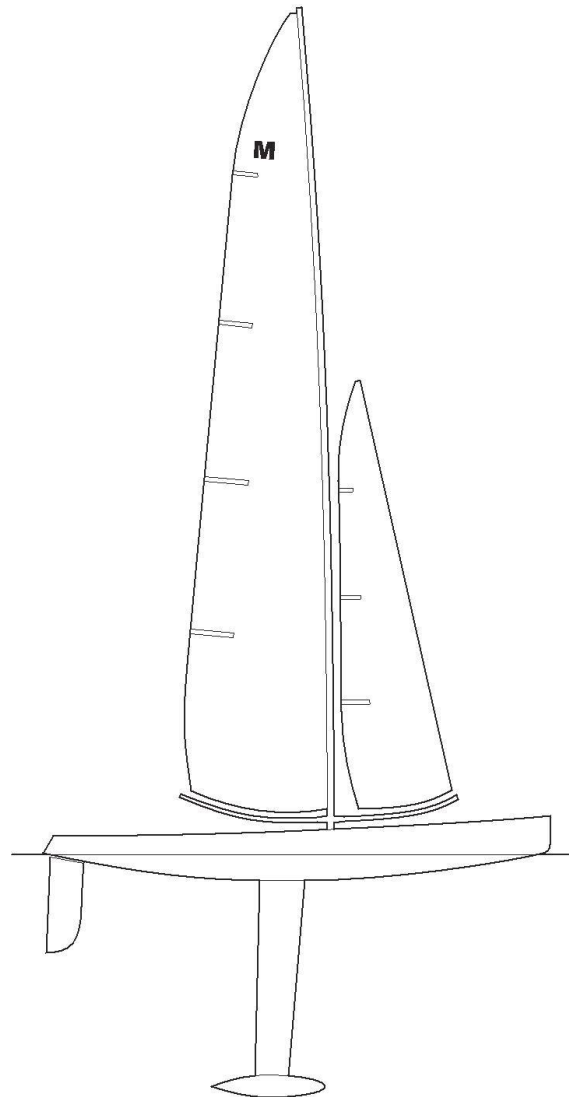


# IRSA

# MARBLEHEAD

## CLASS RULES 2020



The Marblehead class was developed by Roy L. Clough of the Marblehead Model Yacht Club in Marblehead, Massachusetts, USA, and was given international status by a predecessor of the IRSA in 1937.

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# INTRODUCTION

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*This introduction only provides an informal background and the IRSA Marblehead class rules proper begin on the next page.*

## Certification and alterations

*Marblehead Class **hulls, hull appendages, rigs and sails** are **certified by certification control**.*

*Marblehead Class **hulls, hull appendages, rigs and sails** may, after initial **certification control**, only be altered to the extent permitted in Section C of the **class rules**.*

## Responsibility

*Owners and competitors should be aware that compliance with rules in Section C is NOT checked as part of the initial **certification control** process.*

*It is the responsibility of the owner and any other person in charge to ensure that a **boat** is maintained to comply with her **class rules** and that her **certificate** remains valid (RRS 78.1).*

## Deviations outside of tolerances

*When an **equipment inspector** or **official measurer** acting for the technical committee for an event decides that a **boat** does not comply with the **class rules**, RRS 60.4(a)(2) obliges him to protest the boat.*

*When a protest committee finds that deviations in excess of tolerances specified in the **class rules** are not caused by normal wear and tear and/or do improve the performance of the **boat**, it shall penalise her.*

*When deviations between a **boat's** measurements and her **certificate** cannot be corrected as required by RRS 64.3(a), a protest committee may consider accepting that the **boat** shall be brought into rating in another configuration before racing again.*

*If a protest committee decides that a **class rule** has been breached deliberately or knowingly by an owner, competitor, or support person it may call a hearing under rule 69.*

## Class rules

*The rules regulating the use of equipment during a race are contained in Section C of these **class rules**, in ERS Part I and in the Racing Rules of Sailing.*

*The **class rules** for the IRSA Marblehead Class are **open class rules** in which anything not specifically prohibited by the **class rules** is permitted. Individual rules may require, limit, or prohibit as necessary.*

# PART I – ADMINISTRATION

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## Section A – General

### A.1 LANGUAGE

A.1.1 The official language of the class is English and in case of dispute over translation the English text shall prevail.

A.1.2 The word “shall” is mandatory and the word “may” is permissive.

A.1.3 Except where used in headings, when a term is printed in “**bold**” the definition in the current ERS applies, when a term is printed in “*italics*” the definition in the RRS applies, and when a term is printed “underlined” the definition in these **class rules** applies.

#### A.1.4 DEFINITIONS

Rig A **rig**, excluding any wind indicators, and **sail(s)** used in combination.

Spar The main structural part(s) of the **rig** to, or from, which **sails** are attached and/or supported.

### A.2 ABBREVIATIONS

- A.2.1 WS World Sailing  
IRSA International Radio Sailing Association  
MNA WS Member National Authority  
DNM Designated National Member, IRSA Member  
ICA International Class Association  
NCA National Class Association  
ERS Equipment Rules of Sailing  
RRS Racing Rules of Sailing

### A.3 AUTHORITIES

A.3.1 Where one does not exist, the functions of the ICA, as specified in these **class rules**, shall be carried out by the IRSA.

A.3.2 The **class authority** is the IRSA which shall co-operate with the ICA in all matters concerning these **class rules**.

A.3.3 No legal responsibility with respect to these **class rules**, or accuracy of **certification**, rests with:

- WS;
- the IRSA;
- any MNA;
- any DNM;
- the ICA;
- any NCA;
- any **certification authority**;
- any **official measurer**.

No claim arising from these **class rules** can be entertained.

A.3.4 Notwithstanding anything contained herein, a **certification authority** has the authority to withdraw a **certificate** and shall do so on the request of the IRSA.

#### **A.4 ADMINISTRATION OF THE CLASS**

A.4.1 The IRSA has delegated its administrative functions of the class to DNMs. A DNM may delegate part or all of its functions, as stated in these **class rules**, to an NCA.

A.4.2 In countries where there is no DNM, or the DNM does not wish to administrate the class, its administrative functions as stated in these **class rules** shall be carried out by the ICA which may delegate the administration to an NCA.

#### **A.5 SAILING INSTRUCTIONS**

A.5.1 These **class rules** shall not be varied by sailing instructions except as provided by A.5.2.

A.5.2 At World or Continental Championships the sailing instructions may vary these **class rules** only with the agreement of the ICA.

#### **A.6 CLASS RULES AMENDMENTS**

A.6.1 Amendments to these **class rules** shall be proposed by the ICA, or a DNM, and require to be approved by the IRSA.

#### **A.7 CLASS RULES INTERPRETATION**

##### **A.7.1 GENERAL**

Interpretation of **class rules** shall be made in accordance with the IRSA Regulations.

##### **A.7.2 AT AN EVENT**

Any interpretation of **class rules** required at an event may be made by an international jury constituted in accordance with the RRS. Such interpretation shall only be valid during the event and the organising authority shall, as soon as practical after the event, inform the IRSA, the DNM, and the ICA.

#### **A.8 HULL REGISTRATION NUMBERS**

A.8.1 Registration numbers shall be issued by the **certification authority**.

A.8.2 Registration numbers shall be issued in consecutive order starting at "1".

A.8.3 Each hull shall have a unique registration number which shall include the national letters and the **certification authority's** sequential registration number. Under no circumstances may a registration number be used on a **hull** other than the **hull** on which it was first used.

#### **A.9 HULL CERTIFICATION**

A.9.1 For the **certification** of a **hull** all items required by the **certification control** form(s) to be **certified** shall be **certified** by an **official measurer** and the details entered onto the form(s).

A.9.2 The **certification control** form(s), and **certification** fee if required, shall be sent to the **certification authority** in the country where the **hull** is to be registered within 4 weeks after completion of **certification**.

- A.9.3 Upon receipt of a satisfactorily completed **certification control** form(s) and **certification** fee if required within the 4 week time limit, the **certification authority** may issue a **certificate**.

## A.10 VALIDITY OF CERTIFICATE

- A.10.1 A valid **certificate** is issued using the IRSA approved **certification control** documentation in accordance with the procedures in A.9 and A.12. Certificates from other documentation or sources are invalid.
- A.10.2 A **certificate** becomes invalid upon:
- (a) a change of ownership;
  - (b) withdrawal by the **certification authority**.

## A.11 COMPLIANCE WITH CLASS RULES

- A.11.1 A **boat** ceases to comply with the **class rules** upon:
- (a) use of equipment that does not comply, or causes the **boat** not to comply, with limitations in the **class rules**;
  - (b) use of equipment that does not comply, or that causes the **boat** not to comply, with limitations recorded on the **certificate**;
  - (c) alteration or repair of equipment required by the **certification control** form(s) to be **certified**, except where permitted by the **class rules**;
  - (d) a change of **class rules** that causes equipment in use to cease to comply, except where the equipment may comply with the **class rules** in force at the time of its previous **certification**.
- A.11.2 A **boat** that has ceased to comply with the **class rules** may be brought into compliance:
- (a) when limitations affecting the equipment are in the **class rules** or on the **certificate**  
  
by an **official measurer** carrying out **certification control** of affected equipment;
  - (b) and otherwise  
  
by replacing equipment that does not comply with the **class rules** or **certificate** with equipment that does comply.

## A.12 HULL RE-CERTIFICATION

- A.12.1 A **hull** may be issued with a new **certificate**, showing dates of re-**certification** and initial **certification** as applicable:
- (a) when a **certificate** becomes invalid upon change of ownership by application of the new owner to the **certification authority** in the country where the **hull** is to be registered. The application shall include the old **certificate** and re-**certification** fee if required. In the case of an imported **hull** the **certification authority** shall request the **certification control** form(s) from the

- previous **certification authority** and a new **hull** registration number shall be issued;
- (b) when a **certificate** has been withdrawn, or when the **certificate** and **certification control** form(s) cannot be located by application of the procedure in A.9;
  - (c) when one or more alternative **certificates** are requested to be valid concurrently with an existing **certificate** by application of the procedure in A.9.

### **A.13 RETENTION OF CERTIFICATION DOCUMENTATION**

A.13.1 The **certification authority** shall:

- (a) retain the original documentation upon which the current **certificate** is based;
- (b) upon request, transfer this documentation to the new **certification authority** if the **hull** is exported.

## **Section B – Boat Eligibility**

For a **boat** to be eligible for *racing*, it shall comply with the rules in this section.

### **B.1 CLASS RULES AND CERTIFICATION**

B.1.1 The **boat** shall:

- (a) be in compliance with the **class rules**;
- (b) have a valid **certificate**; and
- (c) have valid **certification marks** as required.

### **B.2 CLASS ASSOCIATION MARKINGS**

B.2.1 A valid Class Association Sticker, if required by the NCA or the ICA, shall be affixed to the **hull** in a conspicuous position.

## PART 2 – REQUIREMENTS AND LIMITATIONS

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The competitor and the **boat** shall comply with the rules in Part 2 when *racing*. In case of conflict Section C shall prevail.

**Certification control** to check conformity with rules of Section C is not part of **certification**.

The rules of Part 2 are **open class rules** in which anything not specifically prohibited by the **class rules** is permitted. Individual rules may require, limit, or prohibit as necessary.

**Certification control** and **equipment inspection** at an event shall be carried out in accordance with the current ERS except where varied in Part 2.

### Section C – Conditions for Racing

#### C.1 GENERAL

##### C.1.1 RULES

The following ERS rules shall not apply:

B.1.2 Mast Lower Limit Mark.

B.2 Headsail Booms.

#### C.2 COMPETITOR

##### C.2.1 LIMITATIONS

(a) One competitor only shall control the **boat**.

(b) The competitor shall not be substituted during an event.

#### C.3 ADVERTISING

##### C.3.1 LIMITATIONS

The **boat** may display only such advertising as permitted by the WS Advertising Code.

#### C.4 HULL

##### C.4.1 LIMITATIONS

(a) The **hull** shall not be substituted during an event.

(b) Except for fittings the geometry of the **hull** shell shall not be changed during an event.



## C.4.2 IDENTIFICATION

The **hull** registration number shall be displayed on the external surface of the **hull** clearly and legibly with a minimum height of 20 mm.

## C.4.3 FITTINGS

Fittings shall not project fore or aft or transversely outboard of the **hull** in relation to the datum waterplane described in Figure J.2.

## C.5 HULL APPENDAGES

### C.5.1 LIMITATIONS

Except when a **hull appendage** has been lost or damaged beyond repair the same **hull appendages** shall be used during an event. Such replacement may be made only with the approval of the race committee who shall then remove or cancel any **event limitation mark** attached to the replaced **hull appendage**.

### C.5.2 DEPTH RESTRICTION

The depth restriction gauge, when oriented transversely as in Figure J.1, shall be capable of being passed under the **hull appendages** without either of the two upper corners of the gauge losing contact with the **hull**.

### C.5.3 USE

The **hull appendages**:

- (a) containing or forming **ballast** shall not be rotated relative to the **hull**;
- (b) shall not be attached to the **hull** more than 15 mm from the **hull** centreplane;
- (c) shall not project fore or aft of the **hull** in relation to the datum waterplane described in Figure J.2;
- (d) shall not be moved, articulated, retracted, or extended.

## C.6 RIG

### C.6.1 LIMITATIONS

- (a) Not more than six **rigs** and their **sails** shall be used during an event.
- (b) A **mast** or other spar lost or damaged beyond repair may be replaced only with the approval of the race committee who shall then remove or cancel any **event limitation mark** attached to the replaced item.

## C.6.2 USE

- (a) The rig shall not project fore or aft of the hull in relation to the datum waterplane described in Figure J.2.
- (b) RRS 51 is changed to the extent that the position of the rig counterbalance weight may be changed.

## C.6.3 DIMENSIONS

	minimum	maximum
Deck <b>limit mark</b> to the <b>mast lower point</b>	G - 10	G + 10
Deck <b>limit mark</b> to the lower edge of the foretriangle height <b>limit mark</b> when G is at the <b>certified</b> value		I
Deck <b>limit mark</b> to the <b>mast upper point</b>		2160
<b>Mast lower point</b> to the <b>mast upper point</b>		A

## C.7 SAILS

### C.7.1 LIMITATIONS

- (a) Not more than six **mainsails** and six **headsails**, with a maximum of three **mainsails** and three **headsails** from any A, B, or C rig group, shall be used.
- (b) The race committee may attach **event limitation marks** to **sails** at an event.
- (c) The minimum **mainsail luff** length used when *racing* shall be 990 mm.
- (d) When a **sail** has been lost or damaged beyond repair it may be replaced only with the approval of the race committee who shall then remove or cancel any **event limitation mark** attached to a replaced **sail**.

### C.7.2 DIMENSIONS

The dimensions of the **sails** in each rig group shall not exceed those on the **certificate** for that rig group.

### C.7.3 IDENTIFICATION

- (a) Sail identification marks shall comply with the IRSA Supplementary Class Rules.
- (b) The class insignia shall be the letter “M” of dimensions: height and width 25–30 mm, thickness 6–8 mm and shall be displayed

on the mainsail above a straight line between the **three-quarter leech point** and the nearest point on the **luff**.

#### C.7.4 USE

- (a) When a **mast upper limit mark** is required, the **mainsail** shall be below the **mast upper limit mark**.
- (b) The **tack point** of the **mainsail**, projected at 90° to the **mast spar**, shall not be set below the upper edge of the **mast lower limit mark**.
- (c) When a foretriangle height **limit mark** is required, a line taken through the **tack point** and **head point** of the **headsail** shall cut the forward face of the **mast spar** lower than the lower edge of the foretriangle height **limit mark** when the **headsail clew point** is on the **hull** centreplane.
- (d) When a **sail** has a luff rope or spar sliders they shall be set in a track in the **spar**.
- (e) Not more than one **mainsail** and one **headsail** shall be set at a time.
- (f) A **mainsail** shall be set when *racing*.
- (g) **Sails** shall not be reefed.
- (h) A **sail** from any A, B, or C **rig** group shall not be used with a **sail** from another **rig** group unless it is marked with the appropriate A, B, or C **rig** group letter and it complies with C.7.2.

### C.8 EQUIPMENT

#### C.8.1 PROHIBITED

- (a) Except where achieved by mechanical systems, automated control of **rig** and/or **sails**.
- (b) Except where achieved by mechanical systems, automated steering and/or navigation.
- (c) On board camera(s).
- (d) The use of pictures from any source while *racing*.
- (e) Except for the establishment and maintenance of a radio control link, control unit positioning information, signal strength, and battery status information, radio transmissions from the **boat** while *racing*.

#### C.8.2 USE

During an event, remote control and related equipment:

- (a) if temporarily removed shall be refitted in the same position;
- (b) if replaced, shall be replaced by equipment of similar weight.

## Section D – Hull

### D.1 GENERAL

#### D.1.1 RULES

The **hull** shall either comply with the **class rules** in force at the time of its initial **certification control** or comply with the current **class rules**.

#### D.1.2 IDENTIFICATION

The **hull** registration number shall be marked in an easily visible location on a non-removable part of the **hull** by any of the following means: painting on, engraving in, bonding in, moulding in.

### D.2 HULL

#### D.2.1 DECK LIMIT MARKS

A deck **limit mark**, for each rig group A, B, and C recorded on the **certificate**, shall be displayed on the **hull** centreplane near to the relevant **mast** position. Each **limit mark** shall be a minimum of 5 mm in diameter.

#### D.2.2 MATERIALS

- (a) Except in remote control equipment, the density of material shall not exceed that of lead (11,340 kg/m<sup>3</sup>).
- (b) The forward 13 mm shall be of elastomeric material.

#### D.2.3 CONSTRUCTION

- (a) The **hull** shall be a **monohull**.
- (b) Except for the trunking for **hull appendages**, the **hull** shall not have:
  - (1) voids in the waterplane and/or the profile under the datum waterplane;
  - (2) hollows in the plan view and/or the profile under the datum waterplane that exceed 3 mm;
  - (3) transverse hollows in the undersurface of the **hull** that exceed 3 mm when tested parallel to the waterplane as in Figure J.4.

## D.2.4 DIMENSIONS

	minimum	maximum
<b>Hull</b> length in relation to the datum waterplane described in Figure J.2.	1275	1290
<b>Hull beam</b>	100	

## Section E – Hull Appendages

### E.1 GENERAL

#### E.1.1 RULES

**Hull appendages** shall comply with the current **class rules**.

### E.2 HULL APPENDAGES

#### E.2.1 MATERIALS

Materials shall not be of density higher than lead (11,340 kg/m<sup>3</sup>).

## Section F – Rig

### F.1 GENERAL

#### F.1.1 RULES

**Rigs** shall comply with the current **class rules**.

#### F.1.2 CONSTRUCTION

- (a) A fitting shall be no bigger than is reasonably required for its purpose if it rotates or is attached to a rotating spar.
- (b) A fitting faired into a spar shall be considered to be part of the spar.

### F.2 SPARS

#### F.2.1 LIMITATIONS

The spars used in a **rig** shall consist of no more than:

- (a) one **mast spar**;

- (b) one headsail luff spar;
- (c) four additional spars.

#### F.2.2 CERTIFICATION CONTROL

- (a) The spar cross section:
  - (1) shall be taken to include: fairings, extensions, articulated flaps;
  - (2) shall be taken with movable parts set to give the greatest dimension;
  - (3) shall be taken at the junction of two spars as in Figure J.5; and
  - (4) except as in F.2.2 (a) (3), at a point shall be the largest cross sectional dimension perpendicular to the major axis of the spar at that point.
- (b) A spar which extends fore and aft of the **mast spar** shall be taken as two spars.

#### F.2.3 CONSTRUCTION

- (a) **Limit marks** shall contrast strongly with the colour of the surface they are placed on.
- (b) Except as in F.2.3(c) and F.2.3(d) **limit marks** shall be placed on each **mast spar**, as in Figure J.7, and as follows:
  - (1) an **upper limit mark**,
  - (2) a foretriangle height **limit mark**,
  - (3) a **lower limit mark**.
- (c) The **mast upper limit mark** may be omitted where the **rig** construction makes it impossible to exceed the “A” measurement recorded on the **certificate**.
- (d) The foretriangle height **limit mark** may be omitted where the **rig** construction makes it impossible to exceed the “I” measurement recorded on the **certificate**.
- (e) A spar with a cross section exceeding 20 mm in the regions permitted by F.2.6 shall not be joined to another spar in those regions.

## F.2.4 MAST SPAR DIMENSIONS

	minimum	maximum
Deck <b>limit mark</b> to <b>upper point</b> , H		2160
Deck <b>limit mark</b> to foretriangle height <b>limit mark</b>		0.8 (A + G)
<b>Mast spar</b> cross section above <b>lower point</b>		20
<b>Mast spar</b> cross section below <b>lower point</b>		40
<b>Mast limit mark</b> width	3	10

## F.2.5 HEADSAIL LUFF SPAR DIMENSIONS

	maximum
<b>Headsail</b> luff <u>spar</u> cross section	20

## F.2.6 ADDITIONAL SPAR DIMENSIONS

	maximum
Length of junction where <u>spars</u> meet, as in Figure J.5	100
Minimum combined <u>spar</u> cross section over the length of a junction, as in Figure J.5	40
<u>Spar</u> cross section within 100 mm of one end only of <u>spar</u>	40
<u>Spar</u> cross section at other points	20

# Section G – Sails

## G.1 PARTS

The **sails** used in a rig shall consist of no more than:

- (a) one trilateral **mainsail**;
- (b) one trilateral **headsail**.

## G.2 GENERAL

### G.2.1 RULES

**Sails** shall comply with the **class rules** in force at the time of their initial

**certification control** or with the current **class rules**.

## G.2.2 CERTIFICATION

The **official measurer** shall **certify sails** and add the following marks at the **tack**:

- (a) the date of **certification control**;
- (b) on **mainsails**, mark the **certified** area in square metres rounded to three places of decimals, of the largest **mainsail** in the rig group to which the **sail** belongs;
- (c) on **headsails**, mark the **certified** area in square metres rounded to three places of decimals, of the largest **headsail** in the rig group to which the **sail** belongs.

## G.2.3 DEFINITIONS

Batten Pocket Point

The batten pocket point is defined as the intersection of the extended centreline of the **batten pocket**, or batten if there is no **batten pocket**, and the **leech**.

## G.2.4 CERTIFICATION CONTROL AND EQUIPMENT INSPECTION

- (a) During **certification control** and **equipment inspection**:
  - (1) battens need not be removed;
  - (2) **sails** may be attached to spars;
  - (3) stays not exceeding 2 mm in diameter inside luff **tabling** need not be removed;
  - (4) tell tales overlapping the **sail edges** shall be ignored.
- (b) The **luff perpendicular**, **quarter width**, **half width** and **three-quarter width** shall be taken:
  - (1) on a **double luff sail** with supporting spar in place, to the **luff**, or to the fore edge of the spar, whichever gives the greater dimension;
  - (2) on a **sail** attached to spar section fairings, extensions and/or articulated flaps, to their foremost edges when fully extended;
  - (3) on a **sail** with the **luff** set in a track in the spar: to the aft edge of the spar;
  - (4) on other **sails**: to the **luff**;



- (5) discontinuous attachments on the **luff** shall be disregarded provided their total length measured along the **luff** does not exceed 10% of the **luff** length and the longest attachment is no more than twice the shortest;
- (6) with hollows in the **leech** and/or **luff** bridged using the method described in the ERS H.5.2.
- (c) The upper and lower **leech** profile is controlled as shown in Figure J.6.
- (d) Parts of **stiffening** which are less than 2 mm in diameter and not covered by sail material shall not be taken as parts of the **sail**.
- (e) Where the sail corner measurement points are found by extending the **sail edges**, ERS G.4 is altered and the **sail edges** shall be extended using a template with 900 mm radius.

#### G.2.5 CONSTRUCTION

- (a) The construction shall be: **soft sail**.
- (b) Except for the following, **stiffening** is prohibited:
  - (1) for battens;
  - (2) at the **head**.
- (c) **Sails** shall be marked at the **clew** with their rig group letter, or letters if the **sail** is to be used with more than one rig group.
- (d) A **mainsail** shall have no more than four battens which shall be near the **leech**.
- (e) A **headsail** shall have no more than three battens which shall be near the **leech**.
- (f) The **foot** roach profile may be controlled by either of the following methods:
  - (1) **foot irregularity**;
  - (2) use of the **foot** roach gauge, as in Figure J.9.

#### G.2.6 DIMENSIONS

	maximum
<b>Top width</b> as in Figure J.8:	
of a <b>double luff sail</b>	40

of a <b>sail</b> with luff rope	25
of other <b>sails</b>	20
Extension of <b>stiffening</b> at the <b>head</b> from a point 20 mm forward of the <b>aft head point</b> on a line through the <b>aft head point</b> and <b>head point</b>	20
<b>Foot irregularity</b> , as in G.2.5(f)(1)	3
Foot roach depth taken from <b>foot</b> to a straight line between <b>tack point</b> and <b>clew point</b> , as in G.2.5(f)(2)	25
Batten length	105
Batten width	20
Variation in the following measurements:	
between batten pocket point and adjacent batten pocket point(s),	
between <b>clew point</b> and adjacent batten pocket point,	
between <b>head point</b> and adjacent batten pocket point	25

### G.3 SAIL AREA

#### G.3.1 LIMITATION

- (a) The **certified sail** area of each rig group shall not exceed 0.5161 m<sup>2</sup>.
- (b) Rig groups A, B, and C shall be recorded on the **certification control** forms in descending order of dimension 'A'.

#### G.3.2 CALCULATION

The **certified sail** area of a rig group is taken as the sum of the following areas for that rig group:

<b>mainsail</b> area, mm <sup>2</sup>	$A \times B / 2$
excess <b>mainsail</b> area, mm <sup>2</sup>	$A \times (2X + Y + 2Z) / 6$
<b>headsail</b> area, mm <sup>2</sup>	$Q \times R / 2$
excess <b>headsail</b> area, mm <sup>2</sup>	$Q \times (2x + y + 2z) / 6$

where for that rig group:

A, B, Q and R are the largest dimensions and

X, x are the largest excesses in the **quarter widths** and  
Y, y are the largest excesses in the **half widths** and  
Z, z are the largest excesses in the **three-quarter widths**  
of all the **sails** in that rig group as in Figure J.7.

# PART 3 – APPENDICES

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*The rules of Part 3 are **open class rules** in which anything not specifically prohibited by the **class rules** is permitted, where individual rules require, limit, or prohibit as necessary.*

**Certification control** and **equipment inspection** at an event shall be carried out in accordance with the current ERS except where varied in Part 3.

Except where specified otherwise all dimensions are quoted in millimetres.

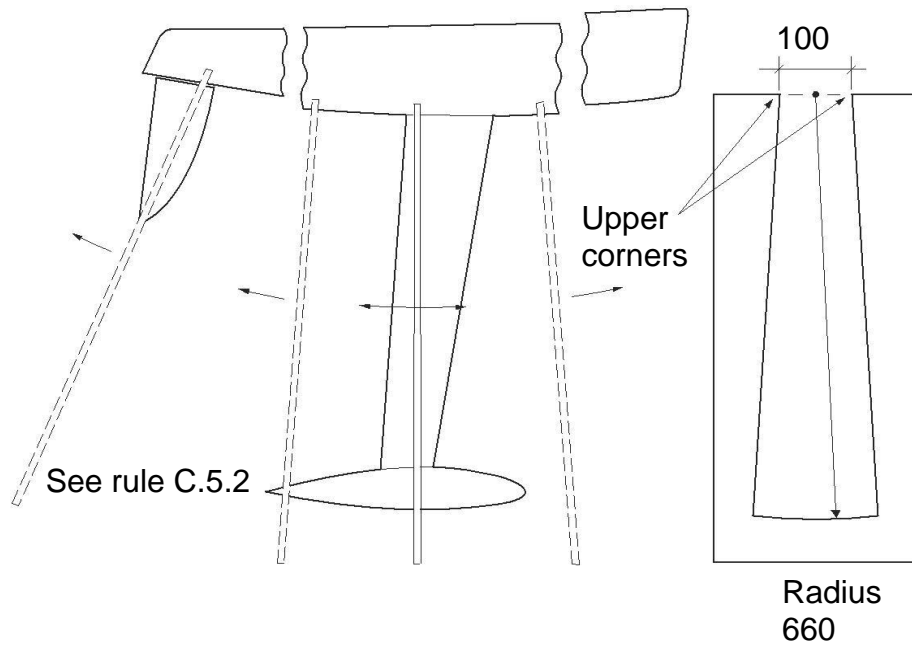
## Section H – Measurement

### H.1 MEASUREMENTS AND CALCULATIONS

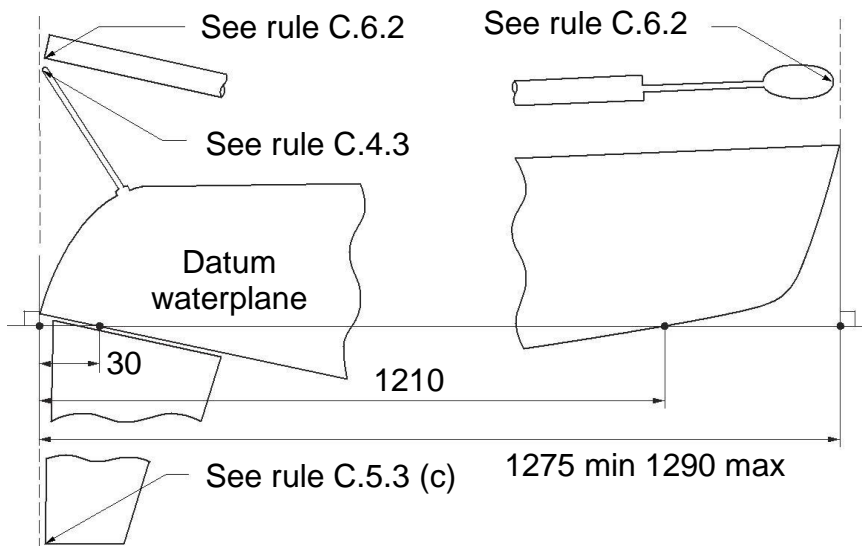
- H.1.1 Linear measurements shall be taken in millimetres and rounded up to the nearest whole number before being recorded on the **certification control** forms and/or **certificate**, used in subsequent calculations, or compared with a limiting value.
- H.1.2 Maximum and minimum values of limitations in the **class rules** or **certificate** shall be taken as absolute limiting values.
- H.1.3 Calculated values in millimetres or square millimetres shall be rounded to the nearest whole number before being recorded on a **certification control** form or **certificate**, used in any subsequent calculations, or compared with any limitation in the **class rules** or **certificate**.
- H.1.4 Calculated values in square metres shall be rounded to the nearest fourth place of decimals before being recorded on the **certificate**.

# Section J - Figures

## J.1 DEPTH RESTRICTION GAUGE

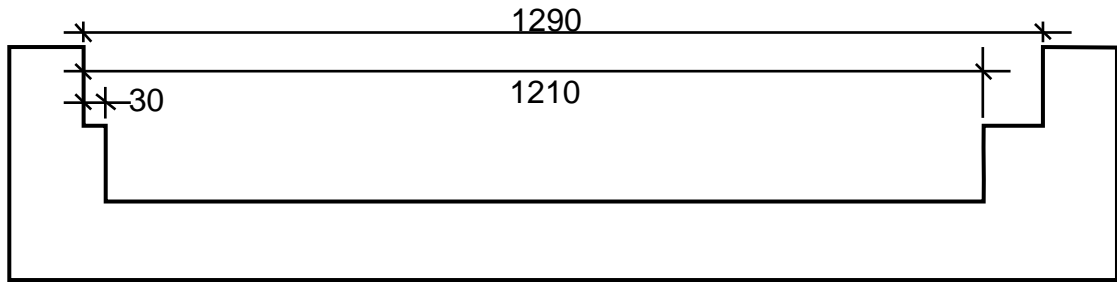


## J.2 LENGTH & DATUM WATERPLANE

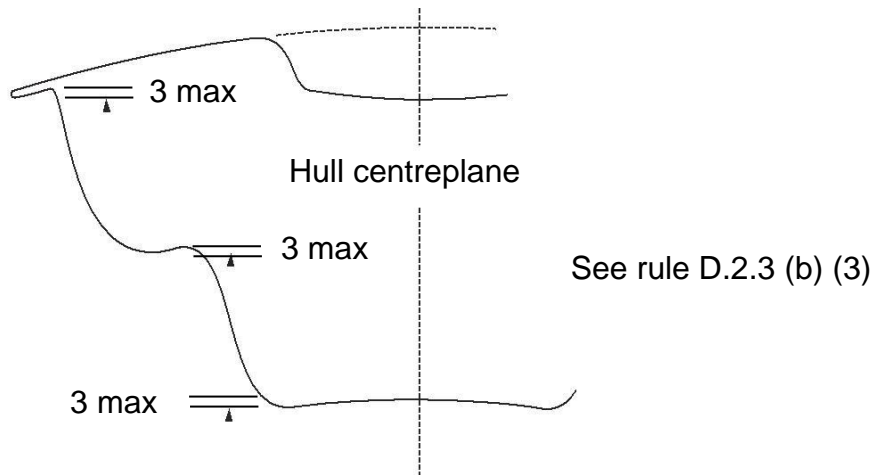


### J.3 LENGTH RESTRICTION GAUGE

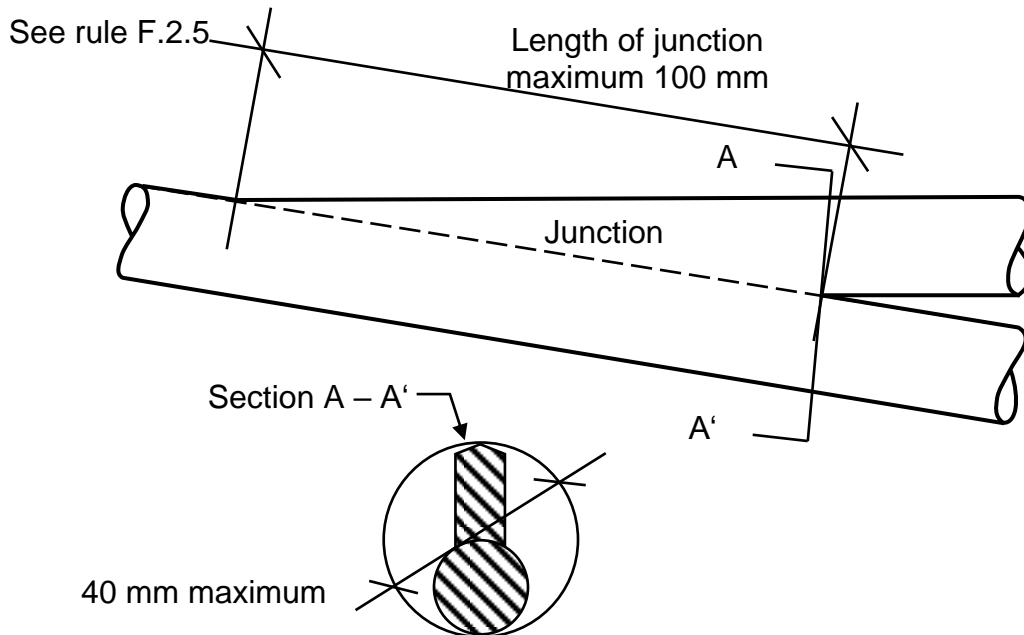
Gauge used to establish length and datum waterplane.



### J.4 TRANSVERSE HULL HOLLOW

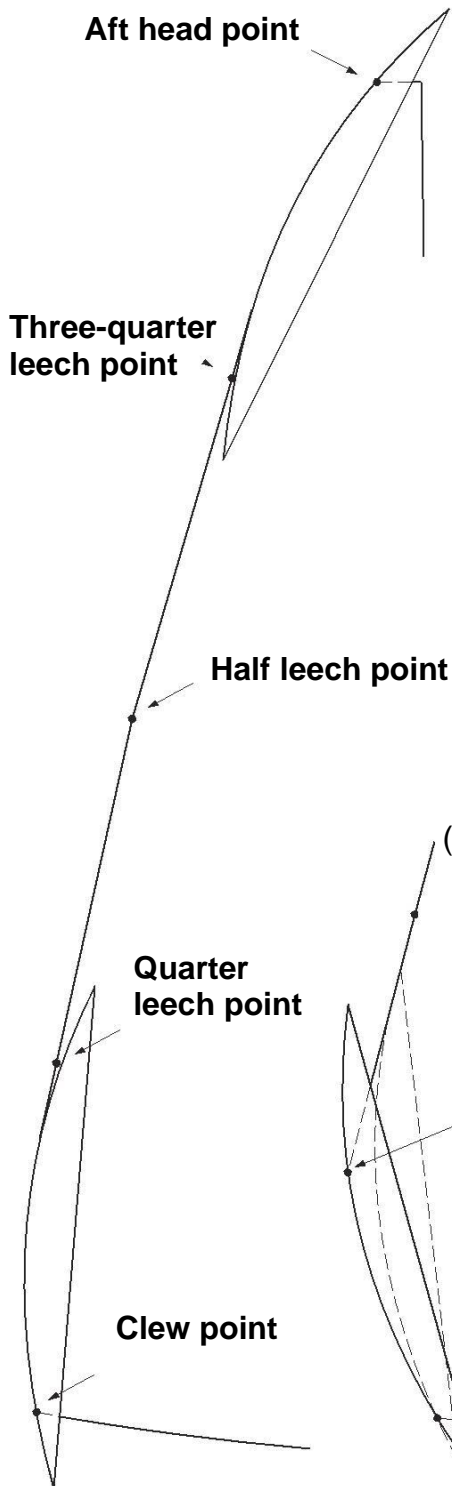


### J.5 COMBINED SPAR CROSS SECTION



## J.6 CONTROL OF THE UPPER AND LOWER LEECH PROFILE

See rule G.2.4 (c)



### THE GAUGE

A gauge of 900 mm radius shall be used for this measurement.

### AT THE HEAD

The gauge shall be placed to touch the **aft head point** and a straight line through the two nearest leech points.

### AT THE CLEW

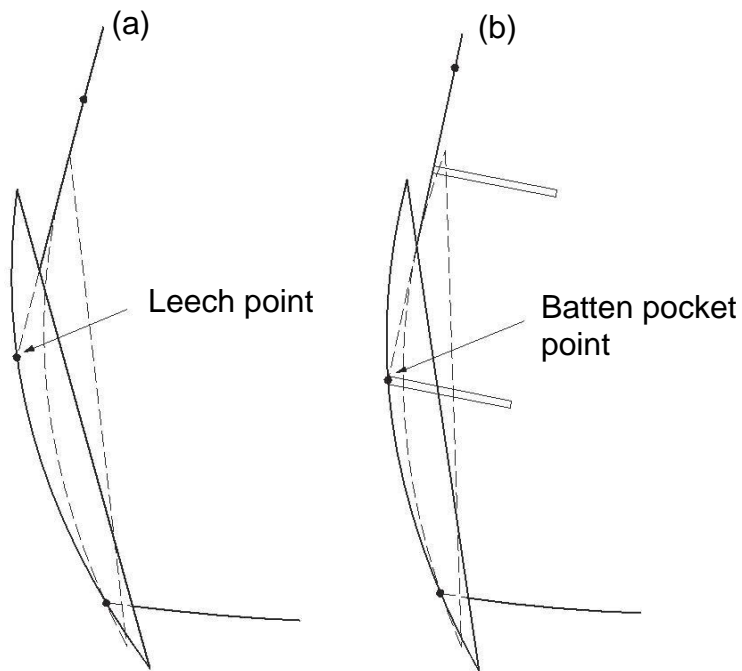
The gauge shall be placed to touch the **clew point** and a straight line through the two nearest leech points.

### GENERAL

If a leech point (Figure a) and/or a batten pocket point (Figure b) falls outside the gauge when positioned as above, the gauge shall be re-positioned to either point so that neither point appears outside the gauge.

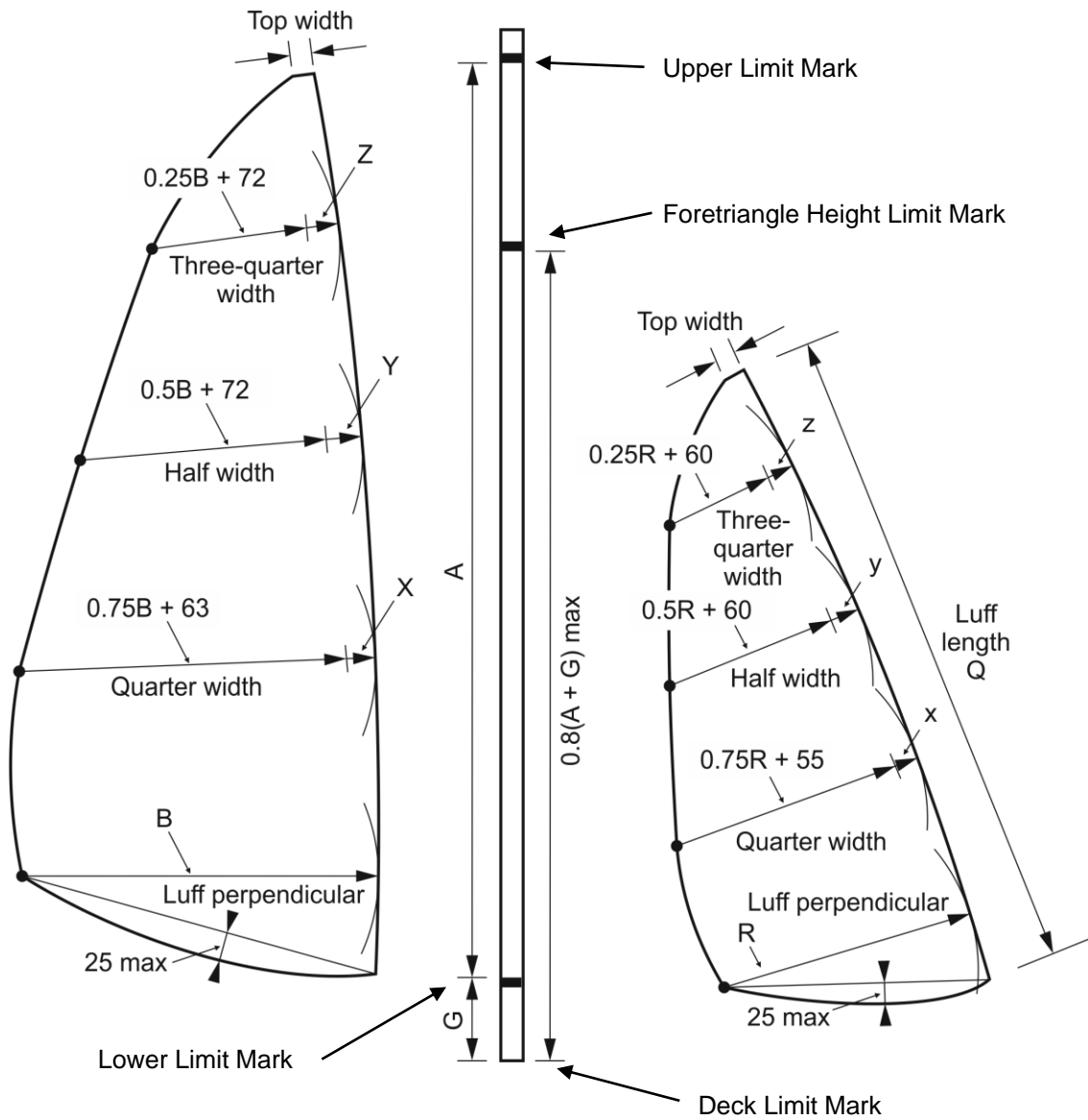
### LEECH PROFILE

No part of the **leech** profile shall fall aft of the aft edge of the gauge.



# J.7 SAIL AREA MEASUREMENT

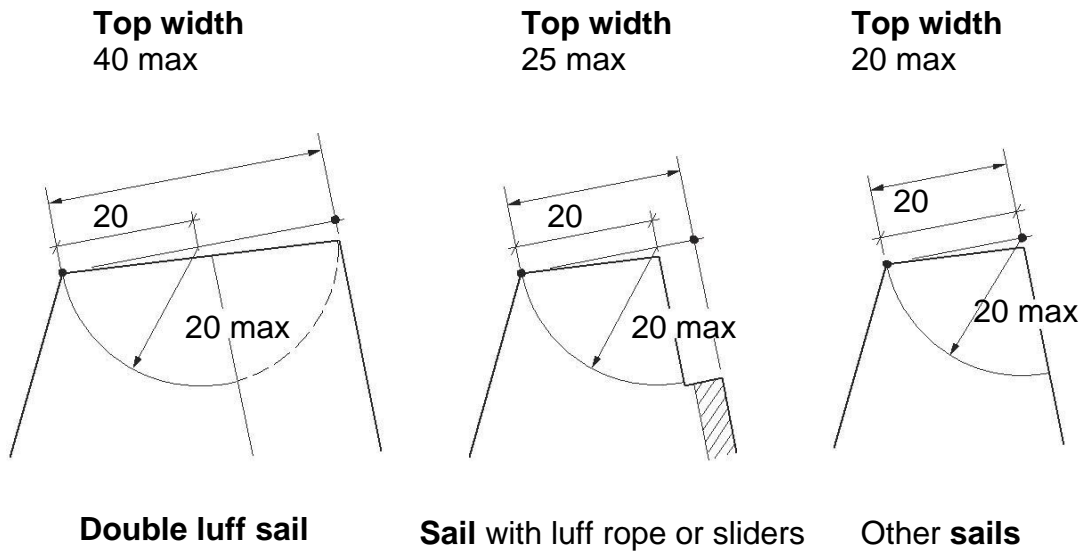
See rules F.2.3, F.2.4 and G.3.2





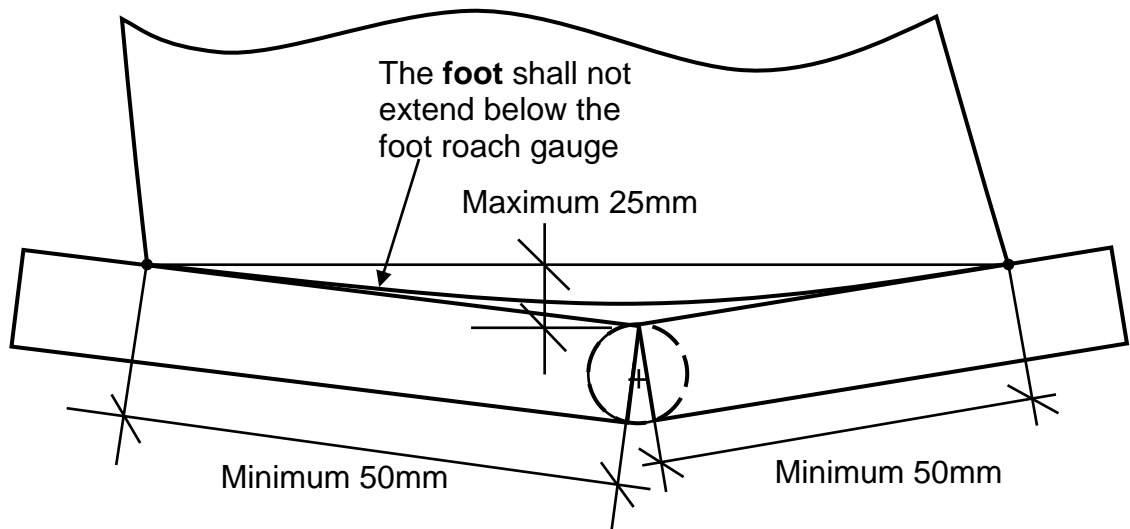
## J.8 TOP WIDTH AND STIFFENING AT HEAD

See rule G.2.6



## J.9 USE OF FOOT ROACH GAUGE

See rule G.2.5 (f) and G.2.6



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