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# *CLASS40*

## *2025 – V1 CLASS RULES*

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In red, changes applicable following the EGM of December 2024

In **bold**, words defined in ERS

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# FUNDAMENTAL RULES

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These rules apply to **monohull** yachts with the aim of racing offshore in real time.

A **monohull** is a **boat** with a single flotation plane at rest or under **sail**, whose hull depth in any transversal section shall not decrease towards the centreline.

The current **World Sailing** (RRS, ERS and OSR) rules apply. Except where used in headings, when a term is printed in “bold” the definition in the ERS applies, when a term is printed in “italics” the definition in the RRS applies and when a term is printed with a “double underline” the definition is in the OSR.

The Rules for Class 40 **Monohulls** are the open type set out in Paragraph **C.2.3** of the ERS (Equipment Rules of Sailing), meaning that anything that is not explicitly forbidden, limited or imposed, is permitted.

The Class40 association was formed with the aim of creating a fleet of simple, seaworthy, performance-oriented, ocean-racing yachts, and where possible within a limited budget. These Class Rules aim to fulfil this mission, but no text can anticipate the capacity of human intelligence to exploit the meaning of words in a manner not in line with the original aim of these Rules.

For this reason, it is highly recommended that any questions on the interpretation of these Rules which might be contrary to the spirit of the Class be put first to the Executive Committee, to avoid the risk of being considered outside the Rules.

Prior to the start of each new build, detailed draft drawings including the structural elements and materials to be used shall be submitted. The layout and distribution of **corrector weights** must feature in the draft drawings. The Chief Measurer can require that these draft drawings be submitted in a specific format (dwg, 3dm, etc.)

These drawings are confidential, seen only by the Chief Measurer. Where it is difficult to validate a point in terms of Class Rules, the Chief Measurer may seek the opinion of the Technical Committee, solely in relation to the point in question.

The submission of these drawings is a requirement for the allocation of a Class40 number. A period of 4 months is required between the class receiving these drawings and any request for, and allocation of, a number.

Class 40 **monohulls** are destined for offshore competition.

Skippers should note that sailing is a potentially dangerous activity, and that the decision to race is theirs alone, in accordance with Article 4 of the *RRS*.

The safety of the **boat** and its crew is the inalienable responsibility of the owner, or his/her skipper, who must ensure that the yacht is in perfect condition, thoroughly seaworthy, and that it is crewed by an experienced crew, who have undergone the appropriate training and are physically capable of dealing with bad weather.

In accordance with article 3 (c) of the *RRS* and whatever the circumstances of an accident, no legal responsibility can be sought from any of the following parties: **World Sailing, National Authorities (FFVoile), Class40**, or an **official measurer** of the present rules.

The class must respect the conditions of the Advertising Code in Category C of the World Sailing Regulations (Chapter IV; 20).

Production and prototype Class40s shall share a common ranking.

The results of the 90° test and the **boat weight** can be consulted at the class secretariat.

All boats without exception may be the subject of random scrutineering (where a boat does not conform, the measurement expenses shall be paid by the person responsible for that **boat**).

Any modification having a bearing on the Rules shall be brought to the attention of the **Class Measurer** and of the Class secretariat.

A disabled sailor in Class40 may request that a specific dispensation be considered.

The official language of the class is French.

# CHAPTER 1 - GENERAL CHARACTERISTICS

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## 100. GENERAL REMARKS

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The **boat** must comply with all aspects of:

- the “**NF EN ISO 12217** Small Craft- Stability and Buoyancy Assessment and Categorisation - part 2: **Sailing boats** of **hull length** greater than or equal to 6m” for design category A, except 6.1.4 b) where the sentence “*for the next less demanding design category*” is replaced by “*for the design category concerned*” ;
- the “**NF EN ISO 11812** – Small Craft – watertightness requirements of quick draining cockpits” for design category A ;
- as well as the requirements set out in OSR for Category 1, with the exception of chapter 3.09 (cockpit).
- Requirements of **ISO 12215** (OSR 3.03.1)
- Requirements of **ISO 15085**

In the event of conflict between the OSR and the **NF EN ISO 12217** standard, the latter will prevail.

These rules are modified as follows:

- **ISO 12217-2 :**
  - ◆ **6.3.2** “Alternative requirement for categories A & B” does not apply. See **§301** of these rules.
- **OSR Cat 1:**
  - ◆ **3.03.2 b)** Certification by a notified body does not apply.
  - ◆ **3.04** Stability index does not apply
  - ◆ **3.08.03** “Companionway” does not apply, replaced by the restrictions noted in the **ISO 12217-2** standard: **§6.2.2.2**
  - ◆ **3.14** “Pulpits, Stanchions, Lifelines”, modified, see **§402** of these rules.
  - ◆ **3.18** “Toilet” , modified, see **§104** of these rules.
  - ◆ **3.19.1** “Bunks”, modified, see **§104** of these rules.
  - ◆ **3.21.1** “Drinking water”, see **§104** of these rules.
  - ◆ **4.01.2** “Sail letters & numbers”. As defined in **Chapter 3 of the Appendix to Class Rules**
  - ◆ **4.26** “Heavy-weather jib”. Modified, see **§212.04** of these rules.
  - ◆ **Appendix E** “Organisation of Oceanic Races”. Does not apply.

- RRS:
  - ♦ § 51. “Movable ballast”. Does not apply.
  - ♦ § 52 MANUAL POWER: does not apply to liquid ballast
  - ♦ § 55.4 “Headsails”, modified. See §212.03.01 of these rules.

## 101. APPENDAGES

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The external **appendages** are limited to a single fixed **keel** when sailing and a maximum of two movable **appendages**. For example, a trimtab, interceptor or flap are considered to be moving **appendages**.

The hull must be symmetrical in the vertical plane, and the **keel** must be located and remain in the same vertical plane of symmetry as the **hull**.

The attachment points of the rudder on the **hull** must be fixed and must remain in place.

The set of points of the leading and trailing edges of the rudder must be in the same plane.

Only one configuration of **appendages** is permitted per full 12-month period.

No modification to the **keel** position is permitted within a period of less than 12 full months.

Note: daggerboards are forbidden. Foils, that is to say any **appendage** designed to generate a vertical force, are forbidden.

## 102. RIGGING

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### 102.01 – General provisions

Stays, **backstays**, runners and **shrouds** (permanent and temporary) must be fixed to the chainplates situated inside the natural intersection of the **hull** and deck extension.

A tolerance of 20 mm is acceptable for attached chainplates. A glued fairing for attached chainplates, toggles and turnbuckles is permitted. The maximum surface area of this fairing is 0.16 m<sup>2</sup>. The tolerance of the thickness is 20 mm.

The overall span of the **spreaders** and the **rigging** may not exceed the value of the **boat's** maximum beam + 130 mm.

The **forestay** must be of a fixed length, neither removable nor adjustable while sailing and attached to the upper quarter of the **mast**.

All systems for adjusting the position of the **mast base**, including a mast jack pump, are forbidden while racing.

Deck spreaders are forbidden.

#### 102.02 – **Mast** rotation

Rotating **masts** are forbidden.

#### 102.03 – **Mast** cant

Canting a **mast** is forbidden.

### 103. **SAILS**

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#### 103.01- General provisions

The total number of **sails** on board is **limited to 8**.

Within this total of 8 **sails**, **boats** are required to carry the following:

1 **mainsail**, 1 solent, 1 heavy-weather jib, 1 storm jib, and 1 storm trysail if the **luff** of the **mainsail** cannot be reduced by more than 70% when fully reefed.

Only **sails** which have been declared before the start may be used in a race. For the category 0 races, the number of **sails** allowed for the duration of the event may be modified by simple amendment to the notice of race, endorsement co-signed by the organization of the race and the Class40.

All materials other than woven or laminated polyester and nylon (modulus lower than 300g/denier) are forbidden in the manufacture of other **sails** (ex **attachments**), with the exception of two **sails** and the heavy-weather jib which can be made from any material

Carbon battens and carbon **batten pockets** are forbidden.

Furling battens are prohibited (dispensation for sails declared before January 1, 2025)

#### 103.02 – Definition of **sails**

##### 103.02.01 **Mainsail**

**Sail** attached to the back of the **mast**

##### 103.02.02 Solent

Triangular **sail** flown from the fixed **forestay**. The **solent** cannot be manufactured with a structural **luff**.

##### 103.02.03 Heavy-weather jib

Triangular headsail whose surface area is limited to 32 m<sup>2</sup> (~~surface =  $HLU \cdot HLP / 2$~~ ).

**Surface =  $HSA = 0,0625 \times HLU \times (4 \times HLP + 6 \times HHW + 3 \times HTW + 2 \times HUW + 0,5 \times HHB)$**

This **sail** must be designed to go upwind in heavy weather.

#### 103.02.04 Storm jib

**Headsail** as specified by OSR.

#### 103.02.05 Storm trysail

Heavy weather **sail** as specified in the OSR.

The trysail must be manufactured from a minimum material weight of 9oz.

### 104. INTERIOR FITTINGS

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In addition to OSR Category 1 requirements, there must be on board:

- A minimum of 4 permanently installed solid bunks (articulating bunks not included) which measure a minimum of 1.8m x 0.5m in size;\*
- A minimum of two portlights in the coachroof providing lateral visibility, the area of visibility measuring a minimum combined area of 0.2m<sup>2</sup>, not including the companionway hatch, on a vertical plane at 0° of heel;
- Permanently installed and usable head or fitted bucket
- Fixed water tanks containing a combined ~~minimum~~ maximum of 40l. These tanks shall be situated at less than 500 mm from the centreline of the boat.

Tanks are not permitted in the **keel** fin (dispensation for **boats** launched prior to the 1<sup>st</sup> of January 2012).

### 105. HULL CONSTRUCTION STANDARDS

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Any **boat** designed after the 1<sup>st</sup> of January 2010 must provide a letter to Class40 certifying that **parts 5, 8 and 9 of ISO 12215** have been respected, as defined in OSR 3.03

### 106. HULL

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The **boat** must be a **monohull**. The **boat** at rest with zero heel and in light configuration must be symmetric with respect to its vertical median plane.

See Appendix for interpretation.



## CHAPTER 2 – DIMENSIONS

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### 200. DIMENSIONS

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The dimensions that must be measured in compliance with the **NF EN ISO 8666** standard are indicated by the name **EN/ISO 8666** followed by the relevant chapter.

### 201. MEASUREMENT TRIM

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**Measurement trim** for measuring purposes is the Light Craft Condition **LCC** (in conformity with **6.3 of the EN ISO 8666** standard and **3.5.1 of the EN ISO12217-2** standard) excluding anchoring equipment (anchor, chain and warp) and the loose external equipment (fenders, warps, mooring lines), **sails**, liferaft.

Fixed internal fittings, be they for comfort or safety, such as fridges, watermakers, plumbing or other equipment which are included when the boat is weighed, shall not be removable and shall be listed on the **measurement certificate**, including their location. The same applies to all other fixed navigational equipment, such as autopilots, computers etc... Any fixed equipment or interior fitting with a (some) degree(s) of movement whose weight exceeds 5 kg shall be excluded from **measurement trim**, unless the centre of gravity of the item is never further than 200 mm from the centreline of the boat.

### 202. HULL LENGTH ( $L_h$ ): (EN/ ISO 8666 5.2.2)

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The **hull length** shall not exceed 12.19 m.

Reminder: This measurement does not include rudders and their fittings, bobstay fittings, without devices designed to lengthen the waterline, nor pulpits and pushpits, solar panels and wind vanes, nor the **bowsprit**, if it is removable (dispensation for fixed **bowsprits** of **boats** launched before the 31<sup>st</sup> of January 2007).

In the case of transom-hung **rudders**, no part of the rudder system shall be wider than 150 mm, except for the top of the rudder boxes and the top of the **rudders**.

### 203. MAXIMUM BEAM ( $B_{max}$ ): (EN/ISO 8666 5.3.2)

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The **boat beam** must not exceed 4.50m.

#### 204. MAXIMUM **DRAFT** ( $T_{max}$ ): (EN/ISO 8666 45.4.4.1)

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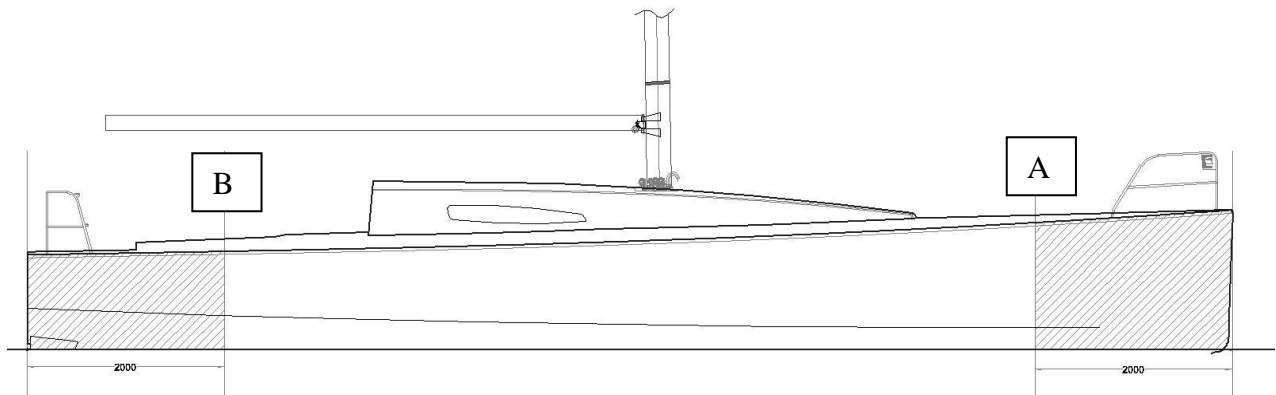
The maximum **draft** must not exceed 3.00m in measurement trim.

#### 205. AVERAGE FREEBOARD

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The average freeboard must not be lower than 1.08 m in measurement trim.

The average freeboard is obtained by dividing by 8.19 the vertical projected surface of the topsides between 2m from the forward-most point of the **hull** used to measure  $L_h$  (point A) and 2m from the aft-most point of the **hull** used to measure  $L_h$  (Point B).



The topsides are defined as the hull surface between the **waterline** and the **sheer**.

The **sheer** is defined as the intersection between the **hull** and deck as per the drawings below. For any configuration which is different, the Technical Committee must be consulted for an interpretation.

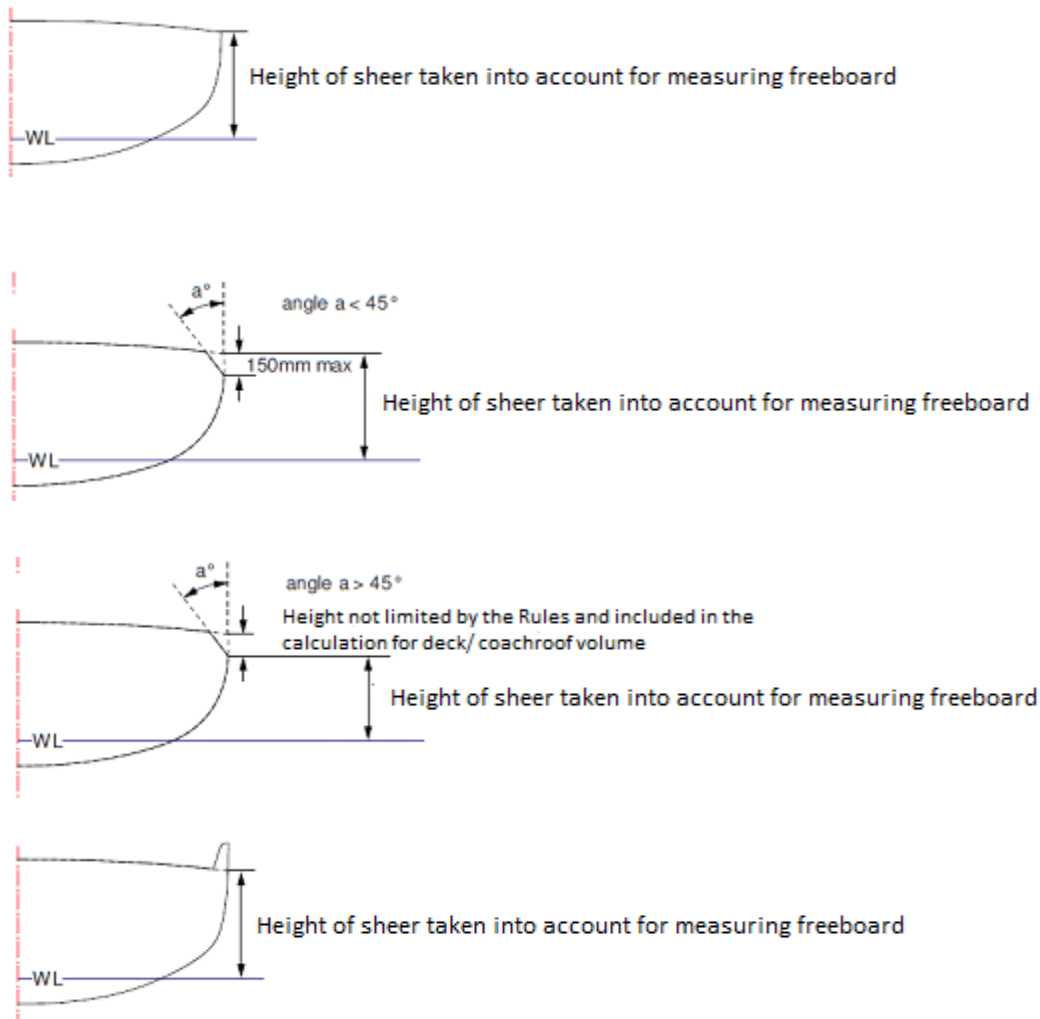
At point A, the freeboard cannot be less than 1.25m and no point of the **sheer** forward of point A can be lower than A. Interruptions in the **sheerline** are permitted for a sprit recess for a bowsprit, but not extend lower than 1.25m from the **waterline**, no more than 1m aft of the forward-most point of the **hull**.

At the aftmost point of the **sheer**, the freeboard must not be less than 0.65 m.

Between points A and B, the **sheer** must not feature any inflection point or discontinuity in its curve.

From 1m aft of the stem to 0.5m forward of the stern, the **sheer** must be a continuous line with a minimum radius of 2m in the profile view.

(Dispensation for **boats** measured prior to the 1st of January 2014).



## 206. DISPLACEMENT

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The **boat weight** must not be lower than 4580 kg in measurement trim as defined in **201**.

The pre-build detailed draft drawings must show the position of any potential **corrector weight** (See **Fundamental Rules**).

## 207. BALLAST

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The maximum volume of **variable ballast** is 1500 l, symmetrically distributed (750 l on each side), including plumbing up to the centreline of the **boat**. The **ballast** tanks are fixed.

Only one configuration of ballast tank layout and volume distribution is permitted per full 12-month period.

## 208. **MAST** (Highest point)

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A band measuring a minimum of 25mm in width in a contrasting colour must be affixed around the top of the **mast**. The lower part of this band will be situated at a height of 19 m above the water surface in measurement trim. No point of any set **sail** may be situated above the lower part of this band.

**Halyards** which exit above the point of maximum air draft must be routed/restrained by appropriate means, for example:

- fairlead
- strop
- some form of mechanical stop for the headboard car

In the absence of such a band, the high point will be the highest point of the **mast** tube.

## 209. **BOOM AND MAINSHEET TRAVELLER TRACK(S)**

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The aftermost part of the **boom** must be at least 80cm forward of the aftermost point used to determine Lh, whatever the trim of the **mainsail**.

The vertical dimension of the cross-section of the **boom** cannot be greater than 250 mm.

Aerodynamic devices (Boom Sweeper, Deck Sweeper, etc) located between the deck and the **boom** are forbidden.

Any track with a curve(s) where the radius is less than 4.5 metres is forbidden.

No part of the mainsheet traveller track can be further than 1.25 m from this aftermost point (dispensation for **boats** launched prior to the 31<sup>st</sup> of January 2007).

## 210. **BOWSPRIT- OUTRIGGERS**

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### 210.01 Bowsprit

The **bowsprit** is a **hull spar** (ERS F.1.4.c). At no point can the vertical section of the bowsprit exceed 150 mm. Where a **bobstay** exists, it can only be a cable (metal or textile). Under no circumstances can its endings and attachment points be artifices for increasing waterline length.

No deviation of the **bobstay** between the **hull** and the **bowsprit** is permitted.

Once in position, the forward extremity of the **bowsprit** must not exceed the forward-most point used to determine Lh by more than 2.0 m. The mounting system must ensure that this length of 2 metres shall never be exceeded.

The **bowsprit** must be removable (in line with EN/ ISO 8666 §5.2.2 for measuring length Lh).

(Dispensation for boats launched prior to the 31<sup>st</sup> of January 2007).

## 210.02 Outriggers

**Outriggers** whose purpose is to hold the spinnaker guy outboard to windward are permitted.

These cannot be located more than 35% of L<sub>h</sub> from the bow.

**Outriggers** are subject to the same material limitations as spars.

By extension, no device for sheet trimming, or deflecting the **spinnaker/ gennaker** sheet, can be affixed to a mount which would be partially or wholly outside the hull.

## 211. SPINNAKER POLE

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Spinnaker **poles** are forbidden.

## 212. SAILS

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The **surface area, mainsail** + solent (see definition in **212.03.01**), must not exceed 115 m<sup>2</sup>.

### 212.01 - Reminders and general points

**212.01.01** – The **Equipment Rules of Sailing** (ERS) and dispositions in Appendix G of the **World Sailing RRS** rules (size and positioning of the **sail** numbers) apply.

**212.01.02** - Sail numbers are distributed by the Class 40 in chronological order of requests.

### 212.02 - Mainsail measurement

**212.02.01** - The sail area of the **mainsail (SMGV/MMSS)** is calculated by the formula:

$$\text{SMGV/MMSS} = (\text{Luff Length} \times (\text{MHB} + 2 \times \text{MUW} + 3 \times \text{MTW} + 4 \times \text{MHW} + 4 \times \text{MQW} + 2 \times \text{foot length}))/16$$

### 212.03 - Measurement of the genoa/jib/solent

**212.03.01** - A genoa/jib/solent is a triangular shaped **foresail** hoisted along a **stay**.

A genoa/ heavy-weather jib/ solent is a headsail which is defined as a sail whose half width is measured from the half leech point to the closest point on the **luff**, and where this half width is 50% or less of **LPG** and whose width perpendicular to the **luff** at the **three quarter leech point** is less than or equal to 30 % of **LP**.

The **head width (HHB)** is less than or equal to 45 cm..

**212.03.02 -** **HLP** is the **luff perpendicular** (ERS G.7.12).

**HLU** is the **luff length** (ERS G.7.3).

**212.03.03** - The surface area of the **jib** (**HSA**) is given by:

~~$SME = 0.5 \times JL \times LP$~~

$$HSA = 0,0625 \times HLU \times (4 \times HLP + 6 \times HHW + 3 \times HTW + 2 \times HUW + 0,5 \times HHB)$$

The distance between the **mid-foot point** and the equidistant point between the **tack point** and the **clew point** of the genoa/ jib/solent shall not exceed 0.1 m. (ERS G.5.12)

#### **212.04 - Trysail, heavy-weather jib and storm jib**

Refer to OSR 4.26 of the OSR Category 1 modified as follows:

A reef is permitted in the heavy-weather jib.

#### **212.05 - Certificate of sail conformity**

The **sail** maker shall sign a document (supplied by the Class 40) certifying the **sail** materials, measurements and surface area of the **mainsail** and each genoa/jib/solent and heavy-weather jib, as well as their total conformity with the specifications of the *RRS* and **ERS**.

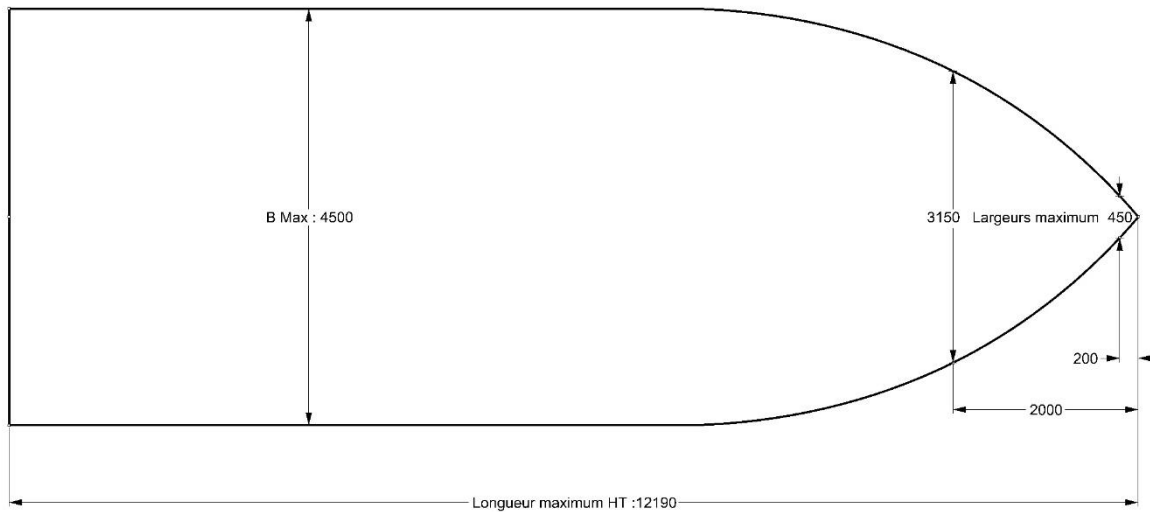
### **213. GEOMETRY OF THE HULL AND BOW VOLUME**

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#### **213.01 – Geometry of the hull**

From 150mm under the **sheer**, any point vertically below must be closer to the centreline than the point immediately above, no matter which section between the transom and the section 4 meters behind the bow.

The maximum width 2000 mm aft of the forward most point used to determine Lh, shall not exceed 3150 mm.

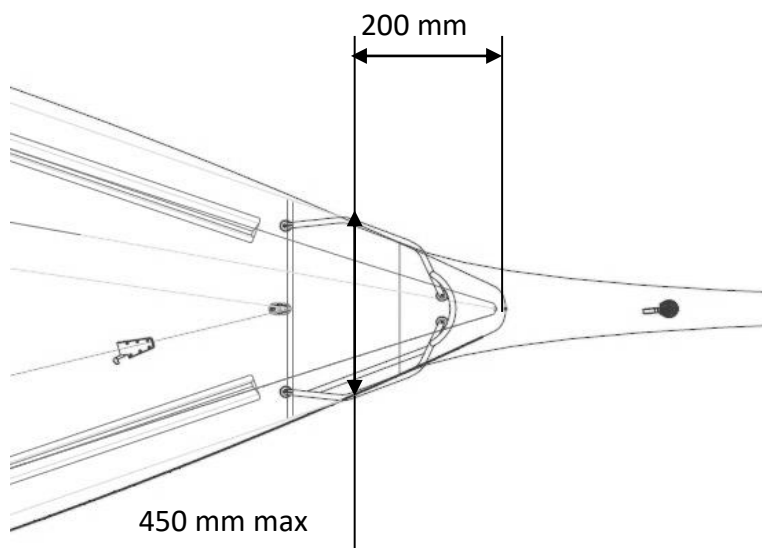


### 213.02 – Bow volume

The maximum width 200 mm aft of the forwardmost point used to determine Hull Length shall not exceed 450 mm. Viewed from above, there can be no inverted curve in the **sheer**. Such that when viewed from above, the **sheer** between the **bow** and max beam:

- Shall not feature any concavity,
- The angle between the tangent to the **sheer** and the centerline of the **boat** can only decrease.

The line formed by the vertical projection on the horizontal plane of the widest point of each section of the **hull** shall not present an inverted curve and is subject to the same rules as the **sheer** line.



## 214. GEOMETRY OF THE DECK

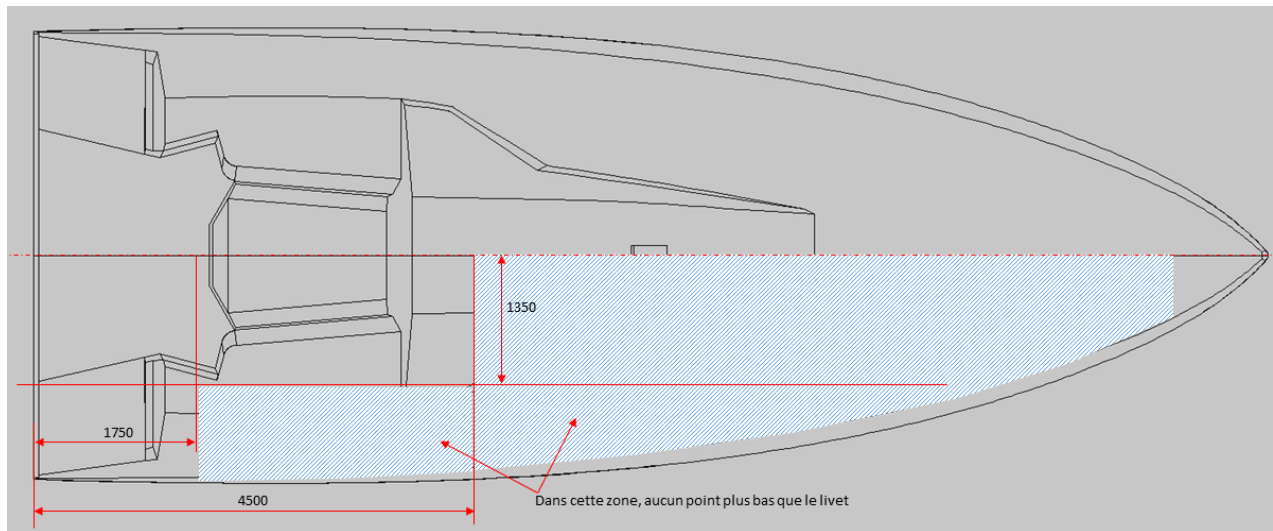
The cockpit can be any width between the aft-most point used to determine  $L_h$  and 1.75 metres forwards of this point.

Between 1.75 m and 4.50 m forward of the aft-most point used to determine  $L_h$ , no part of the **deck** or **cockpit** surface can be lower than the **sheer** of the same section outside a plane situated 1,350 mm from the centerline when the boat is floating upright.

Between 4.50 m forward of the aft-most point used to determine  $L_h$  and the bow, no part of the **deck** or coach roof can be lower than the **sheer** of the same section, ~~with the exception of an anchor locker. The aft-most point of the anchor locker shall be less than 1.50 metres from the bow, and its total volume less than 0.4m<sup>3</sup>.~~

Between 1.75m forward of the aft-most point used to determine  $L_h$  and the bow, no non-watertight locker may be installed in such a way that it would be below the waterline + 300 mm when the **boat** is heeled to 90°.

Any device not covered in this article which could be beneficial for the 90° test shall be submitted to the **Chief Measurer of the Class40** for an interpretation.





## CHAPTER 3 - SAFETY

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### 300. STABILITY: (EN/ISO 12217)

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Reminder:

The **boat** must conform with all aspects of:

- the “NF EN ISO 12217 Small Craft - Stability and Buoyancy Assessment and Categorisation- part 2: Sailing boats with a hull length greater or equal to 6 m” for design category A, except 6.1.4 b) where the sentence “*for the next less demanding design category* » is replaced by « *for the design category concerned*”,
- the “NF EN ISO 11812 – Small Craft – watertightness requirements of quick draining cockpits” for design category A.

A Class40 accredited measurer shall have verified the load measured during a Class40 90° test. The written report (or any other document) shall then be submitted to the class. This document shall prove that the stability of the vessel concerned has been verified and shall state the results obtained for each of the requirements of the standards.

Displacement is validated by weighing (see chapter 301).

Within the framework of this measurement, the measurer will note down the following measurements on his report: Lh, Bmax, Tmax, average freeboard, **top point** of the mast, following the procedure supplied by Class 40.

### 301. DISPLACEMENT CONFORMITY

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The weighing of a **boat** in measurement trim must have been carried out by a Class40 accredited measurer, using a load cell with its valid annual **certificate**.

This person will supply the class with a report of the weighing session.

### 302. 90° TEST

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This test is aimed at proving that the **boat** is capable of righting itself from the broached position with empty ballast tanks.

It must be done by a Class40 accredited measurer.

When heeled at 90 degrees (on both sides, if considered necessary) the **boat** in measurement trim (see §201) is kept in this position with the aid of a stop passed around the **mast** at the level of the measurement band at the top point

of the **mast** (see 208 of the present rules). The load exerted on the strop must be a minimum of 235 kg and a maximum of 323 kg.

If the **mast** band is placed at under 19m of elevation, the load on the strop must satisfy the same righting moment. (The designer must supply the calculations)

The **boat** is considered to be heeled at 90 degrees when the aftermost points of the **sheer line** are situated on the same vertical plane.

### 303. WATERTIGHT BULKHEADS

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A watertight collision bulkhead must be installed between 10% and 15% of Lh aft of the forward-most Lh point. An aft watertight bulkhead must be installed forward of the rudder stocks and a minimum of 1 m forward of the aft-most point of Lh.

A system of watertight hatches, with a minimum opening of 0.18m<sup>2</sup>, shall enable evacuation via the back of the **boat** when inverted. ~~This~~ The hatch located on the transom **must be** outside the aft lifelines on any **boat** launched for the first time after 1st March 2011.

It must be possible to open all of these watertight hatches in either direction, be they the watertight bulkhead hatches or the transom hatch.

### 304. COMBINED VOLUME OF THE DECK CAMBER AND THE COACHROOF

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For **boats** launched from the 1st of January 2021 onwards, the minimum combined deck camber and coach roof volume, V, in m<sup>3</sup>, shall be:

$$V = B_{max} + 0.6 \times B_{av}$$

With :

B<sub>max</sub> being the maximum width of a **boat** expressed in meters,

B<sub>av</sub> being the width of the **hull**, measured at 2000 mm aft of the forward most point used to determine Lh, expressed in meters.

A coach roof is mandatory. The volume of any rope tunnels shall be deducted. The volume represented by coach roof extensions and coamings cannot be included.

A certificate signed by the designer, specifying this volume, must be supplied.

See Appendix for dates of application.

### 305. BUOYANCY VOLUMES

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A minimum of 5 m<sup>3</sup> of closed-cell foam is required. This volume, divided into a minimum of 4 compartments, must be evenly distributed around the center of the **boat**. The volume of the sandwich **hull** lining and structural longitudinal and transverse bulkheads built in sandwich may be included in this volume of foam (but not the volume of the deck lining).

The skipper must supply a drawing showing the detail and the distribution of the buoyancy volume, signed by the designer, the builder and the skipper.

The buoyancy sections must be affixed to the **hull**, the deck or the structure in such a way as to withstand a force at least equal to their buoyancy, no matter what the trim or heel of the **boat**.

For **boats** whose 1<sup>st</sup> measurement **certificate** is issued from the 2022 season onwards, the foam buoyancy sections must be in laminated compartments.

### 306. PROPULSION

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A **diesel** engine, permanently fixed in place, with a minimum power of 19,4 kW at the crankshaft, with fixed transmission with sail drive or propeller shaft, and a propeller, situated beneath the centreline of the **hull**, must be installed.

The diesel engine should be chosen from the following commercial products: Yanmar 3YM30AE, Lombardini LDW / KDW 1003, Nanni diesel N3.30, Volvo D1-27, Volvo D1-30.

Any other engine model or brand will require an application for approval.

There must be a minimum of 40 mm between the propeller when open, and the **hull**. The propeller blades may be folding or feathering.

The propeller when open must have a minimum diameter of 360 mm.

The autonomy of the propulsion system shall be equivalent to that provided by a 40 litres tank for a diesel engine, no matter what the power source.

### 307. LIFELINES

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Only metal lifelines are allowed. A lanyard or synthetic rope may be used to secure the ends of the lifeline. Each lanyard must not exceed 100 mm (4 inches) in length.

## CHAPTER 4 - COST LIMITATION

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The use of titanium and materials denser than the lead is forbidden, except as described in article **406**.

### *401. HULL, DECK, INTERIOR STRUCTURE AND FITTINGS*

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Materials forbidden in the construction of the **hull**, deck, the interior structure and fittings are:

- ◆ Carbon fibre
- ◆ Aramid fibre
- ◆ Any mineral or synthetic fibre where the maximum tensile strength is in excess of 3000 Mpa
- ◆ Sandwich cores: honeycomb cores.

The use of resin pre-preg reinforcements in the construction of the **hull**, the deck, the interior structure and fittings is forbidden.

### *402. STANCHIONS, PULPITS AND PUSHBITS*

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Stanchions, pulpits and pushbits are made of steel.

A continuous structural surface of at least 0.5 m<sup>2</sup>, with the same material limitations as permitted in Rule 401, will be considered to be a guard-rail as a substitute for the aft pulpit if the dimensions of the surface area in question comply with the height requirements of OSR 3.14.1.

### *403. RUDDERS AND STEERING SYSTEM, KEEL FIN*

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Forbidden materials are:

- ◆ Carbon fibre
- ◆ Aramid fibre
- ◆ Any fibre where the maximum tensile strength is in excess of 3800 MPa
- ◆ Honeycomb cores.

The 3D milling of metal **keel** fins and rudder stocks is forbidden.

For **boats** launched from July 2012 onwards and for rudders with stocks, only solid, turned stocks (having an axis of rotation) and made from one type of metal only are permitted. The types of metal permitted are:

- ◆ 316L

- ◆ 17-4PH
- ◆ F16-PH
- ◆ Alloy 7075

#### **404. MAST, BOOM, SPINNAKER POLE, BOWSPRIT**

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Forbidden materials are:

- ◆ Carbon fibre with a modulus greater than 245 GPa (certification from the manufacturer obligatory).

The mast section, except local reinforcements, must be constant from the mast base to the fixed main **forestay** tang.

A section that gradually tapers away is only permitted above the forestay tang.

#### **405. LATERAL STANDING RIGGING**

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All materials other than steel are forbidden. All steels where the Young's modulus is greater than 206 GPa are forbidden.

#### **406. EQUIPMENT**

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406.01: Certain items of equipment on **boats** may contain materials on the forbidden list. These items of equipment can be installed on board on condition that:

- these items are mass-produced, sold to the public, and feature in suppliers' public catalogues with the price listed.
- the publicly listed price of these items is less than or equal to the publicly listed price of the same type of equipment which does not contain any forbidden materials.

For any item of equipment which does not match all the above criteria, the equipment supplier concerned must submit a request to the Board to become an approved equipment supplier. The Board will take a decision within 30 days on the recommendations of the Technical Committee. If approval is not given by the Board, the equipment supplier can request that approval be put to vote at the Class's Annual General Assembly, which will vote on the basis of a simple majority of votes present or represented. Requests for approved supplier status must be submitted to the Class before the 31st of January each year.

The list of items of equipment authorised by the Board or the Annual General Assembly in line with the above procedure will be made available to members of the class via the website under the *Rules and Documents* section.

Soft padeyes and wind sensor mounts (primary and back-up) made out of carbon are not affected by the measures described in this article, and are considered to be permitted items of equipment.

406.02: Coffee grinders are forbidden.

406.03: Batteries shall be exclusively lead (acid or gel)

Batteries must not be moved while at sea, and cannot be installed aft of the aft watertight bulkhead.

The skipper is solely responsible for ensuring that the batteries are securely and appropriately installed in line with the manufacturer's safety instructions.

406.04: **Mainsail halyard** locks are forbidden.

A maximum of 4 **halyard** locks are permitted for foresails including any spare hooks.

The definition of a **halyard** lock is any mechanical system designed to hold **sails** aloft by taking the load off the halyard. This rule does not apply to furling sails with lashings.

No system for keeping **sails** hoisted shall be situated higher on the **mast** than 2.25 m above deck level, except for halyard locks permitted in **406.04**.

406.05: Only one load cell is permitted on board.

406.06: All hydraulic systems, except the autopilots, are forbidden.

## **407. ELECTRONIC**

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There are no restrictions on electronics except for:

- The Inertial navigation systems must be available as standart product (available on catalogue) and at a public price of less than €7,000 ex-VAT
- Elements of the automatic pilot product line, namely the calculator, processor, electronic hub, power control unit, computer software and adjoining licences. Each of these elements must be available as standart product (available on catalogue). This set-up must not exceed a public price of €20,000 ex-VAT. Within this amount, the software licences required to operate the automatic pilot are deemed to be included. The other elements such as the displays, sensors other than the inertial navigation system and the rams are not included in the calculation. The term 'electronic unit' is understood to mean any device used to collect and use the data from the various sensors.
- No element of the backup pilot can be more expensive than its equivalent on the main automatic pilot.