

**PIXEL<sup>®</sup>**

# **CLASS ASSOCIATION**

**CLASS RULES**

**Effective April 2006**



The PIXEL was designed in 2003 by BRUCE KIRBY.

[www.brucekirbymarine.com](http://www.brucekirbymarine.com)

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# INTRODUCTION

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*PIXEL hulls, hull appendages, rigs and sails are measurement and manufacturing controlled.*

*PIXEL hulls, hull appendages, and rigs shall only be built by Fu Yang Flying Eagle Boat Co., Ltd., or any other builder licensed by Bruce Kirby, Inc and referred to in the Class Rules as licensed builders. Equipment is required to comply with the PIXEL Class Association Building Specifications and is subject to ISAF approved manufacturing control systems.*

*PIXEL hulls, hull appendages, rigs and sails, after having been shipped by the builder, may only be altered to the extent permitted in Section C of the Class Rules.*

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

*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.*

# 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.2 ABBREVIATIONS

- A.2.1 ISAF International Sailing Federation
- MNA ISAF Member National Authority
- PCA Pixel Class Association
- NCA National Class Association
- ERS Equipment Rules of Sailing
- RRS Racing Rules of Sailing

### A.3 AUTHORITIES

- A.3.1 The certification authority of the Class is the PCA.
- A.3.2 Notwithstanding anything contained herein, the **certification authority** has the authority to withdraw a **certificate** and shall do so on the request of the PCA.
- A.3.3 Neither the ISAF, the MNA, the PCA, an NCA, the IFDS, the certification authority nor an official measurer is under any legal responsibility in respect to these Class Rules or accuracy of measurement and no claim arising from them can be entertained.

### A.4 ADMINISTRATION OF THE CLASS

- A.4.1 The PCA is the administrator of the class
- A.4.2 The website is [www.pixelclass.org](http://www.pixelclass.org)

### A.5 PCA AND ISAF RULES

- A.5.1 These **Class Rules** shall be read in conjunction with the ERS.
- A.5.2 Except where used in headings, when a term is printed in “**bold**” the definition in the ERS applies and when a term is printed in “*italics*” the definition in the RRS applies.

### A.6 CLASS RULES AMENDMENTS

- A.6.1 Amendments to these **Class Rules** are subject to the approval of the PCA.

### A.7 SAILING INSTRUCTIONS

- A.7.1 Sailing instructions for regional, national and international regattas shall not vary these Class Rules except with the consent of the PCA.

## **A.8 CLASS RULES INTERPRETATION**

- A.8.1 Interpretation of **Class Rules** shall be made in accordance with the PCA Bylaws.
- A.8.2 Proposed amendments may be made in writing to the Board of the PCA or its designees.

## **A.9 DESIGNER'S PLAGUE**

- A.9.1 The licensed Pixel Distributor, upon receiving the Designer's Plague from the Designer, shall affix the Designer's Plague to the aft end of the starboard tank.

## **A.10 CLASS FEE AND BUILDING PLAQUE**

- A.10.1 The licensed Pixel Distributor shall pay the PCA fee.

## **A.11 SAIL NUMBERS**

- A.11.1 Sail numbers shall be issued by the PCA.
- A.11.2 Sail numbers shall be issued in consecutive order starting at "1", and shall have the national letters in accordance with Section G of the Class Rules and with the RRS, Appendix G, in its current form.
- A.11.3 A boat's official sail number shall be the same as the hull number.

## **A.12 HULL CERTIFICATION**

- A.12.1 A **certificate** shall record the following information:

- (a) Class
- (b) **Certification authority**
- (c) Sail number issued by the **certification authority**
- (d) Owner
- (e) Hull identification
- (f) Builder's details
- (g) Date of issue of **certificate**

## **A.13 INITIAL HULL CERTIFICATION**

- A.13.1 For a **certificate** to be issued to a hull not previously **certified**:
  - (a) **Certification control** shall be carried out by the **official measurer**, who shall complete the appropriate documentation.
  - (b) The documentation and **certification** fee, if required, shall be sent to the **certification authority**.
  - (c) Upon receipt of a satisfactorily completed documentation and **certification** fee, if required, the **certification authority** may issue a **certificate**.
- A.13.2 If a licensed builder has been determined by the Executive Committee of the PCA to have signed a measurement form for a hull that did not measure correctly, it shall be required to rectify the error to the satisfaction of the **certification authority**, and may be subject to sanctions by the PCA, including forfeiture or suspension of its license.

## **A.14 VALIDITY OF CERTIFICATE**

A.14.1 A hull **certificate** becomes invalid upon:

- (a) The change to any items recorded on the hull **certificate**, as described under A.11.
- (b) The date of expiry,
- (c) Withdrawal by the **certification authority**,
- (d) The issue of a new **certificate**,

## **A.15 HULL RE-CERTIFICATION**

A.15.1 The **certification authority** may issue a **certificate** to a previously certified hull:

- (a) When it is invalidated under A.13.1(a) or (b), after receipt of the old **certificate** and **certification** fee if required.
- (b) When it is invalidated under A.13.1 (c).
- (c) In other cases, by application of the procedure in A.12.

## **A.16 RETENTION OF CERTIFICATION DOCUMENTATION**

A.16.1 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 hull **certificate**.
- (c) Have valid **certification marks** as required

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

B.2.1 A valid Class Association Sticker, as required by the PCA, shall be affixed to the hull on the upper port side transom.

B.2.2 Sails shall carry a PCA Mark.

## **B.3 DESIGNER & MANUFACTURER MARKS**

B.3.1 A valid Designer's Plague shall be affixed to the hull to the aft end of the starboard tank.

B.3.2 A valid Manufacturer's Plague shall be affixed to the hull to the aft end of the port tank.

## **B.4 RESPONSIBILITY**

- B.4.1 An owner shall agree to the one-design principle of the Class and the boat and shall do nothing during the course of ownership to cause or permit this principle to be violated.

## **B.5 CLASS MEMEBERSHIP**

- B.5.1 An owner shall be a current member of the PCA.

# **PART II: REQUIREMENTS AND LIMITATIONS**

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

The rules in Part II are **closed Class Rules**. **Certification control** and **equipment inspection** shall be carried out in accordance with the ERS except where varied in this Part.

The Pixel is a One-Design class. The rules, official plans and specifications are intended to ensure that the boats in this Class are as nearly as possible identical as regards the shape and weight of each hull, including the centerboard, rudder, spars and sails, and that the equipment is simple, functional, dependable and affordable.

No addition or alteration may be made to the hull form, construction, equipment, type of equipment, placing of equipment, fittings, type of fittings, placement of fittings, spars, standing rigging, sails, battens and running rigging as supplied by a Builder, except when such addition or alteration is specifically authorized by these rules.

## **Section C – Conditions for Racing**

### **C.1 GENERAL**

#### **C.1.1 RULES**

- (a) RRS shall apply.
- (b) The ERS Part I – Use of Equipment shall apply.

### **C.2 CREW**

#### **C.2.1 LIMITATIONS**

- (a) The **crew** competing in a Pixel National Championship shall consist of (a) three members with no minimum weight restriction or (b) two members with a minimum combined weight as stated in C.2.2
- (b) Crew changes may not be made and no **crew** member shall be substituted during an event scheduled to last fewer than 3 consecutive days, except with prior written permission of the race committee.

- (c) Regular members or persons assigned by them may skipper Pixels in Pixel events. In the case of club-owned boats, the club or its representative may designate the skipper.

## **C.2.2 WEIGHTS**

- (a) The minimum total weight of the **crew** dressed for sailing shall be 86 kg (189.6 lbs).
- (b) Interpretation of "dressed for sailing": Crews shall be weighed dry with normal seasonal attire and lifejacket. The allowed make-up ballast shall be fresh water in plastic bottles, sealed (such as with tape). Crews should supply their own bottles. During each weigh-in, and except for correction of ballast, crews will be weighed only once, and must meet the minimum weight requirement at that time.
- (c) Competitors shall neither carry weight on their person nor wear extra layers of clothing for the purpose of increasing their natural weight.
- (d) A local, regional, or any other Pixel racing association may eliminate or change the National Championship weight ruling to meet local conditions and/or age group requirements for any racing except the National Championship.

## **C.3 PERSONAL EQUIPMENT**

### **C.3.1 MANDATORY**

- (a) For any race or series of races, both the skipper and crew shall wear a government-approved Personal Flotation Device (PFD) at all times while afloat.
- (b) Any additional equipment required by international, national, or other governing authorities for safety purposes shall be fitted or carried.

## **C.4 ADVERTISING**

### **C.4.1 LIMITATIONS**

Advertising shall only be displayed in accordance with Category C of the ISAF Advertising Code.

## **C.5 PORTABLE EQUIPMENT**

### **C.5.1 FOR USE**

- (a) **MANDATORY**
  - (1) Floatable towing rope, minimum 9m long and not less than 7 mm in diameter.
  - (2) One paddle, minimum 0.5 m long.
  - (3) Each boat shall use a device that will keep the rudder connected to the boat in the event of capsize or turtle.

## C.6 BOAT

### C.6.1 DIMENSIONS

	Minimum	Maximum
LOA = 4.2 m (13.75').	4190 mm	4210 mm

### C.6.2 WEIGHT

	Minimum	Maximum
(a) The weight of the <b>boat</b> in dry condition	83.9 kg (185 lbs)	90.7 kg (200 lbs.)
(b) The weight shall be taken including centerboard and excluding <b>sails</b> and all portable equipment as listed in C.3 and C.5.		

### C.6.3 CORRECTOR WEIGHTS

- (a) **Corrector weights** of lead shall be permanently fastened **inside deck lockers on each side of boat** with weight distributed evenly when the **boat** weight is less than the minimum requirement.
- (b) The total weight of such **corrector weights** shall not exceed **6 kg**.

### C.6.4 FLOTATION

- (a) The **hull** shall be fully decked and/or have flotation element(s).
- (b) Fully decked **hulls** shall comply with ISO 11812 and ISO 12216.
- (c) Flotation elements shall comply with ISO 12217-3 Annex C.

## C.7 HULL

- (a) The hull shall be in compliance with Section D.

### C.7.1 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) Waxing, polishing and fine wet or dry sanding of the hull are permitted provided the intention and effect is to polish only.
- (b) Sanding or refinishing of the hull with the intention or effect to lighten the hull or improve the performance, finish or shape beyond the original is not permitted, but nothing shall prohibit the repair of a hull which requires refinishing.
- (c) The use of slowly soluble applications, which might alter the boundary layer characteristics of the hull, is prohibited.
- (d) A protective strip or bumper may be added to the bow of the boat.

## C.7.2 FITTINGS

- (a) The fitting type, quantity and placement shall be in compliance with Section D.
- (b) Drainage plugs shall be kept in place at all times.

## C.7.3 LIMITATIONS

- (a) Omitted

## C.8 HULL APPENDAGES

### C.8.1 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) All hull appendages shall be in compliance with Section E.
- (b) The centerboard, rudder, rudder head and tiller shall be used as supplied by a Builder. A non adjustable tiller extension and universal may be altered or substituted.
- (c) No modification shall be made to the profile shapes of the centerboard and rudder, or to the shape of centerboard or rudder foils. Appendages may be wet sanded for smoothness or repaired with epoxy or polyester resins provided this does not alter the shape of the blades or change their leading or trailing edges other than to fair the exposed fiberglass joint.

### C.8.2 FITTINGS

- (a) The fittings types shall be in compliance with Section E.
- (b) Shims of any material may be added between the rudder head cheeks and the rudder blade to improve the fit of the rudder blade in the rudder head.

### C.8.3 LIMITATIONS

- (a) Only one **centerboard** and one **rudder** blade shall be used during an event except when a **hull appendage** has been lost or damaged beyond timely repair.
- (b) The rudder blade shall be in its fully lowered position. However for races sailed in shallow water the sailing instructions may prescribe that this rule shall not apply.

## **C.9 RIG**

### **C.9.1 MODIFICATIONS, MAINTENANCE AND REPAIR**

- (a) The rig dimensions shall be in compliance with Section F.
- (b) The mast, boom and spinnaker pole shall be supplied by the licensed Builder and not altered. No mast or boom which has a permanent bend shall be used. Boats may carry a spare spinnaker pole. Rotating and permanently bent masts are prohibited.
- (c) The pin position of the shrouds shall not be adjusted while racing.
- (d) The use of mast blocks or any other system specifically designed to induce or limit mast bend is prohibited.

### **C.9.2 FITTINGS**

- (a) Sheets and halyards of any length, diameter and material may be substituted for those supplied by a Builder, with the following limitations:
  - (1) Sheets and halyards in whole or in part of wire are prohibited except for the main halyard.
  - (2) No sheets or halyards shall be tapered.
  - (3) Each sheet and halyard shall be one single piece of line, except for the main halyards, which shall include one part wire and one part line.
- (b) Plastic "stopper balls" may be used on any sheet or halyard.
- (c) Cunningham. The cunningham shall be one piece of line rigged using only the fittings supplied on the mast. Line loops or knots may be added to any part of the line to provide additional purchase.

### **C.9.3 LIMITATIONS**

- (a) The shrouds and spreaders shall be supplied by a Builder. No changes are permitted to the length or angle of the spreaders.

### **C.9.4 MAST**

- (a) The mast shall be in compliance with Section F.

### **C.9.5 BOOM**

- (a) The boom shall be in compliance with Section F.

### **C.9.6 Spinnaker Pole**

- (a) The spinnaker pole shall be in compliance with Section F.

#### C.9.7 STANDING RIGGING

- (a) The standing rigging shall be in compliance with Section F.
- (b) Forestay length shall not be adjusted.

#### C.9.8 RUNNING RIGGING

- (a) Running Rigging shall be in compliance with Section F.

### C.10 SAILS

#### C.10.1 IDENTIFICATION

- (a) The national letters and sail numbers shall comply with the RRS except where prescribed otherwise in these **Class Rules**.
- (b) Sails shall carry identification as prescribed by Section G.

#### C.10.2 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) **Sails** shall not be altered in any way except as permitted by these **Class Rules**.
- (b) Routine maintenance is permitted without re-measurement and re-certification.

#### C.10.3 DIMENSIONS

- (a) Sail dimensions shall be in compliance with Section G.

#### C.10.4 MAINTENANCE

- (a) Routine maintenance such as cleaning or repair of damaged panels is permitted without re-measurement or re-certification.

#### C.10.5 LIMITATIONS

- (a) Not more than 1 mainsail, 1 jib, and 1 spinnaker shall be carried aboard.
- (b) Not more than 1 mainsail, 1 jib, and 1 spinnaker shall be used during an event except when a **sail** has been lost or damaged beyond timely repair.

#### C.10.6 MAINSAIL

- (a) The **sail** shall be hoisted on a halyard. The arrangement shall permit hoisting and lowering of the **sail** at sea.

#### C.10.7 JIB

- (a) The lowest point of the tack when hoisted shall be less than 15 mm from deck level at that point.

## C.10.8 SPINNAKER

### (a) IDENTIFICATION

The sail numbers shall comply with the RRS.

## Section D – Hull

### D.1 PARTS

#### D.1.1 MANDATORY

- (a) Hull shell
- (b) Deck
- (c) Buoyancy Tanks
- (d) Bulkheads

### D.2 GENERAL

#### D.2.1 RULES

- (a) The **hull** shall comply with the **Class Rules** in force at the time of initial **certification**.

#### D.2.2 CERTIFICATION

See Rule A.13

#### D.2.3 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) The hull shell, deck, bulkheads, double bottom shall not be altered in any way except as permitted by these **Class Rules**.
- (b) Routine maintenance such as painting and polishing is permitted without re-measurement and re-**certification**.
- (c) If any hull moulding is repaired in any other way than described in D.2.3(c), an **official measurer** shall verify on the **certificate** that the external shape is the same as before the repair and that no substantial stiffness, or other advantage has been gained as a result of the repair. The **official measurer** shall also describe the details of the repair on the **certificate**.

#### D.2.4 DEFINITIONS

##### (a) HULL DATUM POINT

The hull datum points are at the centerline forward-most point of the deck (Point A), on the bow forward of the forestay (Point B), and the aft corners of the side decks (Points C/p and C/s). Datum points are marked by a measuring point sticker on hulls numbered 1 through 23 and 304. All successive hull datum points are raised points that were made part of hull during manufacture.

#### D.2.5 IDENTIFICATION

- (a) The hull shall carry a Plaque permanently placed on the centerline vertical surface at the break of the deck and below the mast step.

**D.2.6 BUILDERS**

- (a) The hull shall be built by a builder licensed by PCA.
- (b) All moulds shall be approved by PCA.

**D.3 CONSTRUCTION**

D.3.1 Construction shall be in accordance with the Pixel Construction Plans.

**D.4 MEASUREMENT**

D.4.1 Measurement shall be carried out in accordance with the ERS.

**D.5 CERTIFICATION**

- D.5.1 The hull shall comply with the Class Rules in force at the time of initial fundamental measurement.
- D.5.2 Certification of the hull shall be in accordance with Section A of the Class Rules.

**D.6 ASSEMBLED HULL**

**D.6.1 FITTINGS**

- (a) MANDATORY
  - (1) Forestay fitting
  - (2) Shroud chain plates
  - (3) Mast step
  - (4) Mainsail sheet blocks, fairleads and cleats
  - (5) Mainsail Cunningham cleat
  - (6) Headsail fairleads and cleats
  - (7) Spinnaker sheet and guy fairleads, blocks and cleats
  - (8) Stowage clips for spinnaker pole, sail bags and other equipment

**D.6.4 DECK FITTINGS**

All dimensions taken are at the centerline forward-most point of the deck (Point A), on the bow forward of the forestay (Point B), and the aft corners of the side decks (Points C/p and C/s) as defined by Section D.2.4

	Minimum	Maximum
(a) From A to headstay stem, center of rocker arm:	142 cm	143 cm
(b) From A to centerline of mast step slot:	142.5 cm	143.0 cm
(c) From A to front edge of jib lead plate	148 cm	149 cm

(d) From front edge of jib lead plate to aft edge of mast step	17.5 cm	17.8 cm
(e) From B to shroud chainplates center of hole:	201 cm	202 cm
(f) From B to Capsize recovery eyestraps/block center of forward hole	232 cm	233 cm
(g) From B spinnaker guy Clamcleat, center of forward hole	181 cm	182 cm
(h) From B spinnaker forward cheek block, center of outside bolt	211 cm	212 cm
(i) From B to spinnaker cam cleat	202.5 cm	203.5 cm
(j) From center of forward hole to center of outside bolt of spinnaker cheek block	14 cm	16 cm
(k) From C to spinnaker aft turning block, center of aft hole, in gunwale:	13.5 cm	114 cm
(l) From C to Centerboard Clamcleat, starboard side of centerboard trunk, center of aft hole	175.5 cm	176.5 cm
(m) From C to centerboard strapeye, port side of centerboard trunk, center of aft hole	175.5 cm	176.5 cm
(n) From C to mainsheet block on centerline at top of centerboard trunk, forward edge of upper bolt plate	175.5 cm	176.5 cm
(o) Spinnaker halyard camcleat, starboard side of centerboard trunk, center of upper fastening	134.5 cm	135.5 cm
(p) From B to centerboard bungee eyestraps, each side of centerboard trunk, center of forward fastening	202.5 cm	203.5 cm
(q) Mainsheet bridle attachment eyestraps, each side of pedestal, top hole forward from back face of pedestal,	20 mm	25 mm
(r) Mainsheet bridle attachment eyestraps, each side of pedestal, top hole forward from top of pedestal,	20 mm	25 mm
(s) Rudder retaining clip top bolt from top of bottom gudgeon	80 mm	85 mm
(t) Centerline of drain plug, starboard side of transom from transom centerline	28 mm	30 mm
from bottom of hull	28 mm	30 mm

## Section E – Hull Appendages

### E.1 PARTS

#### E.1.1 MANDATORY

##### (a) Centerboard

(b) **Rudder**

**E.2 GENERAL**

E.2.1 RULES

**Hull appendages** shall comply with the **Class Rules** in force at the time of **certification**.

E.2.2 MODIFICATIONS, MAINTENANCE AND REPAIR

(a) Hull appendages shall not be altered in any way except as permitted by these Class Rules.

(b) Routine maintenance is permitted without re-measurement and re-certification.

E.2.3 CERTIFICATION

(a) The **official measurer** shall **certify hull appendages** and shall sign and date the **certification mark**.

E.2.4 BUILDERS

(a) The **hull appendages** shall be made by builders licensed by PCA.

**E.3 CENTERBOARD**

E.3.1 RULES

(a) The **centerboard** shall comply with the **Class Rules** in force at the time of the **certification**.

E.3.2 CERTIFICATION

(a) The **official measurer** shall **certify centerboards** and shall sign and date the **certification mark**.

E.3.3 BUILDERS

(a) Builders shall be licensed by the PCA.

E.3.4 CONSTRUCTION

(a) The **centerboard** shall be manufactured from a pattern approved by the PCA.

E.3.5 FITTINGS

(a) MANDATORY

(1) Clip to secure position of centerboard

(b) OPTIONAL

(1) Hiking stick of optional design

## **E.4 RUDDER BLADE, RUDDER STOCK AND TILLER**

### **E.4.1 RULES**

- (a) The **rudder** blade shall comply with the **Class Rules** in force at the time of **certification**.

### **E.4.2 CERTIFICATION**

- (a) The **official measurer** shall **certify rudder** blades and shall sign and date the **certification mark**.

### **E.4.3 BUILDERS**

- (a) Builders shall be licensed by the PCA.

### **E.4.4 CONSTRUCTION**

- (a) The **rudder** blade shall be manufactured in a mould approved by the PCA.

### **E.4.5 FITTINGS**

#### **(a) MANDATORY**

- (1) Rudder Cap
- (2) Tiller

#### **(b) OPTIONAL**

- (1)

## **Section F – Rig**

### **F.1 PARTS**

#### **F.1.1 MANDATORY**

- (a) **Mast**
- (b) **Boom**
- (c) Standing **rigging**
- (d) Running **rigging**

#### **F.1.2 OPTIONAL**

- (a) **Spinnaker pole**

### **F.2 GENERAL**

#### **F.2.1 RULES**

- (a) The **spars** and their fittings shall comply with the **Class Rules** in force at the time of **certification** of the **spar**.
- (b) The standing and running **rigging** shall comply with the **Class Rules**.

F.2.2 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) **Spars** shall not be altered in any way except as permitted by these **Class Rules**.
- (b) Routine maintenance is permitted without re-measurement and re-**certification**.

F.2.3 CERTIFICATION

- (a) The **official measurer** shall **certify spars** and shall sign and date the **certification mark**.
- (b) No **certification** of standing and running **rigging** is required.

F.2.4 DEFINITIONS

(a) MAST DATUM POINT

The **mast datum point** is the butt of the mast.

F.2.5 BUILDER

- (a) Builders shall be licensed by the PCA.

**F.3 MAST**

F.3.1 MATERIALS

- (a) The **spar** shall be of carbon fiber.

F.3.2 CONSTRUCTION

- (a) The **spar** shall include a fixed sail track made of polycarbonate extrusion which shall be glued to the **spar**.

F.3.3 FITTINGS

(a) MANDATORY

- (1) Shroud tangs
- (2) A set of fixed spreaders
- (3) Mainsail halyard sheave box
- (4) Headsail halyard block and tang
- (5) Spinnaker pole fitting
- (6) Spinnaker pole lift block with attachment
- (7) Spinnaker pole downhaul block with attachment
- (8) Gooseneck
- (9) Boom vang

(b) OPTIONAL

- (1) One mechanical wind indicator
- (2) Compass bracket
- (3) Slots for halyards, pole lifts and Cunningham

#### F.3.4 DIMENSIONS

Datum point is butt of the mast.

	Minimum	Maximum
(a) Mast length	541 cm	542 cm
(b) Distance to mast step pin	3.7 cm	3.9 cm
(c) Vang Bale through bolt	10.8 cm	11.3 cm
(d) Main halyard clam cleat, lower hole	21.0 cm	23.0 cm
(e) Cunningham V-jam lower hole	51.0 cm	51.5 cm
(f) Spinnaker topping lift V-jam	68.3 cm	68.8 cm
(g) Gooseneck lower holes	76.5 cm	77.0 cm
(h) Spinnaker Pole ring bottom of plate	99.0 cm	99.5 cm
(i) Bottom of mainsail luff track main section	104.5 cm	105.0 cm
(j) Mainsail luff track above and touching gooseneck	9.8 cm	10.3 cm
(k) Spreader base forward holes:	214.1 cm	214.5 cm
(l) Main halyard lower eyestay	244.1 cm	244.6 cm
(m) Toppinglift eyestay lower hole	253.1 cm	253.6 cm
(n) Jib halyard tang lower hole	398.1 cm	398.6 cm
(o) Headstay tang lower hole	405.0 cm	405.5 cm
(p) Shroud tang lower hole	411.3 cm	411.8 cm
(q) Spinnaker halyard tang lower hole	425.4 cm	425.9 cm
(r) Main halyard upper eyestay	425.4 cm	425.9 cm
(s) Main halyard sheave bolt	535.2 cm	535.7 cm
(t) Sailtrack length	427.0 cm	428.5 cm

#### F.4 BOOM

##### F.4.1 CERTIFICATION

The spar and its fitting shall comply with the **Class Rules**.

##### F.4.2 BUILDER

(a) Builder shall be approved by the PCA.

##### F.4.3 MATERIALS

(a) The spar shall be of aluminum alloy. It may be anodized.

##### F.4.4 CONSTRUCTION

(a) The spar will be wound on a mandrel in two parts joined by a sleeve and fixed with adhesive. The mainsail track shall be glued onto the mast tube.

##### F.4.5 FITTINGS

###### (a) MANDATORY

- (1) Two single sheave mainsheet blocks with attachments
- (2) Clew outhaul blocks and attachments

- (3) Kicking strap fitting
- (4) Gooseneck attachment
- (b) OPTIONAL
  - (1) Spinnaker pole stowage fittings

#### F.4.6 DIMENSIONS

Datum point: all dimensions taken from forward end of boom, not including end cap.

	Maximum	Minimum
(a) Overall length	244.2 cm	244.7 cm
(b) Outhaul forward sheave, bottom of boom, forward hole	55 mm	56 mm
(c) Outhaul V-jam forward hole	29 cm	30 cm
(d) Vang bail	57 cm	58 cm
(e) Mid-boom mainsheet block eye strap, forward hole	107 cm	108 cm
(e) Outhaul aft sheave, forward hole	237 cm	238 cm
(f) Outhaul aft strapeye (offset right side)	239 cm	240 cm
(g) Mainsheet end boom eyestay, forward hole	239 cm	240 cm
(h) Boom reinforcement tube begins 25 mm from forward end, extends back		

### F.5 SPINNAKER POLE

#### F.5.1 CERTIFICATION

The spar and its fitting shall comply with the **Class Rules**.

#### F.5.2 BUILDER

(a) Builder shall be approved by the PCA.

#### F.5.3 MATERIALS

(a) The **spar** shall be of aluminium alloy. It may be anodised.

#### F.5.4 FITTINGS

(a) Fittings are optional.

#### F.5.5 DIMENSIONS

<b>Spinnaker pole spar cross section</b> (non tapered)	31.75 mm
<b>Spinnaker pole length:</b> tube length	1525 mm
<b>Spinnaker pole length:</b> tube and end-fitting <sup>1</sup>	620 mm

### F.6 STANDING RIGGING

#### F.6.1 MATERIALS

(a) The standing **rigging** shall be of stainless steel.

#### F.6.2 CONSTRUCTION

##### (a) MANDATORY

- (1) A forestay of 3/32" x 13' 7 1/4" pin to pin "non faired" 1 x 19 wire
- (2) Shrouds of 3/32" x 12' 10 3/4" "pin to pin", non faired" 1x19 wire

**F.6.3 FITTINGS**

(a) **MANDATORY**

- (1) Forestay rigging link
- (2) Shroud adjuster

**F.6.4 DIMENSIONS**

	Minimum	Maximum
Forestay length overall	414 cm	416 cm
Shroud length from pin to pin	392 cm	394 cm

**F.7 RUNNING RIGGING**

**F.7.1 MATERIALS**

- (a) Materials are optional.
- (b)

**F.7.2 CONSTRUCTION**

(a) **MANDATORY**

- (1) Mainsail halyard Wire part 3/32” 7x19 s.s. wire with shackle, 16’ 5” (500 cm) overall length from nicopressed loop to swaged ball; 16’ 1/2” (491 cm) from shackle swaged ball to halyard lock swaged ball
- (2) Mainsail sheet
- (3) Boom vang
- (4) Headsail halyard
- (5) Headsail sheets
- (6) Spinnaker halyard
- (7) Spinnaker sheet and guy
- (8) Spinnaker pole lift and downhaul
- (9) Mainsail outhaul
- (10) Mainsail Cunningham
- (11) Mainsail traveler
- (12) Capsize recovery line
- (13) Single line spinnaker Barber haulers capable of modifying the sheeting angle in one direction only

(b) **OPTIONAL**

**F.7.3 FITTINGS**

(a) **MANDATORY**

- (1)

(b) **OPTIONAL**

- (1)

## Section G – Sails

### G.1 PARTS

#### G.1.1 MANDATORY

- (a) Mainsail
- (b) Headsail

#### G.1.2 OPTIONAL

- (a) Spinnaker

### G.2 GENERAL

#### G.2.1 RULES

- (a) **Sails** shall comply with the **Class Rules** in force at the time of **certification**.

#### G.2.2 CERTIFICATION

- (a) The **official measurer** shall **certify** mainsails and headsails in the **tack** and spinnakers in the **head** and shall sign and date the **certification mark**.
- (b) An MNA may appoint one or more persons at a sailmaker to measure and **certify sails** produced by that builder in accordance with the ISAF In-house Certification Guidelines.

#### G.2.4 SAILMAKER

- (a) No licence is required.
- (b) The weight in  $\text{g/m}^2$  of the **body of the sail** shall be indelibly marked near the **head point** by the sailmaker together with the date and his signature or stamp.

### G.3 MAINSAIL

#### G.3.1 IDENTIFICATION

- (a) The Class insignia shall conform with the dimensions and requirements as required by the class.

#### G.3.2 MATERIALS

- (a) The **ply** fibres shall consist of woven polyester
- (b) **Stiffening** shall consist of woven polyester
  - (1) Cornerboards
  - (2) Battens
- (c) **Sail reinforcement** shall consist of woven polyester not less than 160 gms

#### G.3.3 CONSTRUCTION

- (a) The construction shall be: **soft sail, single ply sail**.
- (b) The **body of the sail** shall consist of the same **woven ply** throughout.
- (c) The **sail** shall have five batten **pockets** in the **leech**.

- (d) The following are permitted: Stitching, glues, tapes, bolt ropes, corner eyes, headboard with fixings, Cunningham eye or pulley, **batten pocket patches**, batten pocket elastic, batten pocket end caps, mast and boom slides, leech line with cleat, one **window**, tell tales, sail shape indicator stripes and items as permitted or prescribed by other applicable *rules*.

#### G.3.4 DIMENSIONS

		Minimum	Maximum
(a) <b>Leech length</b>	(Measured as ERS G.7.2)	4930 mm	4950 mm
(b) <b>Luff Length</b>		4360 mm	4380 mm
(c) <b>Quarter width</b>	(Measured as ERS G.7.4)	2090 mm	2110 mm
(d) <b>Half width</b>	(Measured as ERS G.7.5)	1720 mm	1740 mm
(e) <b>Three-quarter width</b>	(Measured as ERS G.7.6)	1170 mm	1190 mm
(f) Seven-eighths width		760 mm	780 mm
(g) <b>Top width</b>		90 mm	94 mm
(h) Weight of <b>ply</b> of the <b>body of the sail</b>			160 g/m <sup>2</sup>
(i) <b>Window</b> area		2100 cm <sup>2</sup>	2250 cm <sup>2</sup>

#### **Batten pocket centerline from leech point on leech**

(1) lowermost pocket.....	106 cm
(2) second pocket .....	203 cm
(3) middle pocket .....	293 cm
(4) fourth pocket.....	309 cm
(5) uppermost pocket.....	461 cm

#### **Batten pocket length (inside):**

(1) lowermost pocket: .....	74 cm
(2) second pocket: .....	68 cm
(3) middle pocket: .....	144 cm
(4) fourth pocket: .....	96 cm
(5) uppermost pocket: .....	53 cm

### G.4 HEADSAIL

#### G.4.1 MATERIALS

- (a) The **ply** fibers shall consist of polyester woven material not less than 160 gms
- (b) **Stiffening** shall consist of woven polyester

#### G.4.2 CONSTRUCTION

- (a) The construction shall be: **soft sail, single ply sail**.
- (b) The **body of the sail** shall consist of the same **woven ply** throughout.
- (c) The headsail shall have ... **batten pockets** in the **leech**.
- (d) The **leech** shall not extend beyond a straight line from the aft **head point** to the **clew point**.

- (e) The following are permitted: stitching, glues, tapes, corner eyes, hanks, batten pocket elastic, **batten pocket patches**, batten pocket end caps, leech line with cleat, one **window**, tell tales, sail shape indicator stripes and items as permitted or prescribed by other applicable *rules*.

#### G.4.3 DIMENSIONS

	Minimum	Maximum
(a) <b>Luff length</b>	3840 mm	3860 mm
(b) <b>Leech length</b>	3510 mm	3530 mm
(c) <b>Leach Length</b> to center of clue board hole	3475 mm	3495 mm
(d) <b>Foot length</b>	1385 mm	1405 mm
(e) <b>Quarter width</b>	1070 mm	1090 mm
(f) <b>Half width</b>	705 mm	725 mm
(g) <b>Three quarter width</b>	360 mm	380 mm
(h) <b>Top width</b>		40 mm
(i) Weight of <b>ply</b> of the <b>body of the sail</b>		160 g/m <sup>2</sup>
(j) <b>Window</b> area	1300 cm <sup>2</sup>	1400 cm <sup>2</sup>
(k) <b>Batten pocket centerline from leech point at leech</b>		
lowermost pocket		225 cm
uppermost pocket		225 cm
(l) <b>Batten Length</b>		
Lowermost batten		220 mm
Uppermost batten		220 mm

### G.5 SPINNAKER

#### G.5.1 MATERIALS

- (a) The **ply** fibers shall consist of woven nylon 32 gms

#### G.5.2 CONSTRUCTION

- (a) The construction shall be: **soft sail, single ply sail**.
- (b) The **body of the sail** shall consist of the same **woven ply** throughout.
- (c) The following are permitted: Stitching, glues, tapes, corner eyes, recovery line eyes, tell tales and items as permitted or prescribed by other applicable *rules*.

#### G.5.3 DIMENSIONS

	Minimum	Maximum
(a) <b>Leech lengths</b>	3910 mm	3930 mm
(b) <b>Foot length</b>	2530 mm	2540 mm
(c) <b>Foot Median</b>	4270 mm	4290 mm
(d) <b>Quarter width</b>	2820 mm	2840 mm
(e) <b>Half width</b>	2900 mm	2920 mm
(f) <b>Three-quarter width</b>	1640 mm	1660 mm
(g) Weight of <b>ply</b> of the <b>body of the sail</b>		32 g/m <sup>2</sup>

## PART III – APPENDICES

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The rules in Part III are **closed Class Rules**. Measurement shall be carried out in accordance with the ERS except where varied in this Part.

### Section H