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# **Zoom 8**

## **Builder's Manual and Building Specifications**

This Builder's Manual is made in accordance with the ISAF One-Design Class Rules Standards and the International Zoom 8 Class Rules

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# **ZOOM 8 BUILDER'S MANUAL AND BUILDING SPECIFICATIONS**

The Zoom 8 was designed in 1991 for Expandor R&D Ltd, by Henrik Segercrantz, Finland, adopted as a Strict One Type Class in Finland in 1996 and received full International Status by ISAF November 2004 as a Strict-One-type Class dinghy.

This Builder's Manual and Building Specifications are a part of the Zoom 8 Class Rules and as such it has to be followed by each and every Licensed Builder of any part affected by this manual.

## **SECTION A – FUNDAMENTAL RULES**

### **A.0 Objective of this Builder's Manual**

- A.0.1 The Zoom 8 is a Strict One-Design dinghy. The intention of this Builder's Manual is that the boats shall be as alike as possible in all respects in order that the true test, when raced, is between crews and not boat or equipment.
- A.0.2 The Building Specifications are a part of this Builder's Manual.

### **A.1 One-Design Clause**

- A.1.1 Anything not specifically permitted by this Builder's Manual is PROHIBITED.

### **A.2 Abbreviations**

- A.2.1 ISAF International Sailing Federation  
 MNA ISAF member National Authority  
 IZCA Zoom 8 International Class Association  
 NCA National Zoom8 Class Association  
 ICF International Class Fee  
 OAR Owner of All Rights to the Design and Brand name  
 MF Measurement Form  
 MC Measurement Certificate  
 RRS International Racing Rules of Sailing  
 LBP Licensed Builders Plaque

### **A.3 Authority**

- A.3.1 The authority of the Class is ISAF who has the final ruling in all matters concerning this Builder's Manual and the Building Specifications.
- A.3.2 Each Licensed Builder is legally responsible for building dinghies or parts thereof in accordance with this Builder's Manual.

### **A.4 Language**

- A.4.1 The official language of the Builder's Manual is English and in case of dispute over a translation the English text shall govern.

A.4.2 The word “shall” is mandatory and the word “may” is permissive.

## **A.5 Builder’s Manual and its Interpretations**

A.5.1 Whenever in this Builder’s Manual the word “Class Rules” is used, it shall be taken as including the Measurement Diagrams and the Appendix, Measurement.

A.5.2 In case of discrepancy between this Builder’s Manual and the Building Specifications, the matter shall be referred to ISAF as stated in A.3.1.

A.5.3 Any interpretation shall be made by the MNA, with the exception that interpretations at events shall be carried out in accordance with *RRS*. The race organising authority shall inform the MNA of their ruling as soon as practical after the event.

A.5.4 All measurements have a tolerance of  $\pm 5$  mm unless otherwise stated in this Builder’s Manual or Building Specification.

## **SECTION B - LICENSED BUILDER**

Licensed builders are builders of the Zoom 8 dinghy or parts thereof who have received a Builder’s License from the OAR.

The Licensed Builder undertakes to produce boats or parts thereof in accordance with this Builder’s Manual and the Building Specification.

### **B.1 International Class Fee / Plaque, the Licensed Builders’ Plaque and the Unique Label**

B.1.1 The Licensed Builders are to pay ISAF and IZCA as stated in the Class Rules B.2.1., both of which Fees are included in the Official ISAF Plaque Fee. All Zoom 8 dinghies produced after 01.03.03 shall show the ISAF Plaque on the port side of the bulkhead. A dinghy, not showing this plaque firmly attached to its cockpit will not be accepted by an MNA/NCA as an International Zoom 8 Strict-One-Type-Class dinghy.

B.1.2 All dinghies produced by a Licensed Builder, are to be equipped with a unique LBP, provided by the OAR, stating the name of the Licensed Builder and the CE-certification organ. A dinghy not showing this plaque firmly attached to its cockpit will not be measured or accepted by an MNA as a Zoom 8 racing dinghy.

B.1.3 All parts exclusively produced for the Zoom 8 dinghy, but for the Boom Fitting on mast and mast collar on deck, are to be equipped with a Unique Label or an engraved code, stating the name of the Licensed Builder. No part, exclusively produced for the Zoom 8 dinghy, not showing this Label or engraved code may be measured or accepted by an MNA/NCA as a part of a Zoom 8 racing dinghy.

## **B.2 Fundamental Measurement**

- B.2.1 Fundamental Measurement (measurement required by the International Zoom 8 Class Rules) shall only be carried out as an In-House Measurement procedure as stated from time to time by ISAF.
- B.2.2 A Measurer shall not measure any part owned, designed, or built by him, or has a vested interest, except where permitted by ISAF and the Class Rules.
- B.2.3 If a Measurer is in any doubt as to the legality of any part he shall consult the IZCA before signing the MC.

## **B.3 Fundamental In-House Measurement Procedure**

- B.3.1 Fundamental Measurement shall take place as an In-House Measurement procedure at the Builder's premises.
- B.3.2 The Builder is to testify that the dinghy in question is produced in an approved mould taken from the master mould. The mould used to produce the hull and the running number of the hull has to be shown in the engraved or moulded HIN-number located at the starboard side of the stern close to the upper corner.
- B.3.3 The Builders are to testify that the dinghy is built in accordance with these Building Specifications.
- B.3.4 The builders are to weight and to testify that the weight of the dinghy with fittings exceeds the minimum weight as stated in the International Zoom 8 Class Rules.
- B.3.5 The Builders are to testify that all fittings are on their given place and of such a type as stated in these Building Specifications.
- B.3.6 The Builders are to testify that all parts exclusively produced for the Zoom 8 are obtained from Licensed Builders.
- B.3.7 If the IZCA has forwarded Fundamental Measurement Templates for measuring the hull or any part of the dinghy, these have to be used in the In-House Measurement procedure.
- B.3.8 In guarantee of the aforesaid the Builders are to equip the dinghy with the LBP as stated in B.1.2 and the ISAF Plaque. This will constitute the ultimate proof of that the dinghy has passed the Fundamental Measurement and that the dinghy conforms to the Class Rules in force at the time of the Fundamental Measurements.

## **B.4 Measurement Certificate**

- B.4.1 The Builder is to undersign a Measurement Certificate stating that the dinghy fulfils all demands of the Class Rules and that it is built accordingly to this Builders' Manual.
- B.4.2 If requested by ISAF, the builders of any part under License from the OAR shall issue a MC stating what is said in B.4.1.

## **B.5 Measurement Dispute**

In the case of a measurement dispute, the International Zoom 8 Class Rules are applied.

# **SECTION C – HULL**

## **C.1 Measurement and Endorsements**

- C.1.1 The hull shall conform to the Class Rules in force at the time of Fundamental In-House Measurement. Alternations or repairs shall be in accordance with the current Class Rules.
- C.1.2 The Fundamental Measurement procedure for the hull is presented in B.3.
- C.1.3 When templates are used for Fundamental Measurement they shall be obtained from the NCA/IZCA.
- C.1.4 The hull shall be fundamentally measured before leaving the builder's premises. In case of measurement dispute, C.10.1 of the International Zoom 8 Class Rules is applied.
- C.1.5 When so decided the MNA may, after consulting with the IZCA, approve one or more individuals at a builder to measure the hull produced by that builder. A License shall be issued for this purpose.

## **C.2 Builders**

- C.2.1 Hull Builders shall be licensed by and trained in the production of the dinghy by the OAR or its representative and proven their skill being registered as official Zoom 8 builders by ISAF.
- C.2.2 The Licensed Builder shall, at his own expense, correct or replace any dinghy that does not comply with the Class Rules as a result of an omission or error by the builder.
- C.2.3 The Zoom 8 shall display a LBP obtained from the OAR fixed in the rear port side of the cockpit as stated in B.1.2.

## **C.3 Hull Shell Building Specifications**

### C.3.1 Materials

- a) The hull shell shall be coated with a gelcoat of a uniform thickness of approximately 0,7 mm.
- b) All mats used for production of the hull shell are to be pre-cut using templates obtained from the OAR. The objective of using these is to guarantee that the overlapping of layers give the right stiffness at given places. The width of the glass fibre mat used in the production should preferably but not necessarily be 130 cm.
- c) The polyester resin used for lamination is as to the builder's choice.
- d) The first layer of glass fibre mat is to be of at least 225 g/m<sup>2</sup>. The construction shall be of hand laid glass reinforced polyester resin, GRP.
- e) A second layer of glass fibre mat of 300 g/m<sup>2</sup> is to be hand laid on both deck and hull surfaces.
- f) A layer of 2 mm Coremat or similar material is to be applied on all surfaces on hull and deck, but for the stern and areas where the shell parts are to be attached to each other.
- g) One layer of glass fibre mat of 300 g/m<sup>2</sup> is to be hand laid over the Coremat on both deck and hull surfaces.
- h) Deck reinforcements are to be made of Herex- or similar sturdy foam of 10 mm thickness and duly secured with resin impregnated glass fibre mat.
- i) Use of Vacuum Lamination is prohibited.
- j) \*The bulls-eye (fairlead) to hold the shock cords, the stern fittings and the aft fittings of the foot straps have to be reinforced with wood / plywood / polyethene or alike material of minimum 10 mm thickness or stainless steel plates of minimum 2 mm thickness.
- k) A Nylon bearing with the inner size of minimum 56 mm is to be moulded into the mast pocket in order to make the mast rotate freely.
- l) The hull part of the shell is not to be taken out or released from its mould before the deck part of the shell is laminated to the hull part.
- m) The use of fibres other than glass is prohibited. The use of epoxy or vinyl-ester in the complete hull shell is prohibited.
- n) All drilled holes on deck or hull for fittings and hatches are to be located using templates provided by the OAR

### C.3.2 Fittings



All fittings and inspection covers are to be mounted in a watertight manner using Sikaflex or similar flexible material.

#### C.3.2.1 Foredeck

- a) A U-bolt of sturdy material is to be mounted on its given place on the deck in the bow. Minimum material thickness is 6 mm.
- b) The fitting of the U-bolt is to be secured with a sturdy plate on the underside to spread the point load on the deck surface.
- c) A mast collar exclusively produced for the Zoom 8 and only obtainable from the OAR licensed producer is to be fixed with two eyebolts of 6 mm stainless steel (A-4) material and secured with four approximately 5 mm Ø screws of stainless steel (A 4).
- d) A sheave block, maximum of 25 mm Ø suitable for a line size 4-6 mm, is to be mounted on each of the eyelets on the mast collar. One of the blocks may be replaced by a double block of the same size. The make of the block is free.
- e) Two Cam Cleats with fairleads meant for lines of 4-8 mm Ø and with hole-centres fix of 27 mm are to be mounted on the aft of the foredeck on their given places. The make of these is free.

#### C.3.2.2 Bulkhead

- a) Two Bull's-eyes (fairleads), with a hole Ø of minimum 6 mm and with hole-centres fix of 15 mm, are to be mounted on their given places in front of and above the Dagger Board drum case. The make of the Bull's-eyes is free.
- b) A Shock-cord, of 8 mm Ø and a length of 80 cm, is to be attached by its ends to both bulls-eyes(fairleads),.
- c) A foot-strap front fitting suitable for a webbing band of 50 mm width, consisting of a Buckle and a Mount plate, is to be mounted on its given place on each side of the centreboard case into the bulkhead. The make of the buckle is free. The Mount plates have to be secured with four bolts on their given places.
- d) An inspection cover with the outer cut-out Ø of not more than 157 mm and a nominal Ø of approximately 150 mm is to be mounted on its given place at the starboard side of the bulkhead. The make of the inspection cover is free.

#### C.3.2.3 Cockpit

- a) Two Cam Cleats with fairleads of the same make and dimensions as used on the foredeck are to be mounted on their given place, one on each side of the cockpit.

- b) Two Cam Cleats meant for lines of 6-12 mm Ø and with hole-centres fix of 38 mm are to be mounted one on each side of the cockpit on their given places. The make of these is free.
- c) A plate to alter the angle of the Cam Cleats may be attached under the cleats.
- d) The traveller arrangement consisting of the track, the wheel car, the track mounting brackets, and the control line beackets, are to be all of the RWO- or Harken-make, with the RWO product numbers RWO R3301, R3331, R3391 and R6212, or Harken product numbers 2709, 2701 and RWO R3391 are to be mounted on their given place behind the centreboard case.
- e) The traveller car may be fitted with 2 blocks on top or to each side to ease the force used to adjust the Traveller Car (2:1 purchase). The make and size if the blocks is free.
- f) A mainsheet single block with a maximum sheave size of 40 mm suitable for a maximum line size of 10 mm are to be mounted on the traveller car. The make of this is free.
- g) A Bailer with the inner dimensions of 40 x 84 mm is to be mounted on its given place in the bottom of the cockpit. The make of the bailer is free.
- h) The base plate for fitting the main sheet block in the centre bottom of the cockpit on its given place is to be secured from the down side with a stainless steel plate or equivalent sturdy material of minimum 2 mm thickness, placed between the hull and the deck. The make and the size of the base plate and bottom plate is free.
- i) A mainsheet ratchet block with swivel and a maximum sheave size of 57 mm suitable for a maximum line size of 10 mm and a spring suitable for the swivel are to be mounted on the mainsheet base plate. The make and function of the ratchet block is free.
- j) An inspection cover with the outer cut-out Ø of not more than 140 mm and a nominal Ø of approximately 125 mm is to be mounted on its given place on each side of the cockpit. The make of the inspection covers is free.
- k) Two foot strap fitting plates for securing the aft end of the footstraps have to be mounted in a sturdy manner with screws of at least 4,8 mm Ø and 12 mm in length or M4 machine screws with threaded metal backing plates. The make of the fitting plates is free.
- l) A 165 cm long foot strap of at least of 50 mm webbing is to be attached to each of the aft foot strap fitting. The make of the foot straps is free.
- m) A bulls-eye(fairlead) with a hole Ø of minimum 6 mm and with hole-centres fix of 15 mm is to be mounted on its given places in the stern. The make of the bulls-eye is free.

- n) A 100 cm long and minimum 3 mm thick shock cord to keep the foot straps hoisted is to be mounted through the bulls-eye(fairlead) in the stern and around both foot straps. The make of the shock cord and fastening system to the foot straps is free.

#### C.3.2.4 Hull

Two rudder fittings are to be placed on their given places in the stern at the centre line of the dinghy. The centre axis is not to be further aft from the stern than 40 mm. The make of the fitting is free.

#### C.3.3 Weights

- a) The complete Zoom 8 hull, including deck and fixed fittings shall be weighed. The weight shall be minimum 38 kg.
- b) A Corrector weight of lead with a maximum weight of 4 kg may be permanently fixed to the inside of the main bulkhead at the centreline above the centreboard case.

### C.4 Hull Additions

C.4.1 Additional bulkheads and thwarts are not permitted.

## SECTION D – HULL APPENDAGES

### D.1 Measurement and Endorsements

- D.1.1 The hull appendages shall conform to the International Zoom 8 Class Rules in force at the time of Fundamental Measurement. Alternations or repairs shall be in accordance with the current International Zoom 8 Class Rules.
- D.1.2 The Fundamental Measurement procedure for the hull appendages takes place at the Licensed Builders before leaving his premises. In case of measurement dispute, Class Rules C.10.1 is applied.
- D.1.3 When templates are used for Fundamental Measurement they shall be obtained from the NCA/IZCA.
- D.1.4 When so decided the MNA may, after consulting with the NCA/IZCA, approve one or more individuals at a builder to measure the hull appendages produced by that builder. A License shall be issued for this purpose.
- D.1.5 The rudder blade and the Dagger Board of epoxy coated abachi, *Triplochiton-scleroxylon* (or heavier wood shall carry an official sticker showing the name of the Licensed Producer and running number of the product (HIN-number).

### D.2 Builders

- D.2.1 Hull Appendage Builders, but for what is stated in D.2.3, shall be licensed by the OAR and approved by ISAF.
- D.2.2 The Licensed Builder shall, at his own expense, correct or replace any hull appendage that do not comply with the Class Rules as a result of an omission or error by the builder.
- D.2.3 The builder of plywood Dagger Board and rudder blade is free.

### D.3 Dagger Board

As the Dagger Board strength and bending abilities strongly affects the performance of the dinghy, all producers of the same in epoxy laminated wood have to be licensed by the OAR and approved by ISAF in order to guarantee equal bending and strength abilities. The measurement tolerances are intended to allow for necessary manufacturing tolerances and shall not be used to alter the design.

#### D.3.1 Materials

The Dagger Board shall be manufactured of water resistant plywood or of epoxy coated apache or heavier wood with an even thickness of  $13 \pm 1$  mm in accordance with the Measurement Diagrams.

### D.3.2 Dimensions

The Dagger Board dimensions shall be in accordance with the Measurement Diagrams.

## **D.4 Rudder Blade, Rudder Head, Tiller and Tiller Extension**

As the rudder blade strength and bending abilities strongly affects the performance of the dinghy, all producers of the same in epoxy laminated wood have to be licensed by the OAR and approved by ISAF in order to guarantee equal bending and strength abilities. The measurement tolerances are intended to allow for necessary manufacturing tolerances and shall not be used to alter the design.

The rudder head and the placing of its fittings and equipment shall conform to the Measurement Diagrams. The measurement tolerances are intended to allow for necessary manufacturing tolerances and shall not be used to alter the design.

### D.4.1 Rudder Blade

#### a) Materials

The rudder blade shall be manufactured of water resistant plywood or of epoxy coated apache or heavier wood with an even thickness of  $13 \pm 1$  mm in accordance with the Measurement Diagrams.

#### b) Dimensions

The rudder blade dimensions shall be in accordance with the Measurement Diagrams.

### D.4.2 Rudder Head

#### a) Materials

The rudder head shall be of epoxy-laminated wood or of a composite type as provided by the Licensed Builder.

### D.4.3 Tiller and Tiller Extension

#### a) Materials

The tiller shall be of a composite type as provided by the Licensed Builder.

#### b) The tiller has to be fixed to the head in a sturdy manner

#### c) The tiller extension is free

#### D.4.4 Fittings

A line or pin attached to a line may be fitted to the rudder head to prevent the rudder blade to pivot from its desired position. The loose end of the line or the pin is to be pushed through the drilled hole in the rudder head which corresponds to the two holes in upper part of the rudder blade, one in each extreme position (i.e. vertical and horizontal).

## SECTION E – RIG

### E.1 Measurement and Endorsements

- E.1.1 A spar and its rigging shall conform to the Class Rules in force at the time of Fundamental Measurement. Alternation or repairs shall be made in accordance with the current Class Rules.
- E.1.2 Measurement shall be taken in accordance with the Measurement Diagrams and Appendix, Measurement.
- E.1.3 Spars shall carry an official measurement sticker or engraved identification code.
- E.1.4 The rig dimensions, the placing of fittings and equipment shall conform to the Measurement Diagrams.
- E.1.5 Repairs and preventive maintenance to hull appendages or any fittings and fixings may be carried out without violation of these Rules provided such repairs are made in such a way that the essential shape characteristics or function of the original are not affected.

### E.2 Manufacturers

- E.2.1 An MNA may, after consulting with the IZCA, approve one or more individuals at a spar manufacturer to measure spars produced by that manufacturer. A License shall be issued for this purpose.
- E.2.2 A rig builder is any manufacturer licensed by the OAR and approved by ISAF to build and supply the Zoom 8 rig in accordance with the Zoom 8 Design Specifications.
- E.2.3 The Licensed Rig Builder shall at his own expense, correct or replace any rig items that do not comply with the Class Rules as a result of an omission or error by the builder.

### E.3 Mast

The mast shall only be supplied by an OAR Licensed Builder.

- a) The mast is a one or two-piece mast of sailboard type, specifically designed and produced for the Zoom 8 with needed material strengthening for strength and correct bending curve.

- b) Each produced mast shall be fitted with an engraved Licensed Builders identification code to be able to be recognised as a Zoom 8 Strict-One-Design mast.

The mast shall be of rolled GRP with Carbon reinforcements as manufactured by an OAR Licensed and ISAF approved Licensed Builder.

#### E.3.1 Mast Fitting Specifications

- a) A boom fitting, of a type specially designed for the Zoom 8 dinghy and only obtainable from the OAR by a Licensed Builder is to be used on all masts.
- b) The boom fitting is to be fastened to the mast with eight rivets of minimum 4 mm Ø.
- c) A metal strap with at least four fastening points is to be mounted on the mast at its given point with rivets of minimum 4 mm Ø or a fairlead fastening point on the front side on the same level as the lowest point of fitting as stated in the Measurement Diagrams.
- d) A hollow Nylon mast foot bearing not exceeding 7 mm in thickness is to be mounted in the foot of the mast to prevent mast foot abrasion.
- e) To prevent abrasion at the deck flange and the mast foot, a tube, tape collar of uniform thickness not exceeding 1 mm may be placed around the entire circumference of the mast. The height of each shall not exceed 110 mm.
- f) The mast may be sealed to prevent water from entering into the mast when capsizing. The seal, placed not lower than 700 mm from the foot, shall not influence the bending properties of the mast.

### E.4 Boom

The boom shall be supplied by a Licensed Builder.

#### E.4.1 Materials

The boom shall be constructed of black anodised aluminium alloy. The anodising shall be of a minimum thickness of 25 microns.

#### E.4.2 Dimensions

The boom shall have a uniform round section with an outer Ø of  $38 \pm 1$  mm and with wall thickness  $2 \pm 0,2$  mm.

#### E.4.3 Fitting Specification

- a) The aft end of the boom shall have an end fitting of the same outer diameter as the boom. The make of the fitting is free.

- b) The fore end boom fitting is to be of such a make that the pin to secure the boom with the mast has a firm grip and does not prolong the boom with more than 5 mm. The make of the fitting is free.
- c) The Clam Cleat for luff adjustment is to be placed as stated in the Measurement Diagrams but may be turned pointing aft. The make of the cleat is free.
- d) The length of the mainsheet bridle wire or line, fixed at the boom, may not when tensioned by the sheet be further at its deepest point than 100 mm from the boom. The thickness and the method of fitting the wire or line are free. All fitting points as stated in the Measurement Diagrams.
- e) The kicking strap (Boom Vang) fastening on the boom are either to be of a metal strap type with four fastening points or a fairlead fastening on the upper side of the boom. The fastening points as stated in the Measurement Diagrams.
- f) The kicking system has to be of a double block system with locking device. The sheave  $\varnothing$  is not to exceed 25 mm. The make of the blocks are free.
- g) Two bulls-eyes (fairleads) with a hole  $\varnothing$  of minimum 6 mm and with hole-centres fix of 15 mm are to be mounted on their given places in the aft end of the boom. The angle between the bulls-eyes seen from the centre of the boom shall form a 90-degree angle. The port side bulls-eye may be exchanged to a flat cheek block with a sheave diameter of 25 mm. The fastening points as stated in the Measurement Diagrams. The make of the block and the Bulls Eyes is free.
- h) A similar block as stated in E.4.3..g may be placed in front of the Cam Cleat to alter the tensioning direction. The make of the block and place is free.
- i) The mainsheet block fitting to the gooseneck may not be prolonged with anything but for the shackle or a release hook of a maximum length of 50 mm.

## **E.5 Running Rigging and Fittings**

The running rigging, fittings and the placing of fittings shall conform to the Measurement Diagrams. The Measurement tolerances are intended to allow for necessary manufacturing tolerances and shall not be used to alter the design.

### **E.5.1 Materials**

The material and make is free.

### **E.5.2 Dimensions**

- a) The thickness of the main sheet is 8 - 10 mm.
- b) The thickness of all other lines is 5 – 6 mm.



- c) The length of the main sheet is  $630 \pm 20$  cm.
- d) The length of the kicking strap is  $240 \pm 10$  cm.
- e) The maximum length of the traveller car adjustment line is 380 cm.
- f) The traveller car adjustment line shall be one piece
- g) The length of the luff tension line is free
- h) The length of the Cunningham line is free
- i) The mainsheet gooseneck block is to be of a single loop top block type with Becket and with a maximum sheave size of 40 mm suitable for a maximum line size of 10 mm. The make of the block is free.

## **SECTION F – SAILS**

### **F.1 Measurement and Endorsements**

- F.1.1 The sail shall conform to the Class Rules in force at the time when it was first measured. Alternations or repairs shall be in accordance with the current Class Rules.
- F.1.2 An MNA may, after consulting with the IZCA approve one or more individuals at a sail loft to measure sails produced by the loft. A license shall be issued for this purpose.
- F.1.3 Sails shall be made and measured in accordance with the “ISAF (Sail) Measurement Rules”, except where varied herein.
- F.1.4 Sails shall carry an official measurement stamp or sticker near the tack.
- F.1.5 Substantially altered or repaired sails shall be re-measured and the measurer shall attach a new official measurement stamp or sticker showing the new date of measurement.

### **F.2 Sailmaker**

- F.2.1 A sailmaker is a manufacturer licensed by the OAR and approved by ISAF to build and supply the Zoom 8 sail in accordance with the Zoom 8 Design Specifications.
- F.2.2 All sails are to be produced by a Licensed Sailmaker and have to be cut using templates and / or computer based cutting programs for laser cutting provided by the OAR and no alternations to these are allowed.
- F.2.3 All reinforcements produced by a Licensed Sailmaker for use in the Zoom 8 sail, both primary and secondary, have to be cut using templates and / or computer

based cutting programs for laser cutting provided by the OAR and no alternations to these are allowed.

F.2.4 Primary reinforcements have to be cut using the Zoom 8 sailcloth specifically produced for the Zoom 8 sail and provided by the OAR.

F.2.5 The licensed sailmaker shall, at his own expense correct or replace any sail that does not comply with the Class Rules as a result of an omission or error by the sailmaker.

### **F.3 Mainsail**

The sail, battens and the placing, size and form of fittings shall conform to the Measurement Diagrams. The Measurement tolerances are intended to allow for necessary manufacturing tolerances and shall not be used to alter the design.

#### F.3.1 Construction

- a) The construction shall be: Medium tempered, single ply.
- b) The body of the sail shall throughout consist of a specifically for the Zoom 8 dinghy produced woven ply of polyester provided by an OAR licensed cloth manufacturer.
- c) The sail shall have three batten pockets of even length.
- d) The following is permitted: Stitching, gluing, tapes, corner eyes, Cunningham eye, corner pulleys, one window, sailmaker label, royalty label, measurement stamp or button, tell tales.

#### F.3.2 Dimensions

- a) Dimensions according to the Measurement Diagram.
- b) Sail ply as stated in Class Rules G.3.1.b. of 140 g/m<sup>2</sup>.

### **F.4 Identification Marks**

F.41 The Class Insignia and the sail numbers and letters shall be in accordance with the *RRS* except where varied herein.

F.42 The numbers shall be of the following minimum dimensions:

Height            230 mm

Space between adjoining numbers 40 mm

F.43 The Class Insignia shall conform to the dimensions and requirements as detailed in the Measurement Diagrams.

F.44 The Class Insignia may be displayed on only starboard side of the sail, and when displayed on the port side show a mirror face of the insignia placed at same place as on the starboard side.

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