NATIONS INTERNATIONAL 420 CLASS ISAF

2002 INTERNATIONAL 420 CLASS RULES

Authority*: International Sailing Federation
Ariadne House, Town Quay, Southampton
SO14 2AQ

* The International Sailing Federation (ISAF) is not a National Authority (NA)

1. GENERAL

1.1 The 420 is a One-Design class. The intention of these rules is to ensure that the boats are as alike as possible in all respects affecting performance, in order that crews may compete against each other on level terms.

1.2 The official language of the class is English and in the event of dispute over interpretation the English text shall prevail.

1.3 These rules are complimentary to the Lines Plan (plan de forme), the Building Specification (drawing number 5), the International 420 Class Rudder Blade drawing and the International Measurement Form. The current issues of these documents are listed on the last page.

These items however complete cannot anticipate every situation that may arise. If a point is not clearly covered, a ruling shall be obtained from ISAF through the International 420 Class Technical Committee.

1.4 In the event of discrepancy between these rules, the measurement form, the measurement diagrams, or Building Specification plan, the matter shall be refered to the ISAF.

1.5 In countries where there is no National Authority (NA) or the NA does not wish to administer the class, its functions as stated in these rules shall be carried out by the 420 International Association (420 International) or its delegated representatives (National Associations).

1.6 All hulls built in compliance with the rules and building specifications in effect on the 1st of March 1995, may be measured and certificated until the 31st of December 1998. Fittings and correctors shall comply with either the rules in force when the boat is first measured or the current rules.

1.7 Neither the ISAF nor 420 International accept any legal responsibility in respect of these rules or any claim arising therefrom.

2. BUILDERS

2.1 International 420 hulls shall be moulded and assembled only by Licensed Builders. Application for a licence shall be made to the ISAF which will consult with the NA and the International 420 Class Association before granting a licence. Hulls and decks shall be supplied only as permanently assembled boat units. Rigs, sails, foils and fittings may be produced by any manufacturer.

2.2 Licensed Builders have the sole responsibility that their production moulds, plugs and assembled boat mouldings comply with the current Class Rules and official documents.

2.3 If the builder does not comply with the requirements quoted in the Class Rules and the Official
Documents, the ISAF has the power to revoke the building licence on the recommendation of the International 420 Class or the National Authority.

2.4 Licensed builders must each year pay for minimum ten (10) sail numbers or its equivalent to the treasurer of the International 420 Association.

3. INTERNATIONAL CLASS FEE

3.1 The International Class Fee is 100 Euros or its equivalent in other countries.

3.2 The amount of the International Class Fee may be reviewed by the ISAF in consultation with 420 International.

3.3 420 International is responsible for the collection and distribution of the International Class Fees.

3.4 The International Class Fee shall be payable by the builder on each boat built whether or not it is subsequently measured and registered. Payment shall be made direct to the treasurer of 420 International, who shall issue an International Class Fee receipt and sail number.

3.5 420 International may delegate its responsibility to collect International Class Fees and issue receipts to its National Associations which shall then transmit quarterly to the 420

International Association the sums due.

4. REGISTRATION AND MEASUREMENT CERTIFICATE

4.1 No boat is permitted to race in the class unless it has a valid measurement certificate in English, or with English subtitles, and the competitor or competitor-owner is a current member of a National 420 Association.

4.2 The certificate is obtained as follows:

(a) The builder shall apply to 420 International for a sail number enclosing the International Class Fee or International Class Fee receipt. 420 International shall issue a sail number only on receipt of evidence that the International Class Fee has been paid.

(b) The boat shall be measured before leaving the builder's premises by a measurer officially recognised by a NA. The completed measurement form shall be supplied to the owner of the boat.

(c) The owner shall send the completed measurement form to his NA together with any registration fee that may be required. On receipt of this the NA, or its delegated National 420 Association, may issue a certificate to the owner.

4.3 Change of ownership invalidates the certificate, but shall not necessitate re-measurement. The new owner shall apply to his NA or its delegated National 420 Association for a new certificate, returning the old certificate together with the measurement form and any re-registration fee that may be required and stating the necessary particulars. A new certificate shall then be issued to the owner.

4.4 It is competitor's responsibility to ensure that his boat, spars, sails and equipment comply with the class rules at all times and that alterations or replacements to the boat, spars, sails or equipment do not invalidate the certificate.

4.5 Any equipment, including rigging and fittings, not listed in these class rules is prohibited.

4.6 Notwithstanding anything contained in these rules the ISAF or NA shall have the power to refuse to grant a certificate to, or withdraw a certificate from, any boat.

4.7 420 International shall be sent, at regular intervals from each NA details of certificates issued, together with the names and addresses of the owners.

5. MEASUREMENT

5.1 Only a measurer officially recognised by a NA shall measure a boat its spars, sails and equipment and sign the declaration on the measurement form that they comply with the class rules.

5.2 Measurement tolerances are intended to allow for genuine building errors only and shall not be deliberately used to alter the design. The measurer shall report on the measurement form anything which he considers to be a departure from the intended nature and design of the boat, or to be against the general interest of the class, and a certificate may be refused, even if the specific requirements of the rules are satisfied.

5.3 A measurer shall not measure a boat, spars, sails or equipment owned or built by himself, or in which he is an interested party or has a vested interest.

5.4 New or substantially altered sails shall be measured by a measurer who shall stamp and sign and date the sails near the tack and spinnakers near the top.

5.5 Templates used for official measurement shall be supplied by the ISAF.

5.6 All boats, spars, sails and equipment shall be liable to re-measurement at the discretion of a NA or race committee.

6. IDENTIFICATION MARKS

6.1 The hulls of all boats built after 1st March 1973, shall carry the builder's name, serial number, the mould number, and the sail number allocated to the boat, either moulded in or on a permanently fixed plate.

6.2 Sails shall carry the sail maker’s trademark. In addition, a serial number, prefixed by two numbers for the month and two last numbers for the year of manufacture, placed near the head. The sails shall be measured in accordance with the current class rules.

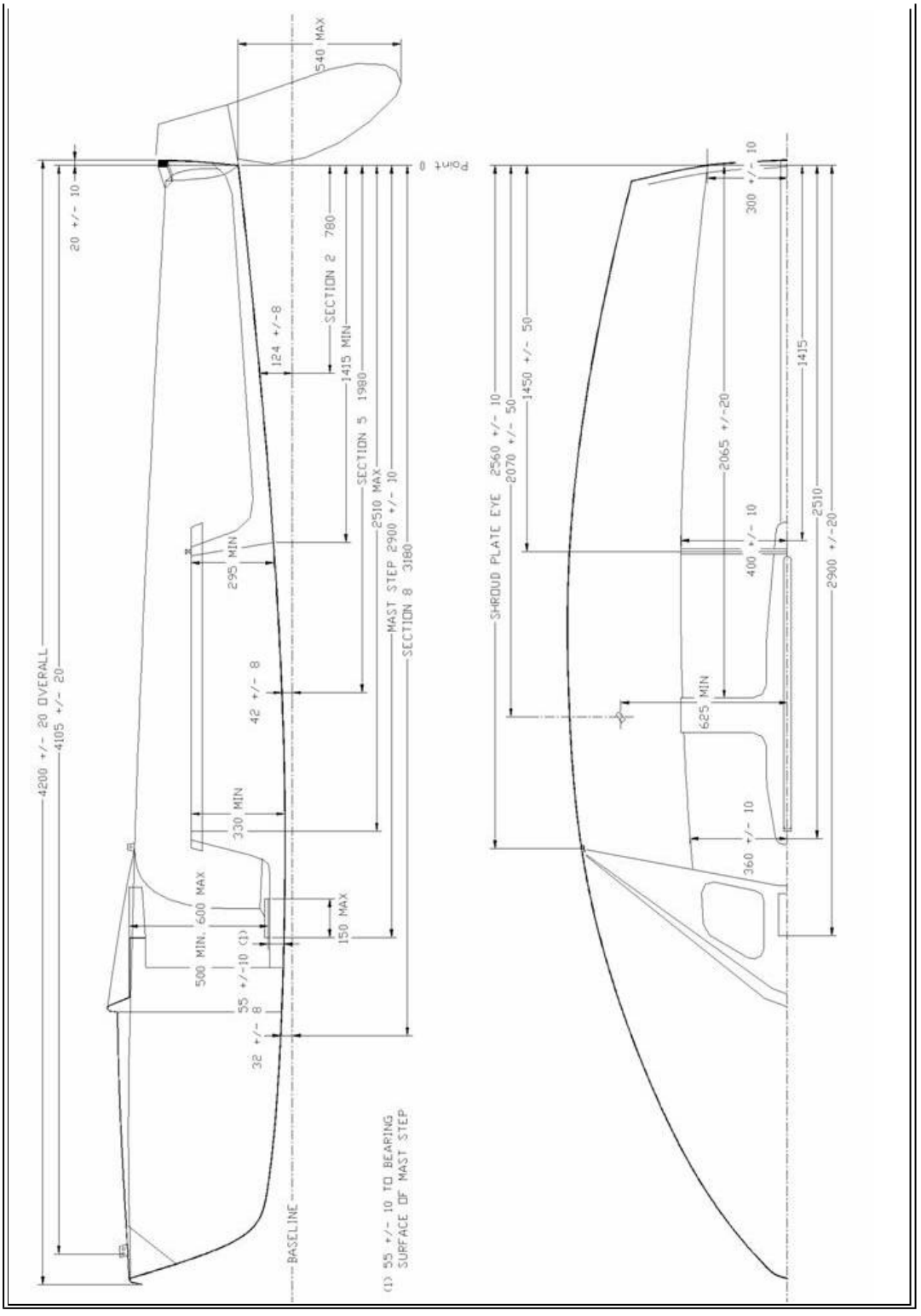
6.3 All emblems, marks and numbers shall be of a durable material and securely attached.

7. CONSTRUCTION

7.1 International 420s shall be constructed entirely in accordance with these Class Rules and the Building Specification plan and the Official Documents.

7.2 Not less than 0.05m3 of positive buoyancy shall be securely attached in each buoyancy tank to give approximately equal buoyancy laterally and longitudinally, and shall be of closed cell rigid foam or air containers of not less than two (2) litres. This buoyancy shall not act as reinforcement.

7.3 The mast partners may incorporate a hole or fairlead for spinnaker boom uphaul/downhaul.



8. HULL MEASUREMENT

8.1 As many measurements as considered practical to check the shape have been listed on the measurement form, but the intention is that in all particulars the boat shall conform to the official documents.

8.2 Length measurements of the hull shall be taken parallel to the base line and depth measurements perpendicular to the base line. Measurement sections including the aft edge of the transom shall be perpendicular to the base line.

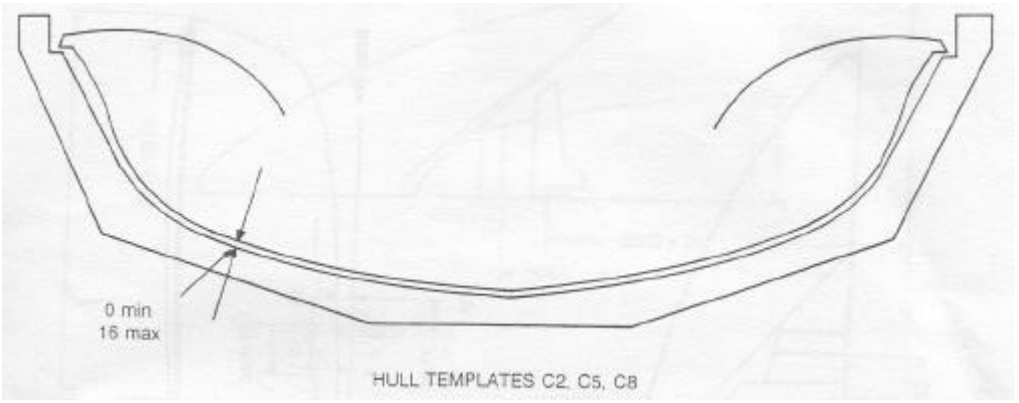
8.3 The length of the hull, including deck overlap, shall be 4200mm ± 20mm

8.4 Measurement sections 2, 5 and 8 shall be at 780mm, 1980mm and 3180mm respectively from the aft lower edge of the transom, which for the purpose of these rules excludes normal rudder fittings and cover for transom port.

8.5 To check the profile of the keel a base line shall be fixed at 200mm below the lowest point of the transom and 92mm below the keel at the aft edge of the stem template. The distance between the base line and keel shall be within the limits specified on the measurement diagram.

8.6 The stem template shall be applied as shown on the measurement diagram below and shall touch the stem, or clear by, not more than 15mm.

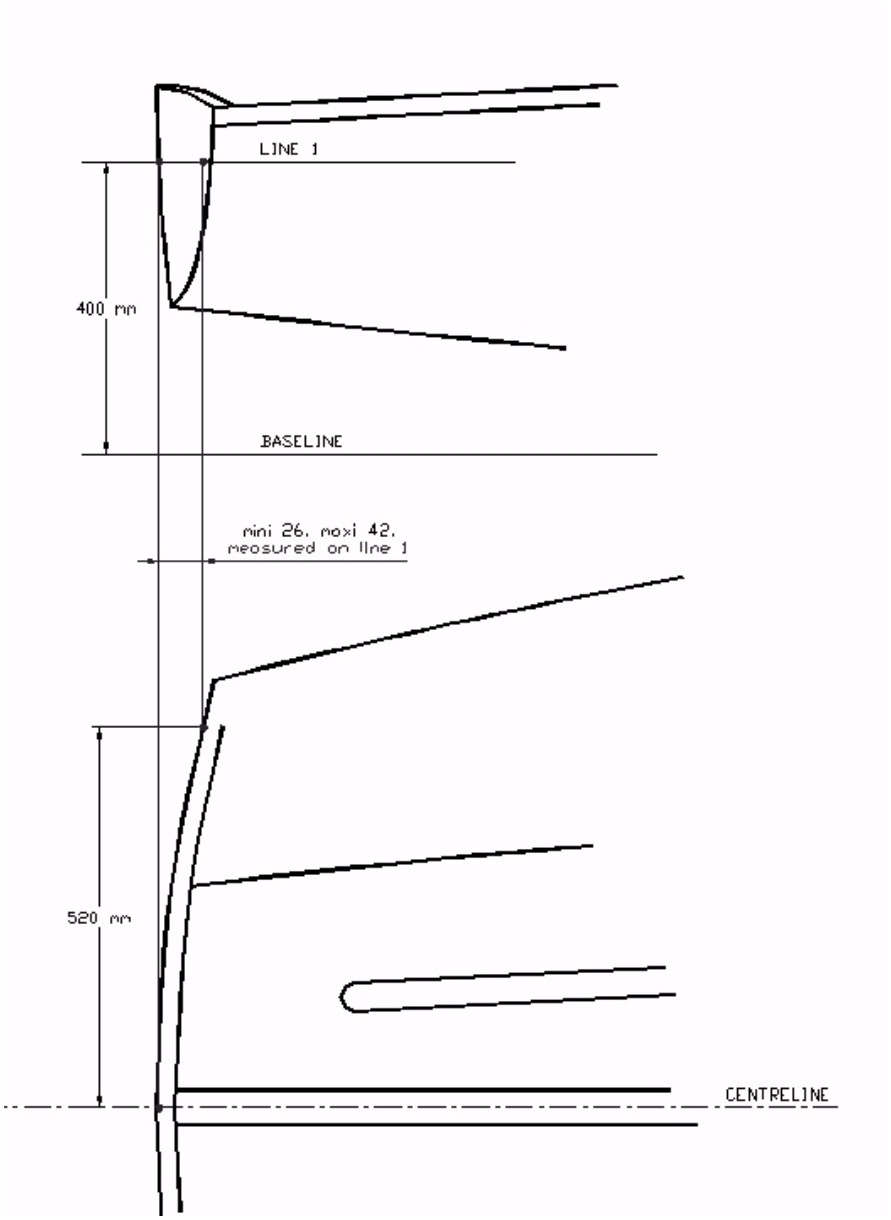
STERN AND TRANSOM MEASUREMENT DIAGRAMS



8.7 The transom template shall be applied as shown on the measurement diagram above. The distance between transom and template shall be 20 mm minimum and 40 mm maximum.

The transom radius shall be checked in a horizontal plan located 400mm above the baseline. On each side, the curvature measured at 520mm from the centreline shall be 26mm minimum and 42mm maximum. See measurement diagram below.

TRANSOM RADIUS MEASUREMENT DIAGRAM



8.8 Section templates 2, 5 and 8 shall be applied as shown on the measurement diagram. The top of deck at the sheerline shall not be more than 10mm above or below the sheer marks on the template. The templates shall touch the rubbing strips or clear. Below the points marked on the templates they shall touch the hull or clear by not more than 16mm, and the total difference between the greatest and least clearances shall not exceed 12mm.

8.9 The measurer shall check the surface of the hull with a flexible batten to ensure that the curvature of the hull is uniform between the template stations.

8.10 The centreboard case shall be in the position shown on the measurement diagram. The forward upper part of the centreboard case shall not be less than 330mm above the underside of the hull, and the aft upper part shall not be less than 295mm above the underside of the hull. Overall, the centreboard capping shall be maximum 170mm wide.

8.11 The position of the mast step shall be as shown on the drawing number 5. The length of the step shall not exceed 150mm. The bearing surface of the mast step, including the fittings (if any) shall be 55mm ± 10mm above the outside surface of the hull.

8.12 The position of mast partner, thwarts, shroud plates, forestay fitting and mainsheet track

shall be as shown on the measurement diagram.

8.13 The distance from the centreline to the joint between hull and side tanks shall conform to the measurement diagram.

8.14 The height of the upper surface of the deck at the mast partners shall be minimum 500mm and maximum 600mm above the bearing surface of the mast step.

8.15 The convex curve of the foredeck shall be measured by placing a 300mm straight edge on any part of the deck forward of the breakwater. In any plane the straight edge must not be flat against the surface of the deck.

9. CENTREBOARD

9.1 The centreboard shall be made only of wood or plywood or GRP. If of wood or plywood a GRP coating is permitted. If of GRP a foam core is permitted.

9.2 The profile of the centreboard shall conform to the dimensions and tolerances on the measurement diagram.

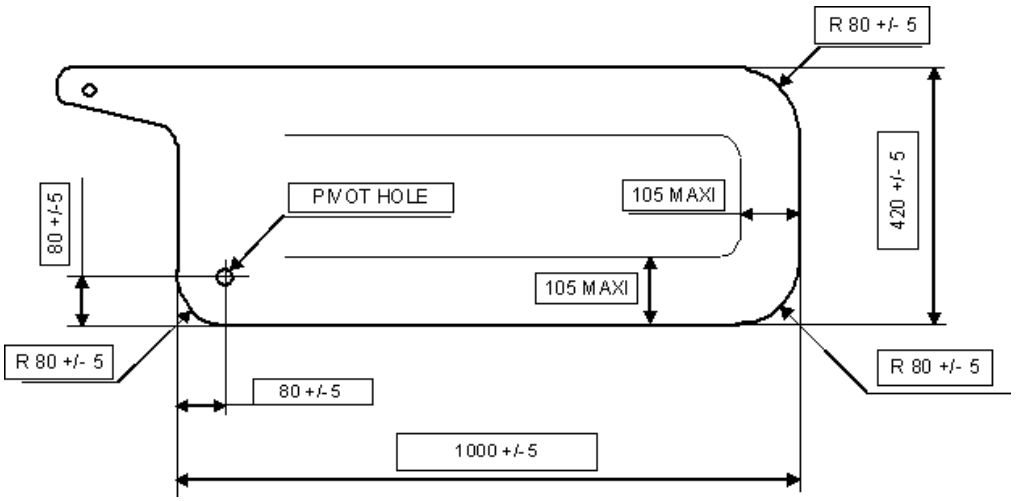
9.3 The centreboard shall be of even thickness throughout 18mm ± 2mm except that the edges may be bevelled to a maximum distance of 105mm from the edges.

9.4 The centreboard shall be fitted by means of an axis pin through a hole in the centreboard case. When fully raised no part of the centreboard shall project below the hull surface.

9.5 Only the following fittings are permitted:

(a) One rope centreboard uphaul using two single blocks and two cleats.

(b) One centreboard downhaul of rope and/or shockcord and one cleat.



10. RUDDER AND TILLER

10.1 The rudder head shall be made of metal and the tiller of wood or aluminium alloy. The rudder blade shall be made only of wood or plywood or GRP. If of wood or plywood a GRP coating is permitted. If of GRP a foam core is permitted.

10.2 The profile of the rudder blade shall conform to the dimensions and tolerances on the official Rudder Blade drawing.

10.3 The rudder blade shall be of even thickness throughout 18mm ± 2mm except that the edges may be bevelled to a maximum distance of 105mm from the edges.

10.4 No part of the rudder, when fully lowered, shall extend more than 540mm below the aft edge of the transom measured as shown on the measurement diagram. At no time shall the leading edge of the rudder blade be forward of a vertical projection of the transom taken at the centreline excluding fittings.

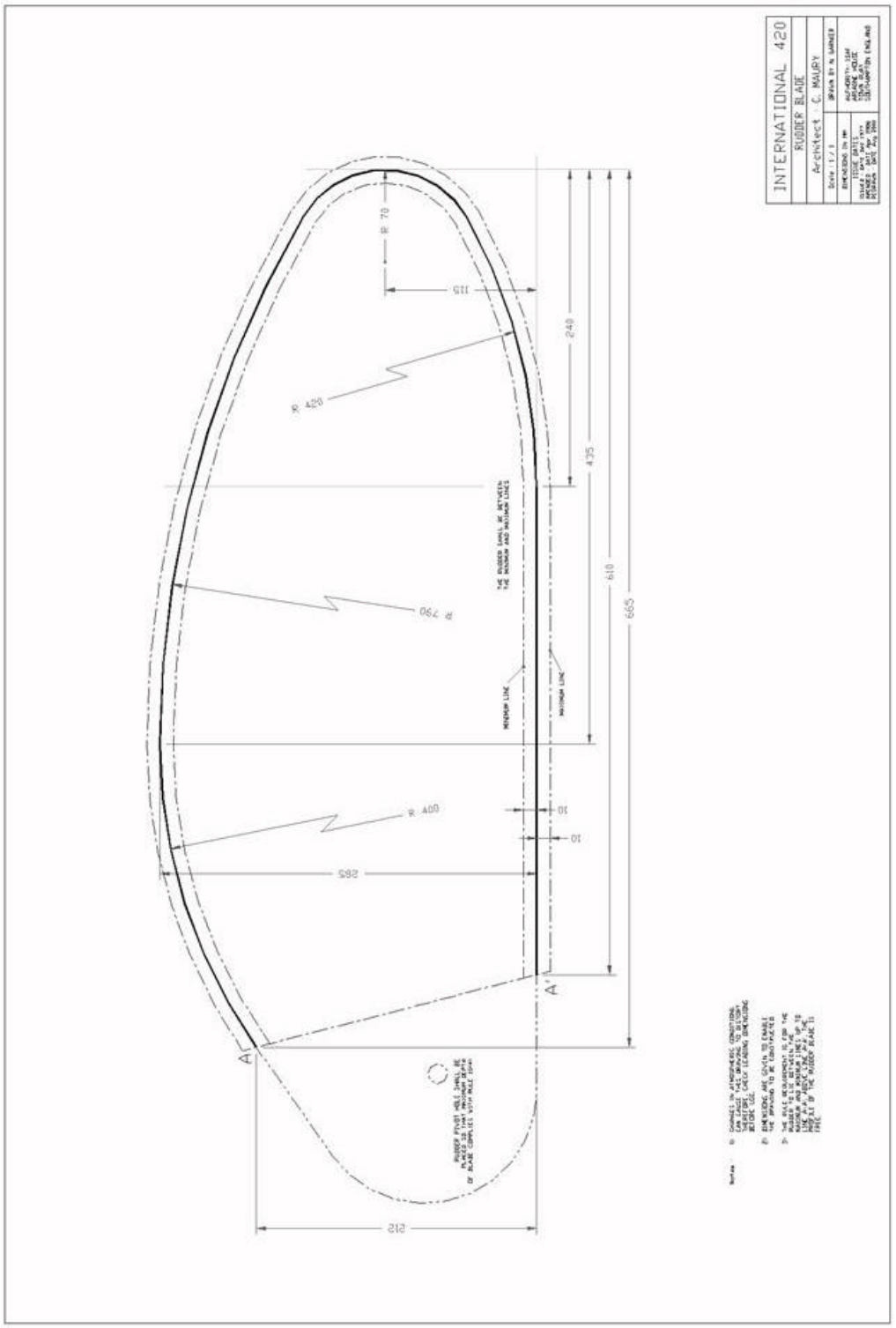
10.5 Only the following fittings are permitted:

(a) One stainless steel wire and/or rope and shockcord rudder downhaul with a cleat on the tiller, or a pin or bolt through the rudder head and rudder blade to hold the rudder blade down.

(b) One tiller extension, which may be of adjustable or telescopic type, of any material. The length of the tiller extension is not restricted.

(c) Universal joint between tiller and extension.

10.6 A means of preventing the rudder from parting company with the hull during a capsize shall be fitted.



11. MAST

11.1 The mast, including the sail track shall be of aluminium alloy.

11.2 Spare number.

11.3 The mast may have one set of spreaders 2600mm ± 50mm above the lowest point of the mast. Spreaders shall not be adjusted while racing.

11.4 The total length of the mast, including any flanges, shall not exceed 6260mm.

11.5 The athwartships dimension of the mast at any point within 4500mm of the lowest point of the mast shall be 60mm ± 15mm. The fore and aft dimension, including the sail track, at any point more than 1550mm and less than 4500mm from the lowest point of the mast shall not be more than 75mm or less than 50mm.

11.6 The extension of the line of the top of the spinnaker halliard, when held taut at right angles to the mast, shall intersect the foreside of the mast not more than 4650mm above the lowest point of the mast. If led through an eye or block, no part of such eye or block shall project more than 40mm from the foreside of the mast.

11.7 Measurement bands, not less than 10mm wide, shall be marked on the mast, so that they are clearly discernible when racing as follows:

Number 1: The upper edge of which shall be not less than 1160mm above the lowest point of the mast.

Number 2: The lower edge of which shall be not more than 6060mm above the lowest point of the mast.

11.8 The following fittings shall be used:

(a) One halliard lock at the mast head for the mainsail or one halliard lock/rack below the gooseneck.

(b) Fairleads or sheaves for each of the mainsail, headsail and spinnaker halliards. The headsail halyard sheave or fairlead shall be located below the forestay attachment. The lower edge of the headsail halyard, when intersecting the mast at 90 degrees, shall be a minimum of 4520mm from the lowest point of the mast.

(c) Fittings to secure the shrouds, forestay and trapeze wires to the mast so that their lines intersect the mast 4550mm minimum and 4650mm maximum from the lowest point of the mast.

(d) One sliding or fixed gooseneck for attaching the boom to the mast.

(e) One cleat for the Cunningham line and a hitch band for the headsail, below the gooseneck. Alternatively, a headsail luff tension adjustment system consisting of 2 blocks of not more than six (6) sheaves and one cleat may be attached via a hook or fork to the headsail halyard and at the other end to the mast/mast step. The cleat which may have moving parts, shall be attached to either of the two (2) blocks. Enclosed purchase systems such as `Muscle-boxes' are not permitted.

(f) One eye or block on the foreside of the mast, and two lower fairleads or blocks for the spinnaker boom uphaul/downhaul.

(g) One kicking strap attachment eye.

(h) One spinnaker boom fitting on foreside of the mast.

11.9 Rotating and permanently bent masts are prohibited but a set due to distortion of not more than 40mm is permitted.

11.10 The weight of the mast including the rigging, trapeze wires and normal fittings, shall be not less than 7.5kg.

11.11 The centre of gravity of the mast, including normal fittings, with the rigging and trapeze wires secured along the mast, shall be not less than 2400mm from the lowest point of the mast.

12. BOOM

12.1 The boom, including the sail track, shall be constructed of wood, or aluminium alloy.

12.2 The boom, including the sail track, shall have the following dimensions:

Depth	72mm ± 17mm
Width	54mm ± 22mm

Length 2750mm maximum

Aluminium alloy booms shall be made from a uniform section and shall not be tapered.

12.3 A measurement band, not less than 10mm wide shall be marked on the boom, so that it is clearly discernible when racing, with its inner edge not more than 2400mm from the aft edge of the mast excluding any local curvature.

12.4 Only the following fittings are permitted:

(a) A kicking strap attachment (eye, plate, or hole through boom).

(b) Two mainsheet attachments (eye, plate, or hole through boom).

(c) One end fitting which may incorporate one sheave at the boom's outer end. One outhaul consisting of not more than one single block and one cleat.

13. SPINNAKER BOOM

13.1 The spinnaker boom shall be constructed of wood, metal or grp.

13.2 The overall length, including fittings, shall not exceed 1750mm.

13.3 Only the following fittings are permitted:

(a) End fittings and control line.

(b) Fittings approximately at the mid-point for attachment for uphaul/downhaul.

14. RIGGING AND FITTINGS

The rigging and fittings listed shall be used only as specified.

Cleats mentioned in these rules may incorporate a hook or eye or be used in conjunction with an eye provided the hook or eye fairlead is on the tensioned rope side of the cleat. Except when specifically permitted, they shall be of a type with no moving parts. A cleat wedge under each cleat is permitted. One ratchet block is permitted for the mainsheet. No other ratchet or winch blocks are permitted.

14.1 The following rigging shall be used:

(a) The mast shall be supported by a forestay and one shroud on each side. These shall be of steel wire rope, diameter not less than 2mm. The forestay wire shall be not less than 3300mm in length. A rope and/or elastic cord of suitable strength may be attached between the end of the wire forestay and the stemhead fitting.

The forestay and headsail shall be attached to the stemhead fitting. The centre of the front hole of the stemhead fitting shall be 4105mm ± 20mm from the O-point and shall be provided with one hole each for the forestay and headsail. The forestay must be attached to the front hole of the fitting, the headsail must be attached aft of the forestay.

Each shroud shall be attached to shroud plates, by means of plates having a row of adjustment holes. No other method of shroud adjustment is permitted.

(b) One steel trapeze wire, diameter not less than 2mm on each side for the use of one person only. Each trapeze shall be provided with one handhold, and may have no more than two (2) sheaves, elastic cord and a cleat on each side, rings and/or hooks. An elastic cord return system with no more than four (4) fairleads, one length of shockcord to keep the trapeze wires clear of the spreaders. Self tacking trapeze systems are not allowed.

(c) Halliards for mainsail, headsail and spinnaker. Sails shall be capable of being raised and lowered at sea with the boat in an upright position. At the end of the spinnaker halliard a shockcord may be used.

(d) Mainsail, headsail and spinnaker sheets.

14.2 The following fittings shall be fitted:

(a) Two fixed headsail fairleads, the bearing surfaces of which shall be 2070mm ± 50mm from the O-point and not less than 1250mm apart, and two cleats with moving parts. The fairleads and the cleats shall be fixed directly to the buoyancy tanks (integral parts).

(b) Spare number.

(c) The mainsheet track or bar of any profile shall be made of metal or GRP. It shall be straight and fixed directly to the centreboard case capping. The track or bar shall be not more than 40mm in depth and not more than 40mm in width.

The mainsheet track or bar shall be attached to the side tanks not more than 1450mm ± 50mm from the O-point.

(d) The bridle shall consist of two (2) equal strops, either of rope or plastic covered wire, fixed to the outer ends of the mainsheet track/bar or its end fittings and to the mainsheet-block, so forming a triangle. The length of the strops may be made adjustable by including one additional eyelet in each strop and two snaphooks fixed at the outer ends of the track/bar or its end fittings. Any other adjusting system is prohibited.

(e) The mainsheet system shall consist of four(4) single sheave blocks. One block shall have an attachment for the mainsheet and shall be connected to the bridle. Two blocks shall be attached directly to the boom. The fourth block, shall be fixed to a mounting on the aft part of the centreboard case capping or keelson.

(f) One swivelling cleat with moving parts or two cleats with moving parts on the side tanks for the mainsheet.

(g) One kicking strap of rope and stainless steel with either, not more than five blocks or, one lever two blocks, and one cleat.

(h) The total area of the transom drainage ports shall be maximum 80cm2. Transom flaps of optional design are permitted. Closing systems are optional.

(i) Two spinnaker sheet fairleads or blocks on the side decks maximum 1950mm from the transom. Two cleats.

(j) One combined uphaul/downhaul system made of rope and shockcord, one hook, one block, two plastic balls and a cleat for adjusting the height of the spinnaker boom. This may pass through the deck.

(k) One fairlead and one cleat with moving parts for the spinnaker halyard.

(l) Rudder pintles and/or gudgeons.

(m) Each buoyancy tank shall have a drainhole with a minimum dimension of 15mm maximum 25mm.

(n) Each buoyancy tank shall have at least one inspection hole of minimum 100mm in diameter.

14.3 Only the following fittings are permitted in addition to those listed above:

(a) Wedges to control the bend of the mast.

(b) A length of wire or chain for adjusting the height of the headsail tack.

(c) Four stainless steel plastic sheathed strops for fastening blocks.

(d) One suction bailer.

(e) Adjustable toestraps and one length of shockcord to keep them lifted up.

(f) Two spinnaker bags located according to the building specification (Drawing 5).

(g) One device as spinnaker sheet guard on or forward of the forestay adjuster.

(h) Two hooks on the shroud, or not more than 100mm forward of the aft shroud plate, to keep the spinnaker clear of the trapeze.

(i) Two devices for securing the spinnaker halliard while the spinnaker is not set.

(j) The lower end of the shrouds and forestay and their adjusters may be covered with plastic tube or other material to ease the passage of the sheets and prevent snagging. Stainless steel springs may be used with mainsheet blocks to prevent the blocks falling over.

(k) One wind direction indicator (non-electrical).

(l) Two centreboard flap devices.

(m) One compass and mounting bracket. The compass shall not be recessed into either side tank or deck. The mounting bracket may form part of the deck.

(n) Trapeze harness the weight of which shall not exceed 4kg and which shall float.

(o) One guiding block directly behind the cleat for the kicking strap system.

(p) One guiding block directly behind the cleat for combined uphaul/downhaul system (adjusting the height of the spinnaker boom).

(q) The mast gate may open at its aft end, or be closed with a removable or permanent device. A compass mounting bracket may be used to close the mast gate.

(r) Electrically powered devices are not permitted on board, with the exception of chronograph function watches.

(s) Chafing and/or filler strips, of any material, except metal, may be fixed in the

centreboard case and rudder stock in order to prevent the movement of foils.

(t) A clip or moulded insert in the thwart, to secure the spinnaker pole in the hull.

15. WEIGHT

15.1 The weight of the boat in sailing condition with all equipment, but excluding sails and trapeze harness, shall not be less than 100kg.

15.2 The bare hull, including stemhead fitting, headsail and spinnaker fairleads, cleats, blocks, toestraps, rudder pintles and gudgeons, mainsheet track/bar, inspection hole covers, spinnaker bags and corrector-weights up to two (2) kg, but excluding the centreboard and rudder, shall weigh minimum 80kg.

15.3 If the hull is found to weigh less than 80kg, correctors, total weight of maximum 2kg, shall be bolted to the upper inside of the transom. The number and total weight of correctors shall be recorded on the certificate. No correctors shall be removed or altered without the boat being re-weighed by an official measurer and a new certificate obtained.

16. SAILS

16.1 Sails shall be made and measured according to Section G of the ISAF Equipment Rules 2001-2004 except where varied herein.

16.2 As an alteration to RRS Appendix G 1.3 (a) the following items shall be displayed on each side of the mainsail :

(a) 420 emblem below and adjacent to the top batten.

(b) National letters above and/or below, adjacent to the second batten from the top, port and starboard not overlapping each other, those on starboard side being uppermost.

(c) Sail Numbers above and below, those on starboard side being uppermost, adjacent to the third batten and above an imaginary line projecting at right angles to the luff from a point one-quarter (¼) of the distance measured from the tack, to the head of the sail (see mainsail diagram).

National letter(s) shall not be in line with the sail number. The emblem shall be blue and not less than 480mm high. Numbers and letters shall be red and of the following minimum dimensions:

Height	300mm
Width	200mm (except number 1 and letter I)
Thickness	45mm

Minimum space between adjoining figures 60mm.

The colour of numbers on the spinnaker is optional but it shall contrast with the colour of the panel to which they are fixed, and of the same colour, full painted and on both sides.. National letters are optional on both sides of the spinnaker.

(d) The following minimum cloth weight shall be used:

Mainsail and headsail	3.5oz/yd (150g/m2)
Spinnaker	0.75oz/yd (32g/m2).

(e) Reinforcements greatest dimensions:

(i) Main and headsail:

Primary reinforcement	300 mm
Secondary reinforcement	900 mm
Flutter patches	100 mm
Chafing patches	900 mm
Batten pocket patches	150 mm

(ii) Spinnaker:

Primary reinforcement	300 mm
Secondary reinforcement	900 mm

16.3 Mainsail

(a) The mainsail shall be made of single ply white woven cloth of even weight throughout. Windows are prohibited. The mainsail shall have only normal cringles except that an additional cringle is permitted in the luff, together with a length of line for making adjustments to the luff tension. Four battens shall be fitted in the positions shown on the measurement diagram. The upper batten shall extend from the leech to within 20mm of the luff. A headboard may be fitted.

(b) No part of the sail shall extend beyond the inner edge of the boom band. No part

of the luff shall extend beyond the lower edge of the upper mast band and the upper edge of the lower mast band.

(c) (i) The upper leech point shall be the point on the leech, 600mm from the head point. The following measurements shall not exceed:

Leech length	5400mm
Top width	115mm
Quarter width	2130mm
Half width	1630mm
Three-quarter width	995mm
Upper width	480mm

(ii) The following batten pocket measurements shall not exceed:

Inside length of centre 2 battens	700mm
Inside length of bottom batten	540mm
Inside batten pocket width	60mm

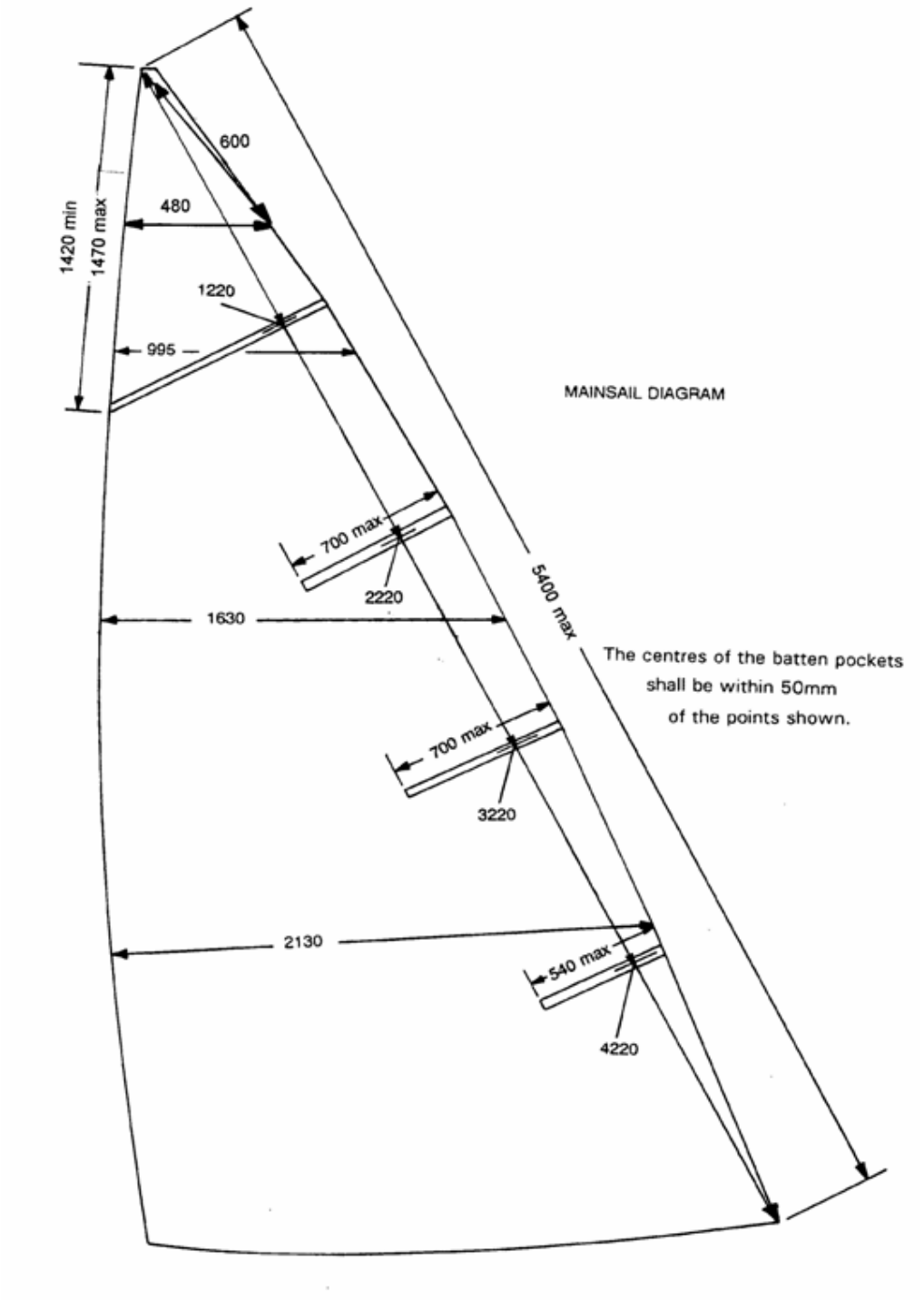
(iii) For sails first measured after 1 March 1998 the continuation of the centreline of the top batten pocket to the luff below the head point, shall be minimum 1420mm and maximum 1470mm. Adjusting the tension of the top batten is not permitted while racing.

(d) Blank

(e) Loose footed sails are not permitted

(f) Tell tales are allowed

MEASUREMENT DIAGRAM OF THE SAIL.



16.4 Headsail

(a) The headsail shall be made of single ply white woven material of even weight throughout. One window is permitted in the headsail. The area of the window shall not exceed 0.1m² and no dimension shall exceed 540mm. Hanks are permitted. A rope for luff tension adjustment and one cleat is permitted in the tack area.

(b) The leech shall not extend beyond a straight line i.e. shall not be convex.

(c) The following measurements shall not exceed:

Luff length	3500mm
Leech length	3200mm
Foot length	1750mm
Foot median	3360mm
Top width	40mm

The mid foot point shall be determined by placing the tack cringle over the clew cringle.

(d) Double luffed sails are not permitted. A steel wire rope in the luff of the headsail is mandatory.

(e) Tell tales are allowed.

16.5 Spinnaker

(a) The spinnaker shall be of woven cloth and be three cornered and symmetrical about its centreline. It shall consist of not more than seven panels and may be of any colour or combination of colours. Except in the uppermost panel and the lowest panel all the cloths shall extend from luff to luff. A centre seam is permitted in the uppermost panel. Not more than three tucks or darts are permitted in the lowest panel and these shall not touch the seam of the next panel nor exceed a maximum length of 450mm. Windows are prohibited. The colour of any tabling and reinforcement is optional.

(b) No headboard, battens or other stiffening device other than normal woven cloth reinforcing are permitted.

(c) The following measurements shall not exceed:

Leech length	4000mm
Half width	2840mm
Foot length	2220mm

17. CREW

17.1 Two persons shall be on board, each in contact with the boat.

17.2 At a principal event, to be defined by the National Association, only one set of sails per boat shall be used except in the case of authenticated damage or loss.

18. SAFETY

18.1 At the first measurement the measurer shall check the watertightness of buoyancy tanks, inspection ports and drain plugs. Thereafter it is the responsibility of the owner to ensure the watertightness of these. If the measurer is in doubt he shall order an immersion test, afterwards checking the tanks for significant leakage. If the buoyancy is unsatisfactory the measurer shall not sign the measurement form until successful remedial measures have been taken.

18.2 One mandatory rope painter, not less than 8m long and of 8mm diameter securely attached to the boat/mast and which can be grasped at the stem.

18.3 An anchor need be carried only when specifically prescribed by the Sailing Instructions.

18.4 Each inspection hole in the buoyancy tanks shall have a detachable cover capable of resisting accidential dislodgement and such covers shall be kept in place at all times.

19. ADVERTISING

19.1 Advertising is permitted in accordance with RRS Appendix 1, ISAF Advertising Code

20.3.2 (b) Category C except as amended by 19.2.

19.2 Advertising is permitted only in the following positions:

a) Event Advertising:

1) Hull: the outside hull shell between 600 mm and 1650 mm from bow.

b) Competitor Advertising:

1) Hull: the outside hull shell aft of 1650 mm from the bow.

2) Mainsail: below sail numbers.

3) Spinnaker: one side below sail numbers

OFFICIAL DOCUMENTS

1. International 420 Class Rules (March 2002)
2. Lines Plan (plan de forme) Issue B
3. Building Specification (Drawing No.5 issue D)
4. International 420 Rudder Blade Drawing (April 1986)
5. International Measurement Form (June 1999)

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