International Cadet Class

Cadet Mark IV Specification / Measurement Supplement 2005

INTRODUCTION

This is the supplement referred to in paragraph D.4.3 of the International Cadet Class Rules and it concerns the specification and measurement of the GRP Cadet Mark IV hull. The supplement is mostly stand-alone, however it makes cross-references to the Class Rules and to the License Agreement. Therefore, Measurers must be familiar with all three documents.
The supplement consists of the following:

- Instructions to Measurers (this page)
- Layout drawing (page 2)
- Full Measurement form for licensing measurement (pages 3 & 4)
- Production measurement form (pages 5 & 6)
- Registration form (page 7)

Pages 5,6 & 7 should be photocopied for use as measurement and registration forms.

MATERIALS

Hulls are to be built from polyester resin with glass fibre reinforcement. Sandwich construction is preferred using PVC or polyurethane foam in sheet form. Modified polyesters such as vinylester and modified epoxies such as epacryn are not permitted. Carbon fibre, Kevlar and other aramids are prohibited.

MEASUREMENT INSTRUCTIONS

The International Cadet Mark IV may only be built by licensed builders using moulds licensed by the ICC. Therefore, the purpose of measurement is to ensure that there has been no accidental or deliberate distortion of the hull and that fittings have been correctly placed. The measurer must also endeavour to ascertain that the hulls have been built in accordance with the lay-up specification that is in the license agreement. This will normally deemed to be by inspection, and by sight of a signed builders certificate relating to the hulls. Foils, spars and sails should be measured in accordance with class rules.

The first hull from any new mould is measured by the ICCA using the "initial mould measurement" form (pages 3 & 4) any problems that are uncovered must be resolved before production of further hulls begins.

Subsequent hulls taken from this mould are measured using the "measurement" form (pages 5 & 6).

The registration form (page 7) shall be progressively completed by the builder and the measurer. The original registration form with the measurement forms attached must be sent to the MNA / NCCA as appropriate, by the measurer. The builder and the measurer must retain file copies. The registration form when fully complete must be sent by the measurer to the authority issuing the class certificate. The authority will then provide the owner with a photocopy of the measurement form and a class certificate.

Each hull must be tested using an air pressure test on each of the three separate buoyancy compartments. A satisfactory air test is the initial buoyancy test for that hull.

Measurements of cleats and fairleads are taken to the bearing surfaces. Each hull must be individually weighed in accordance with Rule D.11.2 and D.11.3.

Datum Points and Lines

- Datum point "A" is the intersection of the projection of the aft transom with the deck at the centreline. Datum line "A" runs through Datum point "A" and is at right angles to Datum line "B".
- Datum line "B" is the horizontal baseline as shown in the diagram on page 2.
- Datum line "C" is the projected intersection of hull with deck and is used for beam and moulding flange measurements.
- Datum point "A" and Datum line "C" should be established using a straight edge with a keyhole cut out for the moulding flange.
- Deck measurements should be taken along the deck.

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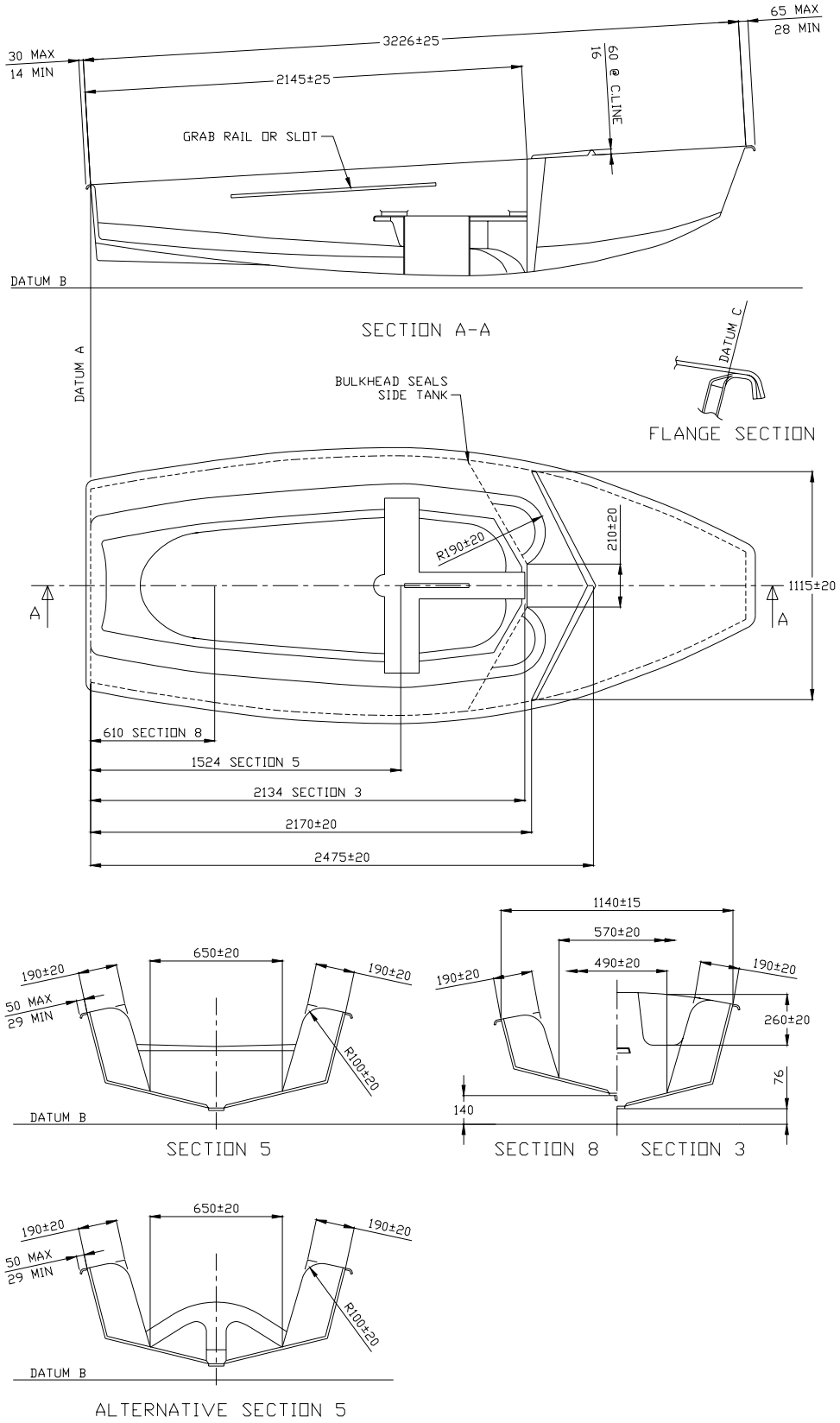

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INITIAL MOULD MEASUREMENT FORM

SHEET 1, OUTSIDE HULL

Measurements	Min. mm	Actual Port		Actual Starboard	Max. mm
Datum line "B" to: Keel at Section 3, 2134mm from Datum line "A".	-	-	76	-	-
Keel at Section 8, 610mm from Datum line "A"...	-	-	140	-	-
Note: - leave marks at Section 3 and 8 for deck level beam measurements					
Datum line "B" to: Keel at fore transom……...	331	-		-	361
Chine at fore transom……..	359				383
Gunwale at fore transom…….	680				707
Beam of fore transom at chine…….	152	-		-	168
Datum line "B" to keel at Section 1, 2743mm from Datum line "A"….	184	-		-	208
Datum line "B" to: Chine at Section 3……..	189				205
Gunwale at Section 3…….	575				599
Beam of Section 3 at chine……..	928	-		-	952
Datum line "B" to: Keel at Section 5, 1524mm from Datum line "A"	58	-		-	75
Chine at Section 5……..	195				211
Beam of Section 5 at chine……..	1080	-		-	1104
Datum line "B to: Chine at Section 8……..	263				279
Gunwale at Section 8…….	502				526
Beam of Section 8 at chine……..	1004	-		-	1028
Datum line "B" to: Keel at aft transom…….	202				224
Chine at aft transom……...	306				328
Gunwale at aft transom……..	490				520
Beam of aft transom at chine……...	839	-		-	863
Beam of aft transom at Datum line "C"……...	934	-		-	958
Datum line "A": to forward end of skeg……..……	965	-		-	1005
to forward edge of centreboard slot……..……..	1835	-		-	1885
to aft edge of centreboard slot……..….	1518	-		-	1568
to aft edge of keel……	46	-		-	56
Width of skeg, upper surface aft……..	38	-		-	-
Width of skeg, lower surface……...	19	-		-	-
Depth of skeg at aft end – including rubbing band……..	79	-		-	-
Chine angle at Section 3……..	114°				122°
Chine angle at Section 8……..	114°				122°
			✔ or ✘		
Radius at fore end of keel……	20	-		-	30
Radius at aft end of skeg……..	20	-		-	30
Width of keel throughout length……..	76	-		-	-
Thickness of keel throughout length……	11	-		-	-
Radius at edges of keel throughout its length……..	-	-		-	10
Radius where skin meets keel Rule D.8.1(a) ……..….	-	-		-	6
Rounding of chines per Rule D.5.1(a)……	-	-		-	4
Top of centreboard case to underside of keel at middle of case……..	290	-		-	-
Width of centreboard case and keel slot……..	15	-		-	-
Cross section of rubbing bands on keel and chines…….	10 x 2	-		-	-
Do rubbing bands conform to rule D.8.1 and 8.2…....……	-	-		-	-
Length of rubbing band on each chine – positioned a minimum of 600mm from the stern transom…….	1219	-		-	-

INITIAL MOULD MEASUREMENT FORM
SHEET 2, DECK LEVEL

Measurements	MIN mm	ACTUAL mm	MAX mm
Datum line "C" to:			
Outside of gunwale moulding flange……	25		50
Outside of bow moulding flange……...	25		65
Outside of stern moulding flange……..	14		30
Inside of side deck at Sections 3, 5 and 8	170		210
Radius of side deck……..	80		120
Datum point "A" to:			
Datum line "C at bow transom on centreline…….	3201		3251
Aft side of forward bulkhead at deck level……	2120		2170
Aft edge of thwart (excluding mainsheet mount)…….	1416		1470
Beam (between Datum line "C") at Section 3……	1125		1155
Beam (between Datum line "C") at Section 8…….	1125		1155
		✔ or ✘	
Do the distances across the cockpit at Sections 5 and 8 where the side buoyancy tanks meet the floor conform to the page 2 drawing?……..	-		-
Do the recesses for the spinnaker bags conform to the page 2 drawing in profile and depth?…….	-		-
Do spray guards conform to the page 2 drawing?……	-		-
Is there a 'grab rail or slot' on each side tank approx. 20mm high / deep and running substantially from Section 5 to Section 8?……...	-		-
Inspection hole in each buoyancy compartment, 90-160mm diam.?……...			
Is the thwart securely fixed to the forward bulkhead?…….	-		-
MEASURERS REMARKS (If yes, use a separate sheet)?……..	-		-

I certify that I have made the above outside hull and deck level measurements on
Hull number ……Manufactured from Mould No.……..……
and that they are within tolerances allowed .

Measurer's Name…….Signature:…….Date:..…….…….....

Status:……..…….……..

Address:……...……..

BUILDER'S DECLARATION

On behalf of my Company, I hereby certify that this International Cadet, Hull No…… has been built in accordance with the agreed specification, using the mould No……and therefore request it to be licensed by the ICC.
Name……..Signature…….Date…….…..…..
Builder's Name……..……
Builder's Address……...…
Date of Completion……...…….
USE BLOCK CAPITALS

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MEASUREMENT FORM

OUTSIDE HULL AND DECK LEVEL

Measurements	Min. mm	Actual Port		Starboard	Max. mm
Datum line "B" to: Keel at Section 3, 2134mm from Datum line "A".	-	-	76	-	-
Keel at Section 8, 610mm from Datum line "A"...	-	-	140	-	-
Gunwale at Section 8……	502				526
Note: - leave marks at Section 3 and 8 for deck level beam measurements					
Datum line "B" to: Keel at fore transom……...	331	-		-	361
Keel at Section 5, 1524mm from Datum line "A".	59	-		-	75
Chine at Section 5……..	195				211
Keel at aft transom…….	202	-		-	224
Chine at aft transom……...	306				328
Datum point "A" to aft edge of centreboard case slot…….	1518	-		-	1568
Beam (between Datum lines "C") at Section 3……..	1125	-		-	1155
Beam (between Datum lines "C") at Section 8……..	1125	-		-	1155
Weight of hull…….	54Kg	-		-	-
Total weight of correctors……	-	-		-	3Kg
			✔ or ✘		
Do keel and chine rubbing bands conform to D.8.2?……..	-	-		-	-
Top of centreboard case to underside of keel at middle of case…….	290	-		-	-
Do rubbing bands conform to D.8.1 and D.8.2……..…….	-	-		-	-
Is there a 'grab rail or slot' on each side tank 20 mm high / deep and running substantially from Section 5 to Section 8?……	-	-		-	-
Inspection hole in each buoyancy compartment, 90-160 mm diam..….	-	-		-	-
Is the thwart securely fixed to the forward bulkhead?…….	-	-		-	-
Has a satisfactory air pressure (buoyancy) test been completed on all three compartments?……	-	-		-	-
Is the hull number permanently marked on port side of transom in figures 25mm min high?……..	-	-		-	-
Has the ISAF plaque been fixed to the hull?……...	-	-		-	-
Has the builders plaque been fixed to the hull?……..…….	-	-		-	-

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MEASUREMENT FORM

			✔ or ✘
Top of deck of centreline of fore transom to centre of towing fitting (230 mm min)……			
Do measurements of mast step block conform? (length 73 –79 mm, width 55-75 mm, thickness 20mm max, central socket 29 x 29 mm)……			
Datum point "A" to aft side of central socket (2165 mm min and 2205 mm max)…….			
Upper face of maststep block to shear line (46 mm max)……			
A bow plate to attach the forestay and foresail must be fitted on the centreline at the bow such that the tack point for the foresail must be aft and a maximum of 50 mm from Datum line "C"….			
Halyard cleats for the mainsail and headsail must be fixed on the forward bulkhead near the centreline…….			
Attachment points for the mainsheet must be fixed 254 mm ± 10mm either side of the centre line at the aft transom……..…….			
Transom gudgeon and pintle for the rudder must be fitted on the centreline and a rudder retaining device must also be fitted. ……..……..			
Do grab rails conform to D.6.1(d)?……			
A spinnaker halyard shall go through a cleat or fairlead either on the foredeck or on the forward bulkhead within 100mm of deck level. In addition the fall (tail) of the halyard may be lead through no more than two fairleads or single blocks. One cleat may be fitted in any position…….			
Toestraps must be fixed in the hull for the crew and helm. They may be fixed or adjustable...the toe strap webbing may be of optional length and width……...…			
Shock cord must be fitted and fixed at either end to retain the centreboard in the down position…			
Measured along the deck:	Min	Max	
Datum "A" to :			
Cleats for spinnaker sheets…….	690	1120	
Fairleads for spinnaker sheets……..…	690	1120	
Centre of shroud plate or "U" bolt……..….	1813	1863	
Bearing surface of headsail sheet fairleads……..	1735	1865	
Datum line "C" to outer edge of headsail sheet fairleads ……..….		50	
Headsail sheet cam cleats inboard of fairleads……	1735		
Does the centre of gravity of hull conform?……..…..……			
Do optional fittings conform – see Rules D.11.1 (b) (iii), (vi), (x), (xi) and (xii) ……..…..			
Are all fittings securely fastened?……..……			
Are there any additional fittings?……			

I certify that I have made the outside hull, deck level and fittings measurements on Hull number ……Mould number…….……..ISAF Plaque No……., and that they are within tolerances allowed .

Measurer's Name…….Signature:…….Date:..……....

Status:……..……..

Address:……...……..
USE BLOCK CAPITALS

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REGISTRATION FORM

This form when completed should be forwarded by the Measurer to the MNA / National Association as appropriate with the current fee for the issue of the Certificate. **(BLOCK CAPITALS PLEASE)**

1. Name of Boat…….Sail No……..…… ISAF Plaque No……
2. Owner's Family Name…….
3. Owner's First Name…….
4. Home Address……..
   ……
5. Club or Squadron…….

6. BUILDER'S DECLARATION

   On behalf of my Company, I hereby certify that this International Cadet, Hull Number……. has been built in accordance with the agreed specification, using the Mould No……..licensed by the ICC.
   Name……..Signature…….Date……..
   Builder's Name……
   Builder's Address……
   Date of Completion…….

7. SPARS AND FOIL MEASUREMENT DECLARATION

   I certify that I have measured the mast, boom, spinnaker boom, centreboard, rudder, standing and running rigging in accordance with Class Rules of measurement and that they comply in every detail with the rules and any official amendment currently in force and with the measurement diagrams insofar as the rules require. (Put comments on a separate sheet).

   Measurer's Name ……Signature……Date……..….
   Status……..
   Address……

8. SAIL MEASUREMENT DECLARATION

   I certify that I have measured the sails in accordance with Class Rules of measurement and that they comply in every detail with the rules and any official amendment currently in force and with the measurement diagrams insofar as the rules require. (Put comments on a separate sheet).

   Measurer's Name ……Signature……Date……..….
   Status……..……
   Address……...……

   RESERVATION
   The International Cadet Class reserves the right to refuse a Certificate of Measurement and to withdraw or cancel a Certificate already granted in the case of a boat or boats which, although complying with the letter of the rules, has by reason of the exploitation of an error, omission or mistake in the official plans, measurement diagrams or in the rules, in the opinion of the National or International Committee obtained a material superiority in competitive performance.