KAYAK CROSS
BUOYS
HOMOLOGATION MANUAL

Version 2 – Released on March 2023

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I. Introduction

This manual describes the ICF homologation process concerning the buoys and hanging system for Kayak Cross.

The homologation process is conducted by an ICF expert panel (ICF Technical committee members, ICF staff, external advisors) nominated by the ICF Secretary General.

Homologation represents a "system of evaluation" that is designed to guide the development and ensure high-standard dedicated canoeing equipment suitable for ICF competitions and venues. It is a process for certification that provides a forum for constructive discussion between ICF experts and providers. The resulting certification represents an ICF stamp of approval for usage of equipment/facilities specific to the environment intended.

The homologation process takes place in two stages:

- Stage 1: Homologation technical file
- Stage 2: Test session on the samples sent by the providers

II. Reason to complete an ICF homologation

The ICF regularly passes to some national or international sport stakeholders (eg. Organising committees for Olympic Games, Continental Games, National Federations) a list of technical products and their recognized manufacturers specific to canoeing.

Through the homologation process the ICF wants to reinforce the quality control of the technical products and create a strong link with the manufacturers.

III. Homologation cost

The manufacturer will provide the needed samples and will pay the ICF a test fee of 500€.

This fee must be paid to the ICF by the manufacturers before the delivery of homologation results by the ICF.

IV. Stage 1 – Homologation technical file and samples to provide

The manufacturer shall provide to the ICF the homologation technical file and some samples for the testing phase.

A. Homologation technical file

The technical file should include the following items:

- Short introduction of the company
- General presentation of the proposed buoy and hanging system: history of development of the product, main strengths etc.
- List of materials used in construction of the buoy and the hanging system.
- Technical scheme of a buoy and the hanging system including size, weight, fixation system etc.
- If available:
    - Commercial catalog (electronic or online)
    - List of main customers and their technical appreciation of the product.
    - User manual

The Homologation technical documents should be emailed to the ICF headquarters attention: jmprono@gmail.com and thomas.rosset@canoeicf.sport

B. Samples to provide

The manufacturers must provide the ICF with **3 red** buoys, **3 green** buoys, **2** hanging systems, **2** numbers and **2** directional arrows banners if not integrated, **1** roll zone barrier, **2** green and **2** red samples of the buoy textile material measuring 100X100mm. These products must be sent to the ICF (the delivery address will be confirmed by the ICF on request to thomas.rosset@canoeicf.sport)

V. Stage 2 – Test session

A. Principles

This test session will be conducted by the ICF and the nominated expert panel. The manufacturers are not able to be present during this test session.
All results will be provided to the manufacturers without public communication.

Discussion between the ICF expert panel and the manufacturer may be requested by either party at the following times:

- By the ICF during the testing phase for additional information.
- By the manufacturer after the receipt of the homologation report.

B. Goals

The test session has three main assessment goals:

- Measurement: each buoy and banner must comply to the ICF rules (see summary in appendix 1).
- Motion sensibility for a buoy attached to the hanging system (targeted time to return motionless after an impact: maximum 3s with a margin of +/- 5 degrees at 15, 35 and 45 deg of start position)
- Stress test:
    - Paddle (shaft and blade) impact on a buoy (1370g, 5370g, 9370g)
    - Mechanical strength of the hanging system and anchor points (400N)
    - Pressure (withstand at minimum 20000Pa, recommend value 50000Pa or more)
    - Puncture (withstand puncture at 500N of a flat 8mm diameter probe)
    - Friction (maximum loss 5 % of weight at 600 cycles, back 400 cycles)

Furthermore, the ICF will assess, based on technical information provided, feedback from customers and simulation software:

- The long-term use on a venue

VI. Conclusion of the homologation process

Following the completion of the two stages, the ICF experts shall deliver a report to the ICF Secretary General. Based on this report and his conclusion, the ICF Secretary General will officially inform the provider of the results of the homologation process.

APPENDIX 1 – 2023 ICF rules and regulation for Kayak Cross buoys

A. 2023 ICF competition rules

1. Article 16.16: Gate requirements

16.16.1 - The gates consist of one (1) or two (2) suspended poles coloured green for downstream gates and red for upstream gates.

16.16.2 - Gates must be numbered on the poles.

16.16.3 - Competition logos and/or advertising agreed with the CSLC may be displayed on the poles.

16.16.4 - The gates must follow ICF Kayak Cross gate requirements.

2. Article 16.19: Course requirements

16.19.1 - The time for the Athletes to complete the Kayak Cross course should be 45 - 80 seconds.

16.19.2 - The course length must be agreed with the ICF Technical Representative to achieve this time.

16.19.3 - The qualification phase may be held with gates and/or a roll zone/barrier. This will be announced at the team leaders meeting. The time trial course design may be different from the elimination phase. If a repechage is organized, the course will be identical to the elimination course

16.19.4 - The elimination phase course must consist of four (4) to six (6) downstream gates and where possible two (2) pairs of upstream gates.

16.19.4.a - A downstream gate may be set as a pair allowing the Athlete to choose to negotiate either down right or down left.

16.19.4.b - The two (2) pairs of upstream gates should be set to allow the Athlete to choose to negotiate either up right or up left

16.19.5 - The elimination phase course must contain a marked roll zone and/or a roll barrier. When used in conjunction with the roll zone, the roll barrier must be set within the roll zone

16.19.6 - Where possible there should be a suitable start platform which allows a drop into the main channel to start the race.

B. Additional ICF technical requirements for manufacturers

1. Hanging system

- The hanging system must allow the gate to be positioned anywhere along the cable, as for a Canoe Slalom gate.
- The hanging system must limit the swinging effect of the whole system when the supporting cables are tight (especially for the Roll zone buoy)

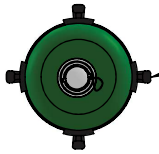
2. Buoys

- Length**:**
  - All homologated buoys must be 2 m from the hanging point to the bottom of the buoy.
  - Any variation of the 2m height for the homologated buoys must be accepted by the ICF in the frame of adaptation of the buoy hanging system
- Color:
  - Green RAL 6037, (RGB 0, 139, 41) or close to this color
  - Red RAL 3024, (RGB 255, 0, 0) or close to this color
  - Yellow RAL 1026 or 1023, (RGB 255, 255, 0 or RGB 247, 181, 0)
  - Black RAL 9005, (RGB 14, 14, 16) or close to this color
  - White RAL 9010, (RGB 241, 236, 225) or close to this color

3. Adjustable height

- At a Kayak Cross course, the bottom part of the gates must be set as close as possible from the water. Then, a height adjustable system of the buoy should be implemented to set the gate properly while keeping the supporting cables tight.

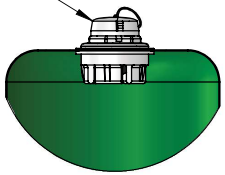
APPENDIX 2 –Buoy design



4 Anchors points

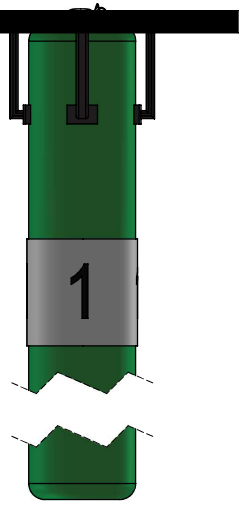
Rigid or textile hangs

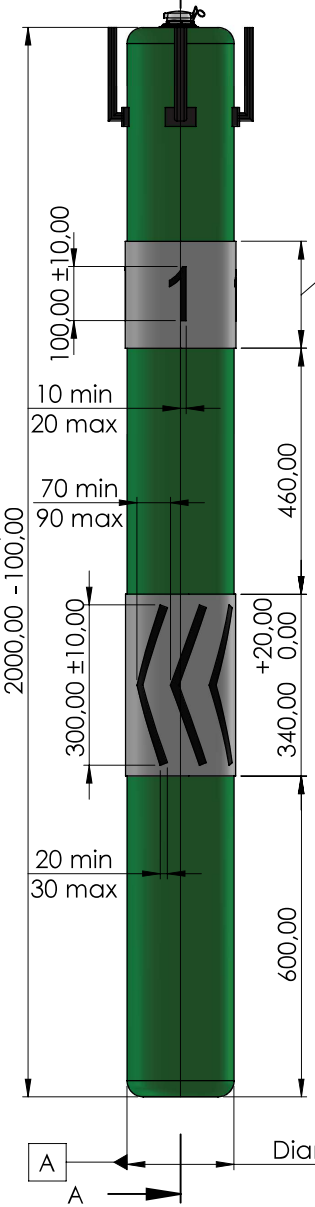
Boston Valve or Halkey Roberts valve

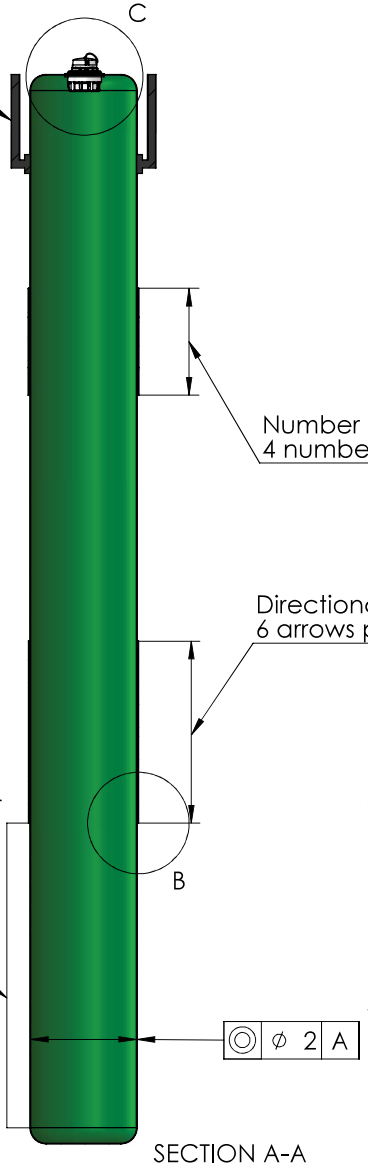


DETAIL C
SCALE 1 : 5

Embedding Junction between Buoy and cable
The hanging system for the buoy should provide no translation and rotation of the buoy arround the cable







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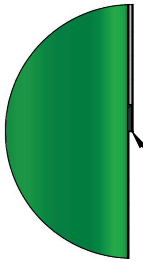
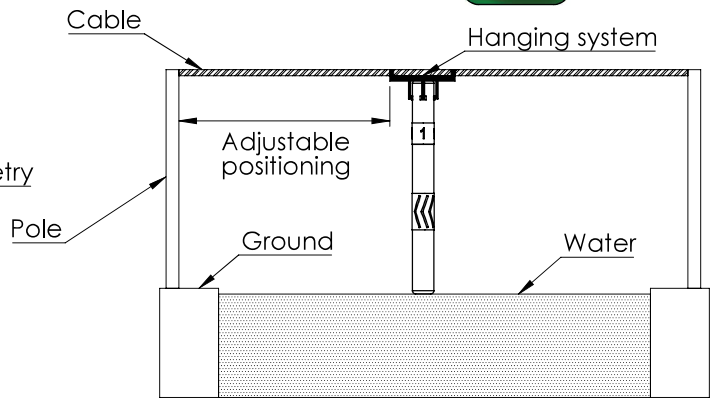
SCALE 1 : 10



Velcro Strap

DETAIL B
SCALE 1 : 4

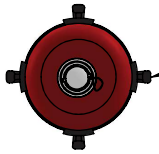


The hanging system must allow free positioning along the cable

Sketch not at scale,for illustration purpose only

The buoy must be an inflatable components

Material: PVC + Plastic + Metal	This drawing and any information or descriptive material set out on it are the confidential and copyright property of ICF © and MUST NOT BE DISCLOSED, COPIED, LOANED in whole or part or used for any purpose without the written permission of ICF	Description: **Kayak Cross (green) buoy and hanging system**	
Color of the buoy: - Green RAL 6037, (RGB 0, 139, 41) or close to this color - Black RAL 9005, (RGB 14, 14, 16), or close to this color - White RAL 9010, (RGB 241, 236, 225) or close to this color		Drawn by: Bourhis	Drawn Date: 15/05/2022
Tolerance general ISO 22081 Linear : +/-5mm, Angular : +/-2° All Dimensions: **mm**	Document Type: Technical drawing	Checked/Approved by: Prono	Checked/Approved Date:
Drawing Scale: **1:10**	International Canoe Federation	Assembly Number: 1	
Approx Weight: 2.42 Kg (Buoy only)	Drawing Produced In Accordance With: **ISO128**	Drawing Number: Version 1.3	Sheet: **1 of 1** / Revision: **N/A**
Projection Method: **THIRD ANGLE**	Sheet Size: **A3**		



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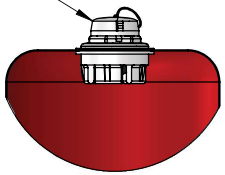

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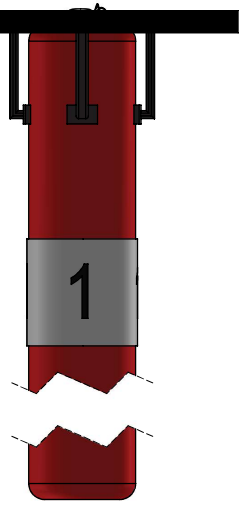

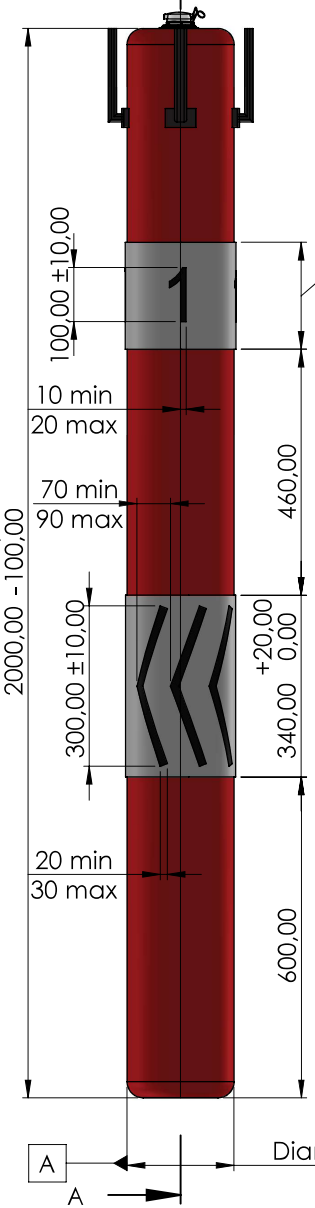

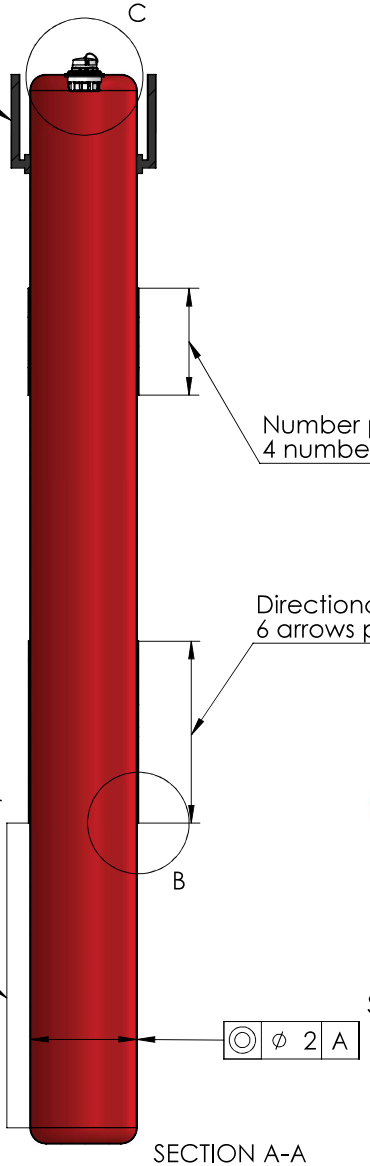

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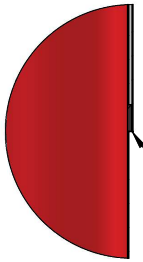
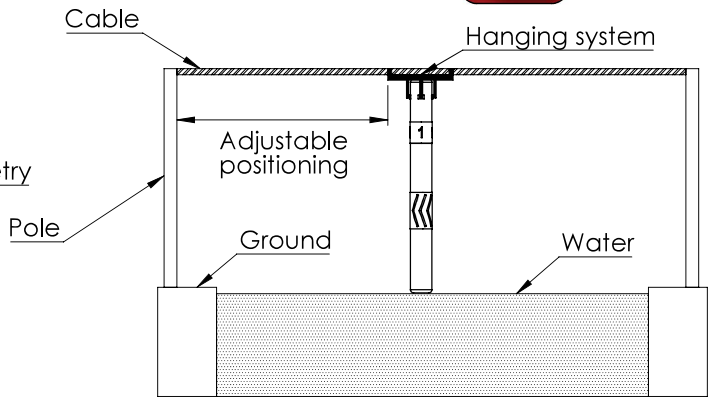


Velcro Strap

DETAIL B
SCALE 1 : 4



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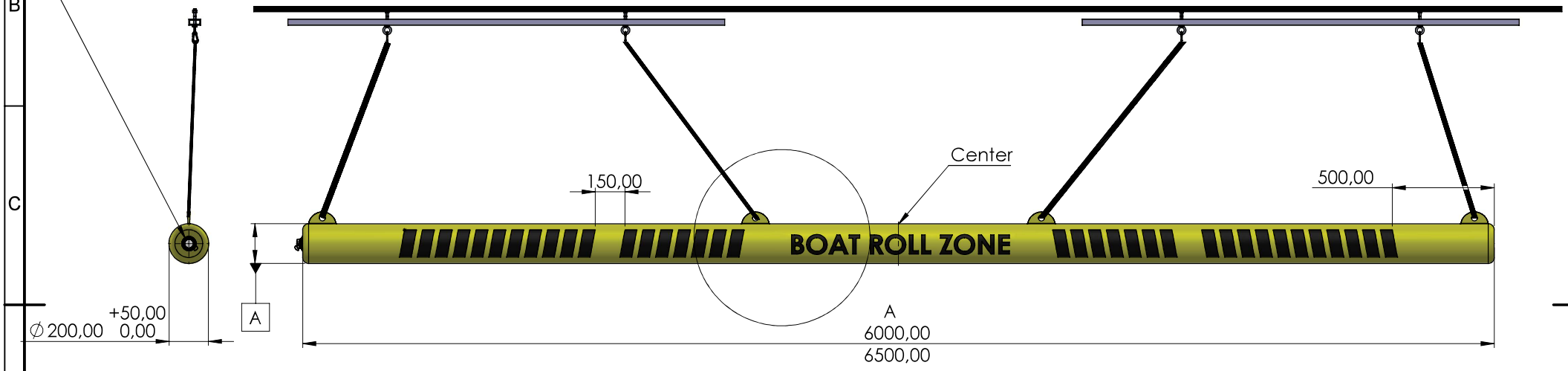

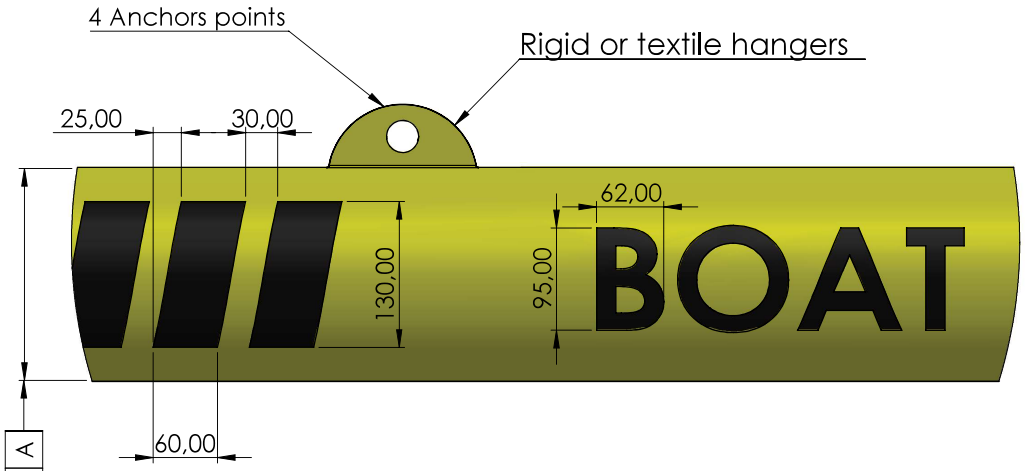

DETAIL A
SCALE 1 : 5

- The boat roll zone can be made from inflatable or rigid materials
- The boat roll zone can be an assembly of buoys or a unique piece
- The boat roll zone must have a uniform shape and look, if buoys are assembled

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Color of the buoy: - Yellow RAL 1026 or 1023, (RGB 255, 255, 0 or RGB 247, 181, 0) or close to this color - Black RAL 9005, (RGB 14, 14, 16) or close to this color		
Tolerance general ISO 22081 Linear : +/-5mm, Angular : +/-2° All Dimensions: **mm**	Document Type: Technical drawing	Drawn by: Bourhis / Drawn Date: 15/05/2022
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Approx Weight: 4,5 Kg (Buoy only) / Drawing Produced In Accordance With: **ISO128**		Assembly Number: 1
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