



# Building Regulations

## Concrete Canoe Race 2024

1. The canoe must be made of concrete. The strength of the canoe must come from the shape, reinforcement and/or composition of the concrete. Reinforcing the canoe with anything other than concrete or reinforcement incorporated into the concrete is not permitted.
2. The canoe must be hollow on the inside. This means that there must be enough space to fit two people properly and to propel the canoe with two people. Only single-bladed paddles, which are not attached to the boat, may be used for this purpose. Soft mats may protect the knees and feet, but should not be used to distribute the load in the canoe.
3. The dimensions of the canoe must meet the following requirements:
  - Minimum length: 4.0 m
  - Maximum length: 6.0 m
  - Maximum width: 1.0 m
  - Maximum height: 1.0 m
  - Minimum depth: 1/4 of the total height
4. Both natural and synthetic and impermeable and porous aggregates can be used.
  - The maximum aggregate diameter of one aggregate is 5.6 mm
  - Both cement and geopolymers may be used as binding agents.
  - The additives may not exceed 25% of the weight of the binder mixture.
5. The reinforcement can consist of wire and grid elements. The reinforcement cannot contribute to the watertightness or buoyancy of the canoe. The buoyancy of the canoe can be created by concrete elements or by the canoe alone.
6. A colored buoy with 10 meters of rope should be attached to the canoe to indicate the location of the canoe when it sinks. The rope must be able to withstand a pulling force of at least 50 kilograms and must guarantee a buoyancy of 2 kilograms.
7. The canoe must have means to minimize the risk of sinking. For example, consider an air bag that can absorb part of the buoyancy, or another means.
8. No material should come loose from the canoe. This is tested during the inspection by holding a wet sponge against the canoe.
9. Sustainability is an aspect that can result in bonus points in the sustainability competition. If special materials or special techniques are used, please mention these in the construction report of the canoe.
10. A construction report (maximum 10 A4 pages) must be submitted by email before April 10, 2024 ([secretary-ccr@concept.utwente.nl](mailto:secretary-ccr@concept.utwente.nl)). The report must in any case cover the following topics:
  - Design: idea, name of the canoe and the people who contributed
  - Explanations of the structure
  - List of materials used, including mixing ratio
  - The production process of the canoe
  - Dimensions, weight and buoyancy
  - Durability of the materials used
  - The method chosen to minimize the risk of sinking, see point 7.
11. The construction report is assessed by the jury. If the construction report does not meet the requirements, contains defects or ambiguities, the jury can demand that the construction report be improved before a certain deadline. Failure to submit the construction report will result in exclusion from the competition.
12. If the canoe does not meet the requirements during inspection or during the races or does not comply with the construction report, the jury can impose a disqualification, reduction of points or time penalty.