



Significant Changes to the Rules and Regulations for the 2011 ASCE National Concrete Canoe Competition™

Each year the rules and regulations are modified and updated in an effort to improve the overall competition and to assure that competitors design and build new canoes. Changes have been made to this year's edition of the rules based on responses to questions, issues that may have arisen at conference and national competitions, and feedback provided by students and judges. Some of these changes are significant while others are minor edits in language.

The intent of the significant changes is to challenge the student's skills, engineering judgment, and creativity. The minor edits are primarily for clarification purposes.

The following is a list of the MAJOR changes to the rules and regulations applicable to the 2011 competition (as compared to the 2010 rules and regulations). Please note that not all of the changes are listed here and that it is the responsibility of all teams to carefully review the rules and regulations.

Section 1 – General Rules and Eligibility Requirements

No significant changes to Section 1 have been made.

Section 2 – Canoe

No significant changes to Section 2 have been made.

Section 3 – Concrete

- All concrete mixtures must have at least two sustainable aggregate sources and each must constitute at least 25% of the total amount of aggregate. Only one of the sustainable materials may be glass microspheres.
- The use of reactive aggregates is a possibility with CNCCC approval.
- All concrete mixtures must contain hydraulic cement with a c/cm ratio between 0.30 and 0.50.
- The unit weight of concrete must be between 55 and 70 pcf based on the yielded proportions of the concrete.
- The w/cm ratio requirement has been removed.
- Air content requirements have been removed; however, teams are still responsible for the correct computation of air content.
- Charts of aggregate gradations are not required.

- Table 3.1 has been revised and teams are required to fill in additional information including mass of concrete, absolute volume of concrete, and theoretical density. Appendix C provides instructions on how to properly fill out the table.

Section 4 – Reinforcement

- The minimum percent open area (POA) of any layer of reinforcing material has been increased to 40%.

Section 5 – Final Product

- Acid based or water based stains are allowable. The maximum solids content has been increased to 10%; the maximum VOC remains 350 g/l.
- The CNCCC must approve of equivalent products of concrete stains and sealers.

Section 6 – Design Paper

- The design paper must contain the following sections – *Analysis, Development and Testing, Project Management and Construction, and Innovation and Sustainability* – in any proportion and the total content must not exceed a total of pages (6) pages. The paper has been reduced from seven (7) pages down to six (6) pages
- Appendix C of the design paper must contain a bill of materials and production cost estimate.

Section 7 – Engineer’s Notebook

No significant changes to Section 7 have been made.

Section 8 – Oral Presentation

No significant changes to Section 8 have been made.

Section 9 – Final Product (Canoe and Cutaway Section)

No significant changes to Section 9 have been made.

Section 10 – Product Display

No significant changes to Section 10 have been made.

Section 11

No significant changes to Section 11 have been made.

Section 12

No significant changes to Section 12 have been made.

Section 13

No significant changes to Section 13 have been made.

The purpose of the Rules and Regulations of the 2011 ASCE National Concrete Canoe Competition is to provide the comprehensive specifications that teams need to meet for the competition, provide guidance to the conference and national judges on the various aspects that they need to evaluate and judge, and serve as a guide to the host schools as to the necessary equipment, personnel, and venues.

Every effort has been made to provide clear language in this edition of the rules and regulations. Students are advised to read the rules carefully and to make interpretations based on sound engineering judgment and experience. The CNCCC will provide clarifications as needed.

Requests for Information (RFIs) regarding rule interpretations should be directed via e-mail to cncce@asce.org. Please note that the change in the e-mail address (cncce@ermail.asce.org which has been used in the past, is not the address that questions are to be submitted to). Official responses will come from cncce@asce.org.