

Request for Information (RFI) Summary

February 2021

Some RFIs may include attached documents, which may not be included in this summary. For these documents, see the ASCE Concrete Canoe Facebook Page (<https://www.facebook.com/ASCENCCC/>).

Additional documents for the Request for Proposal are at: <https://www.asce.org/concrete-canoe-rules-regulations/>

- 2021 ASCE Concrete Canoe Request for Proposals
- Addendum 1 - Correction to Submission Date (09/16/20)
- Mix Proportion Table
- Peer Review and Comment Form
- Pre-Qualification Form
- Concrete Canoe Competition Webinar - Peer Review (January 19, 2021)
- View the recording of the Kick-off Webinar (September 24, 2020)
- View the recording of the Concrete Mix Design Calculations Webinar (October 27, 2020)
- Eligibility for Society-Wide Competitions
- Journal papers dealing with concrete mixes

1.0 REQUEST FOR PROPOSAL

RFI No. 27

Section: 1.1.3 - Problem Statement

Subject: Two Year Theme

Date: 9/23/20

QUESTION: In the rules it is specified that this year's rules should not be used for 2022 planning purposes, just as a hypothetical. However, would it be acceptable to use the theme chosen in 2021 for the 2022 competition?

RESPONSE: Yes, this would be allowed.

RFI No. 29

Section: 1.1.3 Problem Statement

Subject: 2022

Date: 9/25/20

QUESTION: Will the rules for the 2021 competition be used for the 2022 competition? Specifically, will the mix regulations change between this year and next year?

RESPONSE: The technical answer is we don't know. However, Section 1.1.3 states that *Note, 2022 competition rules and information are not yet determined. Teams should not use this Problem Statement for 2022 planning. Please consider this problem statement as hypothetical."

3.0 ELIGIBILITY

RFI No. 1

Section: 3.0 - Eligibility

Subject: Pansexual

Date: 9/11/20

QUESTION: At present our group is coming up short recruiting enough females (her, she, hers) to register for our team. Since we do not want to jeopardize our eligibility standing, we would like to know if we can we substitute a person that identifies as binary or "pansexual" (both him / her or multi-gendered). We ask this because this guy we know returned to campus this year claiming to now be "pansexual". Oddly, he looks exactly the same, but says he switches pronouns depending on who she/he is attracted to. Several of us are not sure about all this. Would it be wise to get a signed affidavit attesting to his/her gender before registering this person?

We get the male/female diversity aspect, but would like more clarification on how gender fluidity might influence our team's registration.

RESPONSE: Section 3.0, Eligibility, in part states that "Participants who identify with a gender may register in accordance with their gender identification, with no requirements for submitting requests, obtaining approvals, or notifying anyone." As such, this individual does not need an affidavit or any other documentation nor do we need participants to justify their decision. In addition, "No other team, judge, host, etc., shall dispute or appeal the choice that a participant makes."

Any participant that is gender fluid can choose to identify as he/him, she/her, or they/them, but should choose this based on how they identify and not as a means to fill gaps in the gender diversity of a team. If someone identifies as both he/him and she/her then that person may choose to fill either spot but should do so in the spirit of the competition and competing fairly. From a gender fluidity standpoint, the individual must make a decision on how they wish to be addressed and it must be consistent throughout the competition (they cannot be fluid during the

competition, for example, compete in the male tandem then compete in the female tandem). Yes, races don't count this year, but is a good example to get the point across.

In addition, the rules do not require that you have gender diversity but encourage it. You can have a team composed entirely of 5 participants that identify with he/him or a team composed entirely of participants that identify as she/her, but you cannot have more than 5 participants that identify as he/him or she/her. You can have 5 he/him and 1 she/her, for example. The table provided shows additional examples but these are not required team compositions. The RFP encourages gender diversity for the growth of your team. In this team's particular case where they are having trouble finding participants that identify as she/her, we would encourage them to keep looking because getting even one she/her could result in future teams having even more.

RFI No. 38

Section: 3.0 - Eligibility

Subject: Pansexual

Date: 10/3/20

QUESTION: We did not hear back from you regarding our September 10 request for guidance on ASCE's new eligibility requirements discussed

Sadly, we are now left to conclude one of two things:

1. The ASCE feels squeamish discussing the nuances of sexual identities, or
 2. The ASCE was merely virtue signaling their support for gender equity, and does not take this matter seriously.
- Neither of these choices are acceptable.

Therefore, we shall ignore the eligibility requirements as outlined on page six of the 2021 RFP in its entirety. The assemblage of our Concrete Canoe team will occur at our discretion and without regard to sexual orientation, race, religion or national origin. Any sanctions initiated by ASCE pertaining to our RFP will result in actions at law.

RESPONSE: First things first, the C4 does not feel that the tone of this message was appropriate, especially the threat of legal action and statement of ignoring the eligibility requirements for this competition. Secondly, Section 1.5, Request for Information (RFI), states that "Official responses will be posted to the ASCE Concrete Canoe Facebook page." Thirdly, a very detailed response was provided in the very first RFI posted to this page - RFI No. 1, Section: 3.0 - Eligibility, Subject: Pansexual, dated 9/11/20 (just one day after the RFI was submitted to the C4).

As such, your team will not ignore the eligibility requirements for this competition.

We also remind you that Section 3.0 refers to Exhibit 3 -

Student Chapter and Participant Eligibility, in particular, SPIRIT OF THE COMPETITION, which states "The judges and/or the C4 may take disciplinary action, including warnings, point deductions, or disqualification of a team or entry for inappropriate use of materials, language, alcohol, uncooperativeness, or general unprofessional behavior or unethical behavior of team members or persons associated with a team. The judges and/or the C4 have the final authority to determine what constitutes a violation of the "Spirit of the Competition" and may take appropriate action towards point deduction or disqualification." One could easily consider the tone taken in the message as being "general unprofessional behavior." We have never DQ'ed a team before a competition. Please do not let this be the first.

4.0 SUBMISSION REQUIREMENTS AND DEADLINES

RFI No. 6

Section: 4.2.1 - Letter of Intent & Pre-Qualification Forms

Subject: Conflicting Submission Dates

Date: 9/16/20

QUESTION: In Sec 4.2.1, it states that the Pre-Qualification form and the Letter of Intent is due on October 16 no later than 5 pm [Eastern], but on the Pre-Qualification form, it says that the form is due October 22 and does not have a specified time. Which one is the correct date and if it is October 22, what is the deadline?

RESPONSE: The correct date and time for the submission of the Letter of the Intent and the Pre-Qualification Form is Thursday, October 22, 2020, NLT 5 pm (Eastern). We will issue an addendum to clarify this. Thanks for the catch!

RFI No. 7

Section: 4.2.1 - Letter of Intent & Pre-Qualification Forms

Subject: Letter of Intent

Date: 9/16/20

QUESTION: In section 4.2.1, one of the early submissions includes the Letter of Intent. Is this the same meaning and format as a cover letter?

RESPONSE: The Letter of Intent is basically a cover letter that is submitted with your Pre-Qualification Forms acknowledging receipt of the RFP solicitation and provides a synopsis of your understating of the project. The C4 will also use it to allow us to determine which teams are competing so that we can assign Peer Reviews.

RFI No. 11

Section: 4.2.1 - Letter of Intent & Pre-Qualification Forms

Subject: Clarification on Letter of Intent

Date: 9/21/20

QUESTION: Can you please give more details on what specifically the Letter of Intent should include/cover?

RESPONSE: Please reference RFI No. 7, Subject: Letter of Intent, dated 9/16/20, which covers this topic.

RFI No. 13

Section: 4.2.2.2 - Hard Copies

Subject: Double-sided copies

Date: 9/22/20

QUESTION: When requested, are hard copies allowed to be double sided?

RESPONSE: They will be single-sided. Judges like to write in them.

RFI No. 33

Section: 4.2.1 - Letter of Intent & Pre-Qualification Forms

Subject: Who to address letter to

Date: 9/30/20

QUESTION: Regarding the letter of intent, what is the address the letter is going to be sent to? Should it be sent to the ASCE Head Office, the Host School, or a different address that I could not find on the RFP? The only address I found was for the National Competition Address.

RESPONSE: You can address the letter to:

ASCE Student Services
1801 Alexander Bell Drive
Reston, VA 20191
Attn: ASCE Concrete Canoe Competition Committee

Just to be clear, teams are not mailing physical copies of the letter to ASCE. The address is simply for putting on your digital copy that is uploaded to the server.

RFI No. 34

Section: 4.2.2 - Technical Proposal & Enhanced Focus Area Report

Subject: Edits after deadline

Date: 9/30/20

QUESTION: The Technical Proposal and Enhanced Focus Area Reports are due in February. Will we have any option to make edits to either after it is submitted but before the Conference Competition? In that same line, will we be allowed to make edits before the Society-wide Competition, should we be moving forward?

RESPONSE: Once the deadline has passed for the submission of the required document for the conference-level event, teams cannot edit them or overwrite the file with a revised version. That is the version to be evaluated by the judges. Teams that advance to the Society-wide Final Competition will update their submission, but once the deadline passes for that, team cannot edit or overwrite them.

RFI No. 49

Section: 4.2.1 - Letter of Intent & Pre-Qualification Forms

Subject: Pre-Qualification Form Submission

Date: 10/14/20

QUESTION: Should the Letter of Intent and Pre-Qualification form be submitted as a single pdf or separate pdfs?

RESPONSE: Please submit as separate files

RFI No. 60

Section: 4.2.1

Subject: Change in Team Members

Date: 11/19/20

QUESTION: Due to some force majeure, one of our team members can not participate in the competition which will cause inconsistency between the number of core team members that we reported in the Pre-Qualification Forms and the actual number of core team members. Will this situation result in a deduction to our team?

RESPONSE: No deduction would be applied. It is just a change in the number of team members.

5.0 HULL DESIGN PROTOTYPE REQUIREMENTS

RFI No. 12

Section: 5.3 - Flotation Requirements

Subject: Bulkhead Dimensions

Date: 9/22/20

QUESTION: Section 5.1 specifies: "All other dimensions, such as but not limited to, beam, depth, rocker, chine radii, etc. and cross-sectional and longitudinal shapes are not regulated, and their values are at the sole discretion of the team." Section 5.3 further states that "Flotation bulkheads and tanks must be encased in concrete."

With no mention of bulkhead or tank dimensions, are these dimensions also at the sole discretion of the team?

RESPONSE: Yes.

RFI No. 57

Section: 5.3 - Flotation Requirements

Subject: Flotation Test

Date: 11/4/20

QUESTION: The RFP states the flotation criteria for a flat gunwale, but what is the criteria for a curved gunwale? It has happened with our team for a couple of times now. Even though majority of the canoe is with its bulkheads were above water due to the curved gunwale the middle of the canoe was a little bit underwater. Therefore, the judges ruled out the Flotation test. Is this correct?

RESPONSE: The 2021 RFP does not differentiate between a flat (level) gunwale and a curved one. Section 5.3, Flotation Requirements, states that "Canoes shall be designed to float near the surface of the water when completely submerged. Flotation bulkheads and tanks must be encased in concrete. Hollow cavities and flotation material in the form of particulates (beads, sawdust, etc.) are not permitted in the design of the bulkheads and tanks."

Since no canoes are required to be built this year, no canoe will actually be subjected to the dreaded swamp test. However, if a canoe as described above, was swamped and it floated near the waters' surface (i.e., it did not sink), it should have passed the flotation test.

RFI No. 67

Section:

Subject: Segmented Canoe

Date: 11/30/20

QUESTION: We have planned to make a canoe with discrete units (bow, stern and 2 middle portions) and assemble them together using tendons. Is that permitted? Is there any condition that the canoe should be casted as only one unit as a whole?

RESPONSE: It is permitted.

6.0 TECHNICAL PROPOSAL

RFI No. 3

section: 6.0 - Technical Proposal

Subject: Reusing Technical Paper from Last Year

Date: 9/14/20

QUESTION: Can we reuse parts of the technical proposal from last year that are still relevant for our design this year? Since the paper was never reviewed/graded, we were hoping to reuse, or slightly update, specific parts of it. Please let me know if this is not allowed.

RESPONSE: You may reuse any portion of previous reports submitted.

RFI No. 5

Section: 6.4.8 - Project Schedule

Subject: 2022 Competition

Date: 9/15/20

QUESTION: It is stated to "Provide a complete two-year project schedule." (Section 6.4.8) Does this mean that the 2020-2021 and 2021-2022 competition seasons will be based around the same canoe and rule set? For example will the single concrete mix design requirements from this competition season carry into next the competition season?

RESPONSE: Section 1.1.3, Problem Statement, states *Note, 2022 competition rules and information are not yet determined. Teams should not use this Problem Statement for 2022 planning. Please consider this problem statement as hypothetical." This can be applied to all facets of the competition.

RFI No. 8

Section: 6.4.6.3 Quality Control and Quality Assurance

Subject: QA/QC

Date: 9/16/20

QUESTION: Sec 6.4.6.3, Quality Control and Quality Assurance, wants us to discuss QA/QC constructing and non-construction related aspects. What happens if our school is not allowing our students to construct our canoe or test mix designs? Will this section be answered hypothetically, or do we ignore that portion and only discuss the QA/QC in non-construction related aspects? If so, do we risk losing points because we are unable to report that?

RESPONSE: We fully understand that teams will not have the capability to test mixtures, build a canoe, or even meet in person due to current, and most likely future restriction due to COVID. QA/QC procedures, as well as other facets, such as Health & Safety, can be based on practices currently in place and used on past canoes and/or those that you feel should be implemented (what would you do if you could do this?)

RFI No. 14

Section: 6.4.9.2 Appendix B - Mixture Proportions and Primary Mixture Calculation

Subject: Mixtures in Different Colors

Date: 9/22/20

QUESTION: For 6.4.9.2 Appendix B - Mixture Proportions and Primary Mixture Calculation are mixtures that only differ in colors considered as one mixture? If so, do we have to note that the color varies when creating the Concrete Mixture Data Table?

RESPONSE: Well, given that fact that Exhibit 5, clearly indicates that teams are (1) limited to a single concrete mixture design and (2) the proposed mixture can be produced in a multitude of colors, that would make perfect sense. Teams can put a note on the table indicating the proposed colors.

RFI No. 16

Section: 6.4.9.4.4 Freeboard Calculation

Subject: Shallowest Section

Date: 9/22/20

QUESTION: In the first paragraph of Section 6.4.9.4.4 Freeboard Calculation, can you provide further clarification for the phrase “the shallowest section of the canoe”? In the case that this ‘shallow section’ is outside the water due to raised rocker heights would we consider the draught value to be 0? What if there is no clearly defined point where the bottom of the canoe ends due to a rounded longitudinal cross-section?

RESPONSE: The shallowest section is defined as the section with the minimum distance between a horizontal line at the bottom of the canoe and the gunwale. Refer to figure below.



RFI No. 17

Section: 6.4.6.1 Design, Analysis, and Construction

Subject: Enhanced Focus Area Report

Date: 9/22/20

QUESTION: At the end of the third paragraph in section 6.4.6.1 Design, Analysis, and Construction, it mentions that the Enhanced Focus Area Report (EFAR) may discuss more advanced structural methods but they may not be included in the technical proposal. If we are justifying a major design decision based on the results of the EFAR, how would we go about reporting this in the Technical Proposal?

RESPONSE: The sentence before the one cited states "For simplicity, structural analysis is to be limited to 2-D analysis only, based on concepts of mechanics of materials, strength of materials, and reinforced concrete design."

An advanced structural analysis provided in the EFAR may be written where you state that the 2-D analysis in the Technical Proposal results in an answer(s) but that the advanced method may allow you to reduce thickness, reinforcement spacing, better factor of safety, etc.

RFI No. 19

Section: 6.4.9.6 - Appendix F – Detailed Fee Estimate

Subject: Enhanced Focus Area Report

Date: 9/22/20

QUESTION: “Projected total hours (including a breakdown of person-hours), over a two-year period, dedicated to project management, hull design, structural analysis, mixture design development, mold construction and canoe construction, and the preparation of this Technical Proposal, Enhanced Focus Area Report, and Technical Presentation. Exclude any time associated with paddling practice.” Does the person-hours include all time spent on the Enhanced Focus Area Report (including research efforts, meetings, and writing)?

RESPONSE: Yes that would be considered as part of the preparation of the Enhanced Focus Area Report.

RFI No. 23

Section: 6.2 - Text, Margins, Page Size and Layouts

Subject: Margins

Date: 9/22/20

QUESTION: Are all pages subject to ½” margins, including the front covers, back covers, and MTDS?

RESPONSE: Per Section 5.1, All pages – ½ in. (min.) margins on all sides. This applies to the body of the proposal, drawings, schedule, appendices, etc. This does not apply to covers.

RFI No. 26

Section: 6.4.6.1 Design, Analysis, and Construction

Subject: Quantitative vs. Experimental

Date: 9/22/20

QUESTION: In section 6.4.6.1, the Request for Proposal says “As possible, include quantitative (not experimental) test results of mixtures selected.” Does this limit the Technical Proposal to only include quantitative, theoretical proof of mix design selection? If a team has lab access, are experimental results allowed to be used as justifications for selection, or for any part of the mix design process, in the Technical Proposal.

RESPONSE: Omit "not." The C4 understands that a majority of the teams will not have access to labs, let alone a physical presence on campuses, and that the situation most likely will change over time. If you are capable of providing test results, go ahead. For all intensive purposes, teams may use data from previous designs, reference manuals, etc. to provide required values. They are not required to have actual test data this year. So, what in the above paragraph would a good peer reviewer catch?

RFI No. 50

Section: General

Subject: Proofreading

Date: 11/4/20

QUESTION: I was wondering if students are allowed to utilize the writing center to proofread our technical report.

RESPONSE: There are no rules preventing this.

RFI No. 51

Section: 6.4.2 - Cover Letter

Subject: Reusing Letter of Intent

Date: 11/4/20

QUESTION: For the Cover Letter as described in 6.4.2., can the contents on this letter use some directly copied content from the already submitted "Letter of Intent"?

RESPONSE: Yes.

RFI No. 52

Section: 6.4.9.4.4 - Freeboard Calculation

Subject: Interval of Loading

Date: 11/4/20

QUESTION: For Section 6.4.9.4.4., is there a specific interval of loading from unloaded condition to the maximum load of 1000+ that needs to be abided by when recording freeboard?

RESPONSE: As you are to provide the required values for certain loading cases, in the end, you should be able to provide a relationship between displacement and draft (or freeboard). We did not specify a particular interval (such as every 100 lbs).

RFI No. 53

Section: 6.4.9.4.4 - Freeboard Calculation

Subject: Shallowest Section

Date: 11/4/20

QUESTION: After reading your response to RFI No. 16, our team is still uncertain about how it applies to our canoe. In our case, the section displayed in your visual would be the deepest section of the canoe, and every cross section both left and right would be shallower.

Could you please address the previously asked question: "What if there is no clearly defined point where the bottom of the canoe ends due to a rounded longitudinal cross-section?" Would teams potentially select the point on the canoe just before the foam begins?

RESPONSE: The shallowest section is defined as the section with the minimum distance between a horizontal line at the bottom of the canoe and the gunwale.

The profile line of the gunwale is really the point of reference here. What we consider the shallowest section is the point of the canoe where water would start of overflow into the canoe when the canoe is considered to be at a point of equilibrium (no wave action overtopping) and loaded to maximum displacement.

So if you have a canoe that has gunwale line that is horizontal and parallel with water surface, the distance between the horizontal line at the bottom of the canoe and the gunwale would be the same height along the entire length of the canoe.

If the gunwale line is curved up, such as the picture in RFI No. 16, the lowest point of the gunwale along that curve would be the shallowest section.

RFI No. 65

Section: 6.4.8

Subject: Project Schedule

Date: 11/30/20

QUESTION: When creating the project schedule for the technical report, would we organize the schedule as if we were doing our original assignments and roles as we were on campus? For example, when testing our mix designs on campus in previous years, we documented that process in our schedule, but because are not able to test mix designs this year, would we exclude the testing portion in our schedule? Or would we keep it in our schedule and say we hypothetically conducted a mix design?

RESPONSE: Teams are to provide a two-year schedule (please refer to Section 6.4.8). Your schedule for 2020-21 should be based on what you actually did or could do within the limits imposed by COVID. For the 2021-22, you should indicate what you plan to do (you probably will have more flexibility in detailing proposed schedule)

RFI No. 66
Section: 6.4.6
Subject: QA/QC and Sustainability
Date: 11/30/20

QUESTION: Should Quality Assurance and Quality Control and Sustainability be separate headed sections within the Technical Proposal, or can they be discussed within the (6.4.6.1) design, analysis, and construction sections and satisfy the RFP?

RESPONSE: They should be separate. Take a look at the scorecard.

RFI No. 68
Section: 6.4.8
Subject: Project Schedule
Date: 11/30/20

QUESTION: Should display, peer reviews, or paddling practices be included in the team schedule, if so, do these belong in the Engineering Design phase or Construction?
In addition, do Regional and Society-wide Competitions belong on the Project Schedule (and in the Engineering Design phase)?

RESPONSE: Per Section 6.4.8, Project Schedule, "Provide a complete two-year project schedule (September 2020 to March 2022) which includes (1) an Engineering and Design Phase, from issuance of this Request of Proposal through the Society-wide Final Competition at the University of Wisconsin-Platteville, and (2) a Construction Phase, starting no earlier than September 1, 2021 with product deliverable date of no later than March 18, 2022."

The competitions should be on the schedule as milestones for 2021. Since 2022 dates are not set yet and a product delivery date of March 18, 2022 is given, they are not needed. No display is required. Peer reviews can and should be listed on the schedule for 2021. Paddling practice is optional.

RFI No. 70
Section: 6.4.9.6 - Appendix F Detailed Fee Estimate
Subject: Enhanced Focus Area Report
Date: 1/11/21

QUESTION: In Appendix F Detailed Fee Estimate, the RFP says to include the hours of "preparation of this Technical Proposal, Enhanced Focus Area Report, and Technical Presentation." For the Enhanced Focus Area Report, does preparation include additional research and time spent on the enhanced focus areas, or does that only include writing of the report?

If it is only writing, should the Enhanced Focus Area research and time be allocated to a unique category or be included in a pre-existing category, like mixture design development or structural analysis?

RESPONSE: The first bullet of the referenced section states "Projected total hours (including a breakdown of person-hours), over a two-year period, dedicated to project management, hull design, structural analysis, mixture design development, mold construction and canoe construction, and the preparation of this Technical Proposal, Enhanced Focus Area Report, and Technical Presentation. Exclude any time associated with paddling practice." You can breakout hours assigned to Enhanced Focus Area topics. If they are part of a topic listed above, it is simply hours associated with that. If it is a "new" topic - you can break it out. "Preparation" can include research, etc.

RFI No. 73

Section: 6.4.8 - Project Schedule

Subject: Project Schedule

Date: 1/11/21

QUESTION: My team and I were a bit confused about how to manage the two-year canoe schedule. Is that second-year strictly only for proposed construction for the canoe or can it be used for further optimization of aspects such as hull design or mix composition? Additionally, If we could use that second year for more testing would we be expected to have a final mix design in time for the RFP date?

RESPONSE: The second year, Construction Phase, can include items such as verification of concrete mix design which would be practical since the first phase may be purely theoretical. As for hull optimization, we would tend to say no given that is what you are basing your design on for this year.

RFI No. 74

Section: 6.4.8 - Project Schedule

Subject: Construction Phase

Date: 1/11/21

QUESTION: Is the construction phase defined as construction of the final product itself, or does it include necessary prior construction of the formwork and tensioning system?

RESPONSE: This would start from mold construction on.

RFI No. 75

Section: 6.4.9.4.4 Freeboard Calculation

Subject: Displacement

Date: 1/11/21

QUESTION: On page 19 of the RFP, Section 6.4.9.4.4 Freeboard Calculation, the first tasked estimation described in the first bullet point describes a maximum load of 1000 lbs in addition to the self weight. Is the 1000 lbs load a point load or a distributed load? If the 1000 lbs is to be applied as a point load, should it be considered to be applied at the shallow section, the location that creates the maximum moment, or generally disregarded in terms of application position?

RESPONSE: The load can be considered as the displacement of the canoe. You can apply it at the center, or evenly distributed. Consideration can be given to making sure that the canoe is trimmed so that it floats level (for example, you would not put 1000 lb load all a the stern and push the canoe down)

RFI No. 78

Section: 6.4.9.3 Appendix C – Material Technical Data Sheets (MTDS)

Subject: Recycled Concrete Aggregate

Date: 1/13/21

QUESTION: Our team has made our own Recycled Concrete Aggregate; we have its specific gravity, absorption, and compressive and tensile strength from lab tests. We are wondering how we should go about making or obtaining an MTDS for this material.

RESPONSE: Per Section 6.4.9.3 Appendix C – Material Technical Data Sheets (MTDS). "In the event that an MTDS does not exist or that the required information is not provided on an existing MTDS (such as proprietary reasons), a letter from the company (on

letterhead) certifying that the materials proposed to be used follow the specifications shall suffice must be submitted to the C4 for its review and approval, prior to its inclusion in the Technical Proposal. Contact information of the individual providing the letter shall be included. If you are in doubt of a product or MTDS, contact the C4 for review."

In this case, the team is the "supplier." We recommend that a letter be prepared, on University or Department letterhead, indicating what the team is using with a summary of the applicable test results and the standards they meet (or how it was tested). Test results (gradation, specific gravity, absorption, etc.) should be attached as well. The letter should be signed by a team captain and faculty advisor or Department Head indicating that the information provided is valid.

Looking forward to reading how you crushed the concrete to sand-sized particles!

RFI No. 79

Section: 6.4.9.3 Appendix C – Material Technical Data Sheets (MTDS)

Subject: Steel wires and bearing plates

Date: 1/13/21

QUESTION: Do we need to include an MTDS for the materials we are planning to use in our post-tension wirings such as the steel wires and bearing plates?

RESPONSE: We understand that MTDS may not exist for these types of products, so if possible, a link to a product data sheet that may just give dimensions, would suffice.

RFI No. 76

Section: Structural calculations

Subject: Assuming values

Date: 1/12/21

QUESTION: Should we use an assumed value for variables within the structural calculations section that are traditionally determined through experimentation? This question specifically arose for determining f'_c .

RESPONSE: Assumptions can be made but should be referenced or justified. For example, if your team has made concretes in the past that were similar in composition and had tested them, one could say that past experience demonstrates that certain values can be obtained (cite past reports for example). There are also empirical and semi-empirical equations as well. We just want you to make sure that you are making reasonable assumptions - for example, you should not make an assumption that you can have a 50 pcf concrete with a 6,000 psi compressive strength without some justifications for it.

RFI No. 81

Section: 6.4.9.6 - Appendix F

Subject: Appendix F - Detailed Fee Estimate

Date: 1/13/21

QUESTION: When citing our sources for the unit price of each material should it be in the references or provide a link to the site at the end of the detailed fee estimate? Also, what would be the best way for us to cite receipts?

RESPONSE: You do not need to cite sources in the Bibliography. You may include notes in Appendix F, indicating the source. Do not cite receipts.

RFI No. 83

Section: 6.4.9.6 Appendix F – Detailed Fee Estimate

Subject: Free, Free, Free, Free, Free? Free, Free.

Date: 1/14/21

QUESTION: Most of the materials we have used for our Mix have been donated to us in the past by the distributors. Is it possible for us to mark these materials as "free" in our cost estimate?

Also, our team wanted to confirm that no patch mix is necessary this year.

RESPONSE: We would like to see the costs associated with the construction, even if it was donated. You can provide local market value information.

In regards to the patch mix - we can't say that you don't need one as that is a function of your quality in construction. However, since you are only allowed to have one mixture, a separate patch mix is verboten.

RFI No. 83b

Section: 6.4.9.6 Appendix F – Detailed Fee Estimate

Subject: 2021-22

Date: 1/14/21

QUESTION: Should we assume the allocation of finances to 2021-2022, since the majority of our finances next year would be spent procuring materials?

RESPONSE: Yes, teams are to forecast costs and develop an overall project budget

RFI No. 84

Section: 6.4.8 Project Schedule

Subject: Submittals for 2022

Date: 1/14/21

QUESTION: Do we need to include potential submittals under 2021-2022, or are construction and racing the only aspects considered to be a part of that year's competition?

RESPONSE: This hypothetical project considers it for two-years. You can assume for the purpose of responding to the RFP that construction of the canoe prototype is the only requirement for 2022.

RFI No. 86

Section: 6.4.9.4.1

Subject: Internal Stresses

Date: 1/24/21

QUESTION: In Section 6.4.9.4.1. when it says "determine the internal stresses for the cross section at the point of maximum moment," does internal stresses include compressive, tensile, and shear stress or would just compressive and tensile be compliant/sufficient?

RESPONSE: We assume that compressive, tensile and shear stresses would be reported.

RFI No. 88

Section:

Subject: Margin Illustrations

Date: 1/24/21

QUESTION: Do illustrations and graphic designs need to be within the 0.5 in margins or does that just apply to the information and body text? Can the 0.5 in margins be colored?

RESPONSE: We allow flexibility with illustrations and graphics which can be in the margins. Tables, charts, photos, figures, etc. referenced in the body text, should be within the margins.

RFI No. 89

Section: 6.4.4 - Executive Summary

Subject: Reporting Values

Date: 1/24/21

QUESTION: In regards to the concrete and canoe properties, our team is unsure of how to report some of our concrete properties, specifically the strength and slump in the table of Section 6.4.4. We have previously calculated these values from testing, but are unclear how to report these values otherwise. Our school does not permit any student organization to have any access to labs and are not allowed to meet in person for anything related to organizations on campus.

RESPONSE: Sounds like you missed our wonderful Concrete Mix Design webinar! We understand that most teams would not be able to make concrete mixtures this year due to COVID restrictions. As such, anticipated values (based on experience, research, design tables, etc.) can be used to fill in said tables. Just note that it is "anticipated" or "estimated", but when discussing it, you should be able to describe how you came up with it.

RFI No. 91

Section: 6.4.9.3 Appendix C

Subject: Material Technical Data Sheets (MTDS)

Date: 1/25/21

QUESTION: Should we attach the data sheets of the concrete mix materials that were used to the Technical Proposal?

RESPONSE: No. Section 6.4.9.3 Appendix C – Material Technical Data Sheets (MTDS) indicates that a Summary Table of MTDS that summarizes all the materials (cement, pozzolans, aggregates, fibers, admixtures, sealers and curing agents, reinforcement) proposed to be used in the canoe prototype is to be provided, unless a MTDS does not exist or that the required information is not provided on an existing MTDS (such as proprietary reasons). In that case, a letter from the company (on letterhead) certifying that the materials proposed to be used follow the specifications shall suffice. This letter must be submitted to the C4 for its review and approval, prior to its inclusion in the Technical Proposal.

RFI No. 92

Section: 6.4.9.6 - Detailed Fee Estimate

Subject: Materials to build one canoe

Date: 1/25/21

QUESTION: The Fee Summary Sheet asked for the "Costs of concrete, reinforcement and finishing materials ... to produce a single canoe". Considering that our team will not physically build the canoe this year due to Covid, these amounts will be estimated (unlike last year, which reflected actual measured amounts of materials used). Will this estimation be based purely on speculations of the canoe's material demands?

RESPONSE: Yes, based on your design you should be able to calculate surface area and volume of the canoe hull and its components and estimate volume, weight and cost of materials.

RFI No. 95

Section: 6.4.9.6 - Detailed Fee Estimate

Subject: finishing materials

Date: 1/27/21

QUESTION: The cost of "finishing materials" is to be reported in the fee summary sheet. Is there a specific marker in the manufacturing process to be considered for the "finishing" stage? Would these finishing materials be considered things we use on the last week of the project, or perhaps the last step of the process? Or is this based purely on our discretion?

RESPONSE: Finishing materials are the sealers, lettering,, etc. that you place on canoe.

RFI No. 99

Section: 6.4.9.6 Appendix F – Detailed Fee Estimate

Subject: Recycled Concrete Cost

Date: 1/29/21

QUESTION: As a Recycled Concrete Aggregate we are using concrete from past years that are in our laboratory. Should we need to estimate the cost of that concrete when we created it for the detailed fee estimate or can we assume the cost to be 0 for that concrete because it is something that we already had?

RESPONSE: We recommend that you get the cost of RCA from a local supplier and use that as your unit cost. Another option is to estimate the cost of the concrete you made and include the cost for labor of breaking it down to sand-sized particles.

7.0 ENHANCED FOCUS AREAS

RFI No. 9

Section: 7.1 Intent (Enhanced Focus Area)

Subject: Construction of Prototype Canoe

Date: 9/16/20

QUESTION: Section 7.1 lists several examples of potential Enhanced Focus Areas, specifically the "Fabrication of reduced scale prototype canoe" and "Construction of prototype canoe (full-scale or scaled version)." Potentially, if COVID increases in severity as the year progresses and all in-person activities are halted, will teams that have chosen to build a prototype canoe be forced to forfeit all time and effort spent on the project thus far and pursue a different Enhanced Focus Area?

RESPONSE: First and foremost, you would not be required to discount any time spent on any EFA that may be adversely affected to COVID. Section 7.4.3, Enhanced Focus Area Selection Process, even includes an example based on the scenario above - "Discuss any impacts of COVID-19 on the selection process. For example, if fabrication of a prototype canoe (full-scale or scaled version) was deemed the most valuable focus area, but could not be completed because of social distancing requirements, this can be elaborated on."

The goal of the EFA is to have teams elaborate on specific concentrations that they believe would enhance their product and strengthen their proposal. This can be research-based, hands-on (which of course may be very difficult, if not, impossible this year), computer simulation, etc.

Even if you decide that a full-scale prototype is one of the best options, does not mean that you must build a full-scale prototype this year. You could elaborate on what facets make it the best option, could do a full-scale cross section that can prove a construction technique or verify speed of construction or a reduced weight (which you could estimate its applicability to a complete canoe), etc.

RFI No. 10

Section: 7.1 Intent (Enhanced Focus Area)

Subject: Structural Calculations of Prototype Canoe

Date: 9/17/20

QUESTION: Section 7.1 listed several examples of potential Enhanced Focus Areas. One of the examples includes a scaled-down prototype canoe. If the main focal point of the Enhanced Focus Area will be the scaled down canoe, will teams have to provide additional structural calculations of the load cases from Appendix D listed in Section 6.4.9.4 for the prototype?

RESPONSE: There is no requirement to do structural calculations on a scaled-version of a canoe.

RFI No. 43

Section: 7.4.3 Enhanced Focus Area Selection Process

Subject: February deadline

Date: 10/5/20

QUESTION: We are looking at the enhance focus areas and one of our thoughts was to build a prototype of the canoe at a smaller scale. The technical report and enhanced focus areas are to be submitted no later than February 19, 2021. Is the expectation that the prototype be finished by this date or could we argue why this prototype is beneficial and the construction of the prototype be completed shortly after?

RESPONSE: There is no expectation that anything must be built. If you are able to build it, it does not need to be done by the February 19 date. Section 7.4.3, Enhanced Focus Area Selection Process, includes an example (albeit related to COVID impact), if fabrication of a prototype canoe (full-scale or scaled version) was deemed the most valuable focus area, but could not be completed because of social distancing requirements, this can be elaborated on. This can apply to overall schedule issues, not COVID-related.

RFI No. 54

Section: 7.0 - Enhanced Focus Area Value

Subject: Value Added

Date: 11/4/20

QUESTION: When discussing added value from the Enhanced Focus Areas, should the focus be on the future of the actual Concrete Canoe team and the college program, or the value added for the benefit of fulfilling the Request for Proposal during the 2020-2022 time frame?

RESPONSE: The focus should be on how these two areas of concentration enhance the proposal / product being submitted in the time frame, however, this does not prevent it from being useful to future teams.

RFI No. 63

Section: 7.0

Subject: Meal Plan as EFA

Date: 11/19/20

QUESTION: In general, the two Enhanced Focus Areas can be on any aspect of the project to provide added value to the proposal and justify the benefits of the results to help the proposal reviewers (judges) to select the best proposal and therefore product.

To our understanding the Enhanced Focus Areas must help the team to improve their project. Therefore, we thought about making a detailed meal plan in order to complement the paddler's training, which enable us to yield better results in the races. Would it be accepted by the C4 as an Enhanced Focus Areas?

RESPONSE: Nothing stops you from making this your focus area, however, we believe judges will likely not look too favorably on this as providing added value to the engineering proposal. We would recommend considering a more engineering related enhanced focus area.

RFI No. 90

Section: 7.1 - Enhanced Focus Areas - Intent

Subject: Permissible EFA Topics

Date: 1/24/21

QUESTION: At the January Peer Review Webinar, we were surprised to see that Life Cycle Analysis (LCA) was not an option for the EFA topic poll. Is a gate-to-grave Life Cycle Analysis a permissible topic for the report?

RESPONSE: Section 7.1, states in part "Some examples of potential Enhanced Focus Areas that teams can pursue are listed below (these were the ones listed in the webinar, including "other", however, this list is by no means all-inclusive and teams are encouraged to select areas they deem most valuable."
A LCA would be deemed acceptable.

RFI No. 93

Section: Enhanced Focus Areas

Subject: Changing topic

Date: 1/25/21

QUESTION: With COVID Restrictions becoming more strict in our state over the course of the competition, we are not able to complete one of our Enhanced Focus Areas. Is it possible to change one of our original topic for our Enhanced Focus Area Report?

RESPONSE: Well since you did not submit the Enhanced Focus Area report yet, you can change topic if you so choose. However, we direct you to Section 7.4.3, Enhanced Focus Area Selection Process, which states that you can " Discuss any impacts of COVID-19 on the selection process. For example, if fabrication of a prototype canoe (full-scale or scaled version) was deemed the most valuable focus area, but could not be completed because of social distancing requirements, this can be elaborated on.

RFI No. 98
Section: 7.4 Enhanced Focus Area Report
Subject: Link to BIM
Date: 1/29/21

QUESTION: Can we include a link to a video at the end of the report of one of the Areas to present in a better way the final result of our BIM approach?

RESPONSE: This is allowed.

RFI No. 100b
Section: 7.4
Subject: full-scale drawings and specifications
Date: 2/4/21

QUESTION: For the Enhanced Focus Area Report, an example of an option was "development of full-scale drawings and specifications for fabrication of the proposed canoe". Our team wanted to develop these drawings for our canoe mold, rather than the proposed canoe. However, where would we include these drawings in the report? (i.e. are they suppose to be included in the references, be figures throughout the report, or 11x17 drawings included within the 10 pages of the report)

RESPONSE: Drawings would be part of the 10-page limit and since it is a drawing, an 11x17 page is acceptable. You do not need to provide all of the drawings in the report (they can be "examples").

8.0 PEER REVIEW OF TECHNICAL PROPOSALS

RFI No. 20
Section: 8.0 - Peer Reviews
Subject: Assignments
Date: 9/22/20

QUESTION: In Section 8.0, the rules say that Peer Review assignments will be announced by December 1. On this date, will teams also find out from ASCE which teams are peer reviewing their paper?

RESPONSE: Yes.

RFI No. 31
Section: 8.0 - Peer Review of Technical Proposals
Subject: Selection Process
Date: 9/25/20

QUESTION: How are the peer reviews assigned (at least for the regional level competition)? Will they be sent just within our region or sent to others across the nation?

RESPONSE: Once teams submit their Letter of Intent, ASCE will have a handle on who intends to compete. Each team will be assigned three (3) Proposals submitted by other teams. One review will be for a team within their own respective conference; the other two will be for teams outside of their conference.

They will be arbitrarily assigned (perhaps names being pulled out of a hat or a random generator in Excel). Most likely we will prepare an Excel spreadsheet that list all the schools and their assignments that will go out to all teams.

9.0 TECHNICAL PRESENTATION

RFI No. 21

Section: 9.1.4 Presentation Order

Subject: One Day or Longer

Date: 9/22/20

QUESTION: In Section 9.1.4., it states that the presentation order will be given by the “host school no later than one day before the event (if live remote).” Will the presentations occur in all one day as they would in person, or be spread across the two or three days that the competition was scheduled?

RESPONSE: It is envisioned that the presentations would take place in a single day.

RFI No. 22

Section: 9.0 - Technical Presentation

Subject: Platform

Date: 9/22/20

QUESTION: Has a video platform been chosen for the “live remote format” for the Technical Presentations as referenced in Section 9.0.

RESPONSE: Not at this time. The host school along with the conference head judge will coordinate and relay that information to the various schools.

RFI No. 24

Section: 9.0 - Technical Presentation

Subject: Who can view a presentation

Date: 9/22/20

QUESTION: In Section 9.1.4., it states that “The presentations, including the question and answer period, shall be open to the public for viewing.” Will these presentation links be released publicly by each regional competition? And will other teams be able to watch a presentation that is not within their own regional competition?

RESPONSE: For remote presentations it is envisioned that the participants of the conference will be invited to watch the presentations (not open to those outside of the conference). Host schools will provide information on the platform in due time.

RFI No. 72

Section:

Subject: Virtual Presentation -Registered Participants

Date: 1/11/21

QUESTION: The cover letter for the Technical Proposal should include the anticipated registered participants. Since this is a virtual competition, would these participants be the presenters? What is the maximum number of presenters allowed during the virtual presentation?

RESPONSE: For the Conference Competitions, the presenters are the only individuals that would need to be registered participants, since there are no paddlers. Technically the maximum number is 10.

RFI No. 87
Section: 9.0 Technical Presentation
Subject: Presentation Visuals
Date: 1/24/21

QUESTION: Do teams need to submit presentation visuals (i.e. PowerPoints) to the conference folders prior to the conference competition?

RESPONSE: No, this is not a requirement.

11.0 R. JOHN CRAIG LEGACY COMPETITION

RFI No. 18
Section: 11.0 - R. John Craig Competition
Subject: 2015
Date: 9/22/20

QUESTION: In Section 11.0, when it states that “The Alumni must have graduated no later than 2015,” would you be able to confirm that this is 2015 inclusive? As in, if an alumni graduated in Spring, Summer, or Fall of 2015, they qualify.

RESPONSE: If an alumnus graduated in either the Spring, Summer, or Fall of 2015, they graduated NLT 2015.

RFI No. 42
Section: 11.0 - R. John Craig Legacy Competition
Subject: Submission
Date: 10/5/20

QUESTION: How do we submit our entry for the R. John Craig Legacy Award at our conference?

ANSWER: Use the same submission link that you will use for all of your other submissions. – In each conference folder there is a folder named “AAA Upload R. John Craig Submission Videos here” – upload your video into THAT folder – (upload your ::: insert all the other things they need to upload::: to your Student Chapter folder within your conference folder)

Here’s the link:

https://upload.asce.org/public/folder/f0jc-j7fi0eL06Z1Wr9YvA/2021%20Concrete%20Canoe%20Submissions?fbclid=IwAR1L38XXhp9ivw4V_-jAhf4gkD8RhkTwwkIX9ElxJMMLPCCaMZSoGewnp0B8

RFI No. 61
Section: 11
Subject: Length of R. John Craig Legacy Competition
Date: 11/19/20

QUESTION: My team has recently completed our video entry for the R. John Craig Legacy Competition and was wondering how the length would impact our scoring. We are currently 11 seconds over the 3 min limit and were wondering if that was alright.

RESPONSE: Yes.

RFI No. 85
Section: R. John Craig Legacy Competition
Subject: Format
Date: 1/14/21

QUESTION: For the R. John Craig Legacy Competition, are there any preferred formats for the video submittal? For example, could the interview be a Zoom recording?

RESPONSE: There is no preferred or required format. What you propose is acceptable.

13.0 EVALUATION

RFI No. 15
Section: 13.4.5 - Tiebreaker
Subject: Criteria
Date: 9/22/20

QUESTION: In Section 13.4.5. it states that “judges may choose to base their decision on whatever criteria they deem appropriate.” In the event of a tie, will judges consider the peer review & R. John Craig Legacy Competition as components of their final decision, or will they only be judging the elements of the competition worth point values (Technical Proposal, Enhanced Focus Area Report, Technical Presentation, On-Site Competition)?

RESPONSE: The ultimate tiebreaker would be based on the components of the competition where points are accumulated. The likelihood that the competition would come down to a judges' decision is about the same as a global pandemic canceling the national compe..... oh wait. If all else fails, it would either come down to coin flip, rock-paper-scissors-lizard-Spock, or arm wrestling with the opposite arm (best 2 of 3)

RFI No. 41
Section: 13.1
Subject: Overall Score
Date: 10/5/20

QUESTION: In the RFP in Section 13.1, one of the categories that teams will be evaluated on is the technical presentation. It says that the max. points that can be earned for this category is 25 points, with an overall score of 90 points in all categories. However, in the scorecard, the % of the overall score for the technical presentation is 20% and for all categories, the % comes out to be a total of 85%. Is this a discrepancy in the scorecard?

RESPONSE: The scorecard is incorrect. The Technical Presentation is worth 25% of the overall competition score.

EXHIBIT 3 - ELIGIBILITY

RFI No. 55
Section: Exhibit 3
Subject: Eligibility
Date: 11/4/20

QUESTION: As I looked through the Rules I was reading through the eligibility requirements. I want to clarify exactly how many years a student is allowed to participate in the competition. I would also like to know if a student being registered to compete for the team last year counts as a year they participate in competition even though competition was not held.

RESPONSE: There are no currently no limits on years of participation for undergraduate students being registered team members.

EXHIBIT 4 – PRE-QUALIFICATION FORMS

RFI No. 4

Section: General

Subject: Reusing Themes

Date: 9/14/20

QUESTION: Are we allowed to reuse our theme from last year?

RESPONSE: Yes. The Pre-Qualification Form indicates this. "The anticipated canoe name and overall theme is – (please provide a brief description of the theme. The intent is to allow ASCE to follow up to determine if there may be copyright or trademark issues to contend with, as well as to provide insight). Note: teams may re-use past themes."

EXHIBIT 5 – TECHNICAL SPECIFICATIONS FOR CONCRETE AND REINFORCEMENT

RFI No. 2

section: Exhibit 5 - Tech Specs

Subject: Poraver

Date: 9/12/20

QUESTION: Typically, we use Poraver expanded glass as our aggregate. But this year, expanded glass microspheres are not allowed. I do not believe Poraver is a microsphere. As well in the definition of fine aggregate, we would need to use crushed stone, sand, or gravel. If Poraver is an expanded glass does it not count as sand, as glass is formed from sand? I would want to know whether or not we are allowed to utilize Poraver in our mix this year.

RESPONSE: Poraver is indeed a microsphere and is not allowed this year. Exhibit 5 allows the use of C330 aggregate and recycle concrete aggregate (RCA) which must comprise at least 50% of the aggregate volume. The remaining volume can be any other aggregate as long as it is not a microsphere or cenosphere.

RFI No. 25

Section: Exhibit 5 - Technical Specifications for Concrete and Reinforcement

Subject: RCA

Date: 9/22/20

QUESTION: If a Recycled Concrete Aggregate contains banned materials, is the Recycled Concrete Aggregate also banned by the mix design specifications from being used in the chosen mix design?

RESPONSE: We assume that you are asking if you can make a concrete using lightweight RCA derived from concrete with microspheres and/or cenospheres in it. The answer is yes. However, you would need to explain how you intend to crush your concrete to the gradation requirements of fine aggregate. Theoretical vs Practical.

RFI No. 28
Section: Exhibit 5
Subject: Terms and Formulas
Date: 9/24/20

QUESTION: Given the current circumstances along with the new rule changes for the 2021 competition, we are unable to go into the lab and obtain experimental results and therefore many of the values within Terms and Formulas. Furthermore, as the new rule changes have affected our last years previous mixes greatly, it would also be very difficult to use previous values and data to obtain a new concrete mix. Due to this situation, the best case scenario would be a theoretical concrete mix with almost no physical limitations. Are teams expected to give justifications for chosen values and could you provide specific guidelines for said justifications?

RESPONSE: Your mixture design should be based on appropriate values for specific gravity, absorption, etc. which should be easily attained from Material Technical Data Sheets or if need be, directly from the supplier/manufacturer. There are other sources of information (just reference them). That is your justification for values.

RFI No. 30
Section: Exhibit 5
Subject: No access to lab
Date: 9/25/20

QUESTION: Since some materials cannot be used this year, how can we work on a new mix if we do not have access to a lab?

RESPONSE: Please refer to RFI No. 26, Section: 6.4.6.1 Design, Analysis, and Construction dated 9/22/20 and RFI No. 28, Section: Exhibit 5, dated 9/24/20

RFI No. 32
Section: Exhibit 5
Subject: Tire-Derived Aggregate
Date: 9/26/20

QUESTION: Are tire derived aggregates acceptable in the concrete mix for the canoe?

RESPONSE: Tire-derived aggregate can be used for the portion of the aggregate that is neither C330 or RCA, and must meet the gradation requirements for fine aggregate.

RFI No. 35
Section: Exhibit 5
Subject: Lab Access
Date: 10/3/20

QUESTION: Since our university does not permit students on campus, we are unable to access the lab. However, our faculty advisors are able to access the labs on campus. Is it possible for our faculty advisor to conduct the hands on mixing and concrete testing if our mix captain gives the mix design to our faculty advisor?

RESPONSE: If your FA is willing to do so, this is permissible.

RFI No. 36
Section: Exhibit 5
Subject: Microspheres in 2022
Date: 10/3/20

QUESTION: Is there any idea on whether manufactured microspheres will be allowed again next year? If one of our Enhanced Focus Areas is on material testing, would it be worthwhile for our team to look at microspheres for future teams' uses?

RESPONSE: To be perfectly honest, we have no idea yet. Your Enhanced Focus Area should be based on the RFP for 2021.

RFI No. 37
Section: Exhibit 5
Subject: Poraver and Glass Beads
Date: 10/3/20

QUESTION: In years past, our team has used Poraver (.1-.3, .25-.5, &1-2) and glass beads as lightweight aggregates for our concrete mix. In the Request for Proposal, Exhibit 5 (Technical Specification for Concrete and Reinforcement) states, "Manufactured microspheres (e.g. expanded glass microsphere, low density hollow-glass microspheres) or cenospheres (either man-made or extracted from fly ash) are not permitted." Does this mean our team can not use Poraver or glass beads as an aggregate in our mix design?

RESPONSE: Poraver is an expanded glass microsphere and is therefore not permitted this year. As for "glass beads" it is requested that you provide additional information (product name and data sheet). Similar products have different names so it is hard for us to comment on a generic term.

RFI No. 39
Section: Exhibit 5
Subject: 3M (S and K series)
Date: 10/5/20

QUESTION: In reference to RFI #37, please confirm that "glass beads" manufactured by 3M (S and K series) are allowed. See technical data sheet attached

RESPONSE: Exhibit 5 clearly states that "Manufactured microspheres (e.g. expanded glass microsphere, low density hollow-glass microspheres) or cenospheres (either man-made or extracted from fly ash) are not permitted."

The very first line of said technical data sheet says it is a hollow-glass microsphere.



Product Information

3M™ Glass Bubbles K Series S Series

Introduction

3M™ Glass Bubbles are engineered hollow glass microspheres that are alternatives to conventional fillers and additives such as silicas, calcium carbonate, talc, clay, etc., for many demanding applications. These low-density particles are used in a wide range of industries to reduce part weight, lower costs and enhance product properties.

RFI No. 40

Section: Exhibit 5

Subject: Anticipated Density

Date: 10/5/20

QUESTION: In previous years, the mix tables included a section for a theoretical density and a measured density of the proposed mix design. However, this year the table shows that the section for the measured density of the concrete is now replaced with an anticipated density of the concrete design. Could you please clarify what the differences are between theoretical density and anticipated density?

RESPONSE: We assume that you meant the difference between "measured" and "anticipated" density. The C4 assumed that most teams would not actually make concrete as they would be restricted access to labs. As such, the densities predicted would be "anticipated" rather than actually "measured."

Theoretical densities are based on zero air content, while measured, or in this case, anticipated, densities take into account an air content. Measured or anticipated densities must be less than theoretical for a given mixture.

RFI No. 44

Section: Exhibit 5

Subject: Aesthetic Layer

Date: 10/7/20

QUESTION: In a past competition, teams were able to add an exterior aesthetic layer to their canoe using just cement, dye, and water. Are we correct in assuming that would count as a second concrete mixture per this year's RFP?

RESPONSE: Previous editions of the rules and regulations for this competition, especially those in recent years, have not permitted the use of a concrete that had no aggregates in it. All concrete, regardless of its use, had to meet the requirements that were specified at the time. There should not have been a purely cement paste added. As it pertains to this year's competition, teams are to formulate a single concrete mixture.

RFI No. 45

Section: Exhibit 5

Subject: Recycled Aggregate

Date: 10/7/20

QUESTION: What constitutes a recycled aggregate, is that aggregate recycled from crushed concrete or does it mean we can use a recycled material as an aggregate? Is there an ASTM standard to base this off of, or further direction from the CCCC?

RESPONSE: Exhibit 5 specifically calls out "recycled concrete aggregate (RCA)" which is crushed concrete coming from a variety of sources - demolished structures and pavements, concrete cylinders, beams, etc. Teams are permitted to use other materials as aggregate as long as they meet the requirements outlined in Exhibit 5. Those aggregates can be from recycled sources (crushed glass, for example)

RFI No. 46
Section: Exhibit 5
Subject: Perlite
Date: 10/7/20

QUESTION: With the microsphere/cenosphere ban this year, my team is looking into using expanded perlite. Looking at this pdf , certain perlite products may be classified as microspheres, while others are not. If the perlite is not classified by the seller as a microsphere and complies with gradation requirements, is it kosher?

RESPONSE: Perlite that meets the gradation requirements of "fine aggregate" per ASTM C125 is kosher. Perlite microspheres (even if a portion is retained on the No. 200 sieve) are considered manufactured and therefore not kosher.

RFI No. 47
Section: Exhibit 5
Subject: Cellular Concrete
Date: 10/14/20

QUESTION: We are brainstorming ways to keep our canoe light but also strong. Is cellular concrete, defined by American Concrete Institute, as "a low-density product consisting of portland cement, cement-silica, cement-pozzolan, lime-pozzolan, or lime-silica pastes, or pastes containing blends of these ingredients and having a homogeneous void or cell structure, attained with gas-forming chemicals or foaming agents" allowed?

RESPONSE: As long as the mixture design meet all of the requirements specified in Exhibit 5, cellular concrete is permitted.as long as it is produced using foam forming materials meeting the requirements of ASTM C796 (which provides a standard method for laboratory measurement of the performance of a foaming chemical to be used in producing foam (air cells) for making cellular concrete and C869 (which covers foaming agents specifically formulated for making preformed foam for use in the production of cellular concrete and provides the means for evaluating the performance of a specific foaming agents)

RFI No. 48
Section: Exhibit 5
Subject: City Mix
Date: 10/14/20

QUESTION: In previous years we have used "City Mix", which is an expanded polystyrene, as one of our aggregates in our mix design. Would we still be able to use this material in our mix design this year or would it be classified as a manufactured microsphere and therefore not allowed?

RESPONSE: City Mix is coated EPS foam. It is not a microsphere and it is permitted for use as aggregate. Just to be clear, it is not a C330-compliant aggregate.

RFI No. 56
Section: Exhibit 5
Subject: Anticipated Density
Date: 11/4/20

QUESTION: I must preface that I am going to be a judge for a regional conference this year if all goes well. I know this was covered in the mix design webinar but, I was listening while driving so couldn't look at the slides or take any notes. How do you calculate the anticipated density if you are unable to make cylinders and measure the wet density?

I just want to be sure where the students are coming up with their numbers if they are unable to have a physical mix design program.

RESPONSE: Anticipated Density and Measured Density are one in the same. Obviously if you could measure cylinders and get a density in the lab, it would be called a measured value. Since most teams will not actually make a mix in the lab, we called it "anticipated" (i.e., what you think it would be).
So how does one compute an anticipated density?

Teams can simply estimate a density by knowing their proportions of their constituents and applicable values of specific gravity, dosage, % solids, etc. and use the Absolute Volume Method. These proportions can be based on past experience, research (online) and manufacturer/suppliers data sheets. Teams need to be able to explain how they came up with their values.

A simple spreadsheet can be made to help do the calcs.

RFI No. 58
Section: Exhibit 5
Subject: Foamed Glass
Date: 11/10/20

QUESTION: I was wondering if Foamed Glass is allowed? Are they technically microspheres?
<https://www.agsco.com/foamed-glass-spheres/>

RESPONSE: Foamed glass aggregate is allowed for use.

RFI No. 62
Section: Exhibit 5
Subject: EPS
Date: 11/19/20

QUESTION: Could a manufactured foam sphere be included in the mix if it is above a certain size?

RESPONSE: As long as it falls with the gradation of fine aggregate (generally between a No.4 and No. 200 sieve), it is allowed.

RFI No. 64
Section: Exhibit 5
Subject: Thinned down mixtures
Date: 11/30/20

QUESTION: For the 2021 concrete canoe, I know we are allowed only one mix design, but could that mix be thinned down to a paint like consistency to be used to cover the canoe? My team is having great issues with strength reduction due to adding pigment to our mix, and we wondered if that could be done as an alternative to the pigment being applied to the whole canoe. It would only be added to the thinner consistency to be painted on the canoe.

RESPONSE: "Thinning down" a mixture is not allowed.
On a side note, the bigger issue is that your pigment is significantly reducing the strength of your concrete mixture. That really should not happen.

RFI No. 69
Section: Exhibit 5
Subject: Fillers
Date: 1/11/21

QUESTION: In the RFP it is mentioned that we cant use cenosphere and other recycled glass substances in the mix. So, previously in our mix we used K15 as a filler. Therefore can we use K15 as a filler considering that it is made up of glass bubbles?

RESPONSE: The RFP does not make any mention of fillers this year. These materials are prohibited.

RFI No. 77
Section: Exhibit 5
Subject: Pozzotive
Date: 1/12/21

QUESTION: In accordance with the 2021 Concrete Canoe Rules & Regulations we are seeking approval to utilize Urban Mining's Ground Glass Pozzolan Pozzotive in our mix. It is currently in compliance with ASTM C1866, and has shown impressive results as a portland cement replacement.

https://pozzotive.com/wp-content/uploads/2020/07/Pozzotive-Brochure-PDF.pdf?fbclid=IwAR1OfATEb2zZIIIs4vZd-9zmFBA2a8sCB_iMlrN0PnKSDhG7dGm82SdcF6N0

RESPONSE: This is allowed.

RFI No. 82
Section: Exhibit 5
Subject: polystyrene beads and fly ash
Date: 1/14/21

QUESTION: Is the use of polystyrene beads and fly ash allowed?

RESPONSE: Under Exhibit 5, Materials, it states that Pozzolans can include ASTM C618 (Class C, F, or N), ASTM C989 (Grade 100) or ASTM C1240. Fly ash falls under C618. Polystyrene beads can be used as long as you meet all of the requirements outlined in Exhibit 5 for aggregate.

RFI No. 100
Section: Exhibit 5
Subject: Is Perlite ASTM C330?
Date: 2/4/21

QUESTION: Do we need to provide official ASTM-C330 certification for our aggregates? Our perlite supplier has confirmed to us that the grade of perlite we have is conform to ASTM-C330 norms and can be used as a lightweight aggregate, however they do not have any certification. Can we count this aggregate towards our portion of ASTM-C330 aggregate?

RESPONSE: If a product is C330 compliant, it usually has a certification that it does meet this (since independent lab testing of the aggregate itself and in mix designs to check strength and density).

Perlite meets the requirement of ASTM C332 (which is for insulating concrete), but does not meet ASTM C330 (which is for structural concrete). As such it cannot be considered to be ASTM C330 compliant even if the supplier says it does.

RFI No. 97

Section: Exhibit 5

Subject: Waterproofing Cork

Date: 1/29/21

QUESTION: We request clarification of the use of waterproofing materials in our mix design. Our club has decided to replace previously used Poraver with cork as an aggregate. We hope to coat the cork in a waterproofing material to prevent water absorption from our concrete mix and decrease the overall canoe density. Is the use of waterproofing material on a cork aggregate allowed? If so, is there a specific list of approved materials?

RESPONSE: Cork should be a non-absorptive material (either that, or a lot of wine would be ruined, and we ain't talking the fancy box wine). There should be no reason to coat it.

RFI No. 100

Section: RFI No. 58

Subject: Foamed vs Expanded Glass Spheres

Date: 2/10/21

QUESTION: RFI No. 58 implies that the use of AGSCO foamed glass spheres is permitted (link below). What is the difference between this product and expanded glass spheres like Poraver? Isn't the AGSCO product also a manufactured microsphere, and why is it allowed?

RESPONSE: In short, the C4 erred in accepting this product. There is a category of "foamed glass aggregates (FGA)" which are different than expanded glass microspheres and they have similar properties. AGSCO even has categories of foamed glass and hollow microspheres which led to this confusion.

The intent of the rule was to eliminate these types of aggregates (microspheres) mainly due to health concerns - nothing like inhaling small particles that remain airborne for long periods of time and coat your lab with a fine layer of dust. We wanted teams to look at other aggregate sources.

At this point in time, we will not rescind RFI No. 58. If teams used this particular product, we will accept it. Now, don't all of you make a last minute change and use an old mix design and replace your Poraver with AGSCO!

EXHIBIT 8 – DETAILED COST ASSESSMENT

RFI No. 59

Section: Exhibit 8: Detailed Cost Assessment

Subject: Material Rates

Date: 11/12/20

QUESTION: My canoe team and I noticed that in Exhibit 8, material rates have yet to be included as they were last year. Will this information be available soon or will it not be provided this year? Thank you.

RESPONSE: "The material costs to produce a single canoe - concrete, reinforcement, flotation, and finishing materials – are to be provided. Unit rates for materials shall be based on current market price. Cite the source of the values provided." Teams are to provide the unit costs and cite where they obtained them. When citing the source, there is no need to include it in the bibliography. Notes can be provided in the cost assessment.

RFI No. 80

Section: Detailed Cost Assessment Materials Unit Cost

Subject: Freight

Date: 1/13/21

QUESTION: Should the unit prices for our material costs include freight?

RESPONSE: Freight does not need to be included. However, you may include if you wish, but leave it as a separate line item. Teams are not being evaluated on the cost this year (there is no metric provided in the RFP)

RFI No. 94

Section: Exhibit 8 Detailed Cost Estimate

Subject: Raw Labor Rates

Date: 1/27/21

QUESTION: For the raw labor rates, do all of the listed positions in the ASCE Rules and Regulations need to be filled? And for outside companies and technical help that simply donated materials, but put no input or advice into the team's project, would they still be considered outside consultants with an outside labor cost?

RESPONSE: No, not all of the listed positions do not need to be filled. Suppliers of materials are not considered outside consultants.