



16th German Concrete Canoe Regatta

Invitation to apply



9 and 10 June 2017
Cologne, Fühlinger See

InformationsZentrum Beton GmbH

16th German Concrete Canoe Regatta

Host

The German Cement and Concrete Industries

Represented by

InformationsZentrum Beton GmbH
Steinhof 39
40699 Erkrath

Regatta team

Torsten Bernhofen
Dipl.-Ing. Roland Pickhardt
Dr.-Ing. Diethelm Bosold
Dirk Pagels
Dipl.-Wirt.-Ing. (FH) Peter Schermuly

Registration and queries

InformationsZentrum Beton GmbH
Dr.-Ing. Diethelm Bosold (Regatta management)
Biebricher Straße 74
65203 Wiesbaden
Allemagne / Germany
Telephone +49 0611 261066
diethelm.bosold@beton.org

Co-Organisers

The City of Cologne
Kölner Regatta Verband e.V.
Technische Hochschule Köln
Association of German Concrete Engineers (VDB) e.V.

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Conditions of Participation

1. Training centres, schools, universities of applied sciences, universities and other institutions that teach concrete technology are eligible to participate.
2. The interim (non-binding) application is to take place by 31 December 2016. The form can be downloaded at www.betonkanu-regatta.de. The final binding date for submitting applications is **8 May 2017**. The post-mark or email date will be taken as the date of submission. The canoe name must also be decided by this point.
3. The canoes and watercraft must comply with the following rules.
4. The canoe or watercraft must not have been built before **1 October 2016**. No more than two canoes are permitted for each participating institution.
5. The canoes and watercraft must be designed and built by the pupils, trainees or students of the participating institute who are trained in concrete technology.
6. Only pupils, trainees or students who actively contributed to the construction of the canoes are allowed to take part in the regatta sports competition.
7. For each participating institution a maximum number of two canoes with two teams each is permitted.
8. Participants who do not meet the aforementioned requirements will be excluded from the competition together with their canoes and watercraft.
9. All competition participants must be able to swim at least 100 m. The organiser recommends the use of life jackets.
10. The regatta team may make exceptions in special cases. Such applications must be submitted to the team in writing. With respect to such applications, the regatta team's decision is final. There can be no appeal.
11. The canoes and watercraft must be in the competition area by 10 a.m. on Friday, **9 June 2017** at the latest. The presentation of the canoes and watercraft of the Open Class and the jury's assessment will take place in the competition area. Canoes for the sports competition will be assessed for construction and design (by two juries) and weighed and measured. Watercraft for the Open Class will be assessed by one jury. The canoes and watercraft must be removed from the competition area by 11 a.m. on Sunday, **11 June 2017** at the latest.
12. The organisers allot the location of the presentation places where the canoes are to be parked and displayed to the judges and visitors. These places are limited to an area of 4 m x 6.50 m per canoe (or 5 m x 6.50 m for two canoes) except for the watercraft of the Open Class.
13. The event organisers accept no liability. Participation in and attendance at the Concrete Canoe Regatta is entirely at the participants' own risk.

Preliminary Note

This invitation to apply contains the rules and regulations for

- Competition Class concrete canoes
- Open Class watercraft
- Regatta tee-shirt competition

Competition Class Concrete Canoes

Rules for Construction of a Concrete Canoe

1. The canoe must be constructed in such a way that it can be propelled by two people, kneeling, sitting or standing, using single-blade paddles. Rowlocks and steering gear are not allowed. Soft mats are permitted solely to provide protection for knees and feet. The mats must be soft enough to bend and may not be used to spread the load on the canoe hull to prevent it being holed. The jury reserve the right to do a punch test during the inspection.

2. Limits for canoe dimensions are as follows:

- Minimum length: 4.0 m
- Maximum length: 6.0 m
- Minimum width: 0.7 m
- Maximum width: 1.0 m

3. The canoes must be made from reinforced concrete, fine aggregate concrete and / or cement mortar. The strength and rigidity of the canoes should be achieved through profiling and reinforcement and through the composition of the concrete, fine aggregate concrete and / or mortar (hereafter simply called the concrete mix).

➤ Aggregates:

Natural or synthetic, impermeable or porous, no restrictions on grain size.

➤ Binders:

Cement according to EN 197, EN 14216 or DIN 1164 or as permitted on building sites.

➤ Admixtures:

Additives according to DIN EN 206-1 / DIN 1045-2 or according to the relevant national standard. Additives such as fly ash, silica dust etc. must not exceed 25 % of the total weight of the cement.

➤ Reinforcement:

All types of reinforcement, such as reinforcement steel, wire, synthetic or natural fibre, wire mesh, and mats and fabrics made from the aforementioned materials are permitted. Sheet metal or other laminar or rod-shaped independently bracing constructions are not permitted.



➤ Synthetic materials:

A maximum of 2 kg can be used in the canoe. This includes any synthetics in the concrete mix, bonding layers, paintwork and so on, but does not include the weight of floats and stickers.

4. Paintwork, undercoats, moisture-proofing, wax etc. may only be applied to the outer skin of the canoe and only above the waterline of the canoe when floating with crew on board.

5. The keel, like the entire canoe casing, must be made of concrete, fine aggregate concrete and/or mortar. Keels made of or encased in other materials are not permitted.

6. Floats should be fixed to the canoe to make it unsinkable. Buoyancy should exceed the weight of the canoe itself by at least 500 N. It must be possible to remove the floats for the judges' evaluation. For the race, the floats must be fixed to the canoe in such a way that they will not become detached should the canoe sink or break apart. Floats must not be used as load-bearing or bracing elements. The jury reserves the right to inspect floats and buoyancy aids, which should enable the canoe to float back up should it become submerged beneath the water. In any case, however, calculations proving the effectiveness of the floats and the buoyancy of the canoe, should it become submerged, must be provided along with the construction report.

7. A buoy must be attached to the canoe with a line at least 10 m long so that if the canoe sinks, despite the floats, the buoy will float up unimpeded, thus marking the location of the canoe.

8. Making the canoe watertight must be achieved via the composition and treatment of the concrete.

9. Seats and other equipment (covers, stabilisation fins, etc.) should be made of concrete (see sub-item 3). Any equipment not made of concrete in compliance with sub-item 3 must be removable; such equipment must not be used to provide additional bracing for the canoe. The jury reserves the right to carry out a test load during their inspection.

10. **NEW:** A race number holder must be mounted at the bow of each canoe. A picture of and sources for these holders can be found at www.betonkanu-regatta.de. Race numbers will be provided by the organisers.



11. A report (maximum 10 pages size A4) detailing the design and construction of the canoe, the materials used and the concrete mix, together with a drawing and list of materials (type and quantity), must be submitted by 8 May 2017 by post only (date of post-office stamp). You are requested to also submit photos and details of any literature consulted. It is recommended that the framework below be used for the construction report.

- General – design concept, explanation of name
- Dimensions, weight, evidence of buoyancy
- Formwork, reinforcement, bracing
- Concrete mix, binders, admixtures, aggregates, preliminary tests
- Construction of the canoe, bracing, floats, surface treatment
- List of materials, drawing of canoe
- Name of the professor, trainer or teacher responsible, together with a list of all contributors

12. Before the race, the canoe will be assessed and checked to confirm it complies with the report submitted.

13. Failure of the canoe to meet the requirements laid out in the construction rules may result in disqualification, or at least the deduction of points or allocation of time penalties in all competitions and races for each individual breach. Information on any such penalties will be given on the day of the regatta.

Competition Rules

1. The sports competition will comprise a combined straight line and slalom course. Further details will be provided later in the programme for the Concrete Canoe Regatta.

2. One team comprises two participants in the competition and a maximum of two substitutes. These must be pupils, trainees or students

- who are enrolled in the institution they are representing,
- who are being trained there in concrete technology and
- who actively contributed to the construction of the canoe.

Proof thereof (student ID card, ID with photograph or confirmation by the professor or trainer responsible) must be included in the final report and must be presented to the event organisers on request. False information will result in disqualification.

3. Each team must nominate a team captain and a deputy.

3.1 The team captain is to take part in a central briefing about the regatta procedure and the expanded safety instructions. Participation is obligatory and must be confirmed by a personal signature. Failure to take part will result in the exclusion of the team from the competition.

3.2 The deputy team captain is to take over the captain's duties in case of the captain's absence, particularly in relation to the inspection and presentation of the canoe.

4. The team may not be changed during the competitions on the water.

5. All participants in the competition must be able to swim a distance of at least 100 m. The organiser recommends the use of life jackets.

6. Teams are not permitted to call upon outside assistance during the race.

7. Deliberately colliding with or damaging other canoes will result in disqualification.

8. A canoe may only cross the line of travel of another canoe approaching from the rear if there is a minimum of one boat length between them.

9. Every canoe must bear a name. The name must be clearly displayed above the waterline. For the race itself, each team will be given a race number, which must also be clearly displayed (see p. 5, sub-item 10).

10. A canoe may only take part in two races, with a different crew each time.

11. Any protests against judges' decisions are to be submitted immediately in writing to the regatta office. A submission fee will be charged for each protest. The regatta office will forward the protest to the chairman of the arbitration board. The arbitration board's decision will be announced in writing after consultation with the chairman of the panel of judges involved. There can be no appeal.

12. All concrete canoes, formwork and transport aids must be removed after the regatta.



Prizes, Certificates and Participation Plaques

Prizes will be awarded for

- › Construction
- › Design
- › Sports competition

Winners of individual competitions will receive the cup for that competition and / or additional prizes. There will also be other prizes, including cash prizes.

Every participating institute will receive a commemorative plaque made of concrete as recognition of their contribution. Special tribute will be paid to the builders of the **heaviest** and **lightest** canoes. There will be a **“booby prize”** to help cheer up the most unlucky crew.

Construction Prize:

The following will be evaluated: design concept, special features of concrete technology, weight (the lighter, the better), position in the water, solutions for details, etc., and the report submitted (see also the section “Evaluation criteria”)

Design Prize:

Conformity of form and function of the canoe, plus craftsmanship and appearance on land and in the water with crew on board (see also the section “Evaluation criteria”).

Sports Competition Prize:

Winners of the races will be determined in the two finals.

The organiser reserves the right to award additional prizes.



Construction and Design Prizes can only be awarded to participants in the sports competitions! After the preliminary heat the canoe has to reach the finish line while retaining its manoeuvrability.

Evaluation Criteria for the Construction Prize

1st prize will go to the canoe that gains the highest score according to the criteria listed below. Each judge is allowed to give 4 to 8 points (maximum) per evaluation criterion. The criteria will be weighted according to their significance. Any deviations from the "Rules for Construction of a Canoe" will result in the deduction of points and the allocation of time penalties in the sports competition. High scores will be given for new concepts in canoe construction, reinforcement and concrete mix, for primary research into building materials, for independent creation of formwork and for good solutions for details.

The following points will be included in the evaluation:

a) Technical report:

Report submitted on time? Report complete? Too short or too long-winded? Well presented? Pictures, detail drawings and descriptions of how the canoe was made? Consistency between the report and canoe produced?

b) Design concept:

Canoe design new / known? Complex / simple design? Ecological viewpoint considered?

c) Materials concept:

Were special solutions applied for the reinforcement and the concrete? Were preliminary tests of concrete mix suitability carried out?

d) Formwork:

Formwork designed and built independently?

e) Execution:

Casting method? Craftsmanship? Surfaces? Repairs?

f) Bracing of the canoe:

Were the requirements of the invitation to apply adhered to?

g) Detail solutions:

Seats? Covers? Buoy effective and attached securely? Floats and their proper fixing?

h) Presentation of the canoe and communication to the jury:

Expert explanations? Use of appropriate media? Poster board? Pictures? Samples? Demonstration material?

i) Weight and wall thickness of the canoe:

The lighter the weight of the canoe per metre in length, the higher the score.

j) Does the canoe comply with the rules for canoe construction?

k) Position in water / freeboard with crew:

How does the canoe sit in the water? Is it in danger of capsizing? Does it travel in the desired direction? Freeboard too low or too high? (Ideally it should be approx. 15 to 20 cm.)

l) Durability when racing:

Was the canoe still seaworthy after the preliminary heats? Were considerable repairs required?



Evaluation Criteria for the Design Prize

1st prize will go to the canoe that gains the highest score according to the criteria listed below. For weighting of points and deviations from the rules, see Construction Prize.

a) Canoe name:

Name original and generally appealing? Does the name bear any reference to the canoe / design / institution or construction location? Legibility and craftsmanship?

b) Presentation on land:

Presentation concept? Overall impression? Special features?

c) Shape and design of the canoe body:

Design objectives recognisable? Appropriateness of the shape? Overall aesthetic impression?

d) Details:

Colour of concrete (natural, coloured using pigments, specially selected cement)? Structure, reliefs or other features?

e) Outer / inner surfaces:

Holes, tears and cracks? Concrete cover of reinforcement? Repair points? Rough spots, ridges, edges? Evenness?

f) Detail solutions:

Original solutions for buoy and floats? Spray protection? Seats? Edge protection? Safeguarding against injury?

g) Canoe in the water:

Position in the water when crew on board? Harmony between canoe and crew? Overall aesthetic impression?



Open Class Watercraft

Motto: “It’s concrete but it floats!”

Concrete canoes participating in the sports competition are not permitted to enter the Open Class.

Watercraft for the Open Class must satisfy the following criteria:

The floating body of the watercraft must be made of concrete and must function according to Archimedes’ Principle. Watercraft made of insulating material covered with cement paste or similar are not permitted.

2. The watercraft must be constructed in such a way that the crew are able to manoeuvre and steer it in the water.

3. Selection of drive is free, but electric motors (excluding solar cell power) and combustion engines may not be used.

4. There are no specifications relating to dimensions and shape of the watercraft. However, the draught may not exceed 1.0 m.

5. Shape and weight of the watercraft must be designed so that the crew, possibly with helpers, is able to bring the watercraft to the water. A slipway suitable for normal pleasure craft is available.

6. The watercraft's buoyancy should exceed its weight by at least 1,000 N. Floats should be fixed to the watercraft to make it unsinkable. It must be possible to remove the floats for the judges' evaluation; the floats must be fixed in such a way that they will not become detached should the watercraft sink or break apart. Calculations proving the effectiveness of the floats must be provided with the construction report.

7. Making the watercraft watertight must be achieved via the composition of the concrete. Paintwork is only permitted above the waterline.

8. The concrete composition of the floating body shall meet the same requirements as for the canoes.

9. All types of reinforcement are permitted. Sheet metal or other laminar or rod-shaped independently reinforcing constructions are not permitted.

10. In accordance with point 11 (see p. 5) of the Rules for Construction of a Concrete Canoe, a report detailing the design and construction of the watercraft must be submitted to the Regatta Committee by 8 May 2017 by mail only (date of post office stamp).

The winner of the Open Class will take home a prize of € 1,500. The runners-up will be awarded € 1,000 (second place) and € 500 (third place).

Evaluation criteria and prizes:

There will be no races in the Open Class. However, the watercraft will be required to take part in a parade (boat parade) with the canoes in the water on the day of the competition. The following will be assessed:

- › Originality
- › Construction
- › Use of concrete, including for “accessories”
- › Design
- › Equipment
- › Drive
- › Crew / watercraft harmony
- › Presentation (e.g. visual, acoustic)



Regatta Shirt Competition

Who has the Best Regatta Shirt?

We are also looking forward to seeing your individual regatta shirt designs (painted or printed) at this 16th Concrete Canoe Regatta. We are hoping to see a colourful display as in previous regattas. 15 regatta shirts will be selected by a jury and presented at the reception evening. The participants themselves will present the shirts, assess them and allocate the award for the best regatta shirts during the reception evening. The winners receive the glory – and also a prize.

In order to participate in the tee-shirt competition, you must submit a drawing (A4 size) or a colour copy of the motif you have designed along with the construction report (by 8 May 2017) and you must hand in a sample shirt of your design at the regatta office during registration on 9 June 2017. The regatta shirt will be returned to you after the competition or when you check out.



Application and Registration

- **Applications and submission of documents**
- **Questions on the invitation to apply and on the Concrete Canoe Regatta itself**

InformationsZentrum Beton GmbH
Dr.-Ing. Diethelm Bosold (Regatta management)
Biebricher Straße 74
65203 Wiesbaden
Allemagne / Germany

Telephone +49 (0)611 261066
diethelm.bosold@beton.org

Please also consult the following website:
www.betonkanu-regatta.de

The website also shows:

- the German version of this invitation to apply
- the form for preliminary registration

The German version of the invitation to apply is authoritative.

The paper is translated from the German original according to best knowledge, 29 July 2016: Bridget Schäfer

Host

The German Cement and Concrete Industries

Represented by

InformationsZentrum Beton GmbH

Steinhof 39
40699 Erkrath

Event Organiser

InformationsZentrum Beton GmbH

Torsten Bernhofen
Telephone +49 (0) 5132 502099-0
torsten.bernhofen@beton.org

Dipl.-Ing. Roland Pickhardt
Telephone +49 (0) 2154 88799-2
roland.pickhardt@beton.org

Registration and queries

InformationsZentrum Beton GmbH
Dr.-Ing. Diethelm Bosold (Regatta management)
Biebricher Straße 74
65203 Wiesbaden
Telephone +49 (0) 611 261066
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