

CONCRETE CRICKET BAT COMPETITION

Concrete is a versatile material with many applications in not only structural engineering but also as an architectural and practical material for use in furniture and recreation.

This year students from across New Zealand will have the opportunity to push the boundaries for the application of concrete even further by designing and building a cricket bat made from concrete at the Concrete NZ Conference.

1.0 GENERAL RULES

1.1 PARTICIPANTS

Each team should consist of between 2–4 members. Membership in the team is open to any university student or person involved in the concrete industry. For student entries, advice and assistance may be provided by others but the leadership and management of the work and any presentations if applicable must be by the students.

1.2 TRANSPORT AND REMOVAL

The participating organisations are responsible for the transportation of the cricket bat to the conference venue and the removal of the cricket bat and any components/debris.

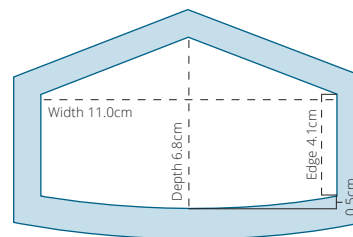
2.0 CRICKET BAT REQUIREMENTS

Two cricket bats are required for each team. The requirements are provided below.

2.1 DIMENSIONAL AND MASS REQUIREMENTS

The bat shall meet the following specifications, based on Law 5 of the laws of cricket (Figure 1):

- Overall length of the bat including handle shall not be more than 96.52 cm.
- The blade shall not exceed Width 11.0 cm, Depth 6.8 cm, Edges 4.1 cm.
- The handle shall not exceed 52% of the overall length of the bat.
- A protective covering that is not rigid, either at the time of its application to the blade or subsequently, may be placed on surfaces. The maximum thickness of the covering is 0.1 cm.



Dimensions of aperture

Total depth: 2.68in / 6.8cm

Width: 4.33in / 11.0cm

Edge: 1.61in / 4.1cm

Curve: 0.20in / 0.5cm

Note: The curve of the lower edge of the aperture is an arc of a circle of radius 12.0in / 30.5cm, whose centre is on the vertical line of the aperture.

2.2 CONCRETE MATERIALS

The bat can be constructed from any form of cementitious binder system combined with aggregate that forms a mortar or concrete. There are no restrictions on the type or size/grading of aggregate used.

The blade must contain at least 50% concrete/mortar by volume.

Intentionally entrained air or void spaces are permitted.

2.3 REINFORCING

The cricket bat must be reinforced. Any type of reinforcing material, including fibres, are permitted.

2.4 HANDLE

The handle and blade of the cricket bat can either be cast as one component or separately and joined together. The handle must also contain at least 50% concrete/mortar by volume.

3.0 COMPETITION PROCESS

The competition will run during the Concrete NZ Conference and include an oral presentation and cricket net practical evaluation by the judges in the on-site cricket net.

3.1 ORAL PRESENTATION

Prior to the match each team will have the opportunity to making a brief presentation about their bat. This should highlight the design and any innovations and summarise the construction process. The oral presentation will be used to help judge the evaluation criteria.

3.2 BAT EVALUATION

The overall design, construction and appearance of the cricket bats and the quality of the work will be evaluated by the judges. A sample assessment sheet is provided in the Appendix below.

Teams are encouraged to consider low-carbon materials as part of the design, which may contribute to the design and innovation scores. Furthermore, a 10% bonus in total score will be given to the team that demonstrates the lowest embodied carbon mix or binder.

The evaluation process includes a 'playability' component, which will see the judges face a number of deliveries in the on-site cricket net. A soft rubber or indoor ball will be used. Further details including health and safety information will be provided at the venue.

3.3 EVALUATION AND SCORING

Category	Weighting
Cricket bat requirements evaluation (see Section 2)	75%
Cricket bat 'playability' by judges	25%

4.0 PRIZE

The winning team will take home a trophy, framed certificate and the satisfaction of have designed and built with the best concrete cricket bat in Aotearoa New Zealand!

5.0 KEY DATES

Confirmation of team involvement	15 August
Presentation and evaluation	23 October

6.0 REGISTRATION OF INTEREST

Could those considering entering the competition please register your interest by sending the details below to the Learned Society Convenor – Adam Leach adam@concretenz.org.nz / 0275355144.

Name. _____

Organisation. _____

Email. _____

Mobile. _____

APPENDIX: SAMPLE CONCRETE CRICKET BAT EVALUATION SHEET - FOR REFERENCE

CONCRETE NZ CONCRETE CRICKET BAT COMPETITION - CRICKET BAT EVALUATION SHEET

Organisation	Design and visual appearance (25)	Construction method and quality (25)	Innovation (25)	Playability (25)	Overall # (100)

Note: a 10% bonus will be given to the team that demonstrates the lowest embodied carbon mix or binder.

COMMENTS: _____
