



Nordic Concrete Research Workshop

ACCELERATED FREEZE-THAW TESTING OF CONCRETE

24-25 January 2022 at Technical University of Denmark (Kgs. Lyngby, Denmark)

Scope

There is a push for performance-based concrete design at the expense of deemed to satisfy approaches. This also pushes for more performance testing. There are several test standards that can be used to quantify concrete frost resistance, e.g. ASTM C666, ASTM C672, and CEN/TS 12390-9, where the later contains three different test methods to choose from. In addition, a number of product standards for concrete products also specify different accelerated freeze-thaw methods.

The aim of the workshop is to discuss the results of recent years' research in relation to accelerated freeze-thaw testing of concrete. For example:

- How well does specific methods represent field conditions?
- Even the test principle is similar, test methods differ in specific parameters. The three test methods in CEN/TS 12390-9 (slab test, cube test, and CDF test, respectively) e.g. differ with respect to
 - duration of capillary suction prior to freeze/thaw (slab: 3 days; cube: 1 day; CDF: 7 days)
 - type of liquid used for capillary suction (slab: pure water; cube & CDF: 3% NaCl)
 - amount of freezing medium relative to test surface (slab: 3 mm; CDF: 5 mm; cube > 10 mm)
 - Temperature cycle (slab: 24 h; cube: 24 h (not identical to slab cycle); CDF: 12 h)How does choice of specific parameters influence the test result?
- Are some test methods more or less favorable for concrete with supplementary cementitious materials (SCM)?
- How can reproducibility be improved and inter-laboratory variations be limited?

The workshop is not limited to the above questions – they are only meant as inspiration. All presentations related to the over-all topic “Accelerated freeze-thaw testing of concrete” are welcome.

Organizing committee

If you need further information on top of what is stated in the following pages, please contact the organizing committee:

- Associate professor Marianne Tange Hasholt (matah@byg.dtu.dk),
Dept. of Civil Engineering, Technical University of Denmark
- Associate professor Katja Frid (katja.frid@mau.se),
Dept. of Materials Science and Applied Mathematics, Malmö University



Tentative program

(final program with titles of presentations are expected to be announced 5 January 2022)

Monday, 24 January 2022

Basically, the workshop is a 1 day event taking place Tuesday, 25 January 2022. However, there are good reasons to arrive at DTU already Monday 24 January.

It is expected that Abdul Faheem will defend his PhD thesis *“Influence of thermal boundary conditions and temperature distribution in concrete on frost scaling – experimental and numerical study”* at 1.00-approx. 4 pm in the afternoon, and this topic is also relevant for accelerated freeze-thaw testing of concrete.

After the PhD reception, you can attend the workshop dinner, where there are excellent opportunities for mingling with frost colleagues, have more informal discussions, etc. The venue of the dinner is going to be announced later.

Tuesday, 25 January 2022

8.30-9.00	Registration & coffee
9.00-9.15	Introduction
9-15-10.15	Presentations and discussions
10.15-10.30	Coffee break
10.30-12.00	Presentations and discussions
12.00-13.00	Lunch
13.00-14.30	Presentations and discussions
14.30-15.00	Coffee break
15.00-16.00	Final discussion and closure

Proceedings

There will be no workshop proceedings. It is planned to submit an extensive workshop summary to the journal *“Nordic Concrete Research”*. All workshop presenters will be asked if they would like to co-author the summary.



All the practical details

Venue

Technical University of Denmark (DTU)
Anker Engelunds Vej 1
DK-2800 Kgs. Lyngby

Registration

Registration of presentations

If you would like to present at the workshop, please send a mail including

- Headline
- Short summary (100-200 words)

to Marianne Tange Hasholt (matah@byg.dtu.dk) no later than 15 December 2021.

Registration of workshop participation

If you would like to participate in the workshop, please register here:

www.conferencemanager.dk/ncr-2022.

There are two options for registration:

- 24-25 January (2 days, including workshop dinner, lunch and refreshments), fee: DKK 1500/EUR 200.
- 25 January (only the last day, including lunch and refreshments), fee: DKK 750/EUR 100.

In the ConferenceManager registration system, there is a textbox for comments. Please state in this textbox, if you have any food allergies, etc.

Deadline for registering your workshop participation is 7 January 2022.

Accommodation

Accommodation is not included in the workshop fee. If you are looking for a hotel in the vicinity of DTU, please have a look at the following webpage:

https://www.byg.dtu.dk/english/about/contact_and_practical_info/accomodation

How to get to DTU

<https://www.dtu.dk/english/about/campuses/dtu-lyngby-campus/getting-there>

Note: COVID-19

In case COVID-19 restrictions leads to travel restrictions, so it is not possible to travel to Denmark, or if the workshop format is in conflict with the COVID-19 guidelines of the Danish Health Authorities in January 2022, the workshop will be postponed.