

Assessment group presentation 1: instructions

This is a group presentation, in which we assess your understanding of your group's degradation mechanism, and to characterize the reaction products. You are expected to search in the literature to present information that goes beyond what is included in the lectures.

The degradation mechanism, and teaching assistant, assigned to each group are:

- **Group #1** – Carbonation – Dr. Alice Titus Bakera <alice.bakera@epfl.ch>
- **Group #2** – Chloride ingress (marine exposure) – Dr. Beatrice Malchiodi <beatrice.malchiodi@epfl.ch>
- **Group #3** – Chloride ingress (deicing salts) – Dr. Alastair Marsh <alastair.marsh@epfl.ch>
- **Group #4** – Alkali silica reaction (i.e. ASR) - Dr. Federica Boscaro <federica.boscaro@epfl.ch>

Objectives

- Explain the principles of degradation mechanism X.
- Suggest how to characterize the reaction products from degradation mechanism X, using 2-3 different characterization methods.

Competencies to be assessed

- Understand and explain the principles of degradation method X.
- Apply knowledge of characterization methods to degradation reaction X and its reaction products

Presentation outline

- The general **outline/format** for your presentation should be:

1. Explanation of the principles of degradation mechanism X

- a. What are the chemical and/or physical transformations that happen?
- b. What are the reactants and reaction products?
- c. What are the combination of conditions (in terms of the material itself, and environmental exposure) required for this degradation mechanism to happen?

2. Suggest how to characterize the reaction products from degradation mechanism X.

- a. Explain the working principles of 2-3 chosen characterization method(s) (This should be short – 1 slide maximum for each technique, and it should not copy and paste from the lecture slides)
- b. Explain what useful information each characterization method gives about the reaction product(s), and/or be used to identify it.
- c. Explain how the chosen characterization methods can be used together, to improve understanding (compared to if only one of those characterization method is used).

Instructions

- **Time limit** = 15 minutes maximum. There will then be 5 minutes for questions.
- The presentation time should be shared approximately equally between the group members. (This should not include the general introduction and thank you for listening slides)
- A **characterization method** is defined here as an experimental technique which gives information about the physical and/or chemical characteristics of a material.
- Examples of what are NOT considered to be characterization methods include:
 - Modelling approaches (e.g. thermodynamic modelling)
 - Predictive testing techniques (e.g. rapid chloride permeability test)
- We recommend that you begin searching for the techniques explained in the Characterisation lecture – however, you may consider other techniques too.
- We expect some **basic ‘good habits’** in your presentation – these are:
 - Include a title slide that states all the members of your group
 - Use animations/transitions sparingly
 - Include slide numbers
 - Ensure that any text on your slides is visible from the back of the lecture theatre (a general rule is minimum font size of 12)
 - We encourage you to use figures and diagrams to help explain your points. These can be from articles in the literature, or you can make your own diagrams too.
 - Include appropriate references for any content included in the presentation that is not your own. This includes, figures, images and quotes.
 - Only cite research articles, or textbooks (unless there is a special reason).
 - Do not cite the lecture slides – find your own sources of information to cite.
- We recommend you use the EPFL powerpoint template, however this is not mandatory.
- Before the presentation, please gather all the presentations on a single laptop (with either a USB-C or HDMI connection) – this really helps to save time, to avoid switching between laptops.
- You may **ask questions to the Teaching Assistant** assigned to your group. However, you should only ask reasonable and ‘good quality’ questions (and not ‘bad quality questions’). A good quality question is specific, and shows you have already thought about the topic and tried to come up with an answer yourself. A bad quality question is extremely broad, and/or simply asking for the answer.
- Examples of good questions:
 - “We’ve noticed that there are some studies on degradation mechanisms happening at the same time (e.g. chloride ingress and carbonation) – should we exclude these from our scope?”
 - “There are some studies that study the decalcification of C-S-H by exposing synthetic samples to CO₂ – is this the same thing as decarbonation, or a different phenomenon?”
- Examples of bad questions:
 - “We can’t find any good articles for our topic, please can you send us some?”
 - “Can you explain carbonation to us?”
- If the answer of a question is relevant to all groups, we will share the answer with everyone.