



DOPAS

Material Reference: D3.6

Content Reference: 3.2.3

### Exercise 3: Stress test of concrete

Simplified stress test on cement paste samples - evaluation of compressive strength.

- Methodology introduction and description.
- Characterisation of samples - samples origin, samples dimensions.
- Guided tests on laboratory device.
- Evaluation of results.

Samples: Cement paste specimens

Testing device: FORM+TEST Digi Maxx C-20 PROTEUS

Evaluation:  $\text{compressive strength} = \frac{\text{force}}{\text{sample area}}$

sample no.	sample dimensions	sample area	force	compressive strength



DOPAS

D7.2

Material Reference: D3.8

Content Reference: 3.2.5

### Exercise 4: Interaction of concrete with bentonite

Evaluation of pH in cement/concrete and bentonite - role of pH in cement-bentonite interactions.

- Methodology introduction and description.
- Preparation and characterisation of the samples - weights, volumes.
- Interaction of solid and liquid phases.
- Calibration of electrodes.
- Guided and students pH measurement. Evaluation of results.

Materials: hardened cement paste, low-pH concrete, bentonite, and distilled water

pH measurements: glass pH electrode, pH buffers: 7, 9, 11, 13

Reference: SKB, 2012: Development of an accurate pH measurement methodology for the pore fluids of low pH cementitious materials. SKB report R-12-02.

sample no.	solid phase weight	water volume	interaction time	pH