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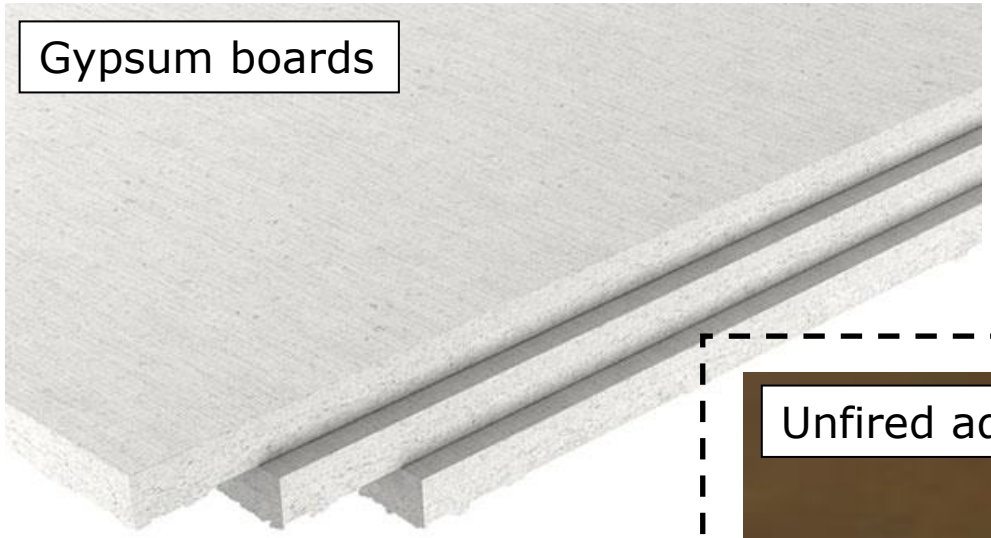
Unfired adobe bricks of Greenlandic sediments

Influence of waste fibres from fishing nets

Fibre reinforced materials

Gypsum boards

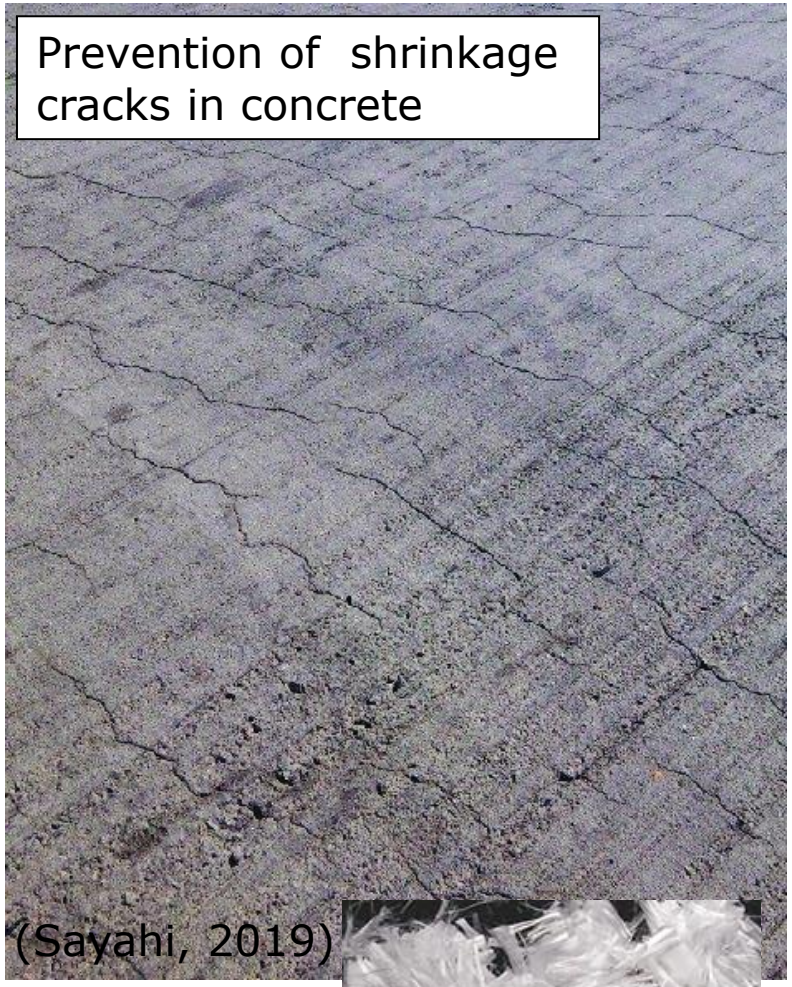


byggematerialer.dk

Unfired adobe bricks

Byggeladen.dk

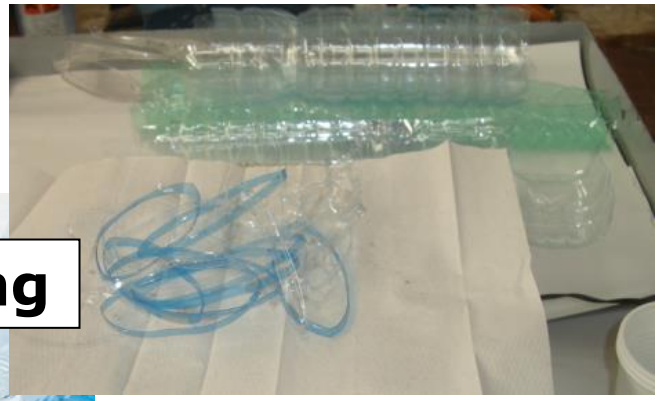
Prevention of shrinkage cracks in concrete



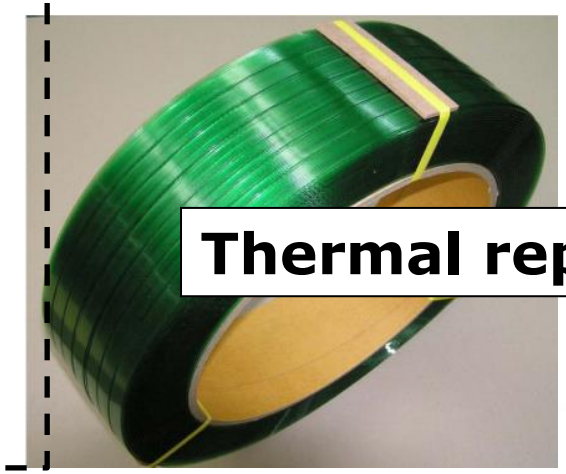
(Sayahi, 2019)

Plastic waste fibres in building materials

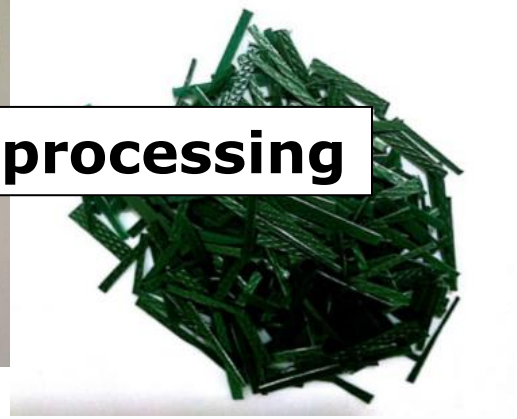
Mechanical cutting or shredding



Discarded fishing nets



Thermal reprocessing

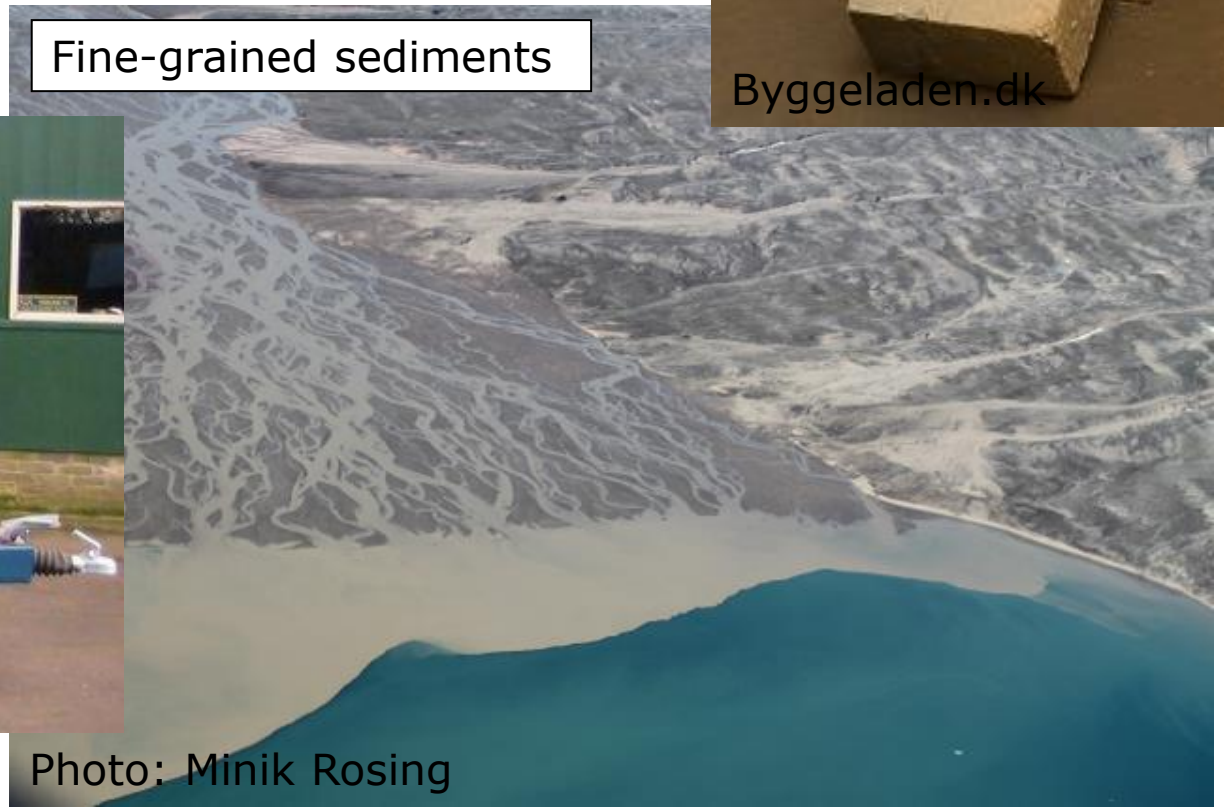


Adobe bricks

Simple and sustainable production technique (only formed and dried)

Mobile production units

Large amounts of suitable raw materials



Discarded fishing nets in adobe bricks

R-PE fibres added to adobe bricks

Materials *can* be reused!

Challenges

Poor mechanical strength of adobe bricks

Low durability in harsh environments → Mainly for indoor use

Strong traditions for constructing with wood and concrete in GL → Alternative building material

Aim of experimental study

1) Mechanical performance and drying shrinkage cracking of adobe materials

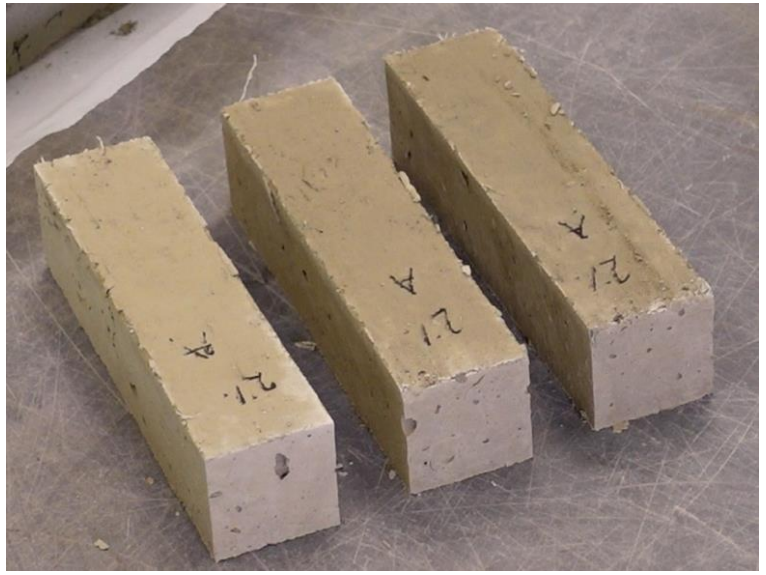
2) Influence of waste polyethylene (R-PE) fibres from discarded fish nets

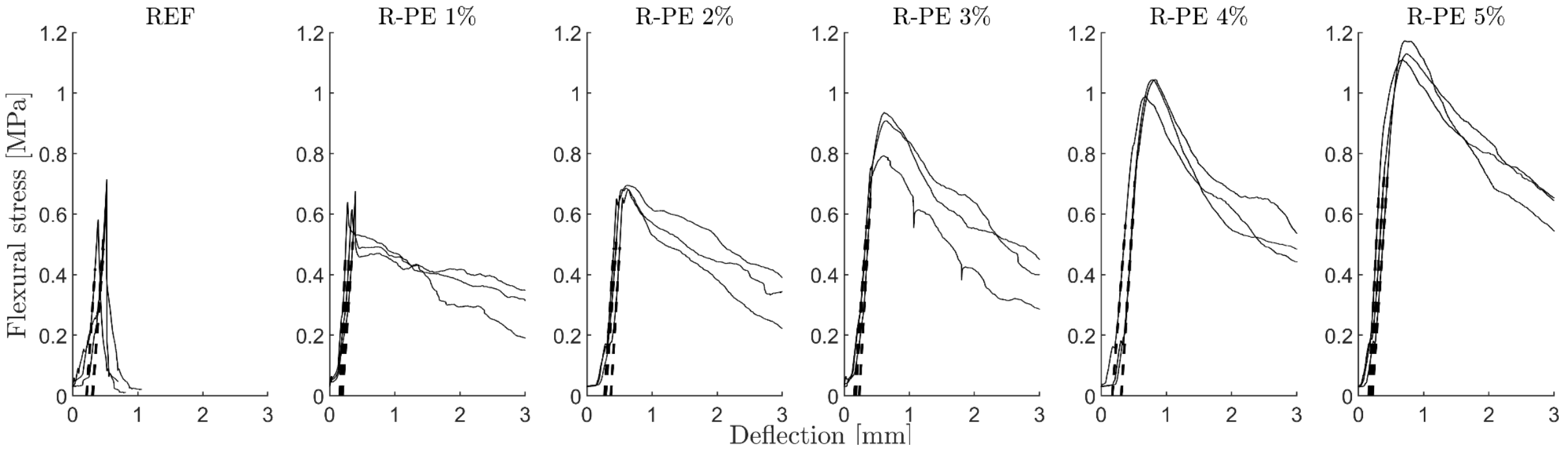
Mechanical performance of adobes

Mechanical strength increases with the addition of fishing nets (flexural and compressive)

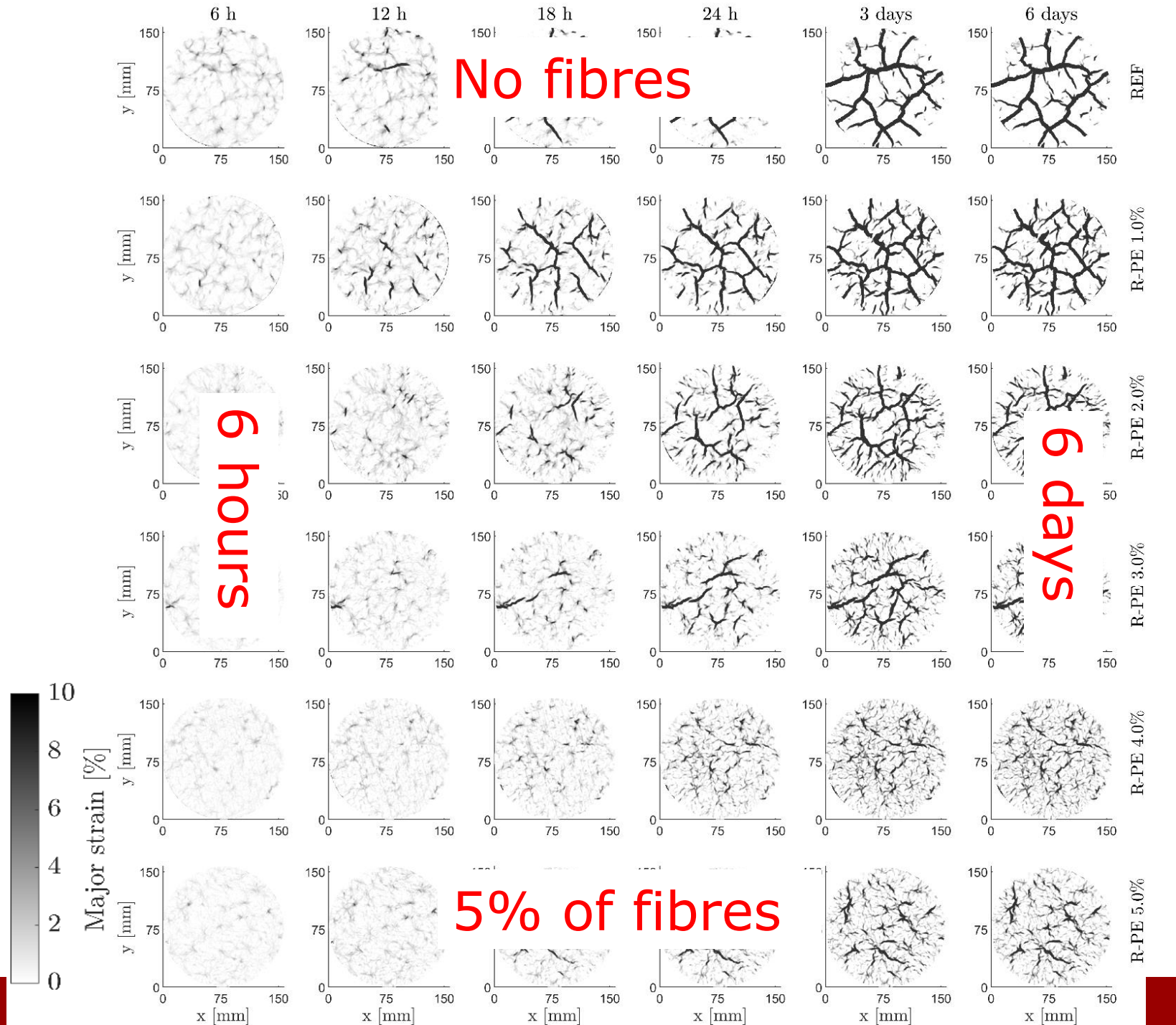
Improved post-crack performance

Reduced linear shrinkage and surface cracking





Shrinkage cracks



Thank you for your attention!

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Influence of synthetic waste fibres on drying shrinkage cracking and mechanical properties of adobe materials

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