DIMENSIONERING AV VÄGAR GJORDA AV ALTERNATIVA MATERIAL FÖR ÖKAD CIRKULÄR MATERIALANVÄNDNING

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Nyttor och effekter

The goal is to enhance the utilization of residual (circular) materials in road construction, aligning with the target of achieving climate-neutral infrastructure by 2040.

The objective of this project is to investigate several recycled and residual materials for their potential usage in pavement structures and to create the necessary design basis for this, particularly by updating the new ME design tool ERAPave PP.

Aktörskonstellation

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Leveranser

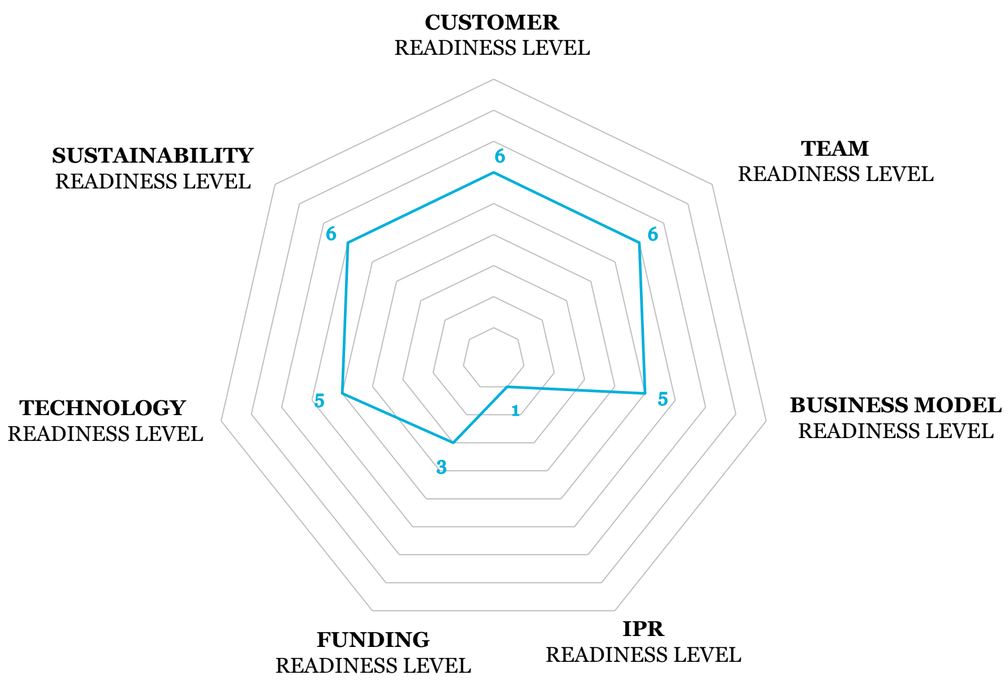
(1) identification of recycled and residual materials suitable for pavement structures.

(2) enhance the database of recycled material properties calibrated for field conditions.

(3) development of a design basis for using recycled materials for specific requirements road structures.

(4) increase international cooperation related to utilization of recycled and residual materials in pavement structures.

Innovationsstatus



The focus of the project is to increase the use of recycled materials in road construction to enhance their sustainability.

This requires testing the materials in both laboratory and field.

Triaxial testing in laboratory gives the material characteristics. Full-scale field pavement structure is used to validate the performance obtained in laboratory.

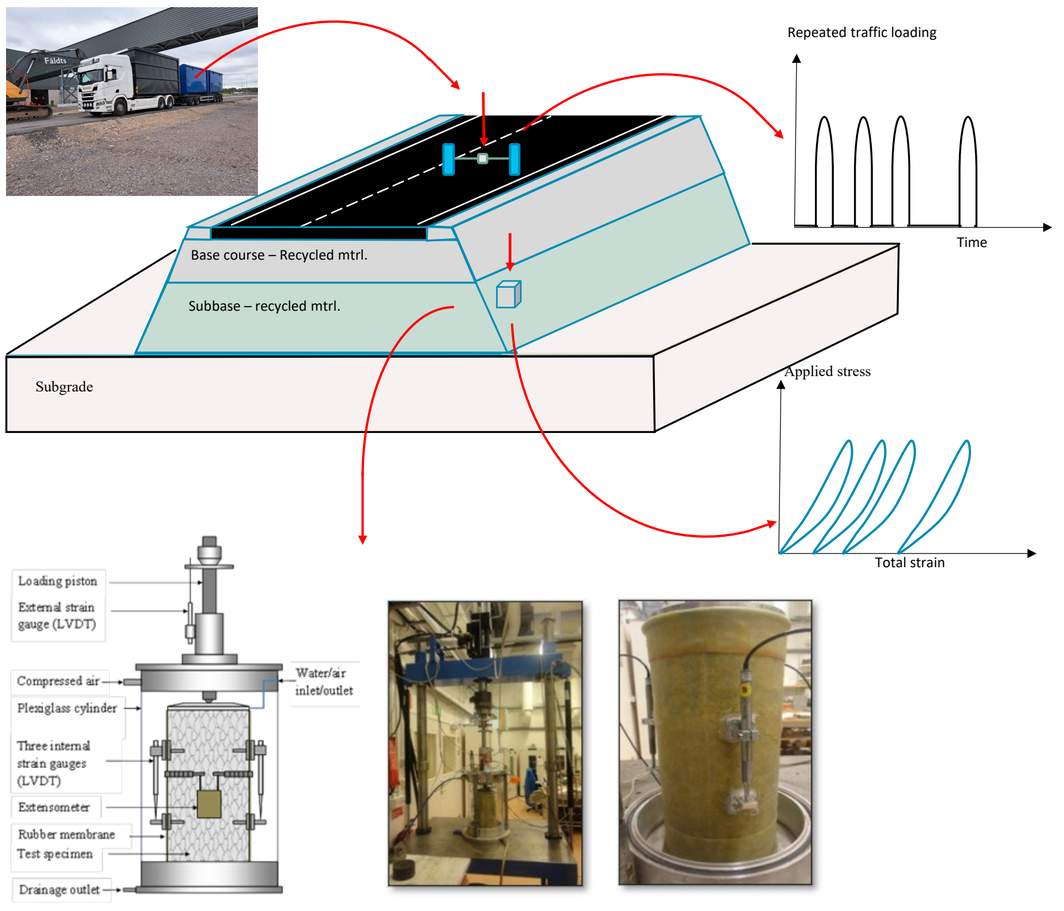


Fig. 1. Road structures, built partly of recycled materials, will be tested and evaluated. The emphasizes will be on the performance on the recycled materials. The materials will be tested in laboratory (aggregate strength testing, tri-axial testing) and full-scale field performance monitoring.

Vidareutveckling och implementering

The project started in June 2024.

Laboratory

Recycled materials have been tested in triaxial testing. Some materials show unexpected properties that need further testing (temperature & moisture dependent properties, time dependent properties). This will be further investigated.

Field pavements (Full-scale) monitoring

A pavement structure in Denmark (partly built of recycled materials) is monitored.

A new pavement structure with subbase as *i*) crushed concrete and *ii*) incineration bottom ash has been built in Linköping (Tekniska verken). Both structures are subjected to heavy loading.

Pavement design and validation

Material parameters will be gathered and included in the materials library in the ME design tool ERAPave PP.

Validation is planned through following the degradation of the full-scale structures and compared to ERAPave PP calculations.

Med stöd från
VINNOVA Sveriges innovationsmyndighet
Energimyndigheten
FORMAS
Strategiska innovations-program
Infra Sweden