FIRM 23
FEHRL Infrastructure Research Meeting
25 - 26 April 2023

LOW NOISE PAVEMENTS

Low Noise Pavements

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Road traffic noise is the second biggest environmental problem negatively affecting health.

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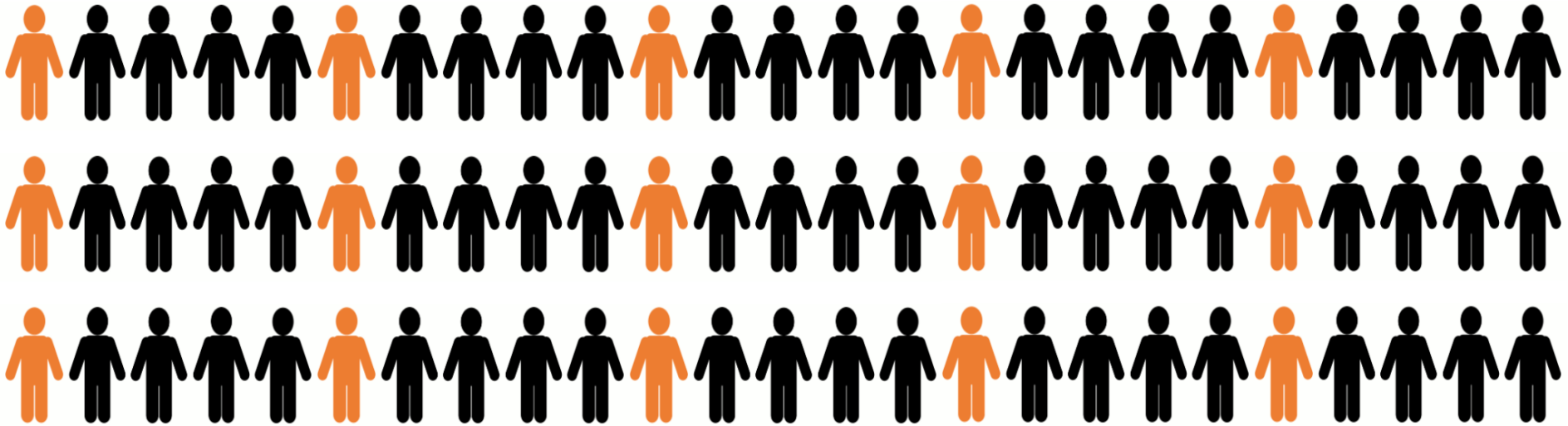
One in five Europeans is exposed to traffic noise levels higher than 55 dB (L_{den}).



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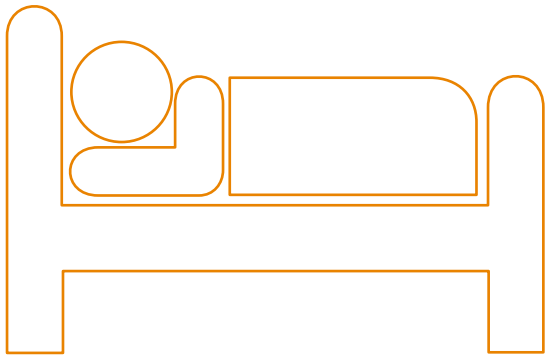
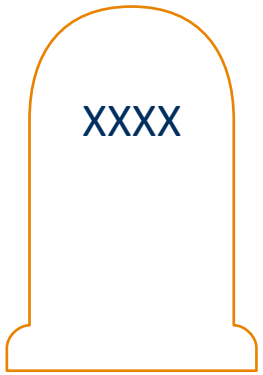
High annoyance
22 M Europeans



High sleep disturbance
6.5 M Europeans

Heart disease
48 K Europeans



Premature deaths
12 K Europeans

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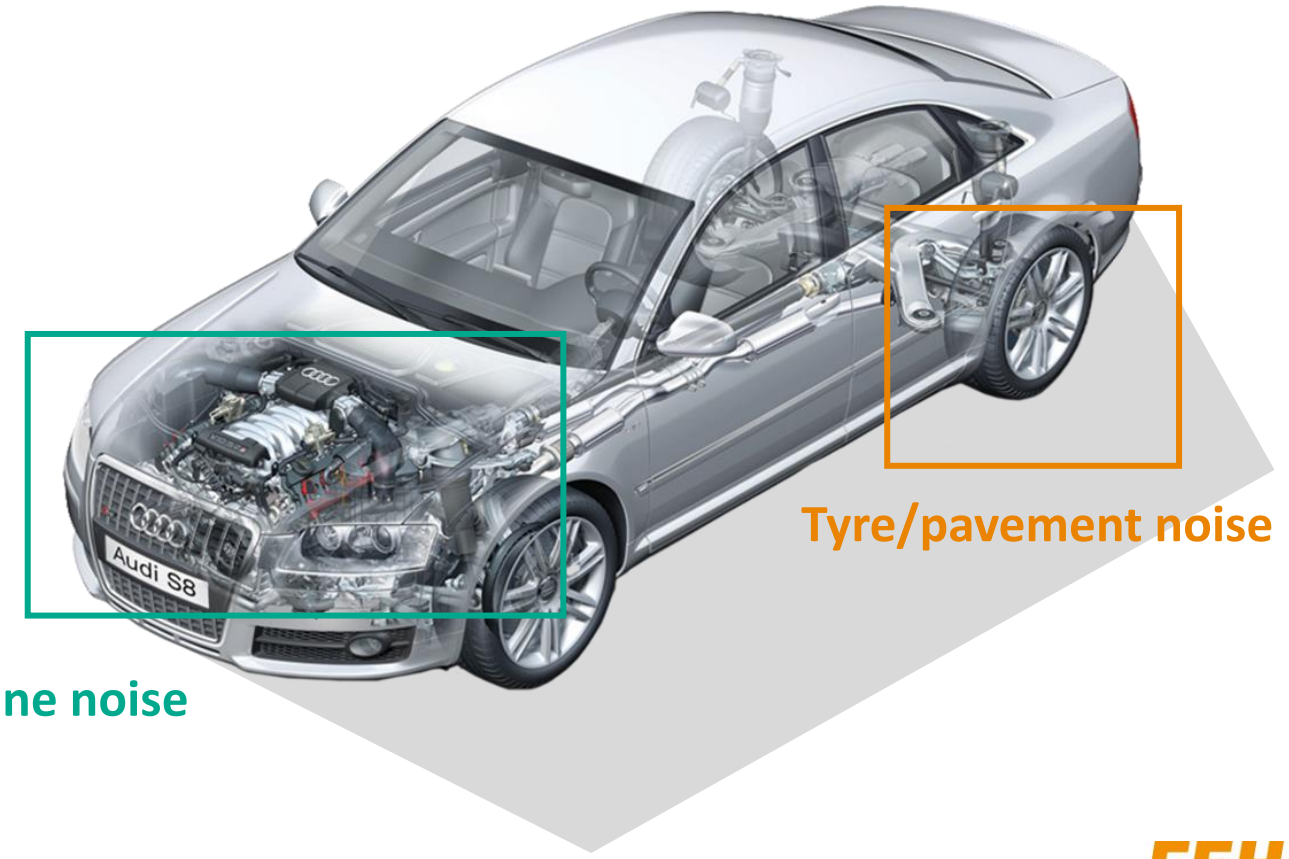
Road traffic generates noise by engine and interaction between tyre and pavement.



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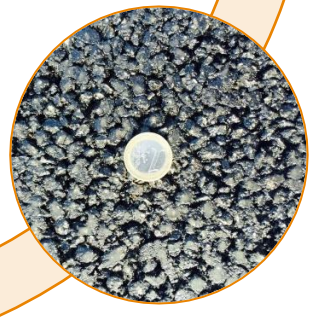
Tyre/pavement noise depends on...

Speed

Tyre characteristics



Pavement characteristics

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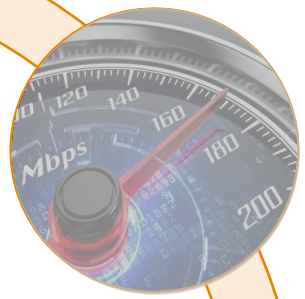
Tyre/pavement noise depends on...



Speed

Tyre characteristics

Pavement characteristics

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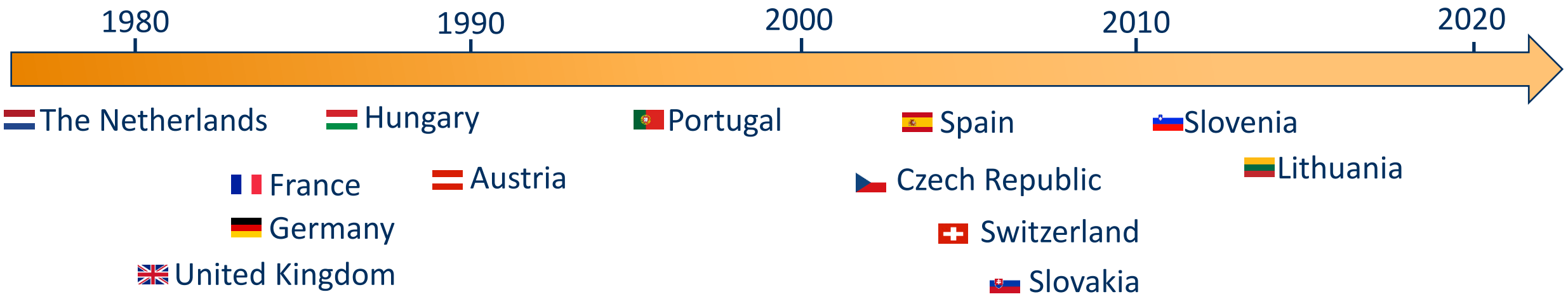
First trial sections with Low Noise Pavements were constructed in…



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LOW NOISE PAVEMENTS

In the last 10-20 years many projects focused on low noise pavements were successfully implemented.

NEMO

ROSANNE
ROlling resistance, Skid resistance, ANd Noise Emission measurement standards for road surfaces

silence
Quieter Surface Transport in Urban Areas

QUIESTIM

TYROSAFE

SPENS

persuade

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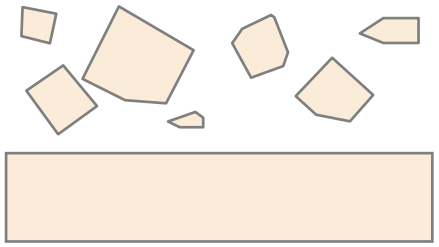
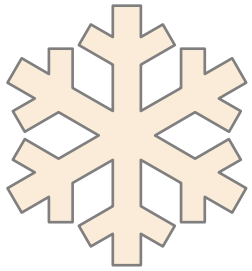
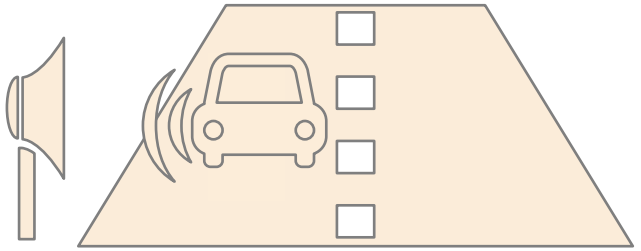
However, many questions are still unanswered.



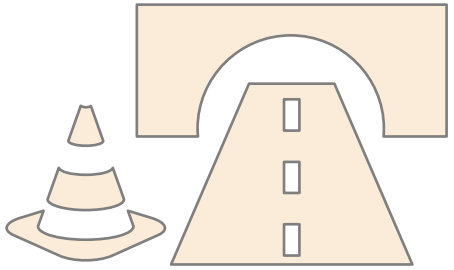
How to improve resistance to raveling?



How they perform in cold climates?



What method/technique should be used to measure road noise (CPX, OBSI, SBP)?



How to maintain and extend the service life of existing low noise pavements?

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FEHRL initiative – Low Noise Pavements

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The overall aim is to collect existing experience and share best practice within initiative partners.

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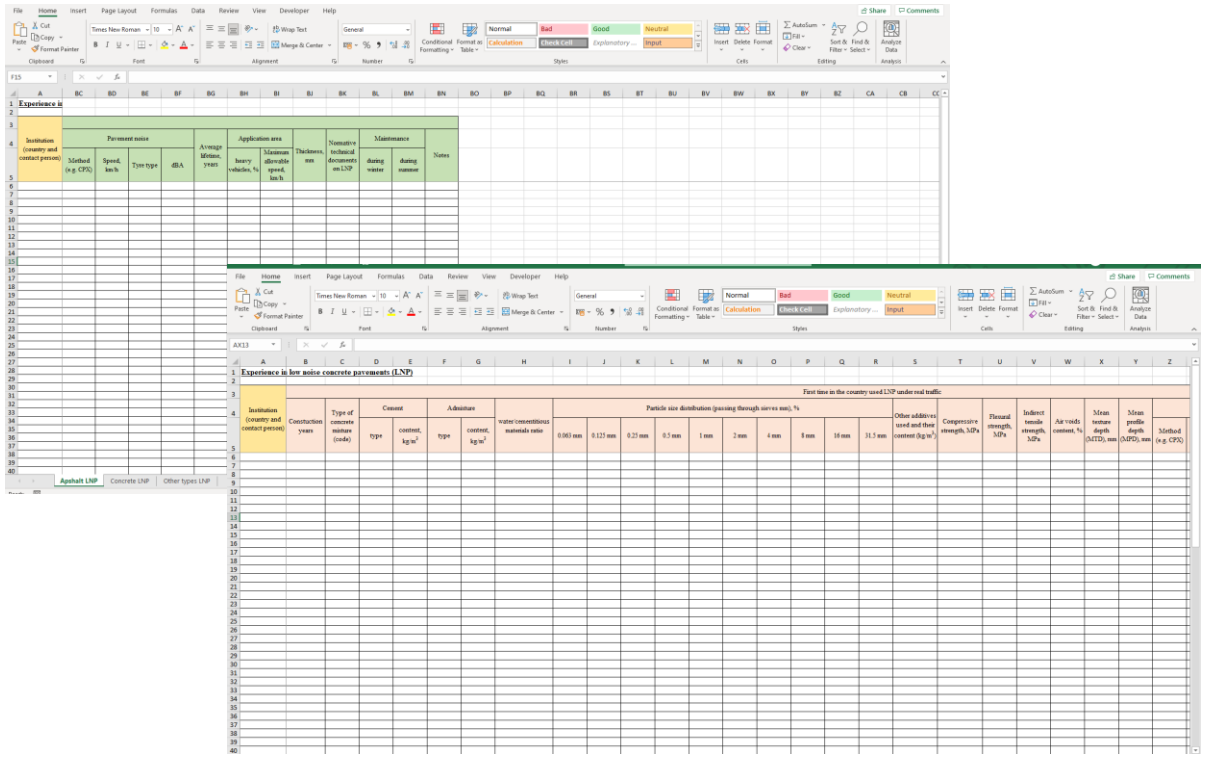
For this purpose, the survey was conducted last year among all FEHRL members.



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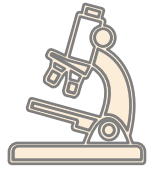
Asphalt mixtures currently used to reduce tyre/pavement noise

Application areas

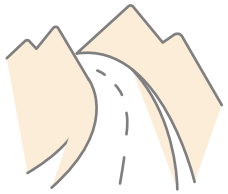
Binder type and content

Aggregate characteristics and requirements

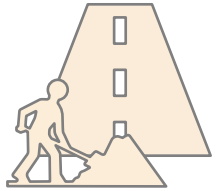


Asphalt mixture characteristics and requirements

Requirements for the constructed asphalt layer



Asphalt pavement performance



Maintenance

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13 countries provided some of the requested data.

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First results will be presented in the Forum Acusticum 2023 in Torino (Italy).

forum acusticum 2023
11-15 September, 2023 in Torino, Italy

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Thank you!

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