



5. How to use the results in road projects

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Where can the FAMOS Guidebook be relevant?

Tasks for road administrations:

- Planning and constructing new roads
- Enlarging existing roads
- Maintaining and improving existing roads

Noise is often an important component:

- Noise criteria that has to be fulfilled
- Noise guidelines giving a framework for the work
- Noise policies for reduction of the national noise problem



Noise abatement - reducing dB

Measures commonly used:

- Increased distance
- Noise reducing road surface
- Speed reductions
- Noise barriers
- Facade insulation
- Local noise barriers
- Etc.



Annoyance and dB!

- Technically feasible and economically possible measures are used to reduce the noise level (in dB) in road projects
- There might still be a need for a further reduction of annoyance to achieve acceptable conditions for people living along roads
- FAMOS has analysed and tested moderators that can reduce the percentage of highly annoyed without reducing the actual noise level in dB



Noise guidelines – dB versus percentage highly annoyed

WHO report from 2018 recommends that keeping the highly annoyed below 10 % secures that the noise will have no impact on the health of people

On the background of world wide noise annoyance surveys WHO recommends a noise guideline of $L_{den} = 53$ dB to keep the highly annoyed below 10 %

On the background of European noise surveys FORCE have shown that $L_{den} = 58$ dB to keep the highly annoyed below 10 % (Euronoise 2021)

According to the EU noise directive (2002) the noise action plans must include estimates of the expected reduction in the number of people exposed to noise (annoyance, sleep disturbance, etc.)



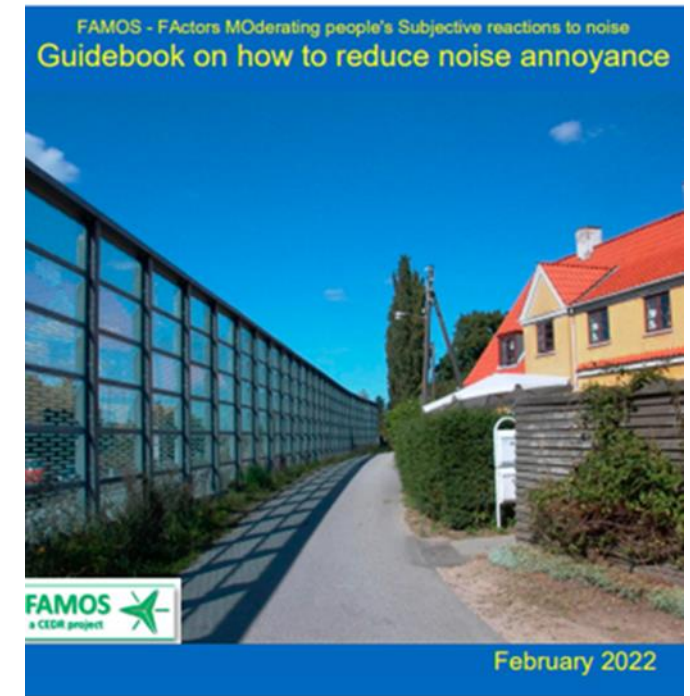
Noise abatement - reducing annoyance – not dB!



Can be done using the moderators presented in the FAMOS Guidebook

Discussion:

- Can moderators be used as a supplement to “traditional” noise abatement measures
- Can moderators be used to improve the soundscape along existing roads
- Can moderators be used to fulfil noise guidelines in new road projects?
- How can moderators be integrated in road projects?



Outlook

- More data on effect of moderators would be helpful!
- Future noise annoyance surveys should include questions on modifiers
When moderators are use in road projects
- It would be very helpful to "monitor" the effect on annoyance
- In FAMOS three methods to do improve data availability have been tested:
- Mini surveys using questionnaires
- Soundwalks in neighbourhoods
- Listening tests performed in the laboratory



**Any more comments, questions and
discussion?
Thanks for joining this FAMOS
session!**

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