

TYROSAFE WP3 workshop Brussels

Task 3.2 Parameters influencing rolling resistance

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- Results of literature survey
- Rolling resistance as a part of total energy loss
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Contemporary status

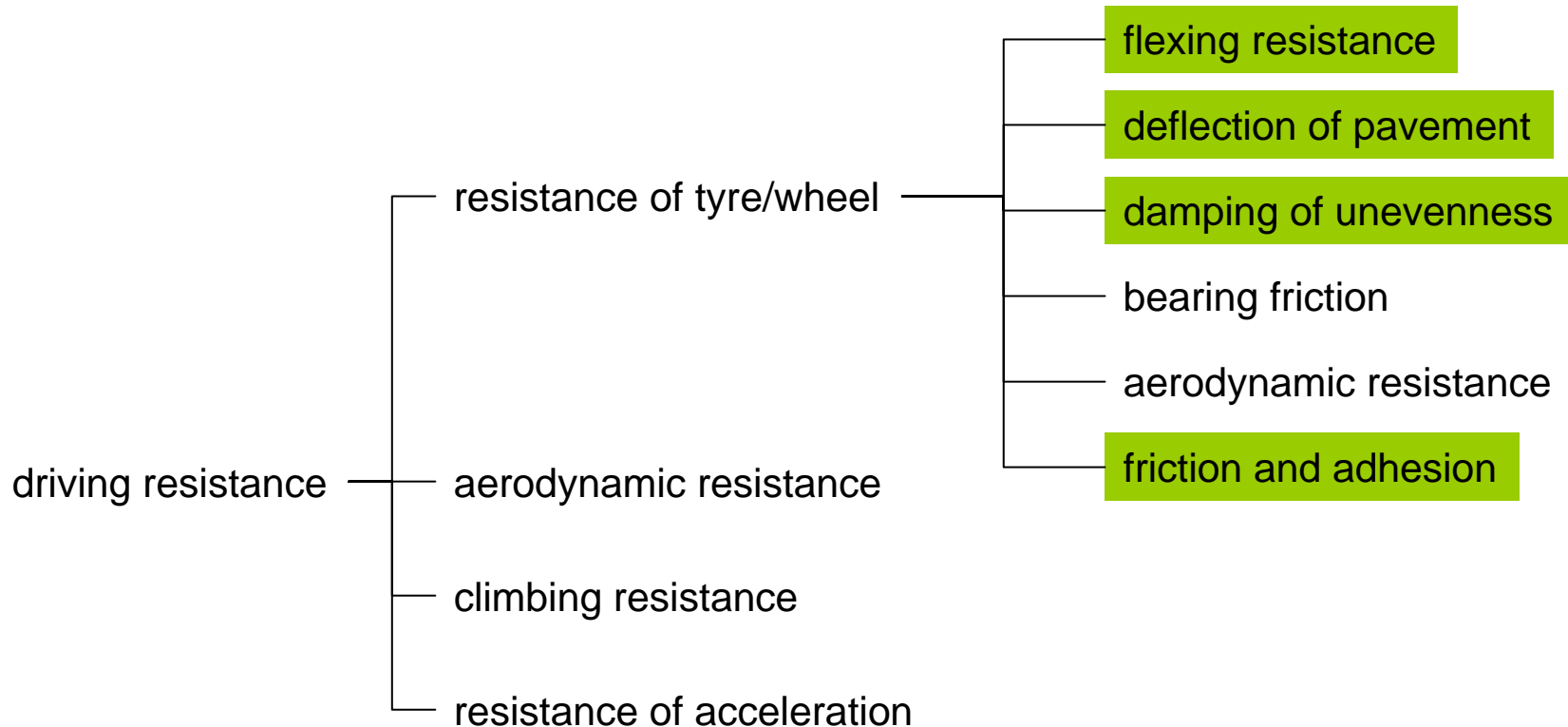
Neither any policies nor any regulations/standards regarding the tyres' rolling resistance on real pavements exist.

But rolling resistance is directly linked with fuel consumption and therefore with CO₂-emission.

Results of literature survey

- Road surface characteristics have an influence on rolling resistance and therefore on fuel consumption and CO₂-emission
- Until now it is not sure which road characteristics are influencing pavements' rolling resistance at the most
- A conflict between good skid resistance, low rolling noise and low rolling resistance [13] could not be detected in the literature survey

Rolling resistance as a part of total energy loss



Suggestion of reduction possibilities of RR

Pavement

texture characteristics:

- micro-texture
- macro-texture
- mega-texture
- road-surface roughness
- longitudinal evenness
- grip

surface temperature

Tyres

- Temperature
- Geometry
- Size
- speed index
- height-to-width ratio
- rim size/-width

- material:
 - rubber compound
 - carcass
 - belt

Influence of road surface on rolling resistance

- Characteristics of road surface have an influence on road's rolling resistance
 - unevenness
 - megatexture
 - macrotexture
 - microtexture

- Question: What influences road surface's rolling resistance at the most?
 - → Questionnaire for experts in this research field
 - → This workshop

Results of questionnaire

- Questionnaire consisted of 9 questions regarding the influence of road pavements on tyres' rolling resistance
- Most important results of questionnaire:
 - Tyre **and** pavement industry shall develop measures to reduce rolling resistance and therefore the CO₂-emissions
 - Ranking of most important texture influences on rolling resistance:
 1. macrotexture/megatexture
 2. unevenness (might be not a part of rolling resistance per definition as soon as unevenness results in body vibrations but is also a part of energy loss caused by the road surface)
 3. microtexture

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thank you for your attention



