

Recent experiences in the Netherlands with  
 Regulation No. 117 (Tyre rolling Noise and wet grip adhesion)

## 1. Summary

In the past four years the Netherlands has measured the noise emission, wet grip and rolling resistance of several hundreds of tyres. All measurements have been carried out in accordance with the various ECE and EC regulations and ISO standards.

From these experiences the Netherlands concludes that the measurement uncertainty of all the measurement methods is currently in the same rank order as the boundaries between the label classes according to EC/1222/2009.

Therefore the Netherlands underlines the need to improve the measurement methods in order to reduce the measurement uncertainty. This could be done either by limiting the allowable range in which valid measurements can be performed, or by introducing a correction formula, or both. Various international working groups are already working on these issues. The Netherlands is cooperating in various of these groups.

## 2. Noise

The noise measurements have been shown to be dependent on the texture of the test track as shown in the figures below. The current standard only contains a lower boundary of the allowable texture (0,4 mm), but lacks an upper boundary. We propose to set tighter restrictions to the allowable texture of the test track, especially to the upper boundary.

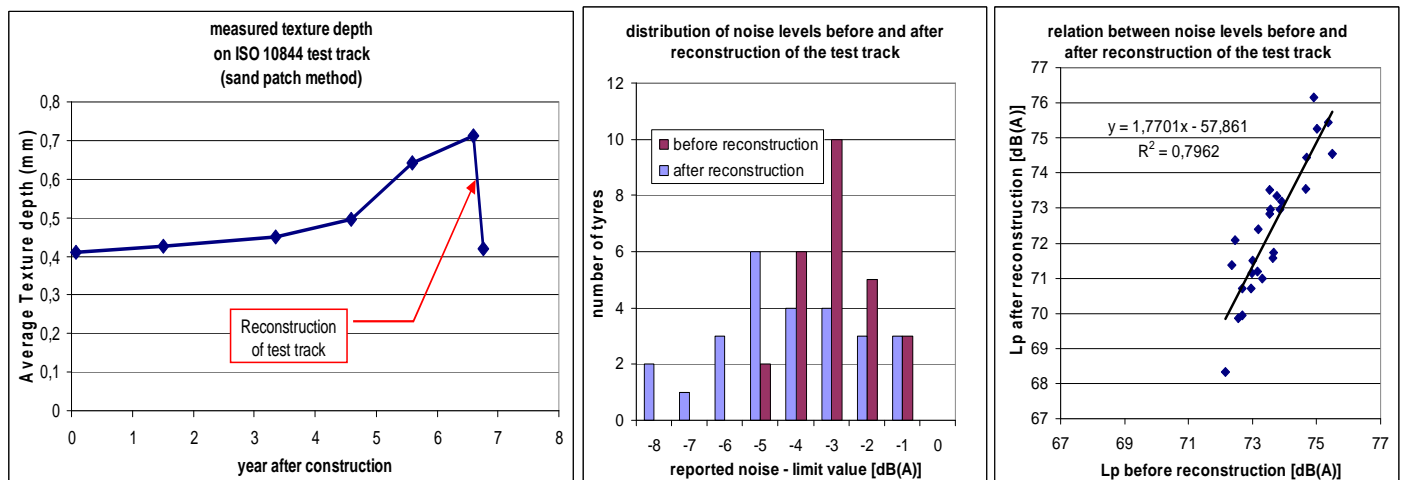


Figure 1. Influence of aging on the texture level of the test track (left) and influence of a test track reconstruction on the noise levels of a group of 26 tyres (middle and right). The higher noise levels remain unchanged. The lower noise levels reduce by up to 4 dB(A).

### 3. Wet grip

The wet grip test results appear to be dependent on the friction coefficient of the test track and the test temperature as shown in the figures below. We propose to restrict the allowable temperature range and friction coefficient of the test track, and to introduce a compensation formulae. These are likely to be different for winter and summer tyres.

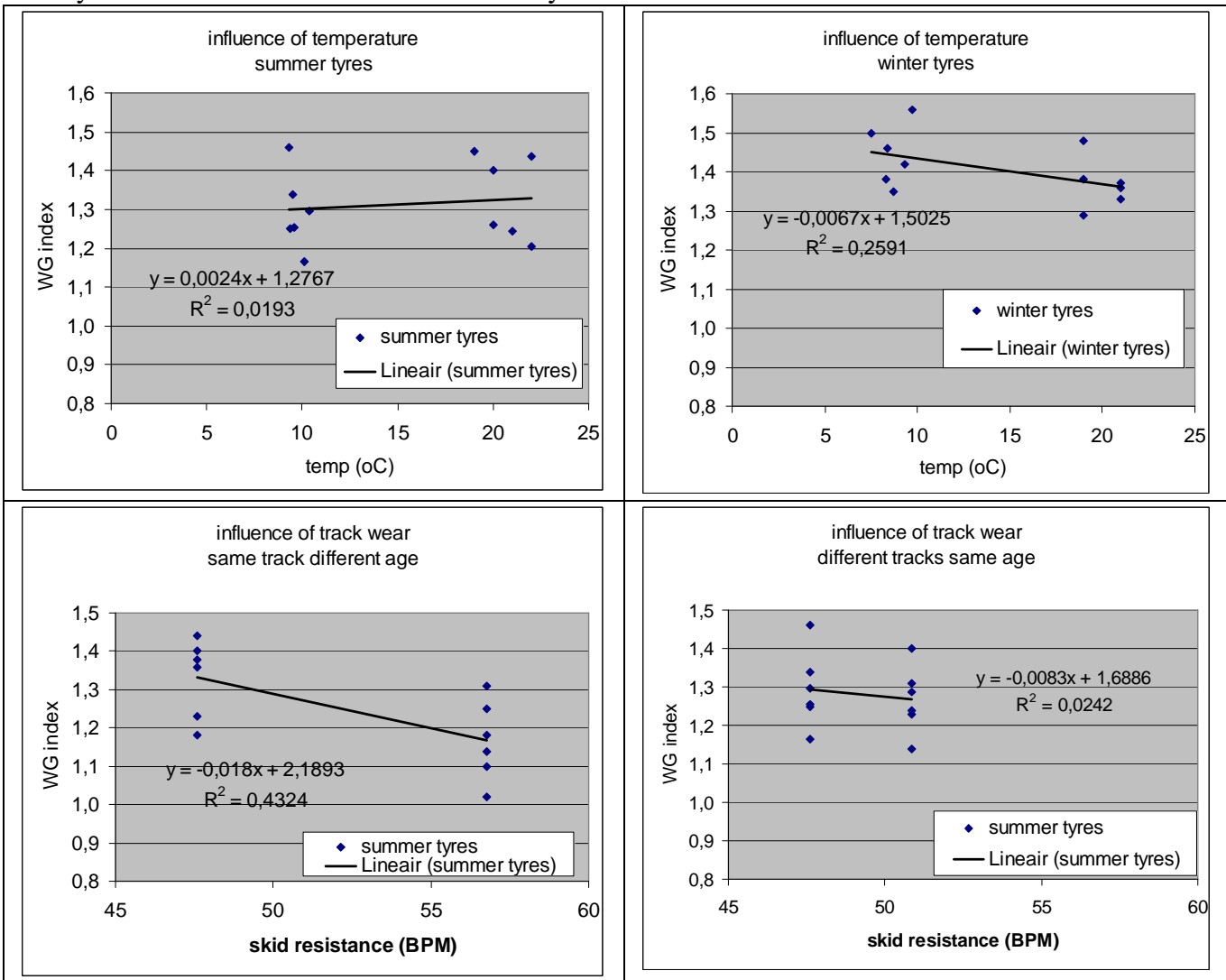


Figure 2. influence of temperature and test track friction on the Wet Grip test results. In all four experiments a group of 6 tyres was tested twice in different circumstances. If the track was changed, the temperature was kept constant and vice versa.

### 4 Rolling resistance

Rolling resistance might also be introduced in R117. The test results are reported to be dependent on the laboratory. Since all the Dutch measurements have been performed in one laboratory, we can not contribute to this discussion. Measurement results are also dependent on the radius of the roller. The latest ISO standard ISO 28580 contains a correction formulae and corrects all values to a radius of 2 m. Measurements according to older ISO standards however may have been corrected to a different radius. All Dutch results for instance have been corrected to an infinite radius (flat road). This means that reported values have to be increased by about 15% to be in compliance with ISO 28580. This may have an effect on the expected number of tyres failing the limit value or the expected number of tyres in a certain label class.