

EXPOSURE TO NOISE IN AGGLOMERATIONS

HEALTH 3

From certain thresholds upwards, environmental noise causes annoyance but also has adverse effects on sleep, cognitive functions and the cardiovascular system of the individuals exposed to it. Agglomerations are sensitive areas both due to the accumulation of various noise sources (transport, economic activities, etc.) and a high population density.

To reduce the effects of environmental noise, legislation² requires (i) a mapping of noise exposure, (ii) public information on noise exposure and its effects, and (iii) the implementation of action plans. Two indicators have been selected to establish noise exposure mappings: L_{den} and L_{night} , which were designed to respectively assess annoyance and sleep disturbance due to noise. These indicators represent the annual average noise levels in dB (A) over all periods of day, evening and night (L_{den}) and during night periods (L_{night}). Noise effects on sleep are observed below 40 dB (A) L_{night} while the risk of hypertension, coronary heart disease and stroke increases from 50 - 55 dB (A) L_{den} ³. According to WHO³, the average annual nocturnal exposure at night should not exceed 40 dB (A).

First noise mapping in Liège and Charleroi

The agglomerations of Liège and Charleroi, classified by the Walloon Government as agglomerations of more than 100,000 inhabitants but less than 250,000 within the meaning of the noise directive (Directive 2002/49/EC), are currently the only ones covered by the legislation⁴. The noise exposure maps⁵, which have been anticipated since 2012⁴, were finalised in 2015⁶. They were established separately for road traffic noise, rail traffic noise and noise from certain major industrial sites (12 IPPC/IED establishments in Liège, 11 in Charleroi).

Air traffic noise is currently not subject to legislation⁷. The Walloon Government has recently set, at 70 dB (A) L_{den} and 60 dB (A) L_{night} , the limit values above which noise abatement measures are required for agglomerations with more than 100,000 inhabitants⁸. The action plans, which have been anticipated since 2013¹, are being drawn up⁹. These need to include protection measures for quiet areas¹.

Nearly 80% of the urban population affected

In 2015, on the basis of L_{den} , urban road traffic noise affected almost 80% of the population living in the mapping areas of Liège and Charleroi¹⁰. Urban rail traffic noise affected 10% of the population in Liège and 6% in Charleroi. Less than 2% of the inhabitants of Liège and Charleroi were affected by the noise emitted by the industrial sites under consideration. Other sites need to be taken into account to provide a more complete overview of the impacts of urban industrial noise.

[1] Walloon Government Decree of 13/05/2004 (Directive 2002/49/EC) | [2] EEA, 2014 | [3] WHO, 2009 | [4] Walloon Government Decree of 13/09/2007 | [5] Referred to as "strategic noise mapping" according to Directive 2002/49/EC | [6] Walloon Government Decree of 17/12/2015 (on mapping) | [7] → HEALTH 4 | [8] Walloon Government Decree of 17/12/2015 (on noise limits) | [9] Draft plans (04/05/2017) submitted to a public inquiry | [10] → Map 46

Fig. HEALTH 3-1 Exposure* to noise in the agglomerations of Liège and Charleroi

