Indoor environment in Swedish passive houses - DTU Orbit (08/11/2017)

Indoor environment in Swedish passive houses

The purpose of this study was to evaluate the indoor air quality (IAQ) in newly built low energy houses. Measurements were performed in 22 passive houses and 21 conventional buildings during 2012-2013 and 2013-2014 heating seasons. The measured parameters were temperature, relative humidity, concentration of CO2, NO2, formaldehyde, volatile organic compounds, and live microbiological flora. Air exchange rates (AER) were determined from the concentration-time profiles of CO2. The median AER was slightly higher in the passive houses than in conventional buildings (0.66 h-1 vs. 0.60 h-1). The median concentrations in passive houses and conventional buildings were 9.7 and 11 µg/m3, respectively, for NO2, 12 and 16 µg/m3 for formaldehyde, and 230 and 145 µg/m3 for TVOC. The indoor microbiological flora did not differ, with a few exceptions, from outdoors. The IAQ in the passive buildings was judged to be relatively good with regard to the parameters measured in this study.

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