### Author's Accepted Manuscript

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elsevier.com/locate/iob/

PII: S2352-7102(16)30382-5

DOI: http://dx.doi.org/10.1016/j.jobe.2017.05.009

JOBE268 Reference:

To appear in: Journal of Building Engineering

Received date: 28 December 2016

Revised date: 3 May 2017 Accepted date: 9 May 2017

Cite this article as: Timo Niemelä, Juha Vinha, Ralf Lindberg, Tiina Ruuska anc Anssi Laukkarinen, Carbon dioxide permeability of building materials and their impact on bedroom ventilation need, Journal of Building Engineering http://dx.doi.org/10.1016/j.jobe.2017.05.009

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#### ACCEPTED MANUSCRIPT

# Carbon dioxide permeability of building materials and their impact on bedroom ventilation need

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#### Abstract

This research determined the carbon dioxide permeabilities of different materials and cellulose-insulated wall structures without a vapour barrier as well as the CO<sub>2</sub> balance of bedroom air. Material tests have indicated that the CO<sub>2</sub> permeabilities of building materials correlate closely with their water vapour permeabilities. Thus, the more permeable the external wall structures are, the bigger their impact on the CO<sub>2</sub> content of indoor air. Yet, higher permeability allows more water vapour to pass through the structures, which make them more at-risk for condensation and mould growth. Some

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