

Rationale behind ventilation standards and regulations given by 20 countries

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SUMMARY

International there are many different requirements and regulations for ventilation. Sometimes the variation is more than a factor of five. There are strong drivers to reduce energy consumption for HVAC, and therefore the spread in requirements and regulation is worthwhile to study. To reduce ventilation flows there is a necessity to understand the reasons behind. Demand control to reduce this flows is in many countries growing but the control parameters are quite different, for instance humidity versus CO₂ control. If you don't know the reasons for ventilation, you cannot decide when and to what level you can reduce the ventilation flows. A questionnaire was sent to 20 countries. The result show large differences between countries even in the same climate and building styles. The answers on the reasons behind ventilation requirements are in most cases not clear formulated. Some reasons are given but in most cases is it more a philosophy behind the ventilation requirements. In some cases they have real chemical contaminant levels defined as a requirement. Based on these insights it is difficult to find a universal approach for demand controlled ventilation. Latest studies show other contaminants in relation to health effects which might determine future parameters for demand control. For example many countries based their requirements for kitchen ventilation on moisture and odours but new insights shows that particulate matter produced by cooking is a parameter to be considered in relation to health.