

New approach to climate information for projecting of Air Conditioning and Ventilation Systems (CVS)

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The purpose of this study is

- to present climate information needed for optimal functioning of Air Conditioning and Ventilation Systems (CVS);
- to interpret potentialities of mentioned information for planners;
- to demonstrate results that could be received when using this type of climate information.

Using of information about outdoor climate allows to estimate annual operation expenses and to calculate their most complicated part that connected with utilization material and energy flows: warmth, cold, air, water. In this case we could choose as a rated period not only one year but other rated periods: seasons, months, shifts.

Adjusting capacity of CVS equipment must conform to permissible period of “precariousness”. It means continuous time period of departure of rated climate parameters from norm, when work process would not be interrupted. The values of this permissible period is indicated by users taking into account technology peculiarities.

Represented information about outdoor climate according to working shifts in a month (season, year) could be used when projecting units that operate in shift regime, for example, only in night time, or twenty-four-hour. But in this case each shift will be characterized by appropriate heat and humidity loadings. Information about outdoor climate within a month or a season could be used for units that don't operate the whole year round, but, for example, only one season.

Parameters of outdoor climate for each shift are divided into elementary intervals with coordinates t_m, d_m within the difference of air temperature $\Delta t = 2^{\circ}\text{C}$ and content of water in the air $\Delta d = 1 \text{ g/kg}$. For each elementary interval we know total time period of recurrence of air temperature and water content combination within each shift. Tabular climate information is presented on I-d diagram as points with intervals of air temperature 2°C and water content 1 g/kg .

Mentioned information about outdoor climate could be used for automatized calculating of economic evaluation when projecting CVS. This form of information about out-

door climate favour the solution of specific problems connected with optimal choice of CVS.