

50 % COST SAVING BY USING THE CORRECT FILTERS

Fans in room air conditioning systems (AHU systems) require electrical energy, not least to overcome the flow resistance of integrated particulate air filters. It should be possible to save energy by using energy-efficient filters which offer less resistance than standard filters. Or that's the theory. To verify this in practice, TROX carried out a yearlong test to measure and compare.

F7 pocket filters were tested in two virtually identical large AHU systems in a production building of a manufacturer of films and industrial adhesive tapes. One system was operated with standard synthetic filters (melt-blown), while the second system was fitted with TROX NanoWave® filters. The flow resistance of the filters in each system was measured at weekly intervals. The volume flow rates were 34,400 m³/h and 32,300 m³/h, respectively, so the systems were comparable. The running time of each plant was 8,760 h/a (cf. Table 1). The plant location has atmospheric outdoor air with normal levels of contaminants.

The contamination of the outdoor air is affected by the geographical situation. The close surroundings include both natural sources of contaminants, such as woodland and arable land, and anthropogenous sources, such as commercial and industrial sites, motorways and urban areas.

Therefore, alongside the emissions produced by the production facility itself, a classification of AUL 2 ("contaminated" as defined in VDI 3803 or "dust and gases" as defined in VDI 6022) or ODA 2 ("high concentration of dust or fine dust and/or gaseous pollutants" as defined in EN 13779) can be assumed.

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