TROX® TECHNIK
The art of handling air

SUSTAINABLE FOR GOOD AIR: TROX FILTERS

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Progressive urbanization has immense effects on the environment. Higher traffic loads, more traffic jams, and long supply routes lead in particular to an increase in fine dust pollution. Filter technology must stand up to the increasing environmental pollution. The higher the fine dust pollution, the higher the demands on filter technology in terms of effectiveness and efficiency. Both industry and legislators are constantly working on effective solutions.

Energy class certification helps reduce energy costs

The energy cost component is so dominant in the cost balance that the total cost is 51 percent lower when equipped with energy-efficient fiberglass filters instead of meltblown bag filters. Although filters themselves do not consume energy, the resistance they provide must be compensated for by the higher power of the fans in an air handling system. In order to be able to evaluate the energy consumption and thus the cost-effectiveness of a filter, Eurovent Certification has developed and published an energy classification in cooperation with leading manufacturers of air filters. With the replacement of the European filter standard EN 779 by the internationally valid ISO 16890, a test procedure with real reference to the prevailing fine dust load was introduced in order to classify filters according to their efficiency in this respect. The new subdivision into the three fractions ePM10, ePM2.5 and ePM1 entails a revised energy classification to evaluate the energy consumption of a filter within its performance class. For the energy evaluation, the filter is uniformly exposed to the newly defined ISO A2 fine dust. The increase in pressure drop as the filter becomes increasingly contaminated is measured. The amount of dust applied differs depending on the filter class. Thus, 200 g of dust is applied to ePM1, 250 g to ePM2.5 and 400 g to ePM10 air filters and then evaluated.

Reduce energy costs

Air filters of the worst energy efficiency class E consume more than twice as much energy as those of the best class A+. An air filter of category ePM1 > 50 % (previously F7) of energy efficiency class A+ with an energy consumption of up to 800 kWh has annual energy costs of €120 at an electricity price of 15 cents/kWh. A class D filter with up to 2,000 kWh has annual energy costs of €300. The difference in energy costs is 180 € for a single filter with a volume flow of 3,400 m3/h, which represents a saving of 60%. TROX develops, produces, and tests energy efficiency and high-performance filters on state-of-the-art manufacturing and testing facilities in Germany. All TROX fine dust filters have Eurovent certification. The filters convince with high separation efficiencies at low pressure drop and long service lives, thus efficiently contributing to the reduction of LCC.

TROX expands the filter business

TROX GmbH has acquired the Czech market leader for air filters, KS Klima- Service a.s., which now operates as TROX KS Filter a.s.. Founded in 1993, the filter manufacturer produces in Pribram, near Prague. The main focus of the business is the development, manufacture and sale of air filters for air conditioning and ventilation systems, as well as for special filter equipment in industrial filtration. In addition to the existing management team - Jan Berger (Chairman) for Sales, Petr Hruby for Engineering, and Miloš Vesely for Finance - Thomas Klamp, Head of Filter Technology at TROX GmbH, has joined the management team of the Czech subsidiary. The aim is to strengthen the filter competences of the TROX Group, to use production synergies and to further expand the location as well as the capacities in the TROX Group. In addition, the acquisition of KS Klima-Service will expand the company's presence in the air filter market in Eastern Europe.

TROX filters in the Deutsche Bahn

More comfort, significantly faster filter change: For the air conditioning of IC cars of Deutsche Bahn, TROX developed various versions of stainless steel frames with tension springs, with the help of which filter media can now be installed or changed without tools in a fraction of the previous time. In the future, the industrially manufactured frames and filter media will minimize the risk of leakage and weathering. With the newly developed filter elements, the filter change is easier and significantly faster: the process has been shortened from 38 minutes to 8 minutes. Thanks to the support of the railroad and the possibility of analysis and inventory as well as tests on site, the development went smoothly. The new filters reduce leakage. They provide improved air quality in the compartments, and thanks to the larger filter area they can absorb more dust, which increases downtimes so that trains can stay on the track longer.

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(Fotocredits: TROX)