Draft VDMA 24177:2019-05 published

The currently valid version 24177:2009-12 of the VDMA specification "Fans for smoke and heat control of buildings in the event of fire" has been extensively revised by the VDMA working group ‘Smoke Extraction’. The draft of the revised version is now available.

Frankfurt, June 4, 2019 - VDMA 24177 defines the requirements and use of smoke extraction fans and their equipment with regard to design, construction, operation and installation of mechanical and electrical installations.

Over a period of nine months, the Smoke Extraction Working Group of the VDMA Air Handling Technology Association worked on the draft of the VDMA specification 24177:2019-05. In cooperation with experts from other organisations, the regulations applicable to fans for smoke and heat control in the event of fire have been extensively adapted to current requirements. The draft was published at the beginning of May.

VDMA 24177:2019-05 describes the various modes of operation of smoke extraction fans and specifies the requirements necessary for dimensioning and selecting the power transmission engineering.

The requirements for safe energy supply and electrical connection have been updated. In addition, important technical information from VDMA Information Sheets 5 and 6 of the VDMA Smoke Extraction Working Group was supplemented.

Smoke extraction fan equipment, just like the smoke extraction fan itself, shall be functionally reliable in smoke extraction mode. Registeres inspectors, planners, system installers and manufacturers are therefore constantly questioned of how the function of equipment shall be verified.
For this purpose, the functionally important equipment for smoke extraction fans was listed and requirements for reliable smoke extraction operation were defined based on EN 12101-3: 2015.

An overview with reference to the associated product and test standards of the components that must be verified in smoke extraction systems was also prepared.

Regarding maintenance, the new draft of VDMA 24177 contains precise information on maintenance work and functional checks. Information on possible applications of supporting maintenance and diagnostic systems was also added, which significantly simplifies future maintenance work.

Relevant topics in connection with the qualification of service and assembly personnel as well as the procedure following a fire event were supplemented in the new version of the specification.

VDMA member companies can download the specification from the specification database via myVDMA after logging on to the VDMA website without incurring costs. In addition, the specification can be obtained from Beuth-Verlag (www.beuth.de).

Smoke-free escape routes due to smoke exhaust fans

Fans for smoke and heat control - so-called smoke extraction fans - are used for extracting smoke gases in the event of a fire. Their use in multi-range systems is becoming more and more regular.

In the event of a fire, smoke extraction fans are designed for several fire scenarios in different fire areas in order to realise fixed defined smoke extraction volume flows. This is ensured by implementing scenario-dependent operating speeds.

The objective is to maintain a low smoke layer below the smoke layer. This objective, which is pursued over a defined assessment period, enables the persons in the building to rescue themselves. In addition, access for fire-fighting and rescue operations is guaranteed by the fire brigade. Controlled pressure differences can thus be built up by the rescue forces and smoke can be prevented from escaping into escape and rescue routes.

Construction product Smoke extraction fan

Smoke exhaust fans are building products. They are therefore subject to the following directives and regulations:

- Construction Products Directive on the basis of the basic documents, implemented by the Bauproduktengesetz (Construction Products Act)
- Building regulations of federal states, in conjunction with the technical rules of the building supervisory authorities
- Model Administrative Regulation Technical Building Regulations (MVV TB), prepared and published by DIBt (Deutsches Institut für Bautechnik)
Construction products shall be "applicable" for the construction work to meet essential requirements and one essential requirement is "fire protection" as written in the EC interpretative documents.

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**Picture source:** TROX X-FANS GmbH

The VDMA represents more than 3200 companies in the medium-sized mechanical and plant engineering sector. With 1.3 million employees in Germany and a turnover of 232 billion euros (2018), the sector is the largest industrial employer and one of the leading German branches of industry overall.

The Air Handling Technology Association comprises the departments Air Conditioning and Ventilation Technology (Process air as well as Ventilation and air conditioning), Refrigeration and Heat Pump Technology, Air Pollution Control (Process air), Surface Technology and Drying Technology.