

ebm-papst brings new testing center into regular operation

Real environmental influences put fans to the test

After a 15-month construction period, Mulfingen-based fan specialist ebm-papst has brought its new testing center into operation, centralizing all testing capacities to be carried out at the company's headquarters. The investment of some 8 million euros will mainly benefit product safety and reliability. State-of-the-art testing facilities on 2,500 m² of floor space are supplemented by an intelligent test specimen monitoring system and enable validation throughout the entire development process and product life cycle.

The service life, performance and long-term behavior of fans are influenced by their environment throughout their entire service life. In six test bays, several hundred fans and individual components pass through the testing stations every year and are brought to and beyond their stress limits under real environmental influences.

Tested to beyond breaking point

Fans often travel long distances before they reach their final place of use. Storage and transportation can have an impact on service life even before commissioning. For this reason, stresses that can occur during transportation are simulated using sustained vibrations of varying intensity and individual shock pulses.

In climatic chambers, the fans are subjected to rapid temperature changes in order to rule out possible weak points, material fractures or material connections in advance.

Fans are used on the roofs of houses, in wind power plants on the high seas and in washing systems. They prove that they can withstand moisture or sprinkling in five standard tests based on the standardized IP protection classes IP X3 to IP X6 and IP X9K.

Individual components are also put under the microscope. In the spin test, both during development and when new sizes of existing series are introduced, the impellers are brought up to and above their maximum operating speed in order to determine the destruction speed.

Salty air can also affect service life. In the salt spray test, the aim is to find out as quickly as possible whether corrosion is developing on the components. To do this, the test specimens are wetted with a salt spray in closed chambers to ensure the quality of the coatings and welding points.

Decades of expertise in proprietary test procedures

In order to work reliably in practice over many tens of thousands of operating hours or longer, fans must also be able to cope with a combination of stress types. Specifically for this purpose, ebm-papst has developed three accelerated service life tests that simulate an entire product life in fast motion over several months. Visual and functional tests are carried out both before and after the tests. Gateways from ebm-papst neo log parameters such as the speed and performance of the test specimens and the test systems in real time. The data is stored in the cloud and can be accessed by the development engineers at any time.

Contacts Trade press

Pascal Schöpf
+49 7938 81-7006
Pascal.Schoepf@de.ebmpapst.com

Corinna Schittenhelm
+49 7938 81-8125
Corinna.Schittenhelm@de.ebmpapst.com

Katrin Lindner
+49 7938 81-4224
Katrin.Lindner@de.ebmpapst.com

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Press office contact
ebm-papst Group
Phone +49 7938 81-7105

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Image 1: As Group Leader Validation, Erich Kemmer is responsible for the new testing center in Mulfingen-Hollenbach.



Image 2: All validation and testing capacities at the headquarters are centralized in the new testing center.

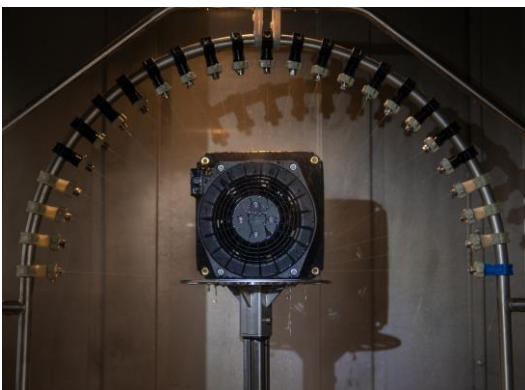


Image 3: In the IP test chamber, electronics and fans are subjected to standardized degree of protection tests in accordance with the IP code against moisture ingress.

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Image 4: The quality of the coatings and materials is investigated in the salt spray test chamber.

Figure	Lukas Zwiessle for ebm-papst
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Tags	Testing center, test bays, validation, quality assurance, quality, product safety, EC technology, axial fan, centrifugal fan, environmental influences
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About ebm-papst

The ebm-papst Group, a family-run company headquartered in Mulfingen, Germany, is the world's leading manufacturer of fans and motors. Since it was founded in 1963, the technological leader has set international industry standards with its core competencies in motor technology, electronics, digitalization, and aerodynamics. ebm-papst offers sustainable, intelligent, and tailor-made solutions for virtually every requirement in ventilation and heating technology.

In the 2022/23 financial year, the Group generated turnover of EUR 2.540 billion. It employs just under 15,000 people at 30 production sites (including in Germany, China, and the U.S.) and in 50 sales offices worldwide. ebm-papst sets the benchmark in almost all sectors, such as ventilation, air conditioning and refrigeration technology, heating technology, information technology, mechanical engineering, intralogistics, and medical technology.

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