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**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 43080.5-2025**

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**Fans - Efficiency classification for fans - Part 5: Jet fans**

通风机 通风机效率等级 第5部分：射流风机

**(English Translation)**

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## Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 5 of GB/T 43080 "Ventilators - Efficiency Classes". GB/T 43080 has published the following...

part.

---Part 2: Standard Losses of Drive Components;

---Part 3: Fans at maximum speed without drive unit;

---Part 4: Ventilation fans at maximum speed including the drive unit;

---Part 5: Jet Fans.

This document is equivalent to ISO 12759-5:2021 "Ventilators - Efficiency Class - Part 5: Jet Fans".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Wind Turbines (SAC/TC187).

## Introduction

Over the past decade, the ventilation fan industry has not only witnessed the "leap forward" in fossil fuel prices, but also the impact on their service life.

This has led to a deeper understanding. Recent climate change is caused by the continuous increase in atmospheric carbon dioxide levels, which has prompted many countries to focus on...

We must examine our country's energy production and consumption methods. For sustained economic growth, we need to improve energy efficiency. This requires...

Users who choose more efficient equipment also need equipment manufacturers to design better technical solutions.

All types of fans are used for ventilation, air conditioning, and in industrial processes (drying, air conveying, combustion blowing) and agriculture, etc.

The energy consumption of these machines has reached nearly 20% of the world's total energy consumption.

This document provides a method for classifying efficiency levels. For example, if a ventilator has a measured efficiency of 68%, its efficiency level is FEG71.

In other parts of ISO 12759, the efficiency class of ventilation fans is based on the measured efficiency value of the fan being greater than or equal to an efficiency rating of 100%.

The principles governing the grade values are established.

To improve the method of classifying ventilation fans, efficiency levels may be renamed or efficiency bandwidth may be narrowed. For example, the measured efficiency of a certain ventilation fan is...

A fan with 68% efficiency rating has an efficiency class of FEG68.

GB/T 43080 aims to establish relevant regulations for the efficiency class of ventilation fans,

and is proposed to consist of 6 parts.

---Part 1: General Requirements. The purpose is to address the classification of power consumption and efficiency levels for various types of ventilation fans, applicable to a wide range of applications.

Fan.

---Part 2: Standard Losses of Drive Components. The purpose is to provide a basis for estimating the input power and overall efficiency of extended ventilation fan systems.

The method is applicable to all electric motor-driven ventilation systems employing various specific component combinations.

---Part 3: Fans at maximum speed without drive unit. The purpose is to determine the efficiency class of the fan for the nominal shaft.

A ventilator body with a power of 0.125kW or greater.

---Part 4: Ventilation Fans at Maximum Speed Including Drive Unit. The purpose is to determine the maximum speed of all types of electrically driven ventilation fans.

Efficiency rating, used for fans with a nominal rated power greater than or equal to 0.125 kW and including a drive unit.

---Part 5: Jet Fans. The purpose is to determine the efficiency rating of all types of jet fans, used for input electrical power of...

5.5kW~155kW jet fans.

---Part 6: Calculation of the Energy Efficiency Index (EER) of Ventilation Fans. The purpose is to determine the energy efficiency index of ventilation fans containing electric motors and other drive devices.

The calculation method is applicable to all types of fans and all specifications of electric motors.

Ventilation fan efficiency rating Part 5: Jet Fan

## 1 Scope

This document establishes the efficiency classification for electric motor-driven jet fans, where the electric motor input power ranges from 5.5kW to...

155kW (see IEC 60034-30-1, motor rated power is 5.5kW~150kW, fan diameter may range from 500mm~) 1600mm).

This document does not apply to jet fans used in enclosed parking lots.

This document is available for use by legislative or regulatory bodies to determine

energy-saving targets for jet fans.

## 2 Normative references

This document has no normative references.

## 3 Terms and Definitions

The following terms and definitions apply to this document.

### 3.1 Ventilation fan

#### 3.1.1

Ventilation fan

A rotating machine capable of receiving mechanical energy; it uses mechanical energy to hold air or other fluids in place by means of one or more bladed impellers.

The gas flows continuously. Its work per unit mass is usually no more than 25 kJ/kg.

**Note:** Ventilation fans are defined according to their installation type, function, flow path, and operating status.

[Source. ISO 13349:2010, 3.1.1, with modifications] 3.1.2 Jetfan A ventilator used to generate an air jet within a space without being connected to any duct.

**Note:** The ventilation fan unit is type E, and its performance is expressed only by thrust. Efficiency is determined by thrust measurement or calculation, and its pressure-related performance characteristics do not conform to...

This requirement.

#### 3.1.3

drive unit

Devices used to power ventilators include electric motors, mechanical transmission devices, and electric motor/control systems.

**Note:** Examples of motor/control systems include frequency converters and electronic converters.

### 3.2 Parameters

#### 3.2.1

mass flow rate