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

GB/T 45465.1-2025

**Testing and calculating methods for seasonal performance factor of
energy recovery ventilators for outdoor air handling - Part 1: Seasonal
performance factor of sensible heating recovery**

**热回收新风机组季节性能系数测试和计算方法 第1部分：供热显热回收季节性能
系数**

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 45465 "Test and calculation method for seasonal performance coefficient of heat recovery fresh air units". GB/T 45465 The following parts have been published.

--- Part 1: Seasonal performance coefficients of sensible heat recovery for heating.

Introduction

In various buildings, the use of heat recovery fresh air units to deliver fresh air to the room while recovering the energy in the exhaust air can significantly reduce the fresh air Load reduction and building energy consumption reduction have become important technical measures to achieve fresh air energy saving and even building energy saving.

The quality will directly affect the realization of fresh air energy saving effect, so its product

performance evaluation also becomes very important.

GB/T 21087-2020 "Heat Recovery Air Unit" mainly proposes general requirements and performance standards for the product itself from the perspective of product quality control.

Requirements and test methods, the energy efficiency index given is the single-point energy efficiency under laboratory standard conditions. GB/T 45465 "Heat recovery fresh air fan The test and calculation method of seasonal energy efficiency coefficient of the heat recovery fresh air unit based on fresh air load is given in the "Test and calculation method of seasonal energy efficiency coefficient of the heat recovery fresh air unit based on fresh air load".

Compared with single-point energy efficiency indicators, seasonal energy efficiency indicators can better reflect the energy-saving effect of actual product applications and are a standard for fresh air energy-saving products.

GB/T 45465 is intended to consist of three parts.

--- Part 1: Seasonal performance coefficient of sensible heat recovery for heating. The purpose is to give the seasonal performance coefficient of sensible heat recovery for heating of heat recovery fresh air units. Testing and calculation methods of energy coefficient.

--- Part 2: Seasonal performance coefficient of sensible heat recovery for cooling. The purpose is to give the seasonal performance coefficient of sensible heat recovery for cooling of heat recovery fresh air units. Testing and calculation methods of energy coefficient.

--- Part 3: Annual performance coefficient of sensible heat recovery. The purpose is to give the annual performance coefficient of sensible heat recovery of the heat recovery fresh air unit. Testing and calculation methods.

1 Scope

This document specifies the test and calculation methods for the seasonal performance coefficient of the sensible heat recovery of heat recovery fresh air units.

This document applies to the testing and calculation of seasonal performance coefficients of sensible heat recovery for heating applications for the purpose of product labeling, comparison and certification.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date

applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 21087-2020 Heat recovery fresh air unit

ISO 16494-1:2022 Heat recovery ventilators and energy recovery ventilators performance test methods Part 1: Energy-related performance

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

With sensible heat or total heat recovery device as the core, the fan drives the air flow to realize the recovery of exhaust air energy and the filtration of fresh air. equipment.

Note: Abbreviated as "unit". [Source: GB/T 21087-2020, 3.1]

3.2 Bypass

The function of reducing the fan energy consumption by changing the air flow channel in the unit and reducing the air flow resistance in the unit.

3.3 Pre heating

In order to prevent the heat recovery device from frosting, the unit is equipped with a function to preheat the fresh air upstream of the heat recovery device.

3.4

The mass flow rate of outdoor air contained in the supply air when the unit is in heat recovery operation.

3.5

The ratio of the temperature difference between the supply air outlet and the fresh air inlet to the temperature difference between the return air inlet and the fresh air inlet when the unit is operating with heat recovery heating.