
Fans — Efficiency classification for fans

Ventilateurs — Classification du rendement des ventilateurs



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 12759 was prepared by Technical Committee ISO/TC 117, *Fans*.

Introduction

The last decade has seen not only an escalation in the price, but also an increasing recognition of the finite life of many of the fossil fuels in use. There is also a belief that climatic change is due to an increase in the levels of carbon dioxide in the atmosphere. This has led to many nations reviewing methods of energy generation and usage.

Therefore, there is a need to promote energy efficiency in order to maintain economic growth. This requires better selection of equipment by users and better design of this equipment by manufacturers.

Fans of all types are used for ventilation and air conditioning, process engineering (drying, pneumatic conveying), combustion air supply and agriculture, etc. Indeed, the energy usage by fans has been calculated as nearly 20 % of worldwide demand.

The fan industry is of a global nature, with a considerable degree of exporting and licensing. To ensure that defined fan performance characteristics are common throughout the world, a series of International Standards has been developed. It is the belief of the industry that there is a need for the recognition of minimum efficiency standards. To encourage their implementation, a classification system is proposed which incorporates a series of efficiency bands. With improvements in technology and manufacturing processes, the minimum efficiency levels can be reviewed and increased over time.

This International Standard can be used by legislators or regulatory bodies for defining future energy saving targets.

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Fans — Efficiency classification for fans

1 Scope

This International Standard establishes a classification of fan efficiency for all fan types driven by motors with an electrical input power range from 0,125 kW to 500 kW. This International Standard is applicable to bare shaft and driven fans, as well as fans integrated into products. Fans integrated into products are measured as stand-alone fans.

This International Standard is not applicable to:

- a) fans for smoke and emergency smoke extraction;
- b) fans for industrial processes;
- c) fans for automotive application, trains and planes;
- d) fans for potentially explosive atmospheres;
- e) box fans, powered roof ventilators and air curtains;
- f) jet fans for use in car parks and tunnel ventilation.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5801:2007, *Industrial fans — Performance testing using standardized airways*

ISO 13348:2007, *Industrial fans — Tolerances, methods of conversion and technical data presentation*

ISO 13349:2010, *Fans — Vocabulary and definitions of categories*

IEC 60034-2-1, *Rotating electrical machines — Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)*

IEC 60034-30, *Rotating electrical machines — Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13349 and the following apply.

NOTE See, in particular, ISO 13349:2010, Tables 4 and 5, as well as the associated equations in Clause 5 of this International Standard and ISO 5801.