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# Water-source heat pumps — Testing and rating for performance —

Part 2:

## Water-to-water and brine-to-water heat pumps

*Pompes à chaleur à eau — Essais et détermination des  
caractéristiques de performance —*

*Partie 2: Pompes à chaleur eau-eau et eau glycolée-eau*



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CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 6, *Testing and rating of air-conditioners and heat pumps*.

This second edition cancels and replaces the first edition (ISO 13256-2:1998), which has been technically revised.

The main changes compared to the previous edition are as follows:

- Significant updates to the formatting, symbols, and terms and definitions, have been included to more closely align with other pertinent ISO standards and the latest ISO requirements.
- The original water loop heat pump (WLHP), ground water heat pump (GWHP) and ground loop heat pump (GLHP) application rating designations, specifying entering liquid source rating test conditions, have been replaced with High, Medium, and Low source temperature range conditions to represent a wider operating map at both standard and partially loaded application rating conditions. It is now possible, when all three (High, Medium and Low) temperature ranges are specified by the manufacturer for energy modelling programs to interpolate performance at other entering water temperatures than those used in the standard.
- Specific antifreeze solution composition requirements have been removed to eliminate prescriptive language and promote industry innovation of novel and improved antifreeze solutions.
- The standard has been expanded to allow multiple heating capacity ratings at differing load temperature conditions (Very High, High, Medium, and Low). Medium was retained as the original load condition.
- Testing tolerances and uncertainties have been harmonized with other pertinent ISO standards.
- Annexes have been significantly updated and harmonized with other pertinent ISO standards.

A list of all parts in the ISO 13256 series can be found on the ISO website.

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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## Introduction

This document covers heating and cooling systems which are generally referred to as “water-source heat pumps.” These systems generally include an indoor heat exchanger with means to move the liquid, a compressor, and a refrigerant-to-water or refrigerant-to-brine heat exchanger. A system may provide both heating and cooling, cooling-only, or heating-only functions.