

SS 530:2024
(ICS 27.015; 91.120.10; 91.140.01)

SINGAPORE STANDARD

**Code of practice for energy efficiency for
building services and equipment**



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Published by Enterprise Singapore

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ISBN 978-981-5277-43-2

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Foreword

This Singapore Standard was prepared by the Working Group on Energy Efficiency for Building Services and Equipment set up by the Technical Committee on Building Maintenance and Management under the purview of the Building and Construction Standards Committee.

In Singapore's densely built-up urban development, with limited land and few natural resources, making buildings green and energy efficient underpin our efforts to reduce our energy and carbon footprint and contribute to the global fight against climate change. Having higher minimum requirements for energy efficient building services and equipment push the boundaries of building performance to create a better and greener built environment and towards achieve our target of net-zero emissions by 2050.

This revision of SS 530 – "Code of practice for energy efficiency for building services and equipment" updates the minimum requirements to keep abreast of international standards and technological advances made in energy efficiency for building services and equipment since the last version published in 2014.

The changes include:

- i) raising the energy efficiency requirements for air-conditioning equipment and water heaters;
- ii) updating of equipment categories, increasing capacity types to align with equipment currently used in the market;
- iii) adding of efficiency requirements for 8-pole motors, as well as for larger capacity motors for 2-pole, 4-pole, and 6-pole motors;
- iv) phasing out the use of gas-fired storage water heaters as being energy-inefficient technology;
- v) introducing methods to determine efficiency for water chilling packages and lighting power density;
- vi) updating lighting power density requirements, and updating/expanding typology for spaces to align with current usage; and
- vii) updating efficiency requirements for building transformers, as well as including higher capacity transformers to align with current products availability in the market.

In preparing this standard, reference was made to the following publications:

- Building Control Regulations 2003
- Code for Environmental Sustainability of Buildings, Edition 4.0
- Code of Federal Regulations – Part 431 – Energy Efficiency Program for Certain Commercial and Industrial Equipment
- Green Mark 2021 Energy Efficiency Technical Guide, 2nd Edition
- Minimum Energy Efficiency Standards – Energy Conservation (Energy Management Practices) Regulations 2013
- Minimum Energy Performance Standards – Energy Conservation (Regulated Goods and Registered Suppliers) Regulations 2017

Permission has also been sought from the following organisations for the reproduction of materials from their publication into this standard:

- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
ANSI/ASHRAE/IES Standard 90.1:2022 Energy standard for sites and buildings except low-rise residential buildings.
- International Electrotechnical Commission (IEC)
IEC 60034-30-1:2014 Rotating electrical machines – Part 30-1: Efficiency classes of line operated AC motors (IE code).

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NOTE

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Code of practice for energy efficiency for building services and equipment

1 Scope

This standard provides minimum energy efficiency requirements, as well as the criteria for determining compliance for:

- new installation of systems and equipment in buildings;
- replacement of systems and equipment in buildings; and
- replacement of components of systems and equipment in buildings.

The provisions of this standard apply to the following systems and equipment used in buildings:

- air-conditioning equipment¹;
- heat rejection equipment;
- water heaters;
- motor drives;
- high-efficiency lighting²;
- distribution transformers;
- lifts and escalators.

NOTE 1 – For related matters on energy conservation in air-conditioning systems, refer to the latest edition of SS 553, 'Code of practice for air-conditioning and mechanical ventilation in buildings'.

NOTE 2 – For guidance on the illuminances recommended for different applications, refer to the latest edition of the SS 531 series, 'Code of practice for lighting of work places'.

2 Normative references

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

ANSI/AHRI 210/240	Performance rating of unitary air-conditioning & air-source heat pump equipment
ANSI/AHRI 340/360	Performance rating of commercial and industrial unitary air-conditioning and heat pump equipment
ANSI/AHRI 366	Commercial and industrial unitary air-conditioning condensing units
ANSI/AHRI 560	Performance rating of water-cooled lithium bromide absorption water-chilling and water-heating packages