



# **Greenhouse and Energy Minimum Standards (Power Transformers) Determination 2012<sup>1</sup>**

*Greenhouse and Energy Minimum Standards Act 2012*

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I, MARK DREYFUS, Parliamentary Secretary for Climate Change and Energy Efficiency, make this Determination under section 23 of the *Greenhouse and Energy Minimum Standards Act 2012*.

Dated                      25 October 2012

MARK DREYFUS

Parliamentary Secretary for Climate Change and Energy Efficiency

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## 1 Name of Determination

This Determination is the *Greenhouse and Energy Minimum Standards (Power Transformers) Determination 2012*.

## 2 Commencement

This Determination comes into force on the day after it is registered.

## 3 Definitions

In this Determination:

**Act** means the *Greenhouse and Energy Minimum Standards Act 2012*.

**AS 2374.1-1997** means *Australian Standard AS 2374.1-1997 Power transformers. Part 1: General*, as it existed on 5 September 1997.

*Note:* AS 2374.1-1997 is available from Standards Australia Limited as a superseded standard.

**AS 2374.1.2-2003** means *Australian Standard AS 2374.1.2-2003 Power transformers. Part 1.2: Minimum energy performance standard (MEPS) requirements for distribution transformers*, as it existed on the date this Determination came into force.

*Note 1:* AS 2374.1.2-2003 is available from Standards Australia Limited.

*Note 2:* AS 2374.1.2-2003 includes all amendments up to and including AS 2374.1.2-2003 /Amdt:1 made on 19 August 2005.

**AS 2735-1984** means *Australian Standard AS 2735-1984 Dry-type power transformers*, as it existed on 9 November 1984.

*Note:* AS 2735-1984 is available from Standards Australia Limited as a superseded standard.

**Australian Standard** means a standard that is published by Standards Australia Limited denoted by the letters "AS" and identifying numbers and/or letters.

**Australian/New Zealand Standard** means a standard that is jointly published by Standards Australia Limited and Standards New Zealand, is applicable in both countries and denoted by the letters "AS/NZS" and identifying numbers and/or letters.

**CIE Standard** means a standard that is published by, or on behalf of, the International Commission on Illumination.

**IEC Standard** means a standard with letters "IEC" and a number that is published by, or on behalf of, the International Electrotechnical Commission.

**power transformer** means a static piece of apparatus with two or more windings which, by electromagnetic induction, transforms a system of alternating voltage and current into another system of voltage and current usually of different values and at the same frequency for the purpose of transmitting electrical power.

*Note:* This is the same meaning as in subclause 3.1.1 of AS 2374.1-1997.

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***standard*** means an Australian Standard, an Australian/New Zealand Standard, a CIE Standard, an IEC Standard or any other equivalent document.

*Note:* Several other words and expressions used in this Determination have the meaning given by section 5 of the Act. For example:

- category A product
- covered by
- family of models
- GEMS
- GEMS labelling requirements
- GEMS level requirements
- model
- product class

## 4 Interpretation

### *Applicable definitions of terms or phrases*

- (1) If a term or phrase is not defined under the Act, the Regulations to the Act or in this Determination, but the term is defined in a standard mentioned in section 3 of this Determination, the term or phrase is to be read for the purposes of this Determination as having the meaning of the term under the relevant standard.

*Note:* Notwithstanding this, for convenience to users, the key terms for ascertaining if a product is covered by this Determination are defined in this Determination.

### *Applicable version of documents incorporated into Standards*

- (2) For the purposes of this Determination the applicable version of any document, including a standard, that:
  - (a) is referred to in a standard under the heading ‘Referenced Documents’, or under an equivalent heading in a standard; and
  - (b) must be applied to give effect to this Determination or a standard referred to in this Determination,

is the following version of the document:

- (c) if the document is the subject of a definition in section 3 of this Determination which specifies a date of effect—the version of the document that existed at that date; and
- (d) otherwise—the version of the document that existed at the date this Determination came into force.

*Note:* For example, clause 4.2 of AS 2374.1.2-2003 states that measurements shall be carried out according to the tests of AS 2374.1-1997. The applicable version of AS 2374.1-1997 is the version that existed on 5 September 1997.

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## 5 Specified product classes covered by this Determination

- (1) This Determination covers power transformers in the product classes set out in subsection (2) with power ratings from 10 kVA to 2500 kVA and a system highest voltage up to 24 kV.

*Note:* This subsection reflects the scope specified in clause 1.1 of AS 2374.1.2-2003.

*Note 2:* This subsection specifies products that are covered by the Determination. See subsection (3) for products that are not covered.

- (2) The product classes are as follows:

<b>Product class</b>	<b>Products covered by class</b>
1	Single-phase or single wire earth return oil-immersed type transformer.
2	Three-phase, oil-immersed type transformer.
3	Single phase or single wire earth return, dry-type transformer where the $U_m$ is 12 kV.
4	Single phase or single wire earth return, dry-type transformer where the $U_m$ is 24 kV.
5	Three phase, dry-type transformer where the $U_m$ is 12 kV.
6	Three phase, dry-type transformer where the $U_m$ is 24 kV.

- (3) For subsection 23 (2) of the Act, this Determination does not cover:
- (a) transformers other than those designed for 11 or 22 kV networks; or
  - (b) instrument transformers; or
  - (c) auto transformers, that is transformers in which at least two windings have a common part; or
  - (d) traction transformers mounted on rolling stock; or
  - (e) starting transformers; or
  - (f) testing transformers; or
  - (g) welding transformers; or
  - (h) three phase transformers with three or more windings per phase; or
  - (i) arc-furnace transformers; or
  - (j) earthing transformers; or
  - (k) rectifier or converter transformers; or
  - (l) uninterruptible power supply (ups) transformers; or

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- (m) transformers with an impedance less than 3 percent or more than 8 percent; or
  - (n) voltage regulating transformers; or
  - (o) transformers designed for frequencies other than 50 hertz; or
  - (p) gas-filled dry-type transformers; or
  - (q) flameproof transformers.

*Note:* This subsection reflects the exclusions specified in clause 1.1 of AS 2374.1.2-2003.

- (4) In this section:

***dry-type transformer*** means transformer of which the magnetic circuit and windings are not immersed in an insulating liquid.

*Note:* This is the same meaning as in subclause 3.1.5 of AS 2374.1-1997.

***oil-immersed type transformer*** means a transformer of which the magnetic circuit and windings are immersed in oil.

*Note:* This is the same meaning as in subclause 3.1.4 of AS 2374.1-1997.

$U_m$  means the highest r.m.s. voltage of the system to which the power transformer is designed to be connected.

## 6 GEMS level requirements

### *Energy use and greenhouse gas production*

- (1) For paragraphs 24 (1) (a) and 25 (a) of the Act, the specified energy use requirements are the requirements mentioned in:
- (a) for products in product classes 1 and 2, Table 1 at clause 2.1 of AS 2374.1.2-2003; and
  - (b) for products in product classes 3 to 6, Table 2 at clause 2.1 of AS 2374.1.2-2003.

### *Conducting tests*

- (2) For paragraphs 24 (1) (a) and 25 (b) of the Act, the specified requirements for conducting tests for products covered by this Determination are the requirements mentioned in section 4 of AS 2374.1.2-2003 and section 5 of AS 2735-1984.

## 7 GEMS labelling requirements

### *Labelling information and communication requirements*

- (1) For paragraphs 24 (1) (b), 26 (1) (a) and 26 (1) (b) of the Act, the specified labelling and communication requirements for products covered by this Determination are the requirements mentioned in clause 1.6 of AS 2374.1.2-2003 in relation to compliance marking.

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## 8 Other GEMS requirements

### *High efficiency level*

- (1) For subsection 24 (2) and paragraph 27 (1) (a) of the Act, the specified requirements for products covered by this Determination to meet the high efficiency level are the requirements mentioned in:
  - (a) for products in product classes 1 and 2, Table 3 at clause 3.1 of AS 2374.1.2-2003; and
  - (b) for products in product classes 3 to 6, Table 4 at clause 3.1 of AS 2374.1.2-2003.

*Note:* This subsection specifies the requirements a product must meet in order to be classified as a 'high power efficiency transformer'.

### *Conducting tests*

- (2) For subsection 24 (2) and paragraph 27 (1) (e) of the Act, the specified requirements for conducting tests for products covered by this Determination in relation to paragraph 27 (1) (b) are the requirements mentioned in section 4 of AS 2374.1.2-2003.

## 9 Families of models

- (1) For section 28 of the Act, the specified circumstances in which 2 or more models in a single product class covered by this Determination are in the same family of models, are the circumstances mentioned in subclause 1.5.2 of AS 2374.1.2-2003.

## 10 Product Categories

For section 29 of the Act, the products covered by this Determination are category B products.

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### **Note**

1. All legislative instruments and compilations are registered on the Federal Register of Legislative Instruments kept under the *Legislative Instruments Act 2003*. See <http://www.frli.gov.au>.