



**Composts, soil conditioners and  
mulches**



This Australian Standard® was prepared by Committee CS-037, Garden Soils and Potting Mixes. It was approved on behalf of the Council of Standards Australia on 16 February 2012. This Standard was published on 29 February 2012.

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The following are represented on Committee CS-037:

- Association of Accredited Certification Bodies
- Australian Institute of Horticulture
- Australian Society of Soil Science
- Compost Australia
- Consumers Federation of Australia
- Department of Agriculture and Food, WA
- Department of Primary Industries, Vic.
- Environmental Protection Agency, Qld
- Environmental Protection Agency, Vic.
- Independent Chairperson
- NSW Department of Primary Industries
- Nursery and Garden Industry Australia
- TAFE NSW
- University of NSW
- Waste Management Association of Australia

Additional Interests:

- Recycled Organics Unit
  - Sydney Environmental & Soil Laboratory
- 

This Standard was issued in draft form for comment as DR2 AS 4454.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard<sup>®</sup>

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## PREFACE

This Standard was prepared by the Standards Australia Committee CS-037, Garden Soils and Potting Mixes, to supersede AS 4454—2003.

*This Standard incorporates Amendment No. 1 (June 2012) and Amendment No. 2 (December 2018). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

This Standard specifies general and specific requirements for composts, soil conditioners and mulches.

The major changes to this edition of the Standard include the following:

- (a) The Application has been extended to include ‘all levels of government’ and ‘as feedstocks to manufacturers’ (Clause 1.2).
- (b) A definition of raw mulch (Clause 1.5.9) and mature compost (Clause 1.5.4) have been added.
- (c) The requirements for compliance with national environmental and health standards have been clarified, limits for chemical contaminants set, and a contaminant warning label and statement is now required if copper and zinc levels fall within certain ranges. (Clause 2.1, Table 3.1(C) and Clause 5.3(h)).
- (d) A clause addressing the classification of products by application and use has been added (Clause 3.1.2).
- (e) The method of measuring bulk density and volume of product as delivered has been clarified (new Appendix J).
- (f) The nitrogen drawdown index has been reinstated as a test for determining maturity/stability (Appendix O).
- (g) An optional revised health warning has been added (Clause 5.2 (e)).
- (h) Additional information on nutrients, trace elements and feedstocks is now required (Clause 5.5).
- (i) The self-heating test reverts to an optional test for determining maturity (Appendix N).
- (j) The determination of CaCO<sub>3</sub> equivalent is now only required if pH > 8.0 (Table 3.1(A)).
- (k) A requirement to test for pathogen indicators when high risk raw materials are used (Table 3.1(A)) has been added.
- (l) A new Appendix N, Method for determination of maturity index, has been included.
- (m) The reinstatement of carbon to nitrogen ratio (C:N).
- (n) The name of the ‘Method for determination of toxicity to plants’ test has been changed to ‘Method for plant growth test (Bioassay)’ and the method modified to accommodate physical properties of composts and mulches (Appendix F).
- (o) Additional requirements for claiming compliance are specified (Clause 4.2 and Appendix Q).
- (p) A new Appendix A, Methods of sampling, sample handling and preparation prior to analysis has been added.

- (q) Requirements to report test results for some parameters (pathogens, nutrients, contaminants, etc.) in mg/kg dry mass equivalent have been added.
- (r) Appendices on best practice guidelines for composting systems and vermiculture systems have been deleted as some of the information was obsolete and information on current best practice is readily available from other sources.

Relevant local, territory, state and federal government regulations not referenced in this Standard may detail additional requirements. In particular, prior to establishing a manufacturing facility, investigations may be required to ensure approval of the location.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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## STANDARDS AUSTRALIA

**Australian Standard**  
**Composts, soil conditioners and mulches**

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard specifies requirements for organic products and mixtures of organic products that are to be used to amend the physical and chemical properties of natural or artificial soils and growing media. It specifies physical, chemical, biological and labelling requirements for composts, mulches, soil conditioners and related products that have been derived largely from compostable organic materials and which meet the minimum requirements as set out in this Standard. It covers products marketed or distributed both in bags and in bulk in an unrestricted manner in all market sectors including domestic use, urban landscaping, agriculture and land rehabilitation.

This Standard applies to organic products and mixtures of organic products that have been treated by pasteurizing or composting procedures as defined by this Standard. Raw mulches that have not been subject to temperature-based pasteurization may be covered by this Standard if they are verified as being free of plant propagules and pathogens in accordance with Clause 3.2.1(b) of this Standard.

This Standard does not apply to home composting end products for self-use, nor does it apply to organic fertilizers such as blood and bone. Also excluded are liquid organic wastes, liquid seaweed products, non-organic mulches (e.g. gravel), non-organic soils and soil conditioners (e.g. gypsum and sand), non-compostable organic materials (e.g. plastics) and materials variously described as 'compost starters' and 'activators'.

Shredded garden organics (sometimes referred to as 'green waste', 'green organics', 'garden wastes' or 'yard wastes') that have not been subjected to either a pasteurization or composting procedure are specifically excluded from this Standard, mainly because they have a high probability of containing plant propagules and pathogens. Vermicast that has not been subject to pasteurization or composting before or after being worked by worms may be covered by this Standard if it passes the provisions of Appendices L and M, along with all the other criteria in Tables 3.1(A), 3.1(B) and 3.1(C).

This Standard does not specify tests for specific or indicator plant pathogens due to a lack of validated methods.

**1.2 APPLICATION**

This Standard is intended for use by all levels of government, those who manufacture or supply compost, mulches and soil conditioners, and those involved in providing compostable organic materials as feedstocks to manufacturers.

**1.3 OBJECTIVE**

The objective of this Standard is to provide manufacturers, suppliers, customers and government bodies with the minimum requirements for the physical, chemical and biological properties of composts, soil conditioners, mulches and vermicast, as well as labelling and marking, in order to facilitate the beneficial recycling and use of compostable organic materials with minimal adverse impact on environmental and public health, by avoiding biosecurity and phytotoxicity risks associated with inappropriate product