

Australian/New Zealand Standard™

Spray painting booths, designated spray painting areas and paint mixing rooms

Part 1: Design, construction and testing

AS/NZS 4114.1:2003

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Electrical Equipment in Hazardous Areas. It was approved on behalf of the Council of Standards Australia on 30 December 2002 and on behalf of the Council of Standards New Zealand on 13 December 2002. It was published on 11 February 2003.

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Part 1: Design, construction and testing

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Electrical Equipment in Hazardous Areas to supersede AS/NZS 4114.1:1995, *Spray painting booths*, Part 1: *Design, construction and testing*.

This Standard is intended for the guidance of manufacturers, designers, users, statutory authorities and others associated with the construction of spray painting booths.

Major changes to the 1995 edition incorporated in this revised edition are based on industry comments received and are as follows:

- (a) The title was reviewed and reads '*Spray painting booths, designated spray painting areas and paint mixing rooms*'.
- (b) New definitions were added.
- (c) Diagrams for the different airflow systems (Clause 1.6) were added.
- (d) Diagrams for external exhaust fans (Clause 2.10) were added.
- (e) Infrared heating (Clause 3.4.5) was added.
- (f) Diagrams for examples of air supply/exhaust systems (Clause 4.2.2.1) were added.
- (g) Spray cycle airflow rates (Clause 4.2.2.3) were fully reviewed.
- (h) Clause 5.3.2—*System requirements* was substantially expanded to include detailed requirements for heat exchangers and heat exchanger flues.
- (i) Method to determine airflow velocity (Clause 7.5) was added.
- (j) Appendix A—*Relevant authorities* was updated.
- (k) A new Appendix B—*Paint mixing rooms* was added; it contains all the requirements for the different types of such rooms.

This Standard is Part One of a Series which consists of the following:

AS/NZS

4114	Spray painting booths, designated spray painting areas and paint mixing rooms
4114.1	Part 1: Design, construction and testing (this Standard)
4114.2	Part 2: Selection, installation and maintenance

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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Australian/New Zealand Standard

Spray painting booths, designated spray painting areas and paint mixing rooms

Part 1: Design, construction and testing

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for the design, construction, and testing of spray painting booths, designated spray painting areas and paint mixing rooms, in which flammable liquids are used. It also covers booths incorporating baking or heating cycles, using either direct or indirect heating systems. For booths using direct fired heating systems, only those using fuels covered in Australian Standards, and in New Zealand, by the New Zealand Standards for gas installations referenced in the New Zealand Gas Regulations, are covered by this Standard.

The requirements contained in this Standard are supplementary to the requirements for electrical apparatus specified in AS/NZS 3000, Wiring Rules and the relevant requirements of the AS/NZS 2381 series.

NOTES:

- 1 Attention is drawn to other requirements that may be contained in the respective legislation.
- 2 Part 2 of this Standard details requirements for the installation and maintenance of spray painting booths, designated spray painting areas and paint mixing rooms.
- 3 Water-based paints contain flammable liquids in the form of organic solvents.

This Standard applies to all types of paints containing flammable liquids including water-based paints, since they also contain organic solvents.

This Standard does not apply to—

- (a) dry powder type spray booths or operations, the requirements for which are detailed in AS 3754; or
- (b) ovens used for the sole purpose of drying or baking.

1.2 APPLICATION

This Standard is intended for application by designers, manufacturers, regulatory authorities, owners and operators of spray painting booths, designated spray painting areas and paint mixing rooms.

NOTE: Appendix A contains a list of various authorities that may have a regulatory role regarding the use of spray painting booths, designated spray painting areas and paint mixing rooms.



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