



Textile floor coverings — Installation practice

Part 1: General



AS 2455.1:2019

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- AWTA Product Testing (Testing Interests Australia)
- Carpet Institute of Australia
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Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee TX-009, Carpets, to supersede, AS/NZS 2455.1:2007, *Textile floor coverings—Installation practice, Part 1: General*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide contractors, manufacturers, suppliers, and purchasers of textile floor coverings, and others (for example, technical educators) with a best-practice guide to enable the provision of correctly installed textile floor coverings.

This revision was undertaken to update systems of installation and preparation.

The AS 2455 series of Standards comprises the following parts:

AS 2455.1, *Textile floor coverings—Installation practice, Part 1: General (this Standard)*

AS 2455.2, *Textile floor coverings—Installation practice, Part 2: Carpet tiles*

NOTE Requirements for installing carpet tiles are covered in Part 2 of this Standard.

The terms “normative” and “informative” have been used in this Standard to define the application of the appendices 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 Standard®

Textile floor coverings — Installation practice

Part 1: General

Section 1 Scope and general

1.1 Scope

This Standard sets out requirements for installing textile floor coverings (carpets). It gives details of the work necessary in preparing subfloor surfaces, together with the procedures that are to be adopted where textile floor coverings are laid over various types of subfloors and underlays. Details of information to be obtained by the contractor are also specified (see [Appendix A](#)).

NOTE 1 The term “textile floor covering” is applicable to carpeting in roll, sheet and modular (tile and plank) form.

NOTE 2 Manufacturer’s instructions take precedence over the requirements of this Standard. If no manufacturer installation instructions are available, relevant provisions of the Standard should be followed.

NOTE 3 Installation methods for specialized products, (e.g. impervious backed carpets) are not covered by this Standard. Reference to manufacturer’s instructions is recommended.

This Standard is applicable to the installation of residential and commercial textile floor coverings.

1.2 Objective

The objective of this Standard is to provide contractors, manufacturers, suppliers, and purchasers of textile floor coverings, and others (e.g. technical educators) with a best practice guide to enable the provision of correctly installed textile floor coverings.

1.3 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1684, *Residential timber-framed construction (all parts)*

AS 2454, *Textile floor coverings—Terminology*

AS/NZS 1859.2, *Reconstituted wood-based panels—Specifications, Part 2: Dry process fibreboard*

AS/NZS 1859.4, *Reconstituted wood-based panels—Specifications, Part 4: Wet process fibreboard*

AS/NZS 2270, *Plywood and blockboard for interior use*

NZS 3604, *Timber-framed buildings*

National Code of Practice for the Control of Workplace Hazardous Substances (NOHSC 2007)

1.4 Definitions

For the purpose of this Standard, the definitions given in AS 2454 and those below apply.

1.4.1

alkalinity (pH)

value that represents the acidity or alkalinity of an aqueous solution on a scale of 0 to 14 with 7 representing neutrality, less than 7 increasing acidity and greater than 7 increasing alkalinity

1.4.2**carpet**

a floor covering having a use-surface composed of textile material

Note 1 to entry: Common used term for textile floor covering.

1.4.3**carpet gripper**

strips which are fixed to the floor around the perimeter of the room, and which have rows of angled pins on which stretched carpet is hooked and held in place, creating a smooth finish at the walls without the use of carpet tacks

1.4.4**carpet tile**

textile floor covering manufactured in modules, designed to be installed by laying side by side

1.4.5**competent person**

a person who has acquired through training, qualification, or experience, the knowledge and skills that enable the person to safely and effectively perform the task required

1.4.6**contractor**

the firm or person authorized by the purchaser to carry out the laying of the textile floor covering

1.4.7**conventional (carpet gripper) installation**

textile floor covering is stretched over a separate underlay and held in place by carpet gripper fixed to the subfloor around the perimeter

1.4.8**cross join**

the join between two pieces of textile floor covering across the direction of manufacture

1.4.9**crotch**

the junction of the lower edge of the riser with the rearmost edge of the stair tread

1.4.10**direct stick installation**

textile floor flooring is adhered over the whole area of the floor to be covered

1.4.11**dual bond installation**

soft underlay is adhered to the substrate and the textile floor covering is then adhered to the soft underlay using the proper adhesive

1.4.12**edge sealing**

application of specifically formulated seam sealant to cut edges of textile floor covering to be bonded to secure and protect the cut edges from fraying and delamination

1.4.13**fill**

an installed length of textile floor covering of a width or dimension that is less than its usable manufactured width

1.4.14**knee kicker**

installation tool designed to position, not stretch, textile floor covering

1.4.15**laitance**

a layer of material formed from the constituents of concrete, which may collect on the surface soon after pouring

1.4.16**may**

indicates the existence of an option

1.4.17**plane (surface)**

when measured between two points over a 2.0 m distance on the surface at any position, no part is more than 4 mm below a straight edge

1.4.18**primary backing**

the part of the textile floor covering that lies under, and is attached to the pile or use-surface

1.4.19**riser**

the vertical face of a step between two stair treads

1.4.20**screed topping/levelling compound**

a layer of cementitious or other suitable material applied over the whole of the subfloor to create a smooth, plane surface at a defined height (see [Figure 1](#))

1.4.21**seam**

the join made along the length in the direction of manufacture between two adjacent pieces of textile floor covering

1.4.22**seam peaking**

stretching the textile floor covering during installation results in slight elevation of taped seams which usually renders the seam more visible

1.4.23**seam sealer**

a specifically formulated adhesive used to join textile floor covering edges together

1.4.24**seaming tape**

specifically engineered tape used for joining two sections of the textile floor covering

1.4.25**secondary backing**

reinforcement attached to the back of textile floor covering to enhance dimensional stability, strength, stretch resistance and ease of handling

1.4.26**selvedge**

the lengthwise, factory-finished edge of a textile floor covering

1.4.27**shall**

indicates that a statement is mandatory

1.4.28**should**

indicates a recommendation

1.4.29**smooth surface (abrupt deviation tolerance)**

of a condition such that, when a straightedge 150 mm long is placed on the surface at any position, no part of it is more than 1 mm below the straightedge

1.4.30**soft underlay**

a layer of soft material such as foam, rubber or textile laid on the subfloor on which the textile floor covering is to be installed

1.4.31**stair nose**

leading edge of stair tread that is rounded for textile floor covering installation

1.4.32**subfloor**

the base structural floor surface (see [Figure 1](#))

1.4.33**subfloor heating**

where heating systems are installed on or in the subfloor

1.4.34**substrate**

finished floor surface upon which the textile floor covering is installed (see [Figure 1](#))

1.4.35**relative humidity (RH)**

the amount of moisture in the air as a percentage of the amount the air can actually hold

1.4.36**textile floor covering**

floor covering having a wear surface composed of textile material

1.4.37**traffic**

movement over a textile floor covering of people, trolleys, equipment, furniture and other objects

1.4.38**trowel**

hand tool used for spreading adhesive, levelling and patching compound and the like

1.4.39**tuft**

a length of yarn that forms the wear surface of a textile floor covering

1.4.40**underlay**

a layer of material laid on the subfloor or screed topping/levelling compound to provide a smooth, level or planar surface to receive the floor covering. Although underlay may be hard or soft, underlay usually refers to soft underlay unless otherwise stated

1.4.41**wear surface**

the pile of the uppermost layer of a textile floor covering directly exposed to traffic

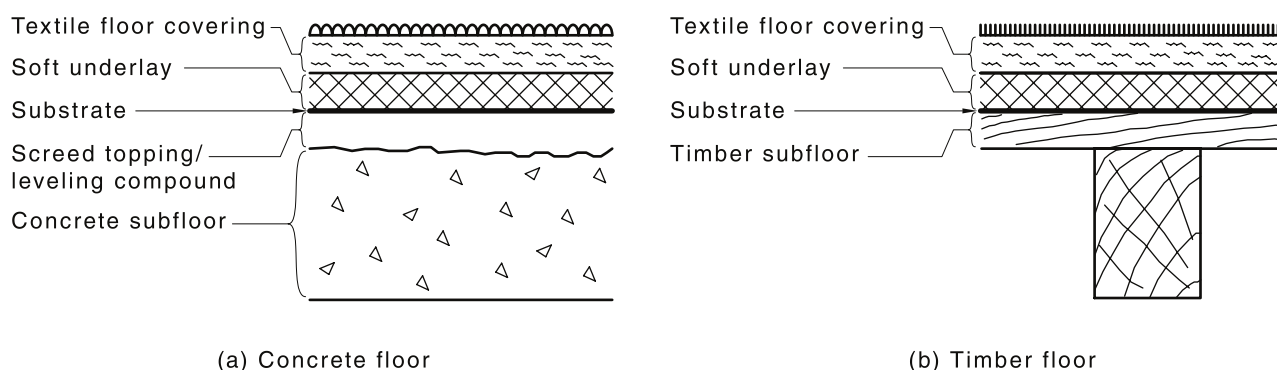


Figure 1 — Illustration of concrete and wood floors and explanation of terms

1.5 Materials

1.5.1 Textile floor coverings

Textile floor coverings shall conform with the requirements of relevant Australian, New Zealand or Joint Australian/New Zealand Standards.

1.5.2 Underlays

1.5.2.1 Hard underlays

Unless the subfloor is substantially free from grooves, ridges, gaps, holes and similar imperfections, the use of a hard underlay is recommended.

Where a hard underlay is used, the following requirements apply:

- (a) The underlay shall have an estimated service life not shorter than that of the textile floor covering.
- (b) The underlay shall be compatible with the textile floor covering and the adhesive(s) which are to be used.
- (c) The underlay shall be non-staining, non-exuding and sufficiently dense to withstand normal traffic load on the floor without becoming indented or deformed.
- (d) The underlay shall be capable of being bonded to the subfloor in such a manner that the bonding is not affected by normal traffic loading.
- (e) The underlay shall be non-shrinking to the extent that, when the textile floor covering is laid, no evidence of gaps shall be visible.
- (f) The maximum variation in length between the diagonals of underlay sheet shall not exceed 1.0 mm.
- (g) For timber subfloors, the underlay shall be either reduced density hardboard flooring underlay (Type RD), as defined in AS/NZS 1859.4, or medium density fibreboard (Types MDF and MR MDF in accordance with AS/NZS 1859.2, or medium density fibre cement sheet known to manufacturers as hard underlay.

NOTE Other products may be used if agreed between the contractor and the purchaser.

1.5.2.2 Soft underlays

The soft underlay shall have a service life no shorter than that of the textile floor covering in accordance with the recommendations of the underlay manufacturer and the textile floor covering manufacturer.

NOTE 1 The requirements for soft underlays are detailed in AS 4288.

NOTE 2 For installation of soft underlays see [Clause 3.7](#) and [Clause 3.8](#).

NOTE 3 Textile floor covering should never be laid over existing textile floor covering and/or existing underlay as this can cause permanent damage to the new floor covering installation and may void the textile floor covering manufacturer's warranty.

1.5.3 Adhesives

When adhesives are to be used the following shall apply:

- (a) The choice of adhesives and manner of use for the particular installation shall be made by consultation between the contractor and the manufacturer/supplier of the selected underlay, textile floor covering, adhesive and any other component of the flooring assembly.

Adhesives used shall be such that they ensure minimal hazardous risk to both personnel and property involved with the installation and site. Safety Data Sheets obtainable from manufacturers of chemical products should be provided on-site whenever adhesives are being used. In Australia, these shall be in accordance with the National Code of Practice for the Control of Workplace Hazardous Substances (NOHSC 2007).

- (b) The ambient RH and temperature of the building shall be in accordance with the instructions of the manufacturer of the textile floor covering and of the adhesive. Where subfloor heating units are installed, the adhesive shall be such that it is not adversely affected by the temperature at which the heating units are to be operated.
- (c) Where additives such as curing compounds, curing agents, parting agents or other surface treatments, or where old adhesives and levelling compounds are present on the subfloor which may have a damaging effect on the adhesive or levelling compound, the adhesive and/or levelling compound manufacturer's installation instructions shall be followed.

NOTE These treatments may have to be removed by grinding or sanding.

1.5.4 Carpet gripper

Where a carpet gripper is used the following shall apply:

- (a) The carpet gripper shall be constructed of five (5) even thickness plywood layers, and be in accordance with AS/NZS 2270.
- (b) A carpet gripper with the correct nails to securely fix the carpet gripper to the subfloor shall be chosen for each subfloor type.
- (c) The anchoring nails shall be of sufficient length to securely fix the gripper to the subfloor.
- (d) The pin height shall be of sufficient length to penetrate the secondary carpet backing and securely hold the textile floor covering to the carpet gripper.
- (e) If the carpet gripper is adhered to the subfloor, then the adhesive used shall have sufficient hold to anchor the gripper to the subfloor when the textile floor covering is stretched in accordance with the textile floor covering manufacturer's instructions.
- (f) The carpet gripper thickness shall be of similar height to the soft underlay so that the textile floor covering can be securely fixed in the same plane to the carpet gripper.
- (g) Architectural gripper shall always be used for commercial installations.