

Australian/New Zealand Standard™

Textile floor coverings—Installation practice

Part 1: General



AS/NZS 2455.1:2007

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Australian Chamber of Commerce & Industry
Australian Retailers Association
Certification Interests (Australia)
Australian Wool Testing Authority
Building Service Contractors of New Zealand
CSIRO Textile and Fibre Technology
Carpet Institute of Australia
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Textile floor coverings—Installation practice

Part 1: General

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TX-009, Carpets, to supersede, in Australia, AS/NZS 2455:1995, *Textile floor coverings—Installation practice*, Part 1: *General*.

This Standard incorporates Amendment No. 1 (August 2009). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This revision was undertaken to include other systems of installation and preparation. Specified conditioning and optimum temperature requirements during installation have also been included in this edition.

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 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
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, and where subfloor heating units are installed. Details of information to be obtained by the contractor are also specified (see Appendix A).

1.2 OBJECTIVE

The objective of this Standard is to provide contractors, manufacturers, suppliers, and purchasers of textile floor coverings, and others, for example, technical educators, with procedures to enable the provision of correctly installed textile floor coverings.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- | | |
|------|---|
| 1684 | Residential timber-framed construction (series) |
| 2454 | Textile floor coverings—Terminology |
| 4288 | Soft underlays for textile floor coverings |

AS/NZS

- | | |
|--------|--|
| 1080 | Timber—Methods of test |
| 1080.1 | Method 1: Moisture content |
| 1859 | Reconstituted wood-based panels—Specifications |
| 1859.2 | Part 2: Dry-processed fibreboard |
| 1859.4 | Part 4: Wet-processed fibreboard |
| 2270 | Plywood and blockboard for interior use |

NZS

- | | |
|------|-------------------------|
| 3604 | Timber framed buildings |
|------|-------------------------|

WorkSafe Australia National Model Regulations

- | | |
|------------|---|
| NOHSC:1005 | Control of workplace hazardous substances |
| NOHSC:2007 | National Code of Practice—Control of workplace hazardous substances |

1.4 DEFINITIONS

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

1.4.1 Contractor

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

1.4.2 Crotch

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

1.4.3 Fill-out

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

1.4.4 Plane (surface)

A1

Of a condition such that when a straightedge 3.0 m long is placed on the surface at any position, no part is more than 5 mm above or below the straight edge.

1.4.5 Purchaser

The principal to the contract or the person authorized by the principal to superintend the work on his behalf.

1.4.6 Smooth (surface)

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.

1.4.7 Subfloor

The surface on which the textile floor covering or the underlay is to be laid (see Figure 1).

1.4.8 Subfloor heating

Any panel heating appliance or system whereby the subfloor structure is warmed intentionally for space heating purposes. Also known as 'underfloor heating'.

1.4.9 Laitance

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

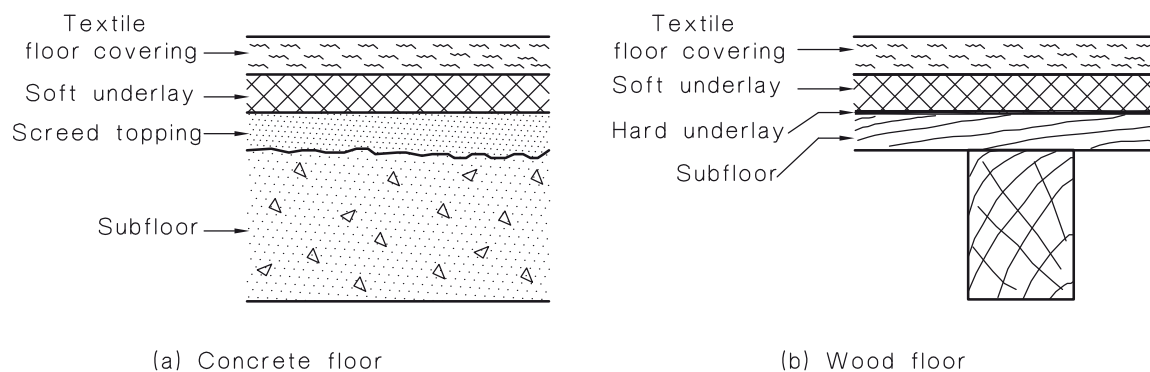


FIGURE 1 ILLUSTRATION OF CONCRETE AND WOOD FLOORS AND EXPLANATION OF TERMS

1.5 MATERIALS

1.5.1 Textile floor coverings

Textile floor coverings shall comply with the requirements of the relevant Australian, New Zealand or Joint Australian/New Zealand Standards. Where applicable, the textile floor covering referred to in this Standard shall be suitable for use above subfloor heating where the temperature of the upper surface of the subfloor does not exceed 27°C.

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 MDFMR 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 carpet manufacturer. The requirements for soft underlays are detailed in AS 4288.

For installation of soft underlays see Clauses 3.7 and 3.8.

NOTE: Carpet should never be laid over existing carpet and/or existing underlay as this can cause permanent damage to the new floor covering installation.

1.5.3 Adhesives

The following shall apply:

- (a) The choice of adhesives shall be made by consultation between the contractor and the manufacturer/supplier of the selected underlay, manufacturer/supplier of the textile floor covering and the manufacturer/supplier of the adhesive, and the purchaser shall be advised if requested.

- (b) Adhesives used shall be such that they ensure minimal hazardous risk to both personnel and property involved with the installation and site. Adhesives used shall be labelled in accordance with regulations concerning occupational health and safety, poisons, dangerous goods and transportation of dangerous goods.

NOTE: Material Safety Data Sheets which should be easily obtainable from manufacturers of all chemical products, should be provided on-site whenever adhesives are being used.

In Australia, these shall be in accordance with NOHSC:1005 and NOHSC:2007.

- (c) Where the relative humidity of the atmosphere in the building is 75% or more, only adhesives suitable for such conditions shall be used. Any such adhesive shall be used in accordance with the instructions of the manufacturers of the textile floor covering and of the adhesive.

NOTE: In high humidity, condensation can form on the surface of the substrate and/or adhesive and prevent adhesion of the flooring.

- (d) Where subfloor heating units are installed, the adhesive shall be such that it is not affected adversely by the temperature at which the heating units are to be operated.
- (e) Where additives such as curing agents, parting agents and surface treatments which may have a deleterious effect on an adhesive are present on the subfloor, the adhesive shall be isolated from the deleterious material/s with the use of appropriate trowelled-on compounds.

NOTE: Some curing agents may need to be removed by grinding or sanding. Some parting agents can be removed by wash with sugar soap, waterblasting and/or grinding.

1.5.4 Carpet gripper

Where a carpet gripper is used the following shall apply:

- (a) The carpet gripper shall be constructed of 5 even thickness plywood layers, and be in accordance with AS/NZS 2270.
- (b) The carpet gripper shall be constructed of sufficient pins and nails so as to withstand a minimum stretching force of 6580 N over a 1220 mm length.
- (c) In Australia, the carpet gripper shall be in accordance with NOHSC:1005 and NOHSC:2007.

SECTION 2 PRE - INSTALLATION REQUIREMENTS

2.1 SITE INSPECTION AND REPORT—COMMERCIAL INSTALLATIONS

2.1.1 Inspection by contractor

A1

For textile floor coverings to be installed, a state of cleanliness for concrete/timber floors is required. Cleanliness of floors may require as a minimum, sanding, grinding, power washing, wet/dry vacuuming or similar.

If dry clean processes are used, then remove all residual waste materials by vacuuming. If wet clean processes are used, ensure floors are dry enough to vacuum waste surface materials before installing textile floor coverings.

The contractor shall obtain the site information on the subfloor, outlined in Appendix A, and inspect the following:

- (a) Each of the relevant particulars required in Appendix A.
- (b) Whether any repairs to the subfloor are required, and whether the surface of timber subfloors needs to be sanded.
- (c) Whether the surface of the subfloor requires cleaning to remove existing floor covering, any deleterious materials such as grease, oil, paint curing or parting agents, or any surface treatment which could adversely affect adhesion.

2.1.2 Report by contractor

If the contractor considers the subfloor under inspection to be unsuitable the contractor shall submit a report in writing to the purchaser, and where appropriate, the builder.

The report shall state—

- (a) whether the subfloor over which the textile floor covering is to be laid is in suitable condition; and
- (b) any and all conditions that, in the contractor's opinion, will affect the satisfactory execution of the installation work or impair the durability and serviceability of the textile floor covering or installation systems.

Where the contractor indicates that the subfloor is not in a suitable condition for laying of the floor coverings, the contractor shall specify reasons for the unsuitability of the subfloor.

Where the contractor indicates that removal or rectification work on the subfloor is needed, doors, quads and scotia moulding, the contractor shall advise the purchaser that this work is the responsibility of others or as otherwise agreed.

2.2 INSTALLATION SITE—RESIDENTIAL INSTALLATIONS

The contractor shall advise the purchaser, prior to installation, of the factors which can make the subfloor unsuitable to receive the new floor covering/s. Where the condition of the subfloor can be practically determined, the contractor shall advise the purchaser of necessary remedial work.

2.3 EXCHANGE OF INFORMATION

2.3.1 General

The information to be exchanged between the contractor and the purchaser shall include advice as to whether the installation is to be in accordance with the commercial or residential laying requirements of this Standard.

Where, because of economics or aesthetics, compliance with parts of this Standard are not practical, the contractor shall discuss the effects of non-compliance with the purchaser and reach an understanding on the effects of the non-compliance.

2.3.2 Commercial installations

In addition to the information required to be provided by the contractor, elsewhere specified in this Standard, there shall be consultation, preferably early in the design stage and generally throughout the whole course of the contract, between all parties concerned with the work. Information which is to be exchanged shall include the following, as applicable:

(a) *Site*

Factors of the site such as location, access, other contractors on site, unloading, hoisting and storage facilities, airconditioning, heating, lighting and power supply, floor loading and security arrangements.

(b) *Building*

Factors of the building such as its nature, assessment of type and density of traffic, particulars of corrosive conditions or other potentially damaging conditions.

(c) *Specifications*

Specifications for, or details of—

- (i) the floor structure;
- (ii) the damp-proof membrane and its location within the floor construction;
- (iii) screed curing and drying times;
- (iv) floor warming installations;
- (v) underlays;
- (vi) adhesives and accessories, including floor preservation treatments;
- (vii) textile floor coverings, including type, batch or rotation number, classification, supplier, dimensions and repeat pattern size if applicable;
- (viii) subsequent maintenance of the textile floor covering; and
- (ix) finished floor level and permissible deviations.

(d) *Associated work*

Details of associated work including services embedded in or passing through the floor, skirtings and abutments, ducts and junctions with other adjacent floorings.

(e) *Planning and procedures*

Details on the plans and procedures for the installation.

These shall include—

- (i) adequate details of total area, including landings and stairs;
- (ii) number of stair treads and landings, where direction of seams or lay of the pile is outside normal practice; and
- (iii) method of installation and seaming.

(f) *Protection*

Details on the intended means of protection including the method of, and responsibility for, the protection of the stored textile floor covering and the completed work and fabric of building.

(g) *Storage*

The textile floor covering shall be stored on a flat, clean, dry surface preferably suspended from the sub-floor.

(h) *Contract*

A1

Information on the contract shall include particulars of the form and type of contract, whether the work is to be completed in any specific order or in sections, safeguarding against damage and theft, safety and health provisions, welfare facilities, airconditioning, heating, lighting and power supply, and insurance.

(i) *Time schedule*

A time schedule for the progress of the work in relation to other trades and services (see Appendix A).

(j) *Time lapse before use*

Where pressure sensitive adhesive, direct-stick or double-bond systems have been used, advice that concentrated foot and wheeled traffic should be avoided for 24 hours after installation so that arrangements can be made for protection if avoidance is not possible.

(k) *Problems*

Details of problems.

NOTE: These may include problems which might be expected to arise and where special consultation might be necessary, e.g. pattern matching.

(l) *Floor covering plan*

Prior to the installation, the purchaser shall be supplied with a floor covering plan setting out the details required by this Clause.

The floor covering plan shall include the following:

- (i) A scaled drawing or proportional sketch of the areas in which the installation shall take place.
- (ii) All dimensions necessary to the installation in accordance with this Standard.
- (iii) All dimensions recorded in centimetres.
- (iv) All dimensions recorded in a manner that enables them to be read from the bottom right hand corner.
- (v) Where possible, all dimensions recorded inside the scaled drawing or proportional sketch.
- (vi) The approximate position of all seams and cross joins.
- (vii) The manufacturer's description of the textile floor covering for the installation.
- (viii) The manufacturer's description of the underlay for the installation.
- (ix) The manufacturer's description of the accessories for the installation.
- (x) So far as is possible, a description of the condition of the subfloor.
- (xi) So far as is possible, details of the subfloor preparation required to obtain a subfloor that complies with Clause 2.4.2(c).

(xii) The method of seaming to be used for the installation.

(xiii) The direction of pile lay, clearly identified.

2.3.3 Residential installations

The contractor shall provide the following:

- (a) The manufacturer's description of the textile floor covering material to be installed.
- (b) The manufacturer's description of the type of underlay to be used for the installation.
- (c) Where appropriate, a description of accessories and fittings.
- (d) Where the condition of the subfloor can be practicably determined by the contractor or where the contractor has previously advised the purchaser of necessary subfloor preparation, the nature of any work required to the subfloor.

Prior to the installation of the textile floor covering, the contractor shall make available for viewing by the purchaser a floor covering plan in accordance with Items (i) to (xiii) of Clause 2.3.2(l).

2.4 CONDITIONING OF FLOOR COVERINGS AND SUBFLOOR

2.4.1 General

The following shall apply:

- (a) Before conditioning, textile floor covering and underlay materials shall be kept in a clean, dry, well-ventilated place and stored as specified in Clause 2.3.2(g).
- (b) Before installation, the textile floor covering shall be allowed to come to the same temperature and relative humidity as the area where it is to be laid.
- (c) The preferred ambient installation temperature in the area where the textile floor covering is to be laid shall be between 10°C and 35°C, but reference shall be made to the manufacturer's recommendation.
- (d) The textile floor covering shall be installed only where relative humidity of the area does not exceed 75% or fall below 30%.

NOTES:

- 1 The optimum installation temperature is between 15°C and 25°C. Floor coverings installed outside this temperature range may experience variations in carpet tension.
- 2 For double-bond and pre-applied installations, see Clause 3.7(c) for conditioning of soft underlay.

2.4.2 Commercial installations

The following shall apply:

- (a) *Airconditioned areas*

Wherever possible no underlay or textile floor covering shall be laid on the subfloor until the airconditioning units have been in operation at normal operating temperature for at least 7 days.

NOTES:

- 1 During this period the temperature should not be allowed to fall outside the textile floor covering manufacturer's recommended limits.
- 2 These conditions should be maintained during laying and for the next 48 hours.
- 3 Where airconditioning is to be installed but is not yet operational, it is recommended that the room be maintained within the temperature range of 10°C to 35°C for 7 days prior to and during installation, and for the next 48 hours.
- 4 Without such temperature control at this stage, subsequent movement of the subfloor, underlay and textile floor covering may occur.