Flooring material guide for government buildings

1. Purpose of document
This guide assists agency representatives, consultants and project managers to select and install flooring materials for government buildings. This guide replaces the carpet panel and the carpet panel buyer’s guide.

Please send feedback on this guide to principal.architect@finance.wa.gov.au

2. General requirements
Flooring materials must be selected and installed in accordance with the requirements of relevant agency project brief. Where the requirements of brief conflict with or exceed the requirements of this standard, the brief takes precedence. In particular:
- Education projects shall be in accordance with the standard pattern primary school brief, or the secondary school planning guide, as required,
- Police projects shall be in accordance with the WAPOL brief, and
- Health projects shall be in accordance with the Health brief.

When selecting flooring materials for a project, consider their suitability in terms of:
- Whole-of-life cost (life cycle assessment),
- Environmental impact,
- Ease of cleaning,
- Longevity, ease of maintenance,
- Fire safety,
- Slip resistance,
- Acoustic properties,
- Infection control, hygiene, and
- Indoor environment quality, VOC emissions.

3. Durability
Flooring materials installed in government buildings must be commercial grade, not residential. For example, carpet must have a minimum ACCS\(^1\) grading of Contract Heavy Duty.

Flooring materials should have a warranty of at least 7 years. Consider any conditions on the warranty. For example, be wary of products where the warranty is void unless the floor is steam-cleaned every week.

Skirtings can reduce damage to walls from cleaning equipment and wheeled furniture.

4. Environmental impact
State Government building projects are required to target a 4-star Green Star rating, so flooring materials should be selected with consideration of the following Green Star credits:
- IEQ-8 Volatile Organic Compounds,
- Mat-6 PVC, and
- Mat-11 Flooring.

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\(^1\) The Australian Carpet Classification Scheme (ACCS) is a product certification scheme administered by the Carpet Institute of Australia. [http://www.carpetinstitute.com.au/accs/index.htm](http://www.carpetinstitute.com.au/accs/index.htm)
Give preference to products with environmental ratings, including but not limited to GECA\(^2\), Green Tag\(^3\), ISO 14000 series\(^4\) and Environmental Certification Scheme\(^5\) (ECS). Carpet should have a minimum ECS rating of level 2 or above.

5. Compliance

Flooring materials must comply with National Construction Code requirements for Critical Radiant Flux values and Smoke Development Rate. (NCC Vol 1 Spec C1.10 – 3)

Non-slip finishes shall in specified for bathrooms and kitchens, and also external pedestrian paths which may become slippery in wet weather. Flooring materials shall be slip resistant appropriate to the requirements of the client brief, the NCC and AS 4586 2013 *Slip resistance classification of new pedestrian surface materials*.

Installation shall be in accordance with the relevant Australian Standard, including but not limited to:

- AS/NZS 2455 series *Textile floor coverings – installation practice*,
- AS 1884 *Floor coverings – resilient sheet and tiles – installation practices*, and
- AS 3958 series *Guide to the installation of ceramic tiles*.


Flooring material specifications shall be in accordance with NatSPEC *Building Professional* section 06 *Finishes*, particularly worksections 0651 *Resilient finishes* and 0652 *Carpets*.

The following documents are referenced in NatSPEC worksection 0651 *Resilient finishes*:

- AS/NZS 1080 Timber - Methods of test
- AS/NZS 1080.1 2012 Moisture content
- AS/NZS 1859 Reconstituted wood-based panels - Specifications
- AS/NZS 1859.4 2004 Wet-processed fibreboard
- AS 1884 2012 Floor coverings - Resilient sheet and tiles - Installation practices
- AS/NZS 2098 Methods of test for veneer and plywood
- AS 2098.1 2006 Moisture content of veneer and plywood
- AS 2834 1995 Computer accommodation
- AS/NZS 2908 Cellulose-cement products
- AS/NZS 2908.2 2000 Flat sheet
- AS 3541 Synthetic sporting surfaces
- AS 3541.1 1988 General principles

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\(^2\) Good Environmental Choice Australia (GECA) runs Australia’s only independent, not-for-profit, multi-sector ecolabelling program, [http://www.geca.org.au/](http://www.geca.org.au/)


\(^4\) The ISO 14000 series addresses various aspects of environmental management. It provides tools for companies to control their environmental impact. More information: [http://www.iso.org/iso/iso14000](http://www.iso.org/iso/iso14000)

AS 4155 Test methods for general access floors
AS 4155.6 1993 Test for floor resistance for electrostatic control
AS 4586 2013 Slip resistance classification of new pedestrian surface materials
AS 4663 2013 Slip resistance measurement of existing pedestrian surfaces
AS ISO 9239 Reaction to fire tests for floor coverings
AS ISO 9239.1 2003 Determination of the burning behaviour using a radiant heat source
BS EN 12199 2010 Resilient floor coverings. Specifications for homogeneous and heterogeneous relief rubber floor coverings
BS EN 1817 2010 Resilient floor coverings - Specification for homogeneous and heterogeneous smooth rubber floor coverings
BS EN ISO 10581 2013 Resilient Floor Coverings - Homogenous And Heterogenous Polyvinyl Chloride Floor Coverings - Specification
BS EN 650 2012 Resilient floor coverings. Polyvinyl chloride floor coverings on jute backing or on a polyester felt backing or on polyester felt with polyvinyl chloride backing. Specification
BS EN 651 2011 Resilient floor coverings. Polyvinyl chloride floor coverings with foam layer. Specification
BS EN 688 2011 Resilient floor coverings. Corklinoleum
BS EN ISO 10874 2012 Resilient textile and laminate floor coverings. Classification

The following documents are referenced in NatSPEC worksection 0652 Carpets:
AS/NZS 1080 Timber - Methods of test
AS/NZS 1080.1 2012 Moisture content
AS/NZS 1385 2007 Textile floor coverings - Metric units and commercial tolerances for measurement
AS/NZS 1859 Reconstituted wood-based panels - Specifications
AS/NZS 1859.4 2004 Wet-processed fibreboard
AS 2001 Methods of test for textiles
AS 2001.2.14 1987 Physical tests - Determination of twist in yarns
AS 2001.2.23 1990 Physical tests - Determination of linear density of textile yarn from packages
AS 2001.3.4 1995 Chemical tests - Determination of solvent extractable matter
AS 2001.4.16 1981 Colourfastness tests - Determination of colourfastness to dry cleaning solvents
AS 2001.4.21 2006 Colourfastness tests - Determination of colourfastness to light using an artificial light source (mercury vapour, tungsten filament, internally phosphor-coated lamp)
AS 2001.6.1 1980 Miscellaneous tests - Determination of the resistance of textiles to certain insect pests
AS 2001.4.E01 2001 Colourfastness tests - Colourfastness to water
AS/NZS 2098 Methods of test for veneer and plywood
AS 2098.1 2006 Moisture content of veneer and plywood
AS/NZS 2111 Textile floor coverings - Tests and measurements
AS/NZS 2111.3 1996 Determination of mass per unit area
AS/NZS 2111.4 1996 Determination of surface pile mass above the substrate
AS/NZS 2111.9 1996 Determination of the number of tufts per unit length and per unit area
AS/NZS 2111.11 1996 Determination of total pile mass per unit area by complete dissection of textile floor coverings
AS/NZS 2111.15 1996 Determination of withdrawal force required to remove tufts or pile from a textile floor covering
AS/NZS 2111.16 1996 Determination of bond strength between backing components of a textile floor covering
AS/NZS 2111.18 1997 Burning behaviour - Tablet test at ambient temperature
AS/NZS 2111.19.1 1996 Colourfastness tests - Rubbing
AS/NZS 2111.19.2 1996 Colourfastness tests - Shampoo solution
AS/NZS 2119 1997 Textile floor coverings - Machine-made - Sampling and cutting specimens for physical tests
AS 2454 2007 Textile floor coverings - Terminology
AS/NZS 2455 Textile floor coverings - Installation practice
AS/NZS 2455.1 2007 General
AS/NZS 2455.2 2007 Carpet tiles
AS 2834 1995 Computer accommodation
AS/NZS 3733 1995 Textile floor coverings - Cleaning maintenance of residential and commercial carpeting
AS 4155 Test methods for general access floors
AS 4155.6 1993 Test for floor resistance for electrostatic control
AS 4288 2003 Soft underlays for textile floor coverings
AS ISO 9239 Reaction to fire tests for floor coverings
AS ISO 9239.1 2003 Determination of the burning behaviour using a radiant heat source
BS 4051 1987 Method for determination of thickness of textile floor coverings
BS 5921 1980 Methods for determination of size, squareness and straightness of edge of textile floor covering tiles
AATCC TM 134 2011 Electrostatic propensity of carpets