



## 0652 Carpets

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# 00 Design principles

## 0.01 Main considerations

It is a requirement to undertake the [PLANNING AND DESIGN/ 0001R - DESIGN REFERENCE](#) and [GLOSSARY OF TERMS](#) information into all aspects of design, detailing and delivery when developing the content here within. Clear demonstration of adherence to these requirements is part of the services and will be called upon at key points in the project and during at the discretion of the Department of Education (DoE).

## 0.02 Carpet performance requirements

### Carpet

- Provides acoustic absorption and reduces impact noise in all suitable spaces including learning and enclosed circulation areas.
- Soft warm surface, where children could work, sit, sprawl and move.
- Only commercial heavy-duty carpets are acceptable.

### Carpet Underlay

- Soft, durable and able to absorb high impact activities if used in areas such as Gymnasiums, Movement, Performance and Health/PE.

## Specification

GUIDE NOTE: Refer to EFSG – [0001c DESIGN CHECKLIST/FINISH](#)

## 01 General

As per current NATSPEC except as follows:

### 1.4 Submissions

### Tests

Submit evidence that each carpet complies with the fire hazard properties required by the National Construction Code (NCC) and Educational Facility Standards and Guidelines (EFSG).

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## 1.5 Inspections

### Notice

Give sufficient notice so that inspection may be made at the following stages:

- Each batch of material upon delivery of the works
- Subfloor prepared to receive the carpet installation
- Fixings, edge strips, underlay installed ready to lay carpet
- Completed carpet after cleaning and before covering for protection

## 1.7 Ordering and Delivery

### Requirement

Order and confirm delivery instructions with the carpet subcontractor not less than 12 weeks prior to the date required and give 2 weeks' notice to the carpet subcontractor of the required laying date. Give a copy of the delivery docket to the Principal's Authorised Person / Principal's Representative on delivery of the material to site with the following details:

- Description of carpet and weight of carpet including Australian Carpet Classification Scheme (ACCS) or Australian Wool Testing Authority (AWTA) reference number.

## 02 Product

As per current NATSPEC except as follows:

### 2.5 Mats

General: Provide a mat made to fit each designated mat recess.

#### Anti-static mat

Type: Anti-static mat with anchors on the underside to prevent slipping on carpet. The mat is to be dissipative of static electricity and free of carbon fibre and ribbon.

Standard: To Australian/New Zealand Standards (AS/NZS) 2834 Computer Accommodation.

Colour: Clear

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## **Carpet overlay (electrostatic)**

Type: Colourfast polypropylene fibre pile electrostatic mat with a polyester primary backing to a high-quality vinyl base.

## **Cork mat**

Description: Bonded cork vulcanised mat to form a dense durable resilient floor unit with anti-slip and anti-fatigue characteristics.

General: Comply with Work health and safety (WHS) requirements. Provide an anti-slip surface and anti-trip tapered sides.

Thickness: 10mm minimum.

## **2.6 Underlays**

### **Needled underfelt**

Type: Double sided, high density needled underfelt.

### **Synthetic foam underlay**

Type: High density bonded polyurethane foam underlay.

### **Rubber underlay**

Type: Highly resilient natural rubber underlay, suitable for use as a conventional lay product.

### **Textile underlay**

Type: High performance pad underlay conforming with AS 4288 manufactured using recycled textile fabric using the following blends:

- 30% wool (nominal)
- 25% cotton (nominal)
- 30% synthetic fabric (nominal)
- 15% virgin polyester fibre (nominal)

### **Bonded polyurethane foam**

Type: Bonded polyurethane foam

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## 2.7 Adhesives and Tapes

### Seam sealing

The seams and cross joints of all conventionally, direct stick or dual bond installed tufted carpets must have seam adhesive applied to both edges prior to heat tape joining.

### Edge strips

Type: Heavy duty edge strips appropriate to the floor covering type (tackless or adhesive fixed), capable where necessary of accommodating different levels of adjacent floor finishes.

Material: Extruded aluminium.

Location: At exposed edges of the carpet, and at junctions with differing floor finishes or finishes of a different thickness. Where edge strips occur at doorways, locate the junctions directly below the closed door.

## 2.10 Stair Nosing

Type: Anodised aluminium stair nosing with carborundum or rubber inserts.

Standard: AS/NZS 1428.1

## 2.11 Carpets – Back Printing

### Requirement

Carpet: All carpet must have the following information printed on the back of the product for the entire length:

- ACCS Number, or
- AWTa Test Report Reference Number

Carpet without the back printing is not acceptable and will be rejected.

## 03 Execution

As per current NATSPEC except as follows:

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## 3.2 Broadloom Carpet Laying

### General

Lay carpet on underlay/underfelt - except for stairs and ramps where a direct stick method may be used.

### Cross joins

Carpet in high traffic areas is to be free of cross joins. Do not use carpet infill strips in doorways. Avoid cross joins in doorways where possible. If a cross join occurs at a doorway, locate the join directly below the closed door.

### Power stretching

A power stretcher must be used in all areas where a conventional installation method is used.

## 3.6 Completion

### Warranties

Before Completion submit a written warranty on all carpet, underlay/underfelt and accessories for a minimum period of 5 years and a minimum period of 12 months on installation (unless noted otherwise in schedules).

## 3.7 Certification

Provide certification that the carpet is in accordance with the specification.

## 04 Selections

As per current NATSPEC except as follows:

### Performance Criteria

Selections should be based on the following performance criteria:

- Offer value for money in a Whole of Life framework.
- Provide comfort for students who may undertake floor-based activities Have appropriate aesthetic appeal
- Offer high durability and robustness
- Provide appropriate functionality for the location and use of the area including:

- Acoustic suitability to expected background and activity noise levels.
- Tactile comfort in relation to the usage of the room.
- Support sustainability by having recycling potential at the end of usable life, and/or include recycled content.
- Compliance with NCC Fire Hazard Properties and Critical Radiant Flux (CRF/SD) requirements listed in Table 01 Schedules
- Carpets must be graded by the ACCS. ACCS licensees give a warranty with their carpets; this warranty is subject to proper installation and maintenance procedures (AS 2454 and AS 2455 will apply). The ACCS licensee's instructions for underlay must be followed.
- Low Volatile Organic Compounds (VOC) emissions in line with the VOC limits stipulated in the Green Star Buildings rating tool Carpet tiles are preferred to broadloom carpet.
- Location of carpet tile and carpet to be determined in consultation with School Principal:
  - Primary Schools – General Learning Hub (GLH), libraries, administration and staff rooms
  - Schools for Specific Purposes (SSP) – GLH, libraries, administration and staff rooms
  - Secondary Schools – GLH, libraries, administration and staff rooms. Where carpet tiles are installed, provide floor cushions (lily pads) and wool rugs for every Primary and SSP General Learning Unit to facilitate floor-based activities.

## 4.1 Schedules by ACCS/ECS

**Table 01: Carpet Tile and Laying**

Property	Requirements
ACCS Grade	Commercial / Contract Extra Heavy Duty (4 Stars) with cushion backing
ACCS ECS Certification	ECS Level 4 (minimum)
Suitable for Stairs Icon	Stairs
Pile: Composition	100% nylon
Pile: Finish	Tufted loop pile
Pile: Mass	Minimum – 542g / m <sup>2</sup>
Pile: Thickness	2.5mm



Property	Requirements
Total thickness	6 - 8mm
Carpet Tile Dimensions	Plank Format 1000 x 250mm or square format 500 x 500 mm
Machine Gauge	Minimum 1/10th gauge
Dimensional Stability	Less than 0.2% variation
Primary Backing	Spun bonded polypropylene
Secondary Backing	Cushion back – 3.2mm +/- 0.1 mm thickness 100% recyclable PET, manufactured from minimum 90% recycled PET content
Recycled material content	Minimum 40% total recyclable content by total weight
Indoor Air Quality	Low VOC emission to comply with Green Building Council Green Star rating tool
Critical radiant flux	Greater than > 4.2 kW / m2
Smoke Developed Rate	Mean less than < 250 percent minutes
Australian Standard	AS/ ISO 9239.1
Treatments: Electrostatic protection	Comply with AATCC 134 less than 3.5Kv at 21 degrees
Environmental /ESD Green Accreditation	Environmental Certification Scheme (ECS) level 4 (minimum) Green Building Council VI compliant ESC level 4 – maximum points Comply with ISO 9001 & ISO 14001
Installation	
Fixing Method	Tiles must be full stick. If more than 2mm cupping is apparent after 3 months, contractor must replace installation at no cost to the department.
Adhesive	Water based, low odour, release type adhesive. Contact adhesive is not accepted
Australian Standard	AS 2455.2

**Table 02: Broadloom Carpet and Laying**

Property	C1	C2
Carpet Type	Broadloom 90% wool/10% nylon	Broadloom 100% wool

Property		C1	C2
ACCS Certification		Commercial / contract, Extra Heavy duty, 4 stars	
ACCS ECS Certification		ECS Level 4 (minimum)	
Product		Loop pile	
Style		Heather appearance	
Yarn		Wool 2 or 3 ply with space dyed nylon 2 or 3 ply yarn as highlighter	Wool, 2 or 3 ply
Pile: Fibre		90% international blend wools containing specialty wools with crimp and/or medullation, 10% anti-static space dyed nylon as highlighter	100% international wool blends containing specialty wools with crimp and / or medullation
Pile: Wool fibre quality		Average not less than 33 microns when measured to AS2001.2.1	
Pile: Nylon fibre quality		Not less than 15 denier per filament containing anti-static filaments sufficient to reduce electrostatic generation to not more than 3 kilovolts when tested to AATCC134	n/a
Pile: Total Mass		1627 grams/m <sup>2</sup> +/- 5% to AS 2111.11	
Pile: Height above Backing		4 - 5mm to AS 2111.5/6/7	
Gauge		3.175mm or 2.54 mm	
Tuft Withdrawal Force		30 Newtons minimum to AS 2111.15	
Backing		Primary: heat stabilised woven polypropylene minimum mass of 90 grams /m <sup>2</sup> Secondary: woven jute with minimum mass of 203 grams /m <sup>2</sup>	
Secondary backing adhesion		40 Newtons (minimum to AS 2111.16	
Indoor Air Quality		Low VOC emission to comply with Green Building Council Green Star rating tool	
Extractable matter		1.5% maximum to AS 2001.3.4	
Colour fastness	Light	5 - 6 minimum to BS 1006.B02	
Shampoo		3 - 4 minimum to AS 2111.19.2	
Rubbing		3 - 4 minimum to AS 2111.19.1	

Property	C1	C2
Dry Cleaning Solvents	3 - 4 minimum to AS 2001.4.16	
Treatments: Insect resistance	Wool fibres to be treated to AS 2001.6.1 for moth and beetle attack.	
Treatments: Electrostatic protection	Required sufficient to reduce electrostatic generation to not more than 3 kilovolts when tested to AATCC134.	
Critical radiant flux	Greater than > 4.2 kW / m2	
Dimensions (mm)	Standard broadloom width 3660 +/-1.5% to AS 2111.15	
Fixing method	Dual bond, direct stick or	
Seaming method	Seams and cross joints must have seam adhesive applied to both edges prior to	
Stair nosing: Finish and Colour	Extruded aluminium. Heavy duty. Carborundum or rubber insert. Fixing: secret fixed, tackless or adhesive fixed. Standard AS1428.1	
Edge strip: Finish and colour	Heavy duty. Fixing: tackless or adhesive fixed.	

**Table 03: Carpet Underlay**

Property	Requirements
Needled Underfelt	Double sided, high density
Synthetic foam underlay	High density bonded polyurethane foam underlay.
Rubber underlay	Highly resilient natural rubber underlay suitable for use as a conventional lay product
Textile underlay	High performance pad underlay to AS 4288 manufactured using recycled textile fabric as follows: 30% wool 25% cotton 30% synthetic fabric 15% virgin polyester fibre
Bonded polyurethane foam	Bonded polyurethane foam
Indoor Air Quality	Low VOC emission to comply with Green Building Council Green Star rating tool