



## Carpets Cleaning Maintenance Residential and Commercial Installations

A series of regularly asked questions about carpet<sup>1</sup> maintenance cleaning in residential and commercial installations are answered.

### SUMMARY

The appearance retention and wear performance of a carpet as well as purchaser satisfaction in its performance, is directly related to its correct specification for the location and, its maintenance.

When the most suitable carpet construction, style and colouration is chosen and properly installed, a professionally designed and followed maintenance program will assist in (i) meeting the expected carpet performance throughout its useful life and (ii) extending the carpet's useful life that could result in a saving on replacement costs.

For any location, the planning of the maintenance program should start prior to the installation and its implementation should commence once the building is in use.

- **What is the purpose of carpet maintenance cleaning?**
- **What does a maintenance plan look like?**
- **Why is entrance matting important?**
- **What is the role of vacuuming and how important is it?**
- **What about spot and stain removal?**
- **When the carpet needs vacuuming, interim cleaning<sup>2</sup> or corrective cleaning<sup>3</sup>, which method or machine should be used on the different carpet pile textures?**
- **What other factors are related to carpet maintenance cleaning?**
- **What actions need to be taken to enable appropriate and timely carpet maintenance cleaning to be carried out?**



### **What is the purpose of carpet maintenance cleaning?**

The purpose of carpet cleaning is to retain the original pile texture and overall appearance of carpet for as long as possible, and to ensure the carpet is hygienic and contributes positively to the indoor environment.

Carpet tends to trap soiling. This helps to maintain better indoor air quality by holding the soiling at floor level instead of allowing it to circulate throughout the building. When cleaning is conducted regularly and effectively, this will prolong the life of a carpet and minimize possible health problems.

It is not only person traffic that wears out carpets, but also soiling material on and in the carpet. In conjunction with airborne contaminants or pollutants that cause soiling, people entering a building (residential or commercial) carry ground and car park soil, dust, mud and grit as well as other contaminants on their shoes (Outside Soils). Soiling such as clothing and fabric fibres and cooking fumes can also originate from within a building (Inside Soils). These contaminants once deposited, eventually work their way into the carpet pile.

While regular vacuuming will help reduce the soil load within the indoor environment, the gradual build up of oils and other sticky soils will reduce the effectiveness of the vacuuming. This oily and sticky soiling can be removed by carpet cleaning technicians<sup>4</sup> using specialist cleaning agents and a variety of methods and equipment.

Where any doubt exists as to the best method of cleaning a carpet, refer to the carpet manufacturer's warranty documentation and its requirements. If warranty documentation is not available, seek expert advice before any interim or corrective cleaning is attempted.

### **What does a carpet maintenance cleaning program look like?**

Whatever the nature of the installation, it is necessary to prepare a system for dealing with soiling and to set up a program of maintenance (see Table 1 & Table 1(a) for examples of a cleaning maintenance program, and Table 3 & Table 3(a) which summarizes the suitability of cleaning apparatus for carpet pile textures.

A number of elements are essential to an efficient program:

- entrance matting for soiling material and moisture removal
- thorough and frequent vacuuming
- spot and stain removal
- interim (i.e. surface maintenance) cleaning, and periodic corrective cleaning.

When preparing the plan, the input information required is (i) to identify areas (see Figure 2 & 2(a) Floor Plan) that will require more time per square metre e.g. vacuuming, spillage, spot and stain removal, interim cleaning and corrective cleaning; and (ii) an assessment of the traffic volume (person passages per week) and its type throughout the installation.

The cleaning maintenance plan needs to be a cost effective one that will keep the carpet adequately maintained and ensure consumer satisfaction with the floor covering's wear and appearance retention.



**What is entrance matting and why is it important?**

As the majority of soiling indoors comes from outside a building, the entrance area should remove particulate soiling and reduce any moisture that is carried into the building.

For example, the entrance to the building shown in Figure 1 consists of a three (3) sections 'Entry Area' with an approximate length of eight (8) walking steps:

**Figure 1**

**Area 1:**

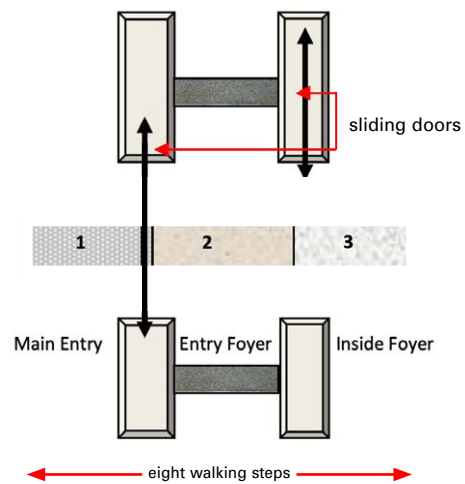
*(main entry)* is for 'rough' cleaning – removal of soiling material from footwear

**Area 2:**

*(entry foyer)* is used to remove and start 'drying-off' any remaining soiling material and moisture

**Area 3:**

*(inside foyer)* consists of changeable matting to absorb any remaining moisture from footwear.



**What is the role of vacuuming and how important is it?**

Vacuuming is one of the most important cleaning steps in the removal of soiling from the floor covering. Numerous studies conducted over many years have shown that 70% to 80% of the soiling in a floor covering is of a dry nature. Efficient vacuuming (both machine and operator) will be the major contributor in the removal of this soiling that is directly related to the foot traffic volume and its frequency.

Efficient single or two motor suction vacuum cleaners have:

- Motor driven power head with a manual or automatically adjustable height brush or brush/beater bar combination
- S-Class or HEPA filters to remove more than 99% of all particles 0.3 microns or larger
- Disposable bag or dust collection container.

To determine which type of vacuum cleaner should be used on the different carpet pile textures, refer to Table 3 and the carpet manufacturer's warranty documentation.



**Vacuum cleaner maintenance**

Regular maintenance of the vacuum cleaner is necessary e.g. check filters, the condition and operation of the beater/brush and for any blockages and, the status of the dust collection bag or container.

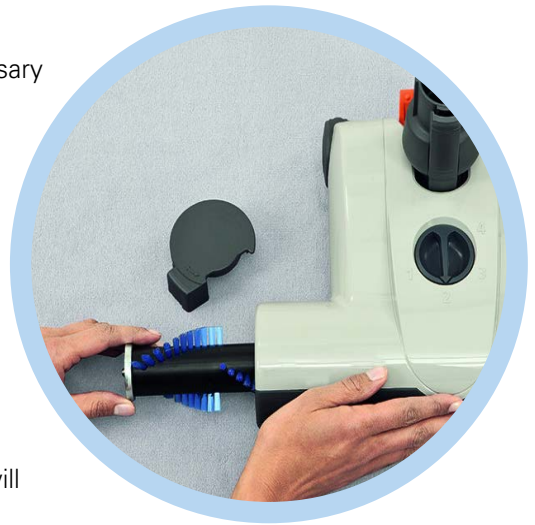
**Vacuumping operation**

Each pass with the vacuum should overlay the previous pass. An overlay of 50 mm is recommended.

High traffic areas such as a building entry way and other entry ways to building facilities are areas that will require more maintenance – see Table 1(a).

More frequent vacuuming cycles will result in more dry soiling material being removed. This allows for a longer period between interim cleans and corrective cleans and prolongs appearance retention of the carpet.

*NOTE: Refer to the carpet manufacturer’s warranty documentation for cleaning machinery/cleaning frequency requirements.*



**What about spot and stain removal?**

For a specific pile fibre type in the carpet e.g. wool, wool/ synthetic, nylon, polypropylene, polyester etc; have a spot and stain removal kit and stain removal guide available that will enable most common spillages, spots and stains to be cleaned up, be removed successfully or the stained area to be left in a condition suitable for removal by a carpet cleaning technician

If a spillage has occurred, clean-up the spill as soon as possible by using water only and blotting with a dry white cloth. Should this action leave evidence of a stain, a spotting agent is likely to be required.

Spot clean daily as would be carried out on any other flooring surfaces.

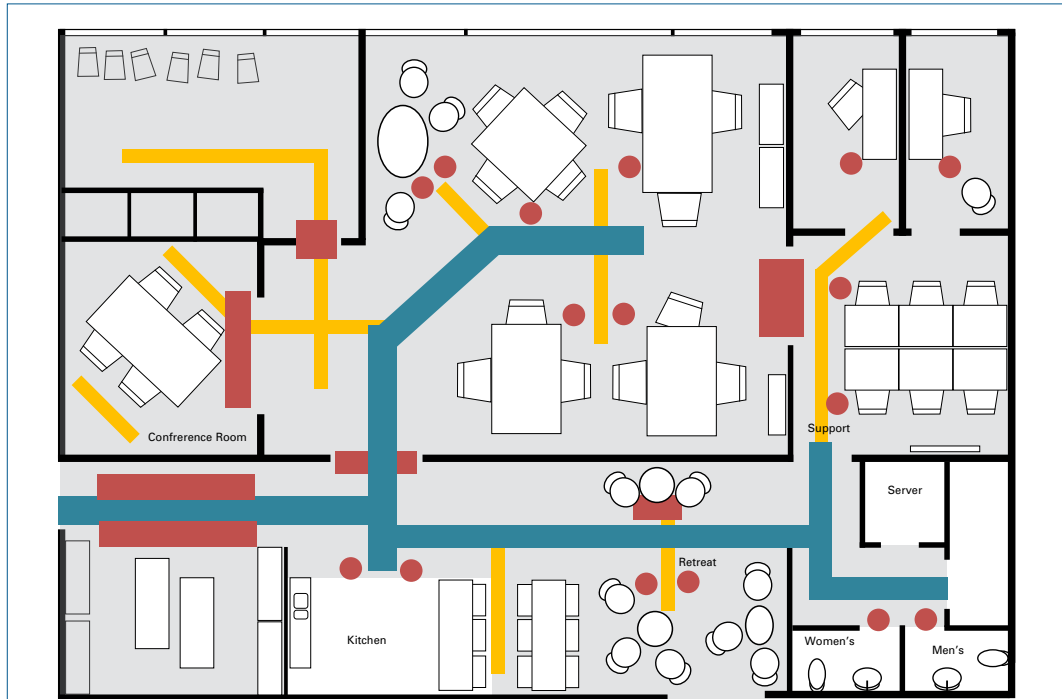
Do not use hard surface cleaning products to clean textile floor coverings.

Where possible, use only pH neutral spotting agents, following the instructions on the bottle or container.

*NOTE: Refer to the carpet manufacturer’s warranty documentation for information on spot and stain removal.*



**Figure 2: Floor plan – trafficking conditions and spot/stain prone areas.**



**Figure 2(a): Legend for carpeted areas**

- Walk-On/ Walk-Off Areas/ Areas prone to Spills, Spots, Stains
- Heavy Traffic Areas
- Medium Traffic Areas
- Light Traffic Areas

**Table 1: Cleaning Maintenance Plan – Residential**

Carpeted areas description	Soiling level description	Recommended maintenance program	Recommended frequency	Minimum frequency
All areas (Residential)	Light to Medium	Full vacuum	2 times per week	Weekly
		Spot and stain removal	Daily — as soon as possible	Daily — as soon as possible
		Low Moisture Surface Maintenance clean	Every 6 months	Every 12 months
		High Moisture Periodic/ Corrective clean	Every 12 months	Every 24 months

**Table 1(a):Cleaning Maintenance Plan - Commercial**

<b>Carpeted areas description</b>	<b>Soiling level description</b>	<b>Recommended maintenance program</b>	<b>Recommended frequency</b>	<b>Minimum frequency</b>
Executive offices (Commercial)	Light	Vacuum traffic areas	3 times per week	2 times per week
		Full vacuum	2 times per week	Weekly
		Spot and stain removal	Daily – as soon as possible	Daily – as soon as possible
		Low Moisture interim clean	Every 9 months	Every 18 months
		High Moisture Corrective clean	Every 18 months	Every 36 months
Clerical offices, hospital wards, and hotel bedrooms (Commercial)	Medium	Vacuum traffic areas	4 times per week	3 times per week
		Full vacuum	3 times per week	2 times per week
		Spot and stain removal	Daily – as soon as possible	Daily – as soon as possible
		Low Moisture interim clean	Every 6 months	Every 12 months
		High Moisture corrective clean	Every 12 months	Every 24 months
Corridors and foyers, ground floor shops, hotel lounges, kindergartens, and school classrooms (Commercial)	Heavy	Vacuum traffic areas	Daily	2 times per week
		Full vacuum	Daily	3 times per week
		Spot and stain removal	Daily – as soon as possible	Daily – as soon as possible
		Low Moisture interim clean	Every 3 months	Every 6 months
		High Moisture corrective clean	Every 6 months	Every 12 months
Restaurants, school corridors, and hospital public areas (Commercial)	Very Heavy	Full vacuum	Daily	Daily
		Spot and stain removal	Daily – as soon as possible	Daily – as soon as possible
		Low Moisture interim clean	Monthly	Every 2 months
		High Moisture corrective clean	Every 3 months	Every 6 months

**NOTES:**

- This is an example and a guide to cleaning maintenance of the locations listed in Table 1 & 1(a). The frequency of carrying out the methods nominated depends on the assessment of the traffic volume, carpet construction, and health considerations.

- *When vacuuming, spot and stain removal, and low moisture interim (surface maintenance) cleaning methods no longer produce an acceptable visual or physical appearance, or these carpet maintenance methods have not been used, corrective cleaning should then be used.*
- *Vacuum is carried out in either of two ways:*
  - (a) *Vacuuming traffic areas - Carpet is vacuumed only in the areas of foot traffic. Edges where traffic and soiling are light may not require to be vacuumed as often as traffic areas where most soiling occurs.*
  - (b) *Full vacuuming - Every area of carpet is thoroughly vacuumed preferably using a vacuum cleaner with a rotary brush attached. In commercial cleaning, heavy duty canister, back-pack or upright vacuum cleaners fitted with power brushes should be employed, and the brush should be driven by a separate motor.*
- *Recommended frequencies are based on normal or average occupancy rates and traffic volumes. Minimum frequencies assume lower occupancy rates and traffic volumes.*

**Table 2: Installation & soiling level descriptions and person passages per week**

<b>Installation description</b>	<b>Soiling level description (traffic volume)</b>	<b>Person passages per week (one person passage = one person passing once through any specific area)</b>
Residential (R)	R-Light	Less than 500
Residential (R)	R-Light to Medium	501 – 1,499
Residential (R)	R-Heavy	1,500 – 3,999
Residential (R)	R-Very Heavy	4,000 – 5,500
Commercial (C)	C-Light	Less than 2,999
Commercial (C)	C-Medium	3,000 – 6,999
Commercial (C)	C-Heavy	7,000 – 14,999
Commercial (C)	C-Very Heavy	More than 15,000

**NOTES:**

- *The traffic volumes of light/medium/heavy/very heavy should not be confused with terms and definitions used in carpet end-use classification schemes, which are based on overall carpet performance due to in-use conditions. The traffic volume for cleaning purposes refers to the number of persons using an area (counted as person passages) and contributing to light soiling, medium soiling, heavy soiling and very heavy soiling (See Table 2).*

**When the carpet needs vacuuming, interim cleaning or corrective cleaning which method or machine should be used on the different carpet pile textures?**

**Table 3: Suitability of cleaning apparatus for carpet pile textures**

<b>Carpet pile texture</b>	<b>Loop pile</b>	<b>Cut pile ▲</b>	<b>Hard-twist</b>	<b>Semi-shag</b>	<b>Shag-pile</b>	<b>Oriental rugs &amp; similar</b>	<b>Comments</b>
<b>Cleaning apparatus</b>							
Carpet sweeper	0	0	0	0	X	0	Only removes surface debris and dry soil (litter); does not clean deep down
Suction cleaner	0	0	0	0	0	0	May have reduced efficiency on carpets with impervious backing and on direct stick carpets
Suction cleaner with revolving bar and bristle strips	0 <sup>NR</sup>	0	0	0	X	0	Not suitable for direct stick carpet installations; may cause fuzzing on certain loop pile carpets
Suction cleaner with revolving bristle strips	0 <sup>NR</sup>	0	0	0	0	0	Generally suitable for carpets with impervious backing and direct stick carpets; may cause fuzzing on certain loop pile carpets
Single or multi-brush/bonnet rotary or oscillating shampooer	0 <sup>NR</sup>	0	0	0	0	X	Generally suitable for cut pile carpets; raise pile with rake or brush when still moist. Efficient pile surface cleaner
Cylindrical brush shampooer	0 <sup>NR</sup>	0	0	0	0	X	Basically for periods between periodic/ corrective cleaning cycles; not suitable for heavily soiled carpets
Smooth wand (push/pull) attachment for hot water injection and extraction	0	0	0	0	0	0	Effective periodic deep cleaner; efficient surface cleaner
Rotary extractor attachment for hot water injection and extraction	0	0	0	0	0	0	Effective periodic deep cleaner; efficient surface cleaner
Cylindrical brush extractor	0 <sup>NR</sup>	0	0	0	X	0	Effective periodic deep cleaner; efficient surface cleaner
Absorbent compound extraction	0	0	0	0	0	0	Often categorised purely as an interim (surface cleaning) technique, it is also an effective cleaning system as part of a planned maintenance programme
Carpet washing machine (i.e. off-site carpet cleaning)	0	0	0	0	0	0	Efficient cleaning technique, but may cause shrinkage with jute and cotton backings; use only if carpet can be economically removed and satisfactorily refitted.

**Table 3(a): Legend for carpet pile textures**

▲ Includes velour, velvet, saxony and plush pile textures;  
 0 Suitable method;

X Unsuitable method;

**NR Not Recommended for wide gauge loop pile carpets**





**NOTES:**

- *Carpet sweepers, hand held battery vacuum cleaners and wide area vacuum cleaners may be used in conjunction with the suggested frequency of vacuum cleaning for removal of surface litter.*
- *Within the locations described in the above table there will be areas which require greater or lesser attention.*
- *The option of more frequent corrective (high moisture) cleaning in place of low moisture interim (surface maintenance) cleaning should be considered.*
- *Low moisture interim cleaning methods: The Absorbent Compound, Dry Fusion, Dry Compound, Dry Foam or Encapsulation methods can be used between Hot Water Injection and Extraction cleaning cycles to maintain appearance levels relative to the levels of foot traffic. These methods are generally considered to be interim cleaning methods. However, if the traffic volume is 'low or light' and, if carpet has been maintained properly by thorough vacuuming, appropriate spot and stain removal, and regular low moisture surface maintenance cleaning of the carpet, high moisture corrective cleaning of the carpet may not be required.*
- *Hot Water Injection and Extraction method: The method is often referred to as 'Hot Water Extraction' and 'Steam Cleaning'. This high moisture cleaning technique is a primary method for interim (surface maintenance) cleaning as well as being a corrective cleaning method for carpets.*

**What other factors are related to carpet maintenance cleaning?**

**Soil hiding characteristics of fibres**

While it is generally accepted that wool has natural soil hiding characteristics, synthetic fibre technology has developed to a stage where numerous fibre types have been engineered to improve their resistance to soiling. Modified fibre cross-section, chemical delustring and in-built antistatic features are used to achieve soil resisting or soil hiding characteristics.

**Reaction to soiling**

Some soiling may cause damage to fibres, particularly natural fibres under moist or even humid conditions. This damage can include acid or alkaline degradation or biological degradation.

**Soil and stain resistant treatments**

Some treatments for carpets can provide soil or stain resistance or both. These treatments may be applied by the fibre manufacturer or by the carpet manufacturer. Alternatively, they may be applied to the finished carpet, usually after installation. Whilst post-manufacturing treatments may be effective, advice should be sought from the carpet or fibre manufacturer, because the application of further treatments may affect any warranty.



**Carpet pattern, texture and colour**

The colour of a carpet is the major factor determining the visibility of soil between cleanings. Carpet yarns which combine two or more colours may act to camouflage soiling until it can be removed. A combination of suitable carpet texture, colour and pattern should reduce the visibility of soiling between cleanings.

**Walk-on, walk-off mats and lifts**

For preventative maintenance and to collect soiling material before it reaches the carpet inside, walk-on, walk-off mats of an effective size should be placed at all entrances to carpeted areas. Carpets in lifts also act as a preventative measure to soiling of the main carpeted areas and they should be thoroughly cleaned regularly and replaced when visibly worn.

**Chair mats (pads)**

Desk chairs on castors in offices, libraries, and similar areas can damage both the carpet and the underlay, and for this reason chair mats, usually made of a material such as PVC, are recommended.



**As any item used during day to day activities in all types of residential and commercial buildings will require maintenance to meet satisfactory performance expectations, what actions need to be taken to enable appropriate and timely carpet maintenance cleaning to be carried out?**

**Residential installations and commercial installations without carpet maintenance staff:**

- Refer to the Warranty documentation to obtain details of the carpet e.g. pile fibre, pile texture description, backing type(s), and the requirements regarding cleaning maintenance – e.g. vacuum type, spot and stain removal, dry or wet cleaning technique/process
- If there is no warranty documentation available, establish the pile fibre type via testing and develop a carpet details record
- Record contact details of a carpet cleaning technician who will be able to assist with spot and stain removal, interim (pile surface maintenance) cleaning and corrective cleaning.
- Make up or purchase a spot and stain removal kit that will enable most common spillages, spots and stains to be successfully removed or leave the stained area in a condition suitable for removal by a carpet cleaning technician.



**Commercial installations with carpet maintenance staff**

- Refer to the warranty documentation to obtain details of the carpet e.g. pile fibre, pile texture description, backing type(s), and the requirements regarding cleaning maintenance – e.g. vacuum type(s), spot and stain removal, dry or wet cleaning technique/process
- If there is no warranty documentation available, establish the pile fibre type via testing and develop a carpet details record
- Assess the traffic patterns and areas that could be or are prone to spills, spots and stains in the building or buildings and develop a maintenance plan
- Make up or purchase a spot and stain removal kit that will enable most common spillages, spots and stains to be successfully removed
- Develop a program that will enable (i) staff development in maintenance techniques and use of equipment, (ii) appropriate supplies and equipment to be purchased and (iii) actions to be undertaken to maintain carpet appearance and indoor health.

Notes

1. Carpet and Textile Floor Covering are interchangeable terms and both are used to describe carpet in roll form and modular carpet, (i.e. carpet tile and plank).
2. Interim cleaning is carried out to improve the overall appearance of the carpet by removing surface soiling while keeping drying times to an absolute minimum.
3. Corrective cleaning involves the use of water based cleaning systems to remove soiling from deep within the carpet pile.
4. Carpet cleaning technicians should be qualified and experienced and have proven compliance with Workplace Health & Safety Requirements.

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The Carpet Institute of Australia Limited (CIAL) is the lead industry association for Australia’s \$1.6 billion carpet industry. CIAL represents carpet manufacturers, carpet retailers and other suppliers of goods and services to the industry.

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