



Victoria Carpets

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WOOL CARPET MAINTENANCE RECOMMENDATION

Correct and regular maintenance will increase the life span of a carpet and also help maintain its good appearance. Cleaning should be proportional to the amount of soiling to which the carpet is subject – the more dirt is deposited on the carpet, the more intensive is the maintenance program required.

In order to be able to appreciate the reasons why carpets are cleaned in the ways in which they are, it is essential to know something about the phenomenon that makes carpet cleaning necessary in the first place – soiling. And to understand why certain cleaning or maintenance techniques are used in particular locations and on given types of carpet, it is necessary to know something about available systems and about carpets.

There is also a difference between cleaning and maintenance – cleaning is the removal of accumulated dirt and is generally carried out when needed. Maintenance is a planned procedure, started on the day the carpet is installed and on-going to retain a carpet's good appearance.

This paper is an introduction to the increasingly sophisticated techniques of carpet maintenance.

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1 How Carpets Soil

Dirt particles carried into a building on the soles of shoes and by air currents are deposited on the carpet surface and stick to the pile fibres. These dirt particles are held by mechanical forces in the yarn structure, or by adhering to the fibre surface because they are sticky (oily) themselves, or because the fibre is sticky, damaged, or has other sites where soil can lodge.

There are two main types of soil (dirt):

- Type 1* - coarse, dry, heavy soil – eg sand, fibres, salts etc – which causes carpet “to fill up with dirt”, and which is deposited as far down as the roots of tufts
- Type 2* - fine sticky, lightweight soil – eg soot, oil, rust, etc – which causes most of the discolouration of the carpet surface and makes the carpet “look dirty”

These two kinds of dirt have to be removed using different techniques:

- Type 1* - by mainly mechanical means – eg vacuum (suction) cleaning
- Type 2* - by mainly chemical means – eg shampooing, or impregnated compound cleaning

The more carpet soil, the more difficult, and often expensive, it becomes to clean them. It therefore makes sense to try to reduce the rate at which carpet soil by somehow trying to reduce the amount of soil reaching the carpet. This can be done by taking preventative measures such as the installation of adequate lengths of entrance mats, and by good housekeeping – eg by preventing spillages, and by putting mats in lifts and in front of drink dispensing machines

2 Maintenance Planning

The importance of properly planning a maintenance program for the carpeting in a building, however large or small, cannot be over-emphasised. The maintenance plan should take into account foot traffic loads, traffic patterns, desired appearance levels of the carpeting in different areas of the building, building occupation, the personnel responsible for the maintenance, available equipment, and – cleaning costs.

Carpet maintenance usually consists of three categories:

- regular
- interim, and
- periodic

2.1 Regular Maintenance

This is usually carried out on a daily basis. It comprises vacuum (suction) cleaning of all regularly trafficked areas, and spot removal. Extra care must be taken of the most heavily used areas, including entrance mats. Areas of minimal use can be vacuum cleaned at a lower frequency, for instance twice weekly.

Spills should be attended to as soon as possible, - the older the stain, the more difficult it is often to remove.

Spot removal kits containing all the tools to tackle spills likely to occur must be available to maintenance personnel, who must be trained in the use of these kits and have access to the kits at all times during carpet maintenance periods.

It is important to check that the chemicals in the kits are compatible with the carpet installed – applying them must not cause colour bleeding or bleaching, or any other damage to the carpeting.

Spot removal chemicals must be used with proper precautions – when used, the area must be well ventilated, the agents should not come into contact with skin or the fumes be inhaled. Those which are flammable must not be used when the operator is smoking, or near open flames, sparks etc.

The recommended spot removal procedure is as follows:

- Scoop up solids and blot up liquids first – avoid rubbing the carpet surface
- For unknown spots, apply solvents (for greasy/oily stains) first, followed by water-based spot removal agents. Apply agent to clean towel or tissue, not to the stain. Use small quantities at a time – always work from edge of stain inwards towards the centre. If at all possible, as a final treatment, rinse spot with clean water – do not over wet – and blot as dry as possible with clean tissues or towelling.

Spot and stain removal kits should at least contain the following:

- Clean tissues and/or towels
- Small brush, spoon (or spatula) and sponge
- Solvent for removing greasy/oily stains
- Carpet shampoo
- Amyl acetate/nail polish remover
- Laundry detergent
- Chewing gum remover (solvent or freezing type)
- Neutralising agents: acetic acid solution, ammonia solution (5%)
- Methylated spirits and turpentine or white spirit
- Rust remover

For details on how to remove different spots, see Table 1.

Table 1**Spot of Stain Removal Guide for Wool Carpets**

The charts below contain methods of treating spots and the order in which they should be tried:

Easy Spots – these are spots which can be easily removed if attended to quickly

Difficult Spots – these are difficult to remove and may require repeated attempts

Easy Spots	Treatment Steps		
	1st	2nd	3rd
Blood	3	1	
Burn/Scorch marks	10	11	
Butter	12	1	
Candle wax	5	12	
Chewing gum	6		
Chocolate/cocoa	1	12	
Cola	3	1	
Cream	1	12	
Egg	1		
Floor Wax	12	1	
Fruit Juice	3	1	4
Gravy and sauces	1	4	
Herbal tea	3	4	
Metal polish	1		
Mustard	1		
Oil and grease	12	1	
Paint (emulsion)	3	1	
Shoe polish	12	1	
Tea	3	1	4
Urine (fresh stain)	3	1	13

Table 1 (contd)

Difficult Stains	Treatment Steps		
	1st	2nd	3rd
Artificially-coloured drinks	3	4	18
Bleach	3	18	
Central heating radiator fluid	18		
Coffee	3	4	18
Felt-tip pen	8 or 12	15	1
Furniture polish	12	1	18
Glue/adhesive (plastic base)	18		
Ink (fountain pen)	18		
Ink (ballpoint pen)	15		
Lipstick	12	18	
Milk	2	1	9
Nail varnish	7 or 14		
Paint (oil)	8	18	
Rust	17		
Soot	9	18	
Tar (asphalt)	12		
Urine (old stain)	18		
Vomit	1	4	13
Red wine	16	4	

Treatments

1. Carpet shampoo solution (diluted)
2. Warm water
3. Cold water
4. Laundry detergent (non-biological), one teaspoon in 250ml warm water
5. Absorbent paper
6. Chewing gum remover, solvent type
7. Nail varnish remover
8. White spirit
9. Vacuum
10. Rub with coin
11. Rub gently with coarse sand paper
12. Spot remover for greasy/oily stains
13. Household disinfectant
14. Acetone
15. Surgical spirit
16. Inert absorbent powder
17. Rust remover
18. Consult professional carpet cleaner

Some chemicals are hazardous and should only be used strictly in accordance with their use and safety instructions.

2.2 Interim Maintenance

This is used to brighten the appearance of the carpeting by removing surface dirt, but without necessarily removing much of the deep-seated soil in the pile.

This can be accomplished by techniques such as bonnet buffing, which use a rotary scrubber and a soft textile cleaning pad in place of the circular brush (as used for rotary shampooing.) The cleaning solution is applied either directly to the carpet or to the pad. Dirt from the carpet surface is transferred to the pad; the pad must be reversed or changed frequently to be effective. Dirty pads can be laundered and re-used.

Impregnated compound (powder) cleaning uses inert powder, impregnated with a mixture of water, solvent, detergents, etc which are brushed into the carpet pile and, after drying, vacuumed out. The powder acts as little sponges, which absorb the dirt from the fibre surfaces.

2.3 Periodic Maintenance

However meticulously both regular and interim maintenance are carried out, the time will come when the carpeting will require a thorough, deep or restorative cleaning. Systems used are based on shampooing, using a high foam carpet shampoo, or spray extraction cleaning, using a low foam shampoo.

Prior to commencing these wet cleaning techniques, the carpet pile is usually treated with a pile lifter, which is a twin-motor vacuum cleaner, with a large cylindrical brush and powerful suction action to open up the pile and remove embedded grit which normal vacuuming leaves behind.

Shampooing involves the use of a rotary or cylindrical brush machine which brushes a shampoo solution – “wet” shampooing – or a shampoo foam – “dry” shampooing – into the carpet pile. After this is completed, the dirt-laden shampoo is either

- Sucked out of the pile by means of a wet pick-up machine
- Rinsed out using a spray extraction machine (charged with water only), or
- Left to dry and the dried shampoo and loosened dirt particles removed by vacuuming – the so-called shampoo crystallisation process.

Of the above procedures, the last one tends to be least expensive, but also the least efficient; the second one the most expensive and most efficient.

Spray extraction cleaning injects a detergent solution into the carpet pile, immediately followed by an integral wet pick-up system. Amount of solution sprayed into or on to the carpet pile varies greatly between machine models and makes, and

this affects both the efficiency of the "flushing" out of the dirt and the chance of inadvertently over-wetting the carpet.

Cleaning efficiency can be improved by pre-spraying the carpet with the low foam shampoo prior to spray extraction, and by the use of rotating or oscillating brushes in the floor "wand" of the machine.

With all wet cleaning techniques, it is important to avoid over-wetting the carpet as this greatly lengthen the drying time and may cause problems with discolouration of the pile. Brushing of the pile should also be kept to a minimum, especially with some carpet constructions. It is strongly recommended that the carpet be pre-tested prior to commencing any wet cleaning to ensure that neither chemicals (shampoos or spot removal products), nor the cleaning technique itself, cause damage to the structure or colour of the carpet.

3 Recommended Cleaning Methods for Wool Carpets

There are no hard and fast rules on which cleaning technique is the best for wool carpets. This depends largely on the type of carpet concerned and the degree of soiling. As a general rule, cleaning methods involving brushes or beaters should be avoided on long pile or coarser loop pile wool carpets. In these cases, plain suction vacuum and spray extraction wet cleaning are often the best methods (see Tables 2 and 3), but much will depend too on the skill of the operator – no technique is completely foolproof.

The damage done to carpet in (wet) cleaning usually relates to over-wetting, too much mechanical action and the use of unsuitable shampoos and other chemicals (see Table 4).

Wet cleaning has both positive and negative effects on the texture of carpets. The positive effects are:

- Lifting of the carpet pile (all textures)
- Improvement in the tuft definition (loop pile, velours)
- Improved handle (all textures)

All wet processes cause some untwisting of yarn in cut pile carpets, depending on amount of moisture applied, mechanical action, degree of "setting" of the yarn, etc. Brushing causes some fuzzing (shampooing, but also upright vacuum cleaner). Ridging on extremely long pile carpets can be caused by some spray extraction cleaning tools.

4 Cleaning Chemicals

The basic requirements of cleaning chemicals for use on wool are:

- low alkalinity
- non-sticky residue on drying
- good cleaning power
- no added bleaches, dyes etc

The reasons for these requirements are:

- high alkalinity (often, but not always, reflected in high pH) can cause colour bleeding with dyed or heather (tweed) yarns, pigment bleeding in natural berbers, jute staining of pile surface in light coloured carpets, and in extreme cases, yellowing and weakening of the wool fibres
- sticky residues cause quicker re-soiling
- poor cleaning performance necessitates excessive mechanical agitation of the pile
- additives can cause uneven cleaning results, bleaching or change of colour

Some commercially available carpet cleaning chemicals are unsuitable for use on wool carpets because they do not conform to one or more of the above requirements. To identify those chemicals – pre-sprays, shampoos, spot removal chemicals – which are compatible with wool carpets and are safe to use, an approval program for wool carpet maintenance products was established in 1991.

Suggested Carpet Maintenance Program for a Typical Office Building

Carpeted Area	Maintenance Category	Maintenance Program				
		Routine Cleaning			Interim Cleaning	Periodic Cleaning
		Spot Removal	Vacuum Traffic Areas	Full Vacuum		
Executive Offices	Light	Daily	Daily	Weekly	12 months	12-24 months
All other offices	Medium	Daily	Daily	Weekly	6-12 months	12-18 months
Function Rooms	Medium	After each function		Weekly	6-12 months	12-18 months
Staff Canteen Corridors	Heavy	Daily		Daily	3 months	6-12 months
Reception Area Stairs/Lifts and Lift Area	Extra Heavy	Daily		Daily	1-2 months	3-6 months

Suggested Carpet Maintenance Program for Carpeted Areas in a Hotel

Carpeted Area	Maintenance Category	Maintenance Program				
		Routine Cleaning		Interim Cleaning	Periodic Cleaning	
		Spot Removal	Vacuum Traffic Areas			Full Vacuum
Suites Guest Rooms Bedrooms	Light	Daily	Daily	12 months	12-24 months	
All Corridors (except ground floor) Lounges	Medium	Daily	Daily	6-12 months	12-18 months	
Function Rooms Restaurant Bar Area	Heavy	After each function			3 months	6-12 months
		Daily	Daily	Daily		
Entrance Area Reception Area Ground Floor – Corridors Lifts and Lift Area	Extra Heavy	Daily	Daily	1-2 months	3-6 months	

Suggested Carpet Maintenance Program for a Restaurant

Carpeted Area	Maintenance Category	Maintenance Program					
		Routine Cleaning			Full Vacuum	Interim Cleaning	Periodic Cleaning
		Spot Removal	Vacuum Traffic Areas				
Office	Light	Daily	Daily	Weekly	12 months	12-24 months	
Powder Room/ Cloakroom	Medium	Daily	Daily	Daily	6-12 months	12-18 months	
Bar Area	Heavy	Daily	Daily*	Daily*	3 months	6-12 months	
Entrance Eating Area Kitchen Entrance Area	Extra Heavy	Daily	Daily*	Daily*	1-2 months	3-6 months	

*Note – Traffic areas should be vacuumed after the first (lunch time) sitting daily with a full vacuum after the second (evening time) sitting for both Heavy and Extra Heavy categories.

Suggested Carpet Maintenance Program for Carpeted Areas in a Hospital

Carpeted Area	Maintenance Category	Maintenance Program				
		Routine Cleaning			Interim Cleaning	Periodic Cleaning
		Spot Removal	Vacuum Traffic Areas	Full Vacuum		
Offices	Light	Daily	Daily	Weekly	12 months	12-24 months
All Corridors (except ground floor)	Medium	Daily	Daily	Daily	6-12 months	12-18 months
Restaurant/Snack Bar/Waiting Rooms	Heavy	Daily	Daily Or as necessary	Daily Or as necessary	3 months	6-12 months
Reception/ Ground-floor Corridors/Lifts and Lift areas	Extra Heavy	Daily	Daily Or as necessary	Daily Or as necessary	1-2 months	3-6 months

Suggested Carpet Maintenance Program for Large Department Store

Carpeted Area	Maintenance Category	Maintenance Program				
		Routine Cleaning			Interim Cleaning	Periodic Cleaning
		Spot Removal	Vacuum Traffic Areas	Full Vacuum		
Offices	Light	Daily	Daily	Weekly	12 months	12-24 months
Staff/Rest rooms Staff Corridors	Medium	Daily	Daily	Daily	6-12 months	12-18 months
All floors (except ground floor) Staff Canteen Stairs	Heavy	Daily	Daily	Daily	3 months	6-12 months
Entrances Ground Floor Lift Areas Restaurant	Extra Heavy	Daily	Daily	Daily	1-2 months	3-6 months

TABLE 2

DAILY MAINTENANCE (SUCTION CLEANING) TECHNIQUES FOR WOOL CARPETS

Cleaning Techniques	Carpet Construction								Comments
	Level Loop Pile	Cut Pile (Plain)	Cut Pile (Patterned)	Hard Twist	Saxony	Shag Pile	Oriental, Rugs, etc.		
Carpet sweeper	+	+	+	+	+	+	+	+	Only removes surface debris (litter), does not clean deep down.
Suction only	+	+	+	+	+	+	+	+	Reduced efficiency on carpets with impervious backing and stuck down carpets.
Suction plus revolving beater bar/bristle strip	+(1)	+	+	+	+	+	+	+	Not suitable for stuck down carpet installations; may cause fuzzing on certain loop pile carpets.
Suction plus revolving bristle strips	+(1)	+	+	+	+	+	+	+	Recommended for carpets with impervious backing and stuck down carpets; may cause fuzzing on certain loop pile carpets.

(1) Not recommended for coarse loop pile carpets

Methods: ++ Best +Suitable O Optional - Least suitable

TABLE 3

WET CLEANING TECHNIQUES FOR WOOL CARPETS (PERIODIC CLEANING)

Cleaning Techniques	Carpet Construction								Comments
	Level Loop Pile	Cut Pile (Plain)	Cut Pile (Patterned)	Hard Twist	Saxony	Shag Pile	Orientals, Rugs, etc.		
Single or multi brush rotary shampooer	+(1)	○	+	○	○	-	○	Cut-pile carpets; raise pile with rake or brush when still moist. Efficient pile surface cleaner.	
Cylindrical brush shampooer	+(1)	+	+	+	+	○	○	Basically for intermediate cleaning; not suitable for heavily soiled carpet.	
Bonnet cleaning	+	+	+	+	+	○	-		
Spray extraction machine	+	+	+	+	+	+	○	Effective deep cleaner, moderately efficient surface cleaner.	
Smooth wand	+	+	+	+	+	+	○	Mainly for large carpeted areas; especially suitable for stuckdown installations.	
Rotating or oscillating cleaner	+(1)	+	+	+	○	-	-		
Impregnated compound cleaner	+	○	+	+	+	+	-	Basically for intermediate cleaning; not suitable for heavily soiled carpet.	
Carpet washing machine (plant cleaning)	+	+	+	+	+	+	+	Most efficient cleaning technique, but causes shrinkage with natural fibre backings; used only if carpet can be economically removed and satisfactory removed and re-fitted.	

Methods: ++ Best + Suitable ○ Optional - Least suitable

TABLE 4

EFFECT OF WET CLEANING AND ACCIDENTAL SPILLAGE ON WOOL CARPETS

	Damage, Effect	Caused by	Contributory Carpet Fault or Weakness
PILE SURFACE	Fuzzing, fluffing, cobwebbing, felting	Excessive mechanical agitation in wet cleaning (shampooing or stain removal)	Low yarn twist, coarse loose loop, long pile
	Browning (surface)	Pigments from naturally coloured wool, jute or foam backing and over-wetting of carpet	Neutral or alkaline pH of naturally coloured wools; loose pigments in backing material
PILE MASS	Excessive yarn untwisting ('pile burst')	Water based spillage or wet cleaning	Low yarn twist, unset or insufficiently set yarn
	Colour bleeding (in multi-coloured patterned carpets)	Water spillage or wet cleaning; high pH cleaning chemicals	Dyestuffs used with insufficient wet fastness
BACKING	Shrinkage	Overwetting in cleaning, flooding of carpets	Jute (and/or cotton) backing fabric
	Delamination (tufted or foam backed carpets)	General wear, localised high wear, e.g. under castor chairs	Insufficient adhesion between primary and secondary or foam backing
	Decomposition or deformation (foam backed carpets)	Dry cleaning solvents (stain removal)	