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# **Carpet Care**

Your guide to beautiful and longer-lasting textile floors

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## Introduction

The number of carpeted areas in non-domestic premises have tremendously increased last decade.

Restaurants, hotels, offices and shops have all been quick to see the initial carpeting benefits of comfort, noise absorbency and aesthetic appeal. These benefits have been supplemented with lower carpeting costs due to improved manufacturing technology together with decreased maintenance costs.

There is no doubt that carpeting can improve the overall appearance of your premises, but without the correct care, a carpeted floor can add to the problems associated with your building's maintenance.

The purpose of this guide is to demonstrate that carpet care does not need to be a difficult task. With a simple well-planned maintenance programme, your carpets will not only look good, they will also maintain their beautiful looks longer.



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## **Carpet Construction**

Carpets are constructed, essentially, from fibres which may be natural or synthetic in origin, and have various types of backing. Dyes are used to provide the colour and the quality of these varies which is why it is essential to ensure colour fastness of the carpet when using any chemical.

### **Fibre Types**

There are three types of fibre found in carpets: animal, vegetable and synthetic. In the non-domestic environment, the only animal fibre that is used is wool, and normally as a mixture with other fibres to improve the overall performance of a carpet.

Vegetable fibres include cotton, rayon, acetate and jute, which are based on cellulose. Examples of synthetic fibres are nylon, polyester, acrylic and polypropylene, of which nylon and polypropylene are most common.

The type of fibre can have a great effect on the performance of a carpet, although the pile density, type of construction and backing, and even the colour affect the choice of carpet for a given application. In non-domestic applications loop pile (non-woven) carpets in medium colours or multi-coloured, tend to retain their appearance best, show less soil and traffic wear, and are easiest to clean.

The following chart (below) shows the effect that the various fibre types can have:

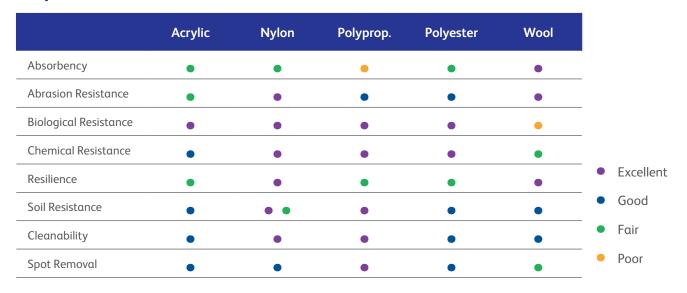
#### Primary Backing

The material used for backing a carpet is extremely important and will have considerable effect upon the life of the carpet. The primary backings nowadays are usually made from a clear synthetic polypropylene. Older carpets may have a primary backing made from a brown natural jute (cellulose) fibre. The primary backing is sometimes dyed to match the colour of the face pile so the backing does not show through between the tufts. Many carpets with synthetic resin or synthetic rubber backing will also have an additional (secondary) backing of jute which is intended to lengthen their life.

Jute or cellulosic browning can occur due to deterioration of the jute from over-wetting. This results in the brown colour from the jute wicking to the tips of the carpet fibre and leaving a brownish stain. (Re-cleaning may sometimes remove it, particularly if the stain is pre-treated with a weak acidic solution first). Polypropylene does not discolour and provides some water resistance.

#### Latex Adhesive

This is the glue that holds the tufts in place in the primary backing and holds the two backings together. Cleaning solvents can affect the adhesive and loosen the tufts. Therefore, over-wetting the carpet with any cleaning solvent should be avoided and all the solvent should be reabsorbed if possible.



## **Carpet fibres and their characteristics**

## **Types of Soilage**

Another key to understanding carpet maintenance is knowledge of the different types of soil that can be present. Typically, carpet soil consists of 85-95% dry soil and 5-15% wet soil.

Regular vacuuming will remove 90-95% of the dry soil (see later), but the wet soil represents the major challenge in carpet cleaning. This soil acts as a binder to hold dry soil in the carpet, so that often it can be removed only by cleaning with a detergent or solvent.

Dry Soil is dust and grit, most of which is trafficked in by people.

Wet Soil can be split into two categories: Water Soluble and Solvent Soluble (see diagram below).

Grease
Oil
Asphalt
Ballpoint pen
Lipstick
Shoe polish
Nail varnish

Some stains such as tea and coffee are difficult to remove because they actually dye the carpet fibre. In these cases, removing all traces of residual staining depends on the use of high quality products, which chemically reverse the dye reaction.

## **Soil Prevention**

### **Dust Control Mats**

How many times have you entered a building onto a carpeted area, and either found a dirty area of carpet in the main traffic area, or if a dust control mat is present, only to find it is so heavily soiled to be worthless. An essential and often overlooked part of any carpet care programme is the installation and correct maintenance of dust control matting.

It is estimated that 80% of the dirt in a building comes in via peoples feet (shoes), which is why barrier matting is essential in maintaining the appearance of your building and in particular the floors.

Size of barrier matting is another consideration, entry mats should be at least large enough to allow both shoes to come into contact with the mat- ideally significantly larger.

There are numerous types of dirt/dust control equipment available today, and the correct choice and usage is of significant importance. To ensure that the correct and most cost effective choice is made, it is advisable to consult a reputable manufacturer of such equipment.

### Carpet Colour

From a maintenance viewpoint, carpet colour should be based on the following criteria:

 The colour of the soil being tracked onto the carpet. Soilage colour varies from red clay through brown to yellow sand, as well as black atmospheric soilage in built up areas. Therefore, the more contrast between the soil and the carpet, the quicker the carpet will look soiled and the more often it will need cleaning.

Obviously, light soils will quickly appear evident on darker carpeting. Red clays quickly soil yellow and gold carpeting. Though somewhat labour intensive, testing various soil types on different carpet colours can pay dividends in the long term.

- 2. The location of the carpet. Petroleum oils and grease are typical soils tracked into entry areas from car parks, especially those constructed of asphalt which produces yellow-black soilage from sulphur and tar residues. Similarly, specific soils may be attributable to specific areas such as kitchen/dining areas and pavements. Atmospheric soils are the only soils that are uniform throughout a building.
- 3. Soils can also be hidden by multicolour tweed designs since solid colours are very prone to show soiling quicker.



## **Carpet Cleaning Methods**

## **Approvals**

### WoolSafe

In response to numerous requests for information on approved products for cleaning or protecting wool carpets, an International programme was established in 1991 to enable those manufacturers whose products are safe and satisfactory for maintaining wool carpets, to state so officially by means of the WoolSafe logo.

Products which claim compliance are subject to random scrutiny by the operators of the programme, to ensure that any changes in formulation, which may be of detriment to wool or the performance of the product, are not OLSA introduced as products are reformulated.

The WoolSafe logo is therefore a sign of quality.

### Carpet and Rug Institute (CRI)

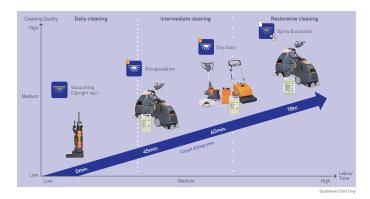
The CRI Seal of Approval program, is an American scheme, that identifies effective carpet cleaning solutions and equipment that clean carpet right the first time and protect a facility's carpet investment. Not all products clean well enough to earn the Seal of Approval distinction, so look for the blue and green CRI Seal of Approval as proof that you are purchasing or using a quality product.



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## **Carpet Care Overview**

Understanding the way carpets become soiled is important in developing a total carpet care maintenance programme. Soil particles, which stick to carpet fibres, are quite small when compared to the loose particles that are easily removed via vacuuming. Such sticky particles, which are bound to the fibres by an oily film, are considered to be below surface level and are difficult to remove.



## Vacuuming

Large particles are easy to remove because less of their total surface area are in contact with the carpet fibre. As air flows around these larger particles via vacuuming, they are dislodged and sucked up into the vacuum. For this to happen, air must flow around the particle, and not just over it. This is the main differentiation between superior vacuum machines and those of inferior quality.

A superior vacuum will have enough energy to create air turbulence at the lower levels of the carpet pile. This 'vacuum effect' is the reason that good vacuum cleaners have an adjustment facility to allow for a minimal gap between the carpet pile and machine thus ensuring an optimum level of vacuum. In addition to air rushing through the carpet, it is possible to dislodge soil via brushing or shaking. This mechanical action forces more soil to enter the air stream and hence be vacuumed away. Incidentally, brushing action machines will also lift the pile of a carpet giving it a more attractive appearance.

### Choosing an Upright Vacuum Cleaner

In light traffic areas, a single motor vacuum cleaner will usually suffice. However, in heavy traffic conditions, a twin motor vacuum cleaner will give the best results, as well as cutting down on labour costs. Those machines fitted with dust collection bags that fill from the top do not lose

efficiency as the bag becomes more full, unlike their bottom filling counterparts.

Careful testing has proved that the brush and opening design play a larger role in cleaning efficiency than the level of suction. Incidentally, contrary to popular belief, there is no correlation between the weight of a vacuum machine and cleaning efficiency.



Once you have purchased an upright vacuum cleaner, two simple steps will ensure maximum efficiency:

Step One: Always empty the dust bag daily. Step Two: Every week check brushes and belts (replace if badly worn).

Sometimes as the air is drawn through the vacuum, it picks up odour from inside the bag and this can create a musty smell. When using a vacuum, the use of a product such as Tapi Deo will help to keep the bag smelling fresh and prevent this problem.



## 1. Spot and Stain Removal

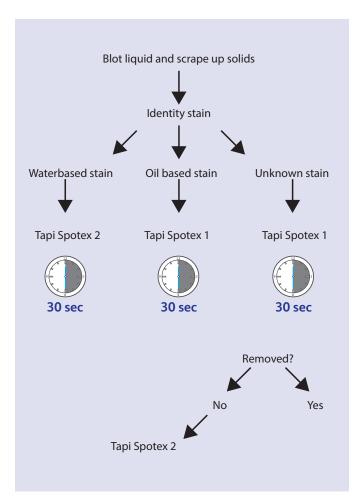
Removing spots and stains from carpets can be a frustrating and time-consuming chore. A little understanding of the processes involved will go a long way to help solve this problem area. It is worth noting at this point, the difference between a spot and a stain: Spots are concentrated substances lying near the carpet surface, which can often be removed using general purpose spotters and shampoos. Stains have penetrated the carpet fibres and are more difficult to remove.

There are several factors which can affect spot and stain removal:

- Age of stain: For most effective removal, spots/stains should be treated immediately after occurrence. Allowing the spot to set will make removal more difficult.
- **Type of stain:** The composition of the stain may determine the method of removal.
- **Temperature:** Stains produced by hot spills are normally more difficult to remove than cool or warm spills. The heat expands the carpet fibres, which makes them more porous.
- **Concentration:** The more concentrated the soil, the harder it will be to remove.
- **Carpet Pile**: The more surface area of pile exposed to a spillage, the harder the removal of the stain. (Shag pile presents more difficult removal of stains than looped pile).
- **Carpet Construction**: The fibre type is also important. Wool fibres absorb stains faster and are harder to treat. Nylon and polypropylene fibres show good removal properties whilst acrylic would be considered to behave in between these and wool.
- First Removal Attempts: Sometimes, the incorrect method of removal may set the stain deeper into the carpet pile.

Other problems caused by improper stain removal techniques are as follows:

- Permanent discoloration due to spot pigments being permeated throughout the carpet pile.
- Carpet pile distortion due to attack of carpet fibres and backing by use of the incorrect product or excessive rubbing.
- Spot migration in which the spot pigments flow away from the main concentration of the soil and cause a halo effect.
- Wicking in which the upper levels of the spot are removed but the lower levels are left to wick up the carpet fibres. Wicking up of jute pigments can also occur due to use of the incorrect product or over wetting.



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### Techniques for Spot and Stain Removal

Before starting, try to identify the type of spot or stain. It may be easily removed with a damp cloth.

N.B. Always work from the edge of the spot or stain towards the centre to avoid spreading it. Also, it is necessary to test all colours and the backing of the carpet for colourfastness before applying any cleaning chemical.

This is done by applying a small amount of the chemical to a clean, white absorbent cloth and dabbing it onto an inconspicuous part of the carpet. There should be no trace of colour on the cloth.

- 1. Remove any solids by gently scraping with a blunt knife, spoon etc.
- 2. Remove any liquid by blotting with a clean, white absorbent cloth or paper towel.
- 3. If it is a solvent based stain or you have not been able to identify the stain, then apply Tapi Spotex 1 to the stain, leave for 30 seconds.
- 4. If it is a water based stain apply Tapi Spotex 2 to the area and leave for 30 seconds.
- 5. Blot treated area with clean white absorbent cloth or paper towel to remove loosened stain and excess solution.
- 6. Repeat steps 3 & 4 until the stain is removed. Allow the carpet to dry thoroughly if it is necessary to repeat several times rather than risk over-wetting the carpet.
- 7. Dry the surface by blotting with a clean, white absorbent cloth or paper towel.
- 8. Rinse if required with clean. water.

Stain	Product
Τεα	Tapi Spotex 2
Coffee	Tapi Spotex 2
Wine	Tapi Spotex 2
Lipstick	Tapi Spotex 1
Shoe polish	Tapi Spotex 1
Grease	Tapi Spotex 1
Pen	Tapi Spotex 1
Ink	Tapi Spotex 1
Nail varnish	Tapi Spotex 1
Blood	Tapi Spotex 2
Urine	Good Sense Breakdown
Grease	Tapi Spotex 1
Curry	Tapi Spotex 1



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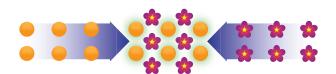
#### **ONT** Technology

Due to the structure of the fibres, carpets tend to trap and hold malingering malodours. Most carpet care products contain some perfume, ostensibly to make the product more pleasant to use, and to mask any malodour. However, the combination of perfume and malodour can be more unpleasant than the original malodour. Moreover, once the perfume molecules fade, the malodour returns.

Conventional perfumes freshen by masking malodours:



Diversey has developed ONT technology. The molecules in the ONT fragrance chemically combine with, and trap nitrogen and sulphur compounds. (These are the primary malodours). The remaining ONT molecules create a fresh, long lasting fragrance:



The net result of using ONT is that the malodours trapped in the carpet are effectively and permanently 'removed'.

#### Urine Removal

Good Sense Breakdown is formulated with natural enzyme cultures, ONT technology and a pleasant fragrance, this makes it perfect for urine removal in carpets. It can be used as a spot and stain remover or if the whole carpet needs cleaning then pre-spray with a 1:10 dilution and then extraction clean. Methods for application are below.





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### Pre-treatment

Pre-spraying carpets before either shampooing or extraction cleaning (see later) helps loosen the soil and dirt particularly in traffic areas. Pre-sprays are diluted, sprayed on with a compressed air pump sprayer and allowed to soak for 5-10 minutes to loosen soil before cleaning, thus:

- 1. Vacuum carpet thoroughly
- 2. Dilute Tapi Extract 1:10 (10%) parts water in a pressure sprayer. In areas of heavy soilage, dilute 1:5.
- 3. Spray traffic lanes and other heavily soiled areas and allow to soak for 5–10 minutes before extracting or shampooing.

#### Bonnet Buffing (Carpet Skimming)

Bonnet buffing can remove the soil that is held to the carpet by an oily film, which cannot be removed by vacuuming. This method of cleaning can be carried out daily in high traffic lanes and weekly in lower traffic areas.

Bonnet buffing of traffic areas on a regular basis can keep the soil from spreading from entrances and traffic lanes to all across the carpet.

Bonnet buffing is quick and the drying time can be very short. Therefore, no down time of the traffic lanes is required.

The basic bonnet buffing cleaning technique involves the use of a rotary floor machine fitted with a yarn pad or bonnet, which has been immersed in a cleaner solution and wrung out. The cleaner loosens the soil from the carpet and is attracted onto the yarn bonnet. The friction between the bonnet and the carpet aids the drying of the pile. The bonnets are made of a combination of cotton and synthetic yarn to provide both absorbency and high scrubbing action.

- 1. Vacuum the carpet thoroughly and carry out any pre-spotting as required.
- 2. Dilute Tapi Extract 1 part to 10 parts warm water. Soak the yarn bonnet and wring out thoroughly.
- 3. Place the bonnet under a floor machine fitted with a drive plate. Move the machine slowly over the carpet, concentrating on the high soil areas.
- 4. Once one side of the bonnet becomes dirty, turn it over and use the other side. When both sides have been used, re-soak bonnet and wring out thoroughly. Change the dirty cleaner solution regularly.





N.B. If Tapi Extract is being used for the first time on the carpet, test for the colourfastness before use on an inconspicuous area

## 2. Foam Shampoo

There are basically two types of foam shampoo processes: WET and DRY foam shampooing. Both methods apply a shampoo solution to the carpet, which must be left to dry completely.

The dried foam absorbs the dirt and loosened soil, which can then be vacuumed away using a conventional vacuum cleaner.

### Rotary (Wet) Shampoo

This method involves the use of a rotary floor machine equipped with a solution tank and fitted with a carpet shampoo (nylon) brush. It is one of the most effective cleaning methods, but requires a skilled operator to avoid over-wetting the carpet. Since the carpet will be relatively wetter than when cleaned by other methods, the drying times (and hence down times) will be longer.

This method is best suited for those premises that only have small areas on their floors carpeted. The same rotary floor machine can then be used throughout the building on both hard and carpeted floors.

### Encapsulation

The cleaning solution is pre-sprayed onto the carpet and worked into the fibres with a cylindrical brush machine. Some machines can carry out this process in one operation applying the cleaning chemical at low pressure onto the carpet and then working immediately with dedicated cylindrical brush. This process has a very low moisture process and the dry residue can be vacuumed after approximately 20 minutes. Encapsulation also avoids the drying time of carpet shampoos, making the carpet immediately available for use.



#### **Dry Foam Shampoo**

Only proprietary dry foam shampoo machines can use this process. The shampoo is foamed onto the carpet and reel-type brushes work the foam into the carpet pile. This method is suitable for large areas of carpet but will not clean heavily soiled areas as effectively as the wet shampoo method.

Using the dry foam shampoo method, only about one twentieth of the volume of liquid is applied to the floor that would be in the case of the wet foam shampoo method. The advantages therefore are that there is less risk of overwetting and a shorter drying time.



The method of use for both methods of shampooing is basically the same, as follows:

- 1. Remove all moveable furniture and vacuum the carpet.
- 2. If necessary, remove spots and stains using Tapi Spotex 2.
- 3. Dilute 1 part Tapi Shampoo to 10 parts warm water.
- 4. Shampoo the carpet following the manufacturer's directions for the machine used.
- 5. Allow the carpet to dry completely. The drying process is the most important step in this cleaning method. As it dries, the foam absorbs the soilage and sets up the soil barrier to retard the resoiling of the carpet pile in use.
- 6. Vacuum the carpet thoroughly to remove the dried foam and loosened dirt.
- 7. Re-set the pile by brushing in one direction with a stiff carpet brush.

N.B. Tapi Shampoo is being used for the first time on the carpet, test for colourfastness before use on an inconspicuous area.

It is also necessary to avoid wetting the legs of furniture with Tapi Shampoo. Metals, particularly metal glides under furniture legs may corrode and spot a newly cleaned carpet. To avoid this, place small strips of aluminium foil or plastic sheeting under the legs of furniture, which should remain there until the carpet has completely dried.

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## **3. Extraction Cleaning**

Extraction cleaning is the most thorough and effective method of removing soil from carpets. It involves the injection of a cleaning fluid at high pressures (and sometimes high temperatures) into the carpet pile.

The soil is then loosened and/or dissolved into the cleaning fluid which is almost immediately vacuumed up again into the extraction machine's recovery tank (see diagram below). This method of cleaning is carried out periodically and is not normally used as a regular maintenance technique.

- 1. Remove all moveable furniture and thoroughly vacuum the carpet.
- 2. If necessary, use Tapi Spot & Stain Remover to remove spots and stains, and/or pre-spray the area with diluted Tapi Extract to loosen the soil before cleaning.
- 3. For normal soilage, dilute 1 part Tapi Extract to 80 parts hot or cold water. In areas of extreme soilage, dilute 1 part cleaner to 50 parts water.
- 4. Pour the solution into the solution tank of the extractor machine (separate defoamer is not required).
- 5. Extract the carpet following the equipment manufacturer's operating instructions.
- 6. Re-set the carpet pile by brushing in one direction with a stiff synthetic carpet brush, and allow too completely dry.
- 7. Replace furniture when carpet is dry.

Having discussed the various carpet cleaning methods, the

chart at the bottom of the page will help you decide which maintenance programme will best suit your requirements.

N.B. If Tapi Extract is being used for the first time on the carpet, test for colourfastness before use on an inconspicuous area.



	Extraction Cleaning	Wet Foam Shampoo	Dry Foam Shampoo	Encapsulation	Bonnet Buffing
Cleaning performance	***	**	**	**	*
Productivity	*	**	**	***	***
Size of area cleaned	***	*	**	***	**
Dry time/down time	*	* Relies on operator	**	***	**
Pile restoration	Improved if machine has mechanical brush	***	**	**	*
Operator requires high level of training	**	**	***	***	**

\*\*\* Excellent \*\* Good \* Moderate

## **Maintenance Schedule**

Once you have decided on the particular maintenance technique to suit your needs, the next question to answer is how often do I need to clean my carpets?

The following chart will help you plan your regular programme, depending on the standards you require.

Appearance Level Required	Procedure	Low Traffic	Medium Traffic	High Traffic
Excellent	Vacuuming	Daily	Daily	Daily
	Spot & Stain Removal	1 x week	2 x week	3 x week
	Bonnet Buffing	1 x month	2 x month	4 x month
	Shampooing	1 x year	2 x year	1 x month
	Extracting	1 x year	2 x year	3 x year
Good	Vacuuming	1 x week	2 x week	3 x week
	Spot & Stain Removal	1 x month	2 x month	1 x week
	Bonnet Buffing	none	1 x month	2 x month
	Shampooing	none	1 -2 x year	3-4 x year
	Extracting	1 x year	1 - 2 x year	3-4 x year





## **Carpets and Allergens**

Allergens are proteins and will therefore not be removed by disinfection (active on bacteria). Therefore there is no guaranteed method to remove 100% allergens in a carpet. It is only through repeated cleaning procedures that you will improve the elimination every time.

BMA Labor tested the cleaning method impact on 2 different allergen types: dust mites and cat allergens. The comparison has to be seen versus vacuuming which everyone does on a daily basis.

	How does it work on allergens?	Cat allergen reduction (BMA report)	Dust mite allergen reduction (BMA report)
Vacuuming	Mechanical action	45%	59%
Shampooing	TASKI Tapi Shampoo is responsible for chemically deactivating the allergen part of the mite (a protein)	83%	69%
Extraction cleaning	Most effect on allergens with extraction cleaning is mechanical	86%	92%

This shows that extraction cleaning really removes allergens in a mechanical way but if you use the intermediate cleaning technique of shampooing then TASKI Tapi Shampoo chemically deactivates the allergen thus making it a unique product.



## **First Aid for Carpets**

In previous sections we have already discussed how to remove all common spots and stains. The following is a guide to overcoming most of the other problems you may come across:

Candle Wax	Place a white absorbent cloth over the spot, and lightly apply a little heat with a warm iron. DO NOT PLACE THE IRON DIRECTLY ONTO THE CARPET. Absorb as much wax as possible into the cloth, then use Tapi Spotex 1 following the instructions on the pack.
Chewing Gum	Freeze the gum using Tapi Gum, following instructions on the pack.
Nail Varnish or Glue	Apply Tapi Spotex 1, ensure a colour fastness test is completed BEFORE applying to the stain. Follow instructions on the label. Ensure carpet is rinsed with water after application.
Oil Based Paint	Apply Tapi Spotex 1, following instructions on the pack.
Rust	Apply a 1% solution of oxalic acid* (available from chemists) in warm water to spot. Allow to stand for 10 - 15 minutes then blot. Repeat as necessary, then treat with Tapi Spotex 2.
Burns	If the carpet is wool, the damage will probably be restricted to a 'charring' on the surface. A gentle rub with fine grade sandpaper will remove the mark. If the carpet is synthetic, the fibres may well have melted together, often into a black hard lump, which may easily be cut out of the carpet.
Indentations	Caused by furniture or other heavy objects. The application of an ice cube will alleviate this problem, followed by gently brushing dry. Steam will also rectify this problem.

\* Use with caution, as oxalic acid is poisonous.

#### **Other Helpful Hints**

- Always test cleaning agents on an inconspicuous area of carpet for possible fibre damage or colour change.
- If a stain is old and unidentified, spray first with Tapi Spotex 1, if this does not remove the stain then use Tapi Spotex 2
- Avoid over wetting
- Avoid excessive rubbing as it may cause unsightly distortion of the carpet fibres
- Take care when using flammable solvents



## Notes
