

# Carpet Maintenance Guide

# **Carpet Maintenance**

It may not be the first thing on your mind when you purchase commercial carpet, but carpet maintenance is the secret behind keeping your carpet looking and performing at its best for years to come.

Of course, your initial line of defence against soil is proper carpet selection. This includes specifying a well constructed qualityengineered carpet and having it installed by experts. All carpets made of Antron<sup>®</sup> carpet fibres – produced of nylon 6.6 with a tight molecular structure – are subjected to special tests that ensure good quality and wear properties.

This brochure is designed to give you the information you need to create an effective maintenance programme, which includes preventive maintenance and regular, proper cleaning. That will extend the life of your carpet, reducing life cycle costs and maximising your commercial flooring investment.

### Table of contents

Why maintenance is important	3
Maintenance of commercial floorcoverings	4
Soil and your carpet	5
Calculate the impact of maintenance costs	6
Creating a carpet maintenance program	_ 7

1: Make preventive maintenance a priority; 2: Manage soil with regular vacuuming;

3: Promptly remove spills and stains. Bleach is not recommended; 4: Renew your carpet with proactive, periodic cleaning Antron® wear resistant fibres

10

2

# Why maintenance is important

### MAINTENANCE IS GOOD FOR THE ENVIRONMENT

Our life cycle analysis of commercial carpet shows that the overall environmental footprint of carpet is reduced by increasing the amount of time a carpet remains on the floor. A consistent, proactive maintenance program can significantly improve the appearance retention throughout the life of the carpet. Less carpet waste is always good for the environment.

Antron<sup>®</sup> carpet is engineered to stay newer looking longer and should outperform carpets of similar construction using other fibres.

### MAINTENANCE PROTECTS YOUR INVESTMENT

Commercial flooring is a substantial investment for any business – one you will want to protect for years to come. After all, the longer your flooring lasts, the less it costs.

The initial cost for floorcovering materials and installation does not fully encompass your total floorcovering investment. The life cycle cost also factors in life expectancy of the carpet, costs for removal/disposal, lost revenues during renovations and maintenance costs over the life of the carpet.

Good maintenance helps protect your total flooring investment.



Composition of floorcovering investment

### MAINTENANCE HELPS CARPET LAST LONGER AND COST LESS

Proactive, regularly scheduled maintenance removes soil before it can build up and damage carpet fibres. This can actually extend the life of the carpet, reducing the costs of restoration, replacement and disposal.

Reactive maintenance cannot fully restore a carpet to a like-new appearance. This results in shorter carpet life and higher carpet life cycle costs.



Appearance over time

# Maintenance of commercial floorcoverings

While the cost of carpet maintenance may seem significant, carpet is actually easier and costs less to maintain than other types of commercial floorcoverings. Carpet requires fewer chemicals for maintenance. Hard surface floors require sweeping, mopping, buffing, stripping and waxing.

Carpet, on the other hand, requires three basic maintenance operations: vacuuming, spot cleaning, and regularly scheduled maintenance or periodic deep cleaning. When it comes to hours spent on maintenance, carpet is clearly the economical choice.

# FLOORING COST COMPARISONS: A MAINTENENCE PROGRAM FOR CARPET AND VINYL COMPOSITION TILE (VCT)

	Carpet		V	СТ
	total time /100m <sup>2</sup> in a school year	cost / m² in a school year	total time 100 / m <sup>2</sup> in a school year	cost/m² in a school year
Vacuuming	1,938 min	2.59 EUR		
Spot removal	1,550 min	2.07 EUR	1,550 min	2.07 EUR
Rinse Cleaning	129 min	0.17 EUR		
Deep cleaning	388 min	0.52 EUR		
Dust mopping			1,550 min	2.07 EUR
Wet mopping			5,231 min	6.98 EUR
Spray burnishing			1,860 min	2.48 EUR
Scrub / recoat			646 min	0.86 EUR
Strip / finish			323 min	0.43 EUR
Chemical costs		0.03 EUR		O30EUR
Total	4,005 min	5.38 EUR	11,160 min	15.18 EUR

Long-term, carpet costs less to maintain than other floorcoverings. This life cycle cost analysis of carpet and vinyl composition tile (VCT) floorcovering in school facilities is a method of depicting the true overall cost of each floorcovering over a predetermined period of time.

These maintenance figures are based on a 36-week school schedule in heavy-traffic areas and a labor cost of 8.00 EUR/hr.

Source: ISSA (International Sanitary Supply Association) cleaning rates – courtesy of Carpet and Rug Institute

# Soil and your carpet

### HOW DIFFERENT SOIL TYPES AFFECT CARPET

Carpet soil is made up of two components: dry soil and oily soil. Clay, dust and silicates are the dry soiling agents that can destroy the appearance of carpet. Fortunately, most dry soil found in a typical commercial environment can be removed by regular vacuuming.

Oily soil, including resins, gums, greases and fats, act like binders – attracting and holding dry soil to the carpet. This results in a dingy grey or brown appearance. Oily soil is the largest contributor to poor carpet appearance. It adheres to carpet fibres, cannot be easily removed and continues to attract more dry soil.



Composition of typical carpet soils

### UNDERSTAND HOW TRAFFIC AFFECTS SOILING

Soil that does make it into your building will be most visible – and potentially damaging – in high-traffic, high-volume areas. These include entrances, lifts, corridors, doorways, and the natural paths between furnishings. These areas will have more visible soil than under desks and around the perimeters of offices and conference rooms. These typical traffic patterns, along with cleaning requirements for each area, are illustrated in the office floor plan below.



# Calculate the impact of maintenance costs

One way facility managers can complete a comprehensive analysis of a carpet investment is to use the Antron® "Total Cost of Ownership (TCO)" model. The TCO calculator, designed to provide an "apples to apples" comparison for a Antron® carpet and an alternate specification, can help you make the best fiber choice for your long-term investment.

	example		your comparison
	Antron® nylon 6.6	Nylon 6 with no fluorchemical	
A: colour value (see below)	10		
B: texture value (see below)	4		
C: pattern value (see below)	8		
D: fibre value (see below)	10	3	
E: soil performance rating (add up values A-D above)	32	25	
F: foot traffic/year	200.000		
G: estimated cleanings over a 7-year period (experience)	14	29	
H: cleaning costs per m <sup>2</sup>	2,15 EUR		
l: estimated maintenance costs per m² over a 7-year period (G x H)	30,10 EUR	62,35 EUR	
J: carpet cost per m <sup>2</sup>	25,00 EUR	20,00 EUR	
K: total costs per m² (I + J)	55,10 EUR	82,35 EUR	
total costs (m <sup>2</sup> x K)	5000 x 55,10 EUR = 275.500 EUR	5000 x 82,35 EUR = 411.750 EUR	
Antron <sup>®</sup> savings	136.250 EUR		

### A: colour value

Colour can minimise visible evidence of dirt and stains. Very light, very dark and plain colours tend to reveal dirt.



### B: texture value

Dirt does not readily penetrate heavy, dense pile whereas a more open structure tends to trap dirt.



# cut: 2

### C: pattern value

Soiling is less apparent on patterned carpets.

# solid: 2 regular pattern: 8

# random pattern: 10

### D: fibre value

The fibre from which a carpet is manufactured has a fundamental influence on long-term appearance and ease of maintenance.

Antron® nylon 6.6	10
Nylon 6 with fluorchemical	5
Nylon 6 with no fluorchemical	3
Wool	4
Polypropylene	2

This model illustrates the impact that fibre, pattern, colour, and texture have on the cost of carpet maintenance. The model does not account for the difference in carpet life cycles. Antron® carpet is engineered to stay newer looking longer and will out-perform carpets of similar construction using other fibres.

To compare different carpets please visit: http://www.antron.invista.com/content/toolbox/ant05\_02.shtml

# Creating a carpet maintenance program

BY UNDERSTANDING THE IMPORTANCE OF PROPER CARPET MAINTENANCE, YOU CAN EASILY CREATE A COMPREHENSIVE MAINTENANCE PROGRAMME FOR YOUR FACILITY.

# Make preventive maintenance a priority

Preventing soil from entering the environment is easier and less expensive than removing it from the carpet. Here are four simple but important steps in a preventive maintenance program:

### KEEP OUTSIDE AREAS CLEAN

Outside maintenance helps minimise immediate sources of soil. The cleaner you keep paths, parking areas, garages and other areas around the perimeter of your building, the less dirt that will be tracked inside. During winter months, remove as much snow and ice as possible rather than treating it with chemicals, salt or sand.

### USE SOIL BARRIERS

External grates, internal walk-off mats, and removable lift carpets help collect soil before it can be tracked throughout the building. Be sure soil barriers are large enough to allow for at least five steps across. Vacuum daily, clean frequently and change often for best results.

### PROTECT DESK AREAS

Chair pads under desk chairs prevent castors from crushing carpet and grinding in soil. Specify eating, drinking and smoking areas. Restricting these activities to limited areas, you can help confine certain difficult kinds of soiling.

### MAINTAIN YOUR HVAC SYSTEM

To remove many airborne particles before they are recirculated, regularly replace or clean filters on air-handling equipment. Airborne soil includes industrial wastes, auto emissions, tobacco smoke and pollen.

# 2 Manage soil with regular vacuuming

Vacuuming is the most important dry soil management procedure. Effective vacuuming removes dry soil so that it cannot spread to other carpeted areas. The level of effective vacuuming has two components: frequency and equipment type.

Vacuuming frequency

- Heavy- to moderate-traffic areas should be vacuumed daily:
  - entrances
  - lifts
  - reception areas
  - busy corridors
  - cafeterias
  - vending machine areas
  - employee lounges
- Light-traffic areas should be vacuumed at least two to three times per week:
  offices
  - conference rooms

Equipment type

- Upright dual-motor vacuums are very effective machines for thoroughly cleaning heavy to moderate traffic areas. This vacuum uses two motors to clean. One motor drives a beater-brush bar that knocks dirt loose, while the second motor provides suction that pulls dirt into the vacuum bag.
- Detail vacuums can be used to clean around the edges of a room or in confined areas around furniture.
- Single-motor vacuums can be very effective machines depending upon their design. For the most part, they should only be used in light-traffic areas. They are generally less powerful than dual-motor vacuums, but easier to manoeuvre around furniture.
- Carpet sweepers may be used to remove larger particle-sized surface dirt and small litter in high-visibility areas during the business day. However, they are not an effective cleaning method and should not take the place of thorough vacuuming.

The Carpet and Rug Institute has identified vacuum cleaners that meet industry criteria for removal efficacy, particulate emission and carpet damage.

To learn more about CRI Green Label approved vacuum cleaners visit their web site at www.carpet-rug.com.

# 3 Promptly remove spills and stains

Although spills are inevitable, permanent stains do not have to be. Most stains can be avoided or removed by immediate, or at least, same day treatment. It is good practice to have spot and stain removal products and equipment on hand for immediate use. Correct identification of spots and stains is the first step in proper removal because some types of spills may require special cleaning solutions and techniques. But for most spills, the basic removal procedure is the same:



Remove solid soils and soak up liquids with clean, white cloth or kitchen roll. Always work from outside to inside.



Mop up stain with a cloth or sponge and cold water. Do not rub!



Allow to dry thoroughly. Then vacuum-clean carpet to bring it back into shape.

# ④ Renew your carpet with proactive, periodic cleaning

Even the most effective, consistent vacuuming may leave some soil behind. Periodic cleaning improves the appearance and extends the life of carpet. Periodic cleaning also removes oily, sticky soil from the carpet that attracts and holds additional soil.

Depending on soiling conditions and other factors, there are a number of available cleaning methods. Your choice of method should be based on what will be the most effective and compatible with your carpet and its traffic levels. If you are not familiar with the cleaning methods and products that are used in your facility, contact your maintenance provider. For carpet to look its best for the longest time, our research shows that only those cleaning methods and products that remove soil and reduce the likelihood of resoil should be used. Resoil is the tendency for detergent that is left in the carpet after cleaning to continue to attract and hold soil.

### HOT WATER EXTRACTION

Extraction machines clean carpet by first spraying hot water and detergent into the carpet pile under pressure, and then removing water, detergent and loosened soil with a powerful vacuum. This method is the most frequently used type of cleaning in the industry and is very effective for deep-cleaning carpet.

Caution: Detergent left in the carpet will continue to attract soil (resoil) causing a dingy, dirty appearance. Moisture left in the carpet can lead to wicking back of soil onto pile surface. Carpets must be allowed to dry completely before use.

### DRY COMPOUND

In this method, dry compound is sprinkled on carpet to attract soil and absorb oil. A mechanical brush with counter-rotating agitation knocks soil from carpet fibres. The compound is then vacuumed up.

Less moisture is used with this method than with hot water extraction, which means a much shorter drying time is required for the carpet.

### FOAM SHAMPOO

This method uses a machine to create foam by air compression and agitation. A revolving cylindrical brush combs foam through carpet pile. Like dry compound, the foam shampoo method uses less moisture, resulting in short drying times.

### ROTARY SHAMPOO

With this method, a solution of detergent and water is fed through a brush into the carpet. A rotating brush agitates the solution into the carpet pile, loosening soil particles from the carpet fibres. This method is usually used in conjunction with the hot water extraction method, for heavily soiled areas.

### BONNET

This technique involves spraying a solution of detergent and water onto the carpet and then using a rotating absorbent pad to agitate carpet tufts. Alternately, the absorbent pad is soaked in a detergent solution and then applied to the floor. This is generally used as an interim method for appearance purposes only. It is not recommended as an effective deep cleaning method. Caution: A build up of residual compound can occur over time dependant on efficiency of removal. A hot water extraction every one to two years should be used to minimise these residues.

Caution: A dingy, dirty appearance may result from detergent left in the carpet, and some areas may appear less clean due to inconsistent foam application. Periodic hot water extraction should still be used.

Caution: The rotary shampoo method requires the use of a heavy machine that can cause pile distortion or even carpet damage. Damage can also result if the rotating brush dries out during cleaning.

Caution: If the rotating pad dries out during cleaning, carpet damage can occur. The heavy machines required may also cause pile distortion or carpet damage. The bonnet method is very likely to leave detergent in the carpet, increasing the likelihood of carpet resoil.

# Antron<sup>®</sup> wear resistant fibres

INVISTA makes Antron® nylon 6.6 fibres and yarns specially engineered to meet the typical needs of the contract sector with its heavy-duty requirements. After 40 years, Antron® nylon remains the performance leader. Superior appearance retention for the life of your commercial installation - a claim not every fibre, or even every nylon fibre, can make, especially with the demands of a typical commercial environment.



Antron® nylon 6.6 carpets retain their original height without noticeable wear and tear or loss of structure.



The polypropylene sample has excessively compressed pile with complete loss of tuff structure.



### WEAR RESISTANCE/SUPERIOR APPEARANCE

Antron<sup>®</sup> carpets, with the tight molecular structure of the nylon 6.6 fibres, have outstanding wear resistance.

This is expressed in three different ways:

- The outstanding resilience after static pressure means that an Antron® fibre pile can recover after chairs and furniture are moved, so that minimal impressions remain,
- Antron® wear resistance prevents fibre loss due to wear and tear,
- Antron® resistance to compression and "track marks" means that the carpet keeps its appearance for a long time.





LOW SOILING

The hardness of the polymers is a decisive factor in how much dirt can adhere to the carpet.

Due to the high fibre crystallinity of the nylon 6.6, all Antron<sup>®</sup> fibres are so hard that it is difficult for dirt particles to penetrate the surface. This prevents dirt adherence and allows dirt to be effectively removed by vacuum cleaning.

	the the second	and the second second
irc	on impression aft	er
10 minutes	10 minutes	10 seconds
	A	6
Antron® Nylon 6.6	Nylon 6	Polypropylene



HEAT RESISTANCE

There is a wide range of Antron® B1 and  $B_{\rm fl}$  and  $C_{\rm fl}$  fire-retardant carpets made from Antron fibres.

The DIN 4102 B1 building materials class and/or the EN 13501-1  $B_{\rm fl}$ ,  $C_{\rm fl}$  classes of reaction to fire are the highest for textile floor coverings and are achieved more easily with Antron® fibres than with other synthetic fibres, because nylon 6.6 has the highest melting point.



## ANTRON® EXCEL FIBRE - REDUCED DIRT ADHERENCE

The carpet fibre you specify today will greatly affect how carpet will look and perform over its lifetime. The small, smooth surface areas of nylon 6.6 Antron® Excel hollow fibres make it difficult for dirt to adhere. Comparative tests have shown that carpets made from Antron® Excel fibres can save up to 30 % in maintenance costs over an equal time period due to extended cleaning intervals.

Nylon 6 trilobal fibre



Nylon 6.6 Antron® Excel hollow fibres





Nylon 6.6 zero traffic Nylon 6 after being walked over 479,000 times



The photographs show the improved dirt-repellent qualities and release of dirt of the nylon 6.6 Antron® Excel hollow fibres in contrast to trilobal nylon 6.

Nylon 6.6 after being walked over 479,000 times

Carpets with the Antron® Excel trademark must meet special quality standards in terms of pile weight, retention of appearance, antistatic properties and, where appropriate, effectiveness of Teflon® stain and dirt protector.



### ANTRON® WITH TEFLON®

Antron<sup>®</sup> carpet fibre with Teflon<sup>®</sup> carpet protector is an innovative stain and soil resist system specially engineered for carpets produced from Antron<sup>®</sup> fibres and yarns. Antron<sup>®</sup> with Teflon<sup>®</sup> markedly reduces the effort involved in carpet cleaning and maintenance helping it look fresh and as good as new for longer.

Soil resist component produces a dense protective layer around each individual Antron® fibre thereby forming an invisible barrier that repels soil and dust and allows liquid spills to be mopped up more easily.

11



# **INVISTA**<sup>®</sup>

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### Stain Removal Guide



### Type of spill or stain

(NUMBER DETERMINES CLEANING METHOD TO BE USED)

10

2

D

Asphalt 1	Lacquer 3
Beer 4	Lard 0
Berries 4	Linseed oil 0
Blood 🛈	Machine oil 1
Butter, margarine 1	Mascara 1
Cheese	Mayonnaise 2
Chewing gum 0	Milk 2
Chocolate 2	Mixed drinks 4
Coffee 4	Nail varnish 1
Cooking oil	Paint (latex) 1
Cough syrup 6	Rust @
Crayon 1	Salad dressing 1
Curry 0	Shoe polish (liquid) 🛈
Dye 🛈	Shoe polish (paste) 1
Egg 2	Soft drinks 0
Excrement 2	Solder 0
Foundation cream	Soya sauce 2
Fruit juice 4	Starch 2
Furniture polish 1	Sweets
Furniture polish (stain) 9	Tar, soot 0
Garden soil 2	Теа
Gravy, culinary sauces 0	Toothpaste 2
Hair oil 0	Typewriter ribbon
Hair spray 🛈	Urine (dry) 😰
Hand lotion 0	Urine (wet) 8
Ice cream 2	Varnish G
Ink (ball point) 1	Vomit
Ink (felt tip pen) 1	Wax (candle) 🛛
Ink (fountain pen) 6	Wax (paste) 0
Ink (permanent) 🕄	White glue 2
Ketchup 2	Wine 0

Caution No carpet is absolutely stainproof. In general hot liquids, bleaches and products containing natural dyes such as curry, mustard, herbal teas, etc., can cause permanent discolouration.

### **Cleaning methods**

- Solvent ⇒ blot ⇒ detergent ⇒ blot ⇒ water ⇒ blot
- ② Detergent ➡ blot ➡ ammonia ➡ blot ➡ detergent ➡ blot 🔿 water 🔿 blot
- Solvent → detergent → blot → water → blot
- ④ Detergent → blot → white vinegar → detergent → blot ➡ water ➡ blot
- O Detergent → blot → ammonia → blot → white vinegar ➡ blot ➡ water ➡ blot
- **⑥** Detergent → blot → white vinegar → blot → ammonia ➡ blot ➡ water ➡ blot
- ⑦ Freeze with ice cubes ➡ shatter with a blunt object ➡ vacuum is solvent is wait several minutes is blot is vacuum in the solvent is wait several minutes is blot is a solvent is repeat if necessary
- ③ Blot ➡ water ➡ blot ➡ ammonia ➡ detergent ➡ blot 🔿 water 🔿 blot
- O Denatured alcohol => blot => repeat if necessary
- Call carpet cleaning professional
- Use cold ingredients: Detergent => blot => ammonia => blot **→** detergent **→** blot **→** water **→** blot
- ⑦ Detergent → blot → vinegar → blot → ammonia → blot → detergent → blot → water → blot

### Your carpet first-aid kit

Detergent A crystallising carpet shampoo will avoid premature resoiling. One tablespoonful to one litre water.

Ammonia Clear household ammonia. Two tablespoonfuls to one litre water.

Vinegar Pure white vinegar. Two tablespoonfuls to one litre water.

Solvent Dry-cleaning solvent (spot remover).

Blotting material Clean white cloth or white paper towel.

**IMPORTANT:** Never use bleach or bleach containing cleaning products. Cleaning products should always be kept out of reach of children.



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