

CARPET CARE
TRAINING MANUAL

CARPET CARE

**BY
ENVIRO ED**

A Complete Training Service...

**FOR INDUSTRY, BUSINESS, HEALTH CARE,
AND EDUCATION FACILITIES**

CARPET MATERIALS AND CONSTRUCTION

PREFACE

Carpet is a fabric covering floors and stairs. It can be made from many different materials and in many different ways. Carpet made from different material fibers and by different construction methods are often cleaned differently. If you use the wrong cleaning procedure or chemicals on certain carpets you can ruin them.

Before you can maintain your carpet correctly, you must be able to identify which kind it is. You will learn the various types of carpet yarn fibers, carpet backs, carpet pads, construction methods, and installation methods. You will learn their strengths and weaknesses. You will also learn any special precautions you must take when cleaning carpet.

A BRIEF HISTORY OF CARPET

The manufacture of carpet started almost 2,000 years ago when the first carpets were woven of animal hair. Vegetable fibers (grass, reeds, and the leaves of various trees) were also used to make early carpets in different parts of the world. Before 1800, the people of Persia (now Iran) were producing their famous Oriental rugs. The care and handwork they put into these rugs gave them such great wearing quality that many of them are still in use. In mid-1800's, European carpet-making began using crude wooden looms. The invention of the power loom in the late 1860's started the United States making its own carpet.

As recently as 50 years ago, carpets were considered a luxury. No other type floor covering could give its owner all the benefits that carpet could: good looks, comfort, warmth, softness underfoot, and non-slip surface. The recent invention of synthetic (man-made) fibers has led to the development of indoor-outdoor carpeting. Today, you find carpeting not only on porches and terraces, but in hotels, restaurants, hospitals, schools, office buildings - and even on boats and boat docks.

DEFINITION OF CARPET AND RUGS

Carpets and rugs are simply textile (woven cloth) fabrics for covering floors and stairs. They are made from a great variety of materials, and are produced in many different ways. Rugs and carpets differ only in size and edge finish. A rug usually comes in a given, standard size, and exposes bare flooring around its edges. Rugs are therefore usually bound or "finished off" around the edges as shown. Carpet is normally cut in long lengths from a standard width roll. Its edges are not bound. Unbound carpet edges are joined to other carpet pieces with seams, and the outer edges anchored to the floor along the baseboard when laid wall-to-wall. "Carpet" refers to both carpets and rugs in this unit, because the construction care of both is the same.

Over the past 20 years, the cost of installing and maintaining carpet has been reduced until it is about the same as the cost of installing and maintaining resilient floors. In fact, compared to some resilient floors, carpets are not as hard to maintain and keep clean. Before you clean any carpet, you must know what materials go into it, and how it is made.

CARPET CONSTRUCTION

Carpets have a texture or weave that differs from most fabric and cloth coverings. The pile or nap of the carpet is made from either natural fibers (like wool or cotton) or synthetic fibers (like nylon or polyester-{poly-ESTER}). The fibers are spun (or twisted) into yarn, and this yarn is woven, tufted, knitted, or needlepunched into a pile.

The pile is attached to a back that holds it together to form either a natural fiber (like jute which is also used in making ropes), or a synthetic fiber (like polypropylene). These fibers are also twisted into heavy yarns. Both jute and polypropylene are strong materials, but jute absorbs water while polypropylene does not. (Remember this important point about water absorption of backings.)

The most important parts of a carpet to a custodian are the pile yarns and the backing yarns. Pile yarns are the upright (vertical) yarns that form the surface that people walk on. The top surface of the pile yarns is called the face. Backing yarns make up the bottom layer of the carpet that holds the pile together. You cannot see them. In certain types of carpet construction, the pile yarns and backing yarns are woven or knitted together. In other types of carpet, the pile is stitched or tufted into a separate back that is made from woven yarn or matted fibers.

Depending on the carpet pattern and texture, the pile face may be cut, looped, or a combination of cut and looped to make a pattern. Cut yarn looks like a single yarn cut off like a blade of grass. Both ends of a looped yarn are attached to the backing so that no loose ends show on the pile face.

The pile face receives the traffic wear and soil. The patterns, textures, and colors of the pile face hide wear and soil to varying degrees. The carpet construction method determines pattern and texture. A low-level loop pile face is designed for heavy traffic areas. Sometimes a portion of the loops are cut to make a textured surface. Uncut loop pile does not shed fibers. It is dense, and resists soil better than cut pile. A cut pile face, although very beautiful, crushes very easily. It makes the carpet appear to change color (this is called shading). Cut pile carpet also sheds fibers.

A shag face has either a looped or cut pile 1 inch or more in length. Its ragged appearance helps to hide dirt and soil. A frieze or twist face is much like a shag, except that the yarns are twisted and are shorter than a regular shag. A multi-level loop pile face creates various textured patterns. A multi-level loop pile face with random shearing produces beautiful sculptured (curved) patterns.

The pile density of a carpet greatly affects how well the carpet wears and keeps its good looks. The number of tufts (pile loops of yarn strands) per square inch and the weight of the yarn both affect pile density. The more tightly the yarns are packed together and the heavier they are, the more support they give each other. Soil will not sink in as deeply in a dense pile carpet, making the soil easier for you to remove with a vacuum.

FIBER YARN MATERIAL

Pile yarns are made from either synthetic or natural fibers. The type of fiber in a carpet is very important. It greatly affects:

1. How good it looks
2. How long the carpet lasts
3. How difficult it is to clean
4. How often it must be cleaned

The pile fibers most often used in carpet that is installed in public buildings include:

1. Wool (natural fibers)
2. Nylon (synthetic fibers)
3. Acrylic and/or modacrylic mixtures (synthetic fibers)
4. Polypropylene (synthetic fibers)
5. Polyester (synthetic fibers)
6. Various blends of the above fibers

Each of these fiber materials has both its strong and weak points. Certain manufacturers of synthetic fibers have found ways to increase the strong points and decrease the weak points of some synthetic fibers. Therefore, a particular fiber made by one company may be better or worse than the same fiber made by another company. This greatly complicates the cleaning of carpet.

Wool has been used in woven carpet for centuries. It is still very popular. It is a natural fiber that comes from sheep. Its outstanding feature is its resilience. This simply means that the wool fiber springs back to its original shape quickly after being stepped on or crushed. Wool is also very strong and resists abrasion (wear). When these qualities are combined in the right construction, they make a good looking carpet that lasts a long time if cared for properly.

However, wool stains more easily than synthetic fibers. It also absorbs water and can, therefore, mildew. This can become a problem if the carpet is exposed to a lot of wet soil. It can also cause problems if you must shampoo the carpet frequently. The main disadvantage of wool is that it is expensive.

Nylon is the fiber material most commonly used in carpet. It is noted for its strength. It wears a very long time, and comes in many colors and color combinations. Some nylon fibers hide soil very well. Nylon also resists stains.

The main disadvantage of nylon carpets are pilling and static electricity buildup. Pilling occurs in older nylon carpets when loose fibers tangle and form small balls or "pills." This problem has been almost solved by newer nylon yarns and better construction methods.

Static electricity builds up in the bodies of people who walk on some carpets. When a person touches a grounded light switch or metal surface, he gets a “shock” as the static electricity discharges. This problem becomes worse in cold weather and dry climates. Static electricity can build up on all carpet fibers, but nylon presents the most severe problem.

Most nylon carpet manufacturers now insert special fibers or materials among the nylon fibers to help reduce this problem. Most newer nylon carpets now have this anti-static feature. However, if you are having trouble with static electricity buildup, you can spray an anti-static compound on the carpet to combat it. You must re-apply the compound each time you shampoo the carpet. Because foot traffic gradually wears the compound off, you may have to treat busy areas more often.

Acrylic and modacrylic mixtures are also synthetic fibers. Acrylic fibers resist discoloration due to sunlight very well. For this reason, they are often used in outdoor carpet. Neither acrylics nor modacrylics are damaged by most acids. They also stand up well to many mild alkalis and other chemicals that damage wool. This quality allows you to use certain stain-removers on acrylic carpet that you cannot use on wool carpet.

Some of the earliest acrylic carpet fibers were very flammable. But mixing acrylic fibers with modacrylic fibers made the carpet less flammable. Today’s mixed fiber carpets are no more flammable than wool.

Polypropylene is one of the newest synthetic fibers. These fibers are very strong, and wear well. Polypropylene carpet usually does not build up static electricity. It also resists most common acids, alkalis, bleaches, stains, and absorbs very little water. Olefin is the polypropylene fiber most widely used in carpet today.

Polypropylene fibers - like acrylics- are not affected by mold, mildew, or insects. They are widely used in indoor-outdoor, but polypropylene fibers are not as resilient as many other carpet fibers. They also do not have as much luster as nylon.

Polyester fiber yarn is soft, rich-looking, and resists stains. Like polypropylene, however, it is not very resilient in some constructions. Also, it does not retain its texture as well as a nylon carpet does. Nylon and acrylics are now replacing polyester carpet fibers.

Carpet manufacturers often blend or mix several different types of yarn in a pile to combine the best properties of each. As an example, a carpet that has 69% acrylic yarn, 30% nylon yarn, and 1% static control material has a good appearance (from the acrylic), good strength (from the nylon) and built-in static control. If the acrylic and nylon content are reduced, and modacrylic yarn is added, the carpet would be flame retardant as well.

BACKING YARN MATERIALS

The back that holds the pile yarns together is a tufted carpet consisting of a primary back – and sometimes a secondary back. Both backs may consist of either woven yarn, or fibers matted together. In a tufted carpet, the backing fibers are usually jute, cotton, rayon, or nylon. The lengthwise backing yarns in a woven carpet are called the warp, and the crosswise ones are called the waft. Stuffer warp and chain warp fibers are used to add extra strength and weight to the backing in a woven carpet.

The pre-woven secondary back is usually laminated to the primary back with liquid rubber or latex. This lamination:

1. Keeps the tufts from pulling out.
2. Adds more strength to the carpet to resist wear.

TYPES OF CARPET

The different methods of making carpets classify them into types. The most common are: tufted, needlepunched, woven, knitted, and flocked.

About 95% of today's carpets are made by tufting. **Tufted** carpet is used more than any other type in buildings and facilities. It comes in a wide variety of patterns and textures. The machine that constructs tufted carpet is like a giant computer-controlled sewing machine, usually 12 to 15 feet wide (standard carpet widths). It has hundreds of needles that push the pile yarn through the pre-woven primary back sheet. As each needle pulls out, it forms a loop or tuft of pile that is held in place by the back sheet. The carpet is then coated with a latex compound that keeps the loops from pulling out of the carpet.

Needlepunched carpet – such as indoor/outdoor carpet – is made up of loose fibers (not yarns). The carpet-making machine first combs the fibers, and then lays them out on a web form. A sheet of polypropylene back, called scrim, is placed over the first fiber layer, and a second layer of fibers is laid out on top of the back sheet. This loose “sandwich” moves to a needlepunching machine that use hundreds of barbed needles to interlock the fibers with themselves, and to the polypropylene back sheet. After a third layer of fiber is laid out on top of the sandwich, it goes through a final needlepunching operation. Sometimes a secondary back of foam rubber or similar material is applied before the design is printed or embossed by another machine.

One layer of pile crushed down on another makes a rather hard carpet, with little or no pile height. But needlepunched carpet wears very well, and its color lasts. Because of these qualities, it is widely used in both industrial and institutional facilities. Needle punched carpet for indoor use may contain nylon, polypropylene, or acrylic fibers. Most outdoor carpet is made of polypropylene or acrylic fibers.

The process of weaving woven carpet produces both the pile and back at the same time, and on the same loom (weaving machine). The most common woven carpets are: Velvet, Wilton, and Axminster. Manufacturers can modify each type to produce special patterns, textures, and properties.

Velvet woven carpets have the most simple construction. They are usually woven on a loom from only one pile yarn and therefore come mainly in solid colors. Two or more strands of different colors can be twisted together to make them appear “tweed” or “salt and pepper,” however. Velvet carpet pile yarns are woven either through the backing yarns, or interwoven with the backing yarns. To decrease skidding and give the carpet more weight, special compounds may be applied to the back. A top quality velvet carpet has about 64 to 100 tufts per square inch. A medium grade carpet has 50 to 80 tufts per square inch. And the lowest priced carpet has only 43 to 49 tufts per square inch.

Velvet carpet comes in many surface textures, such as: loop pile, plush effect, tree bark effect, and a combined cut and uncut pile. Solid color velvet carpet shows dirt faster than multicolors do. It wears very well, and is suited to heavy traffic areas. It also resists snags and pulls. Some velvet weave carpets have backing yarns made from natural materials. Be careful not to get such a carpet too wet when you shampoo it. Velvet carpets are usually more expensive than tufted.

WOVEN CARPET

Wilton carpet is usually very strong, and has a dense pile. For these reasons, it has been used for many years in commercial facilities. The name “Wilton” comes from an English town of the same name where the Wilton loom was invented. The Wilton loom is much more complex than the velvet loom. It weaves the pile yarns and backing yarns together at the same time. If your company symbol or trademark is woven into the carpet in your lobby, it was probably made on a Wilton or an Axminster loom.

Although the loom for weaving Axminster was invented by an American, the weave is named after an English town. This loom can handle a great many colors at one time, thereby producing multicolored carpet at low cost. It also produces carpet with complex designs: geometric, floral, modern, stylized, etc.

Axminster carpet almost always has cut pile tufts instead of loops. Sometimes the cut pile sheds in heavily trafficked areas.

The dense pile of good quality Axminster gives excellent crush resistance and long wear. Axminster has a heavy back reinforced by ribs that are so heavy, you can roll the carpet in only one direction.

Knitted carpet is similar to woven carpet, because the pile and backing yarns are interlocked in the same operation. The difference is that the yarns are knitted together with different sets of needles instead of woven together by a loom. Knitting is faster than standard weaving, but slower than high-speed tufting. Therefore, knitting produces very good carpet at a moderate cost.

The tufts of a knitted carpet are firmly locked in position by a special chain-lock stitch. They are also arranged in a checkerboard design so that they give each other better support. This helps them spring back into a vertical position after being crushed. The checkerboard design also makes the pile look the same viewed from any direction. All of these qualities make a knitted carpet suited to areas where traffic lanes develop. For this reason, some “contract installers” who lay carpet in buildings and other large facilities prefer knitted carpeting.

Although the flocking process was used to make wallpaper in Europe 400 years ago, it has been used to make flocked carpet only recently. Flocking produces a soft vertical short nap on a back instead of a pile. Flock (nylon fibers) can be applied to a back by electricity, by a beater bar, or by spraying.

In the electrical process, short (3/16 in.) nylon fibers are charged with electricity and shot (like small darts) into an adhesive coating on the back sheet. Almost 18,000 fibers per square inch of carpet are bonded permanently to the back as the adhesive dries. After curing in an oven, layers of woven jute are applied to the back. Flocked carpets can be dyed after construction, or they can be made from fibers already dyed.

In the beater bar process, an adhesive-coated back sheet passes over a series of bars that vibrate it. As flock fibers are sifted onto the adhesive, the vibration makes them stand upright. In the spraying process, the flock is sprayed from a gun onto the adhesive-covered back sheet. Following either process, the carpet is cured in an oven. Because the flock fibers are short, straight, and close together, there is little room in a flocked carpet for dirt and germs to build up.

As you have learned, the primary back and the pile in woven and knitted carpet are joined together as the carpet is made. The yarn fibers in the back are usually natural materials (jute, kraft-cord, cotton), or synthetic materials (polyester, polypropylene, nylon, rayon). They can also be a mixture of natural and synthetic materials.

The back sheet in tufted and needlepunched carpet is also made of yarn, usually from jute or polypropylene fibers. A synthetic back is best for an area that gets a lot of wet traffic, or must be cleaned often. It will not discolor the pile yarns if the carpet gets wet. Also, synthetic backs do not mildew or shrink when wet.

Be careful not to get natural fiber backing yarns too wet when you clean the carpet. If you must use a wet cleaning method on carpet that has a natural fiber back, test a small (25 sq. ft.) sample area first to make sure it can withstand wet cleaning.

CARPET PADDING

Carpet padding is the material placed between the carpet backing and the floor. Padding is also known as cushioning, lining, underlaying – or just plain pads. The padding may or may not be attached to the carpet. Padding will not improve the quality of a carpet, but it makes a carpet feel softer and plusher and usually increases its wear life. It also often makes short pile carpet easier to clean and maintain.

Padding installed directly on a concrete floor protects the carpet from dust and moisture given off by the concrete. Dust and moisture can discolor the pile – and you will not know that you have a problem until the pile discolors.

Padding also helps to:

1. Lengthen carpet life
2. Reduce carpet crawl or creep
3. Increase sound-deadening qualities
4. Insulate against heat and cold
5. Absorb crushing forces on pile
6. Hide uneven floors

PADDING MATERIALS

Carpet padding and/or cushioning is usually made from: jute, animal hair felt, fiber felt, sponge or foam rubber, urethane foam, and synthetic fibers.

Jute comes from the jute plant and is often used to make burlap bags. The fibers are twisted into yarn and the yarn is woven into a cloth. (As you know, jute is also used in carpet backing.) In padding, jute is generally mixed with other natural or synthetic materials. It is not often used by itself. Jute absorbs water. Therefore, any carpet that covers a padding containing jute must be cleaned carefully. Jute-backed carpet that does not have a moisture barrier made from rubber, for example, will develop a dark brown stain if soaked through during shampooing. Jute can also mildew if it gets wet and stays wet.

Animal hair felt and **fiber** felt are often used to make a blanket-type pad. The pad can have a “waffle” design to help make it more skid-proof and provide a more cushioning effect, or be reinforced with a jute backing, or be coated with rubber on both sides. The pad is sometimes coated on one or both sides with an adhesive to make it stick to both the floor and carpet.

Animal hair and fiber felt pads are firm and relatively inexpensive. But they are subject to mildew and insect attack. Shampoo carpets installed over them very carefully. If the fibers get wet, the padding can wring or mildew.

Sponge and foam rubber carpet cushions are made from either natural or synthetic rubber. They are either glued to the carpet during manufacturing or laid on the floor during installation.

The surface of the cushion may be waffled to make the cushion softer and thicker. Rubber cushions come in many different degrees of firmness. Synthetic rubber is not bothered by mildew or insects. Carpets that have rubber cushions are much easier to shampoo. If they get too wet, they usually do not wrinkle.

Urethane foam cushions are very similar to sponge rubber. They come in many degrees of thickness and firmness. What you have learned about sponge and foam rubber cushions also applies to urethane foam cushions.

Carpet cushions made from **synthetic fiber** are usually firmer than foam or sponge cushions. Synthetic fiber cushions are made by bonding synthetic fibers together to form a blanket. They do not mildew.

CARPET INSTALLATION

How a carpet is installed greatly affects how you clean it. If it is not attached to the floor firmly, it can wrinkle when you vacuum or shampoo it. For example, "waves" may appear in the carpet in front of the vacuum as you push it. Or, if the carpet is attached with a water-soluble adhesive, it may dissolve upon contact with a wet shampoo. The most common installation methods are: tacking, tackless strips, water soluble adhesives, and non-water soluble adhesives.

Tacking is one of the oldest installation methods. In this method, tacks or staples hold the carpet in place. If the carpet is laid over concrete, a thin narrow plywood strip is installed to hold the tacks. A disadvantage of tacking is that the tops of the tacks or staples are exposed to air and can rust or pull out. Be very careful when you vacuum or shampoo a tacked or stapled carpet.

Tackless strips are the most common means of installing carpet. They simply are narrow strips of wood through which many evenly spaced tacks are driven. The strips are nailed or glued to the floor (usually only along the sides of the room) with the tacks sticking up. The edges of the carpet lie on top of the strips, which hold them in place. The strips provide a very good bond. Their only disadvantage is that, when they are sewn with thin carpets, the strips sometimes bulge. Certain carpets installed with tackless strips also stretch or wrinkle and pull away from the tackless strips.

Carpets glued directly to the floor, stairs, or wall with a **water soluble adhesive** are very firmly bonded. (Padding is not normally used when carpets are glued.) The wrong adhesive can cause difficult problems. Sometimes the adhesive dries out and the carpet wrinkles. When shampooing a glued carpet, be careful not to get it too wet because the water can dissolve the adhesive. When this happens, the adhesive can soak into the carpet pile and stain it, or the carpet can wrinkle.

Carpets glued with water soluble adhesives can be replaced easily, however. After the carpet is pulled up, just scrub the adhesive off the floor with a good water-based stripping solution.

Non-water soluble adhesives eliminate most of the problems produced by water soluble ones. But these adhesives are permanent, and when a carpet must be replaced because of wear, staining, etc., the adhesives cause a major problem. After the old carpet is taken up, the floor may have to be sanded before a new carpet can be laid.

THE EFFECT OF CARPET COLOR

The color of a carpet affects how often you must shampoo it, as well as how much time you need to spend vacuuming it daily. As a general rule, solid and/or dark colors require more daily cleaning time, and must be shampooed more often. They simply show soil more. Tweeds (mixtures of colors) and patterns do not show dirt as much. Medium colors help to hide soil.

PREVENTIVE MAINTENANCE FOR CARPET AND ROUTINE VACUUMING

PREFACE

Through preventive maintenance, such as using walk-off mats at building entrances – you can prevent dirt and soil deposits on your carpets so that they will look good longer and will not wear out so quickly. To remove dirt and soil from carpet before foot traffic and other activity grind them deep into the carpet, you must perform tasks such as policing, cleaning walk-off mats, and vacuuming heavily trafficked areas often.

This Lesson tells you, step by step, how to do each of these tasks. It also explains how to use and care for many types of vacuuming equipment. Vacuum cleaners are actually the only powered equipment that you will use for routine carpet care. When you know how to use this equipment correctly, your carpets will keep their appearance better – and you will be able to do your work faster and easier.

WHY CARPETS NEED CARE

Carpets have been used for many years in offices, hotels and motels, theaters, auditoriums, and other places where people gather. Carpet is used not only because it gives warmth and beauty to a room, but because it is comfortable and easy to walk on. In recent years, carpeting has been extended to lobbies, terraces and even the public sidewalk in front of some buildings. Building owners want all of their carpeting to stay in good, clean condition and last as long as possible.

It isn't easy for a carpet to stay clean, however. The biggest enemy of carpet is dirt. Dirt and soil from different sources make it necessary for you to clean a carpet often. Without regular cleaning, dirt is ground in the carpet yarns by the weight of people walking on it. Finally, dirt cuts off some of the fibers like a fine-tooth saw. Losing fibers and yarns makes carpet wear out. The most common sources of dirt are:

1. **Tracked dirt** from outside dry areas (dust, sand) and wet or oily areas (mud, grease, oil, tar). Tracked dirt from inside the building consisting of wax and polish particles, cooking oils, dust, etc.
2. **Air movement** through doors, windows, and heating and ventilating systems deposits dust particles, soot, and ashes on all building surfaces.
3. **Spots and stains** that occur wherever people gather. This kind of soil ranges from food crumbs and hair, to paint and urine.

A carpet has other enemies besides dirt. Among the other enemies that shorten the service life of a carpet are:

1. The weight of passing and fixed objects (furniture and equipment) that crushes the pile yarns.
2. The constant rubbing of yarns against each other (called abrasion) caused by foot and vehicle traffic.

Carpet is made from fabric or material like clothing. People walk on carpet, but they would not think of walking on their clothing. Carpet, however, is designed to withstand this harsh treatment. Clean carpet yarns survive by bending and absorbing (“soaking up”) the weight of a load. In a clean carpet, the yarns bend without hitting any obstruction.

But carpet yarns cannot soak up the load when they are dirty. They bend until they hit embedded dirt and then stop. However, the load continues to push the yarns down against the sharp edges of dirt particles. After this happens over and over again, the dirt particles finally cut the yarn fibers. Sometimes the yarn actually breaks off because of this treatment. When it does, it leaves a small gap in the carpet. Many such small gaps make a carpet look worn out. The only way to prevent this destructive wear is to keep the carpet clean.

KEEPING A CARPET CLEAN

There are two ways to keep a carpet clean:

1. Do not let it get dirty (preventive maintenance), or
2. Clean it when it does get dirty (corrective maintenance).

Preventive maintenance may sound too simple, but many custodians forget about preventing a carpet from getting dirty. Then they must spend more time than necessary cleaning it when it does become dirty. You can save yourself a lot of time and work by learning how to keep a carpet from getting dirty.

Keeping dirt from reaching the carpet is called **preventive maintenance**. Preventive maintenance saves you time and work by stopping dirt problems before they start. One of the best ways to keep dirt off carpet is to use dirt-catching devices – mats and grates that trap dirt before it gets to the carpet. Another way to prevent dirty carpet is to police (pick up trash from) carpeted areas at regular intervals.

DIRECT-CATCHING DEVICES

Most dirt and soil that gets on carpet comes from people's shoes. The dirt is normally knocked from shoes onto the carpet during the first two or three steps that a person takes after walking through a building entrance. If you do not trap this dirt, it can spread throughout the building as other people track through it. Therefore, you must protect the carpet next to entrances or it will wear faster and look worse than carpet in other parts of the building. If that happens, the carpet next to entrances must be replaced before the rest of the carpet in the building wears out. This is costly.

Replacing just a piece of the carpet does not always solve the problem either. The new section often does not match the older carpet. To make the carpet look good, you should really replace both the worn section and unworn sections – which means replacing the whole carpet! Dirt-catching devices can help prevent the heavy cost of replacing carpets.

Dirt-catching devices simply remove the dirt from people's shoes and trap it before it is tracked past the entrance. Some devices are costly – others are not. Some do a good job – some do not. The most costly device may not do the job as well as a cheaper one. The simplest – but least effective – device is a piece of carpet scrap placed at the door. One of the most complex devices is a motorized grate that brushes the dirt from people's shoes as they walk across it.

The most common dirt-catching devices is a **walk-off mat**. Walk-off mats are small rugs and runners (short lengths of rugs) that trap dirt and/or moisture before it is tracked into or through a building. They can be used to protect bare floors and finishes, as well as carpets. Mats come in many different sizes, colors, and materials – from molder rubber to coconut fibers to flexible metal links. Depending on their construction and material, mats can trap dry dirt, or both wet and dry dirt.

Soft walk-off mats – like coconut fiber and the carpet fiber entrance mat are designed to trap and hold both wet and dry dirt and soil. Coconut fiber mats are especially useful in sandy areas of the country, because they hold several pounds of wet sand. The carpet fiber entrance mat (made from carpet fibers) soaks up water from rain and melting snow, as well as traps dirt. This keeps bare floors free from wet spots that people can slip and fall on. When soft mats become full of dirt and water, remove them and clean them with a wet-type vacuum. Keep an extra mat for each location so that you can clean one while the other is in service.

Absorbent mats also trap both wet and dry dirt and soil caused by food spills. They are usually made from olefin – an easily washed synthetic that has a soft, plush texture. Absorbent mats are used in cafeteria lines, and in front of vending machines. They often have a rigid border that makes them lie flat so that people do not trip over them.

Walk-off mats made from scraps of carpet are not recommended. First of all, ordinary carpet isn't designed to knock the dirt off shoes and trap it. Also, carpet scraps often have exposed edges that tend to roll up and trip people. If you do use carpet scraps for mats, be sure to tape or sew all loose edges. This will keep them from unraveling (coming apart) and rolling up.

Hard vinyl plastic or rubber mats protect floor and carpets from dry dirt. They are designed to protect any heavy traffic area from wear, including approaches to escalators and elevators. They come in both opaque (cannot see through) and transparent (see-through) materials, and both solid and open construction. Some open construction mats are perforated with holes. Others have pieces of mat material linked together in a pattern. Transparent mats made from vinyl protect floor surfaces and allow flooring or carpet patterns to show through at the same time. You can wash off rubber and vinyl mats with a garden hose, and they will dry quickly. Keep an extra mat on hand for each location, so that you can wash one while the other is in service.

For safety underfoot, many rubber and vinyl mats have small nubs or teeth on their backing. Under a load, the nubs grip the floor and keep the mat from sliding. Some mats have a rigid border around the edges to

keep them from rolling up and tripping people. Another way to prevent people from tripping on mats is to recess (set in the floor) them in a shallow pit. The pit –which is usually only as deep as the mat is thick – often has a metal border around it. When you place a mat in the pit, the top of the mat is even with the floor so that no edges are exposed.

The flexible metal link mat has the same link-type construction that some rubber and vinyl mats do. This design is especially useful in entrances to and from a dirty garage or warehouse floor. To clean the area, simply pick up and shake the mat, and then sweep up the dirt and litter from the floor.

Walk-off grates are simply metal bars or strips set in the floor with a small gap (about 1/16 in.) between them. A catch pan is located under the grate. The grate knocks the dirt off shoes, and the dirt falls through the gaps and into the catch pan. Walk-off grates do a good job of trapping wet, oily soil so that it will not be tracked into the building. Often a walk-off mat is placed just past the grate to wipe off the shoes after the oily dirt is knocked off.

Walk-off grates are even easier to clean than walk-off mats. You simply remove the grating, and use a vacuum or shovel to remove the dirt from the catch pan. Some catch pans are connected to drains to make them easy to flush and clean. The only bad feature of walk-off grates is that they are costly to install. Because they require a hole to be cut in the floor, these devices must be installed either when the building is built or when it is remodeled.

Some walk-off grates are electrically operated. These motorized grates have motor driven brushes that stick up in the gaps between the bars. When someone steps on the grate, it turns on an electric motor that moves the brushes back and forth. The brushes knock the dirt off people's shoes. Motorized grates are very useful in areas that have a lot of wet or snowy weather. They are also useful if a messy shop or factory floor is located next to an office area.

POLICING

In addition to dirt-catching devices, you can prevent dirt from getting on carpets by proper policing. If you police an area correctly, you can remove soil and stains before they have a chance to become embedded (trapped) in the carpet. Policing includes:

1. Picking up litter several times a day.
2. Sweeping or vacuuming heavily trafficked areas several times a day with a light-duty tool.
3. Exchanging or cleaning walk-off mats and grates, which you learned how to do earlier in this Lesson.
4. Removing spots and stains with a carpet spot-cleaning kit, which you will learn how to do in Lesson Four.

Picking up litter is the simplest – and probably the most often forgotten – part of policing. It is very important that you and other custodians in your building make it a habit to pick up every piece of paper, cigarette butt, gum wrapper, paper clip, wad of lint, etc. that you see several times a day. This will make any area look neat and orderly, with no noticeable dirt.

There are many light-duty tools that you can use to remove loose dirt and solids from heavily trafficked areas. For policing, you will usually need a tool that is lightweight so that you can move quickly through the building. If the soil in your area is dry and the carpet has a relatively short, dense pile, you can use a **non-electric sweeper**. As you push or pull this lightweight sweeper, a set of small rotating brushes sweeps the dirt and soil from the carpet. For wet, heavy, or oily soil, use a lightweight, single-motor, upright vacuum equipped with a rotating brush.

ROUTINE VACUUMING

No matter how careful you are, or how much preventive maintenance you do, you still must vacuum your carpet completely and thoroughly to keep it looking as it should. This type of cleaning is called routine vacuuming. It consists of removing loose dirt and soil from the carpet while they are still loose, and before they get trapped in the pile. Routine vacuuming picks up the dirt while it is still near the surface. Once it sinks down into the pile, it is much harder to remove. This is why it is necessary for you to clean the carpet “often enough.”

How “often” is often enough? This question puzzles many custodians. As a general rule, however, vacuum the carpet in all public areas (halls, corridors, classrooms, and dining rooms) at least daily. Vacuum the carpet in lightly used areas (libraries, executive offices, conference rooms, and stores) only every other day or even weekly. In any case, it is very important to vacuum the entire carpet on a definite schedule. At least once a week you should move the furniture before vacuuming in areas that are used a lot so that you can pick up the dust and dirt around the furniture legs and under the furniture. Use a heavy-duty upright vacuum to ensure removing all of the dirt, grit, and deeply embedded soil. Also, every week you should remove the light dust along baseboards and in corners because it will grow into an unsightly grey fuzz if you do not remove it regularly. Every other week, vacuum the carpet in seldom-used areas that do not require more frequent care. Unused areas are soiled by airborne dust and the oily fumes and gases from heating and ventilating systems.

VACUUM CLEANERS

There are many different types and sizes of vacuums that you can use for routine vacuuming. To avoid wasting time and effort, you should know how to use each type, and make the best possible use of its features. Two common types vacuum carpet very well: the dry-tank type, and the upright type.

Use a **dry-tank vacuum** to remove the soil that lies on the surface of the carpet pile. This is the simplest type of vacuum, and is used most often. It consists of a tank (usually mounted on wheels), an electric motor, a filter bag, and a flexible suction hose. To pull the dirt from the carpet, a tank-type vacuum produces a vacuum or suction. A fan driven by the electric motor blows air out of the tank through an exhaust outlet, forming a partial (not complete) vacuum in the tank. This pulls more air in through the hose. As the air enters the hose, it picks up and pulls in the dirt and soil from the carpet.

You need only very simple attachments to vacuum carpet. Insert a curved wand into the end of the hose. (The wand is a lightweight tube that serves as a long handle for the cleaning tool.) Then put a carpet pick up tool on the other end of the wand. The tool must have a hard bottom – steel or plastic – so that it slides over the carpet easily without catching or snagging the carpet pile. A crevice tool on a flexible hose is handy for cleaning carpet edges along baseboards.

A dry-tank vacuum is not powerful enough to remove dirt that has been ground into the carpet. Use it only for surface dirt – and use it often enough to remove dirt before it is ground in. This type of vacuum, with the right attachment, is good for reaching under furniture where an upright vacuum cannot reach. (You usually have to move the furniture when using an upright vacuum.) Dry-tank vacuums are also very useful for cleaning carpet on stairs.

When the dirt and soil are ground into the pile of a carpet, it takes more than just vacuum suction to remove them. This is where the **upright vacuum** comes into use. This type of vacuum has a power head instead of a hose or wand. The power head – which is actually the “foot” of the machine – rests on the carpet. The power head contains rotating tubular-type brushes driven at high speeds by the vacuum’s motor. The spiral rows of brush bristles sweep the soil from the pile.

To loosen the ground-in dirt so that the suction can pick it up, an upright vacuum is also often equipped with motor driven beater bars. They allow the upright to beat and sweep the carpet at the same time. The beating action knocks the stubborn dirt loose, and the vacuum action sucks the dirt into a large bag mounted on the handle.

Upright vacuums come in three different types: single-motor, dual-motor, and pile brush. Each has a special purpose. When choosing an upright vacuum to use, do not pick one so powerful that it pulls the yarn out of your carpet.

The single-motor upright vacuum has one electric motor that turns both the brush (or beater) and the fan (that makes the suction). This type is sometimes called a light-duty or commercial vacuum. The main advantage of this type is it is light weight – it is much lighter than a dual-motor upright vacuum. Most single-motor vacuums are only about 12 inches wide which lets you clean around furniture easily. This machine is best for use in cluttered areas, and places that do get a lot of traffic.

The dual-motor upright vacuum does the same job as the single-motor vacuum, but it has one motor to turn the brush or beater and another to turn the fan that makes the vacuum. It is, therefore, more powerful. It can remove dirt that a single-motor machine cannot reach or loosen. It can also pick up objects as large as match books, cigarette packs, and napkins. Most dual-motor vacuums have a wider cleaning width (up to 27 inches) than the single-motor vacuums. This lets you clean more carpet with each pass, and helps you to save time in large areas. But because of the greater machine width, it is hard to use dual-motor machines in places that are cluttered with furniture.

When using a dual-motor vacuum, be sure to set the tubular-type brush and/or beater bar to the height recommended by the carpet manufacturer. Setting the brush or bar in its lowest position will not ensure a

better cleaning job. In fact, a brush set too low just wipes the carpet instead of flicking the dirt out of the pile yarns. A brush set much too low cannot only damage the face of certain types of carpet – it will not do any cleaning either.

The pile brush vacuum is a very heavy-duty dual-motor vacuum. It has a powerful electric motor that turns a very coarse bristle tubular brush, and a second motor that produces the vacuum. The brush vacuum is designed to separate the pile, and pull the dirt out of it. When you use it correctly, you may be able to lengthen the time between shampoos. But if you use it incorrectly, or too often, its power can damage your carpets. Some pile brush vacuums can actually pull the yarn right out of the carpet if you are not careful. Be sure to read the manufacturer's instructions before operating a pile brush vacuum.

It is a good idea to use a pile brush vacuum just before shampooing a carpet. This helps remove the loose soil and unpack the pile yarns. It also lets the shampoo get to the more stubborn soil. This is especially important if the carpet has a dense pile. This vacuum also does a good job of removing dirt and shampoo residue after the carpet has been shampooed.

Do not use a pile brush vacuum too often. Even in heavily trafficked areas, do not use it more than once a month. If the carpet receives medium traffic (as in a public building), it is safe to use a pile brush about once every three months. In areas that receive only light traffic, use the pile brush only before and after shampooing.

WARNING: You must empty all filter bags on vacuum cleaner regularly. Never let them get more than half full. Because air cannot pass through the bag if it is too full, the vacuum cannot pull in any more dirt-carrying air.

PILE RAKE

When a carpet has a long pile (over ½ in.) or is a shag, you can make it look much better by “setting the pile.” This simply means untangling the carpet pile yarns, and combing them into place. One of the easiest ways to do this is with a pile rake. It is sometimes called a shag rake. Do not confuse raking a carpet with cleaning it. You must clean long pile carpets and shags routinely with a vacuum just like other carpets. Some vacuums have a special beater bar adjustment for shag. This adjustment keeps the bar from getting tangled in the long yarns.

ROUTINE SANITIZING OF CARPETS

How can you sanitize a carpet? Can you make a carpet “sanitary” enough to use in hospitals that have germ-sensitive areas? The answer is yes. Carpets have been used in hospital rooms since the early 1960’s. Most new hospitals and nursing homes use carpet today. Tests show that a carpet does not harbor germs any more than a bare floor does. Using common cleaning methods, you can keep the number of germs on carpets down to the same level as on bare floors. Both keeping the carpet dry and cleaning up spills promptly helps to reduce the number of germs.

When you clean and sanitize germ-sensitive hospital carpet, remember that germs depend upon dirt, dust, and moisture to live, grow, and move about. Germs ride the small bits of dust and droplets of moisture in the air as they are blown or carried about. You should also remember that germs are very, very small. Some germs are only 0.0000787 inches long (or 12,700 germs per inch if laid end-to-end). It is hard to remove germs so small that you cannot see them.

The best way to remove germs from a hospital carpet is to vacuum the carpet at least daily with a vacuum that picks up and traps small bits of dust and dirt. Most heavy-duty upright carpet vacuums will do a good job of this. Wet-tank vacuums will do a good job of picking up moisture (water, medicine, etc.). But, these machines do not trap the small bits of dust. The germ-carrying bits are so small that they pass through the vacuum’s filter. Then the vacuum’s exhaust blows them around the room again. Hospital rooms must be as germ-free as possible so that the patients do not breathe in germs.

It is best to vacuum hospital carpet with a wet-tank vacuum equipped with a special microbial (mi-CROW-bee-ul) filter. This filter – which can trap the very smallest specks of dust – reduces the number of disease-causing germs in the room. Factories that make precision parts also use vacuums with microbial filters to keep the air dust-free for their delicate operations. After using the vacuum, always clean the filter as instructed by the manufacturer. A dirty filter will eventually clog so that it no longer traps germs.

To maintain hospital carpets in the most germ-free condition, shampoo them on a regular schedule – at least once every six weeks. (Hospitals test their carpets for the presence of germs at regular intervals. If the test results are not acceptable, you may have to shampoo more often than once every six weeks.)

ANITSTATIC ELECTRICITY TREATMENT

In some climates, building users encounter problems with static electricity when they walk on a carpet and then touch grounded metal. This problem is usually worse in dry, cold climates. If this is a problem in your building, there are chemical treatments that you can spray on the carpet to reduce the static buildup. These treatments – called **static controls or anti-statics** – can be bought wherever cleaning chemicals are sold. You must use the spray after each time you shampoo the carpet. The only disadvantage to these spray treatments is that they do not last very long.

PROTECTING CARPET YARN FROM CRUSHING

Besides performing preventive maintenance to keep your carpet clean, you can also protect its yarns from being crushed. Once carpet yarns become bent or damaged, it is much harder to clean them. Bent yarns entrap the dirt, and will not release it as easily when you vacuum the carpet. Therefore, you should protect carpet yarns against crushing by furniture and chair legs. You can do this in many ways. Special **carpet cups and pads** that fit on the bottoms of furniture legs are available. These cups spread the weight of the furniture over a larger area. This prevents the legs from sinking so deeply into the yarns. Rubber tips on furniture legs help to prevent marks made by wood or metal legs.

If furniture is movable, it can be fitted with special **carpet casters**. These casters have larger wheels than regular casters. They spread the weight of the furniture out over a larger area so that more carpet yarns help to support it.

You can also use crush shields to keep the wheels of movable office chairs from damaging carpet. These shields are normally large 3 by 5 feet pieces of plastic laid over the carpet. Some shields are made of transparent (see-through) plastic, so that the carpet color and pattern show through them.

SHAMPOOING CARPET

PREFACE

When preventive maintenance and routine vacuuming no longer keep a carpet looking clean, you must shampoo it. Depending on the type of carpet and the type and amount of soil, you can shampoo carpet by several methods – mopping, wet foam or dry foam shampooing, water extraction, and dry powder.

This Lesson tells you how to set up the carpet and equipment for each shampoo method, and gives the step-by-step procedure for using each method. It also tells you how to mix shampoo or cleaning chemical solutions. You will also learn how and when to set the pile. When you know how to shampoo carpets correctly, you will be able to keep them in their best condition.

THE NEED FOR SHAMPOOING CARPET

As you learned in Lesson Two, unless you remove dirt and soil from a carpet on a routine schedule, they will permanently damage the carpet. Besides, the entire building looks bad when the carpet is dirty. A vacuum that uses only suction will remove surface soil. An upright vacuum will remove some of the more stubborn soil from the pile and backing yarns. But no vacuum can remove all of the dirt from a carpet. Nor, can a vacuum **remove stains**.

Shampooing is the only way to remove the really ground in dirt and some of the stains that make a carpet look bad. To shampoo a carpet simply means to wash it. Carpet shampoos wash a carpet in two steps. First, dirt and soil are dissolved and suspended (floated) in the shampoo. Then, both the shampoo and dirt rise to the top of the carpet. When they are dry, you pick them up with a vacuum.

FREQUENCY OF SHAMPOOING

How often you should shampoo the carpets in your building depends on:

1. Which shampoo method you use
2. The type of carpet pile yarn
3. The type of dirt and soil in the carpet
4. The type of activity or traffic in the area
5. How good the carpet must look
6. The carpet pattern and color

Suggested frequencies and procedures for shampooing are given, based on soil load. You should not shampoo a carpet too often. Most shampooing methods leave a residue or film on the carpet. If you shampoo the carpet too often, this residue builds up, becomes sticky, and attracts dirt.

There is no reason to shampoo carpet on a regular schedule, excepts in hospitals. Shampoo your carpet only when it becomes very dirty or stained – and you must restore its good looks. Always try to remove ground-in dirt with a dual-motor upright or pile brush vacuum before you decide to shampoo.

If the carpet looks dull or dirty after a thorough vacuuming, it needs shampooing. But, if only a section of the carpet is dirty, you do not have to shampoo the entire carpet. You can restore overall appearance by shampooing just the dirty area(s).

If you shampoo just a soiled section, be sure to feather its edges. To feather means to shampoo the edges of the soiled area very lightly. Use just enough shampoo to dampen the carpet lightly. This keeps a visible line from forming between the shampooed carpet section and the rest of the carpet.

It is common to shampoo carpet only once a year in medium trafficked areas. It may be necessary to shampoo every three or four months in areas that receive a lot of wet weather or snow, or that have dark soil. If you find that your carpet requires shampooing more than three times a year, try changing to a different shampooing method, or use more preventive maintenance as you learned in Lesson Two. More frequent preventive maintenance can lengthen the time between shampooing.

SHAMPOOING METHODS

The most common shampooing methods:

1. Carpet mopping
2. Wet foam
3. Dry foam
4. Water extraction
5. Dry powder

Each method has advantages and disadvantages.

You must use powered equipment to apply shampoo and/or water to the carpet in the wet foam, dry foam, and water extraction methods. You can use a machine to apply the powdered chemical in the dry powder method also. You must be careful any time you use electrically-powered equipment around water or chemical solutions. You can get an electrical shock if the power cord is cracked or the plug is damaged. Also, the plug should have three prongs so that the equipment is grounded. If you find any cracks in the cord, or the plug does not have three prongs, tell your supervisor about it.

MAKING AN AREA READY FOR SHAMPOOING

You must make the room or area ready first, whichever shampooing method you use. Always place a sign by the door saying that they room is “out of service” or “closed for cleaning.” Move all the furniture out of the room, if possible. If you cannot, move it to one side of the room. Do not try to move heavy furniture by yourself. You may hurt yourself or damage the furniture. Then use a dual-motor upright or pile brush vacuum to remove all the loose dry soil. A pile brush vacuum will do the best job. Next, treat any spots and stains with a carpet spot-removing kit, which you will learn about in Lesson Four.

CARPET MOPPING

Carpet mopping is a shampooing method in which you mop just the surface (face) of a carpet with a shampoo. The shampoo helps remove some stains, and it brightens the carpet color. This method can help you keep the carpet in heavily trafficked areas looking good between regular shampooings. The first step in carpet mopping is to mix the shampoo solution according to the directions. For all carpet shampoos, always add the chemical to the water. If you add the water to the chemical, you will get too much suds, and suds just get in the way so that you cannot see if the carpet is getting clean.

To mop a carpet, you need a short-yarn mop (like a dust mop) and a bucket or flat pan. Dip only the tips of the mop into the shampoo. Then scrub the surface of the carpet with the mop. The carpet will normally be dry within 1 hour if you do not get the carpet too wet. After the carpet is completely dry, vacuum it – with a dual-motor upright vacuum, if possible.

You can also use an aerosol can or a pump-type sprayer to apply shampoo instead of the mop and bucket. Then scrub the carpet face with a brush, a mop, or a single-disk floor machine equipped with a pad. Any of these tools will remove dirt from the carpet pile, and brighten its color.

FEATURES OF CARPET MOPPING

Carpet mopping will help you improve the looks of some carpet quickly and easily. This method takes only one person and very little equipment. It is especially suited to heavily trafficked lobbies, hallways, and elevators. However, carpet mopping does not remove very much dirt or soil. This method is not recommended for synthetic carpet fibers, for example, which tend to hold oily soil more stubbornly than natural fibers. Synthetic fiber carpets require machine agitation and a carpet shampoo brush. Also, shampoo builds up on the carpet if you mop it too often. Then the carpets yarns get sticky, and dirt sticks to them very easily.

WET FOAM SHAMPOOING

With the wet foam shampoo method, you use a specially equipped single-disk floor machine and a wet-pickup vacuum. The floor machine should be equipped with a shampoo solution tank and a carpet shampoo brush. First, prepare the shampoo solution. Like most cleaning chemicals, wet foam shampoo normally comes in a concentrated form. Add the concentrate to water before you use it. The instructions on the label will tell you how much concentrate and water to mix.

Use a small pail and a measuring cup to mix the chemicals. Remember, add the chemical to the water. If you do not use enough water, the shampoo can “gum up” on your carpets. If you use too much water, the shampoo solution may not be strong enough to remove the dirt. After you mix the shampoo, pour it into the solution tank mounted on the handle of the machine. Protect the floor while you are pouring with a piece of plastic or a protective pad.

It normally requires two people to properly shampoo a carpet with wet foam. One person applies the shampoo and scrubs the carpet with the single-disk floor machine. The other person picks up the shampoo with the wet-pickup vacuum as soon as the scrubbing is finished. Or, if you must use this method by yourself, you can simply allow the shampoo solution to dry thoroughly on the carpet. Then, use a dual-motor upright vacuum to pick it up.

After the area and floor machine are ready, pre-wet the shampoo brush and work up a foam on the plastic or pad before you place the machine on the carpet. Then use the floor machine to both apply the shampoo and scrub the carpet. The control lever or button on the handle of the machine controls how much shampoo flows from the solution tank onto the carpet. To begin, move the lever or button slightly, and let a small amount of shampoo (about ½ cup) flow onto the carpet. Then start scrubbing with the floor machine right away. Run the machine with a side-to-side motion in a 5 by 5 ft. square area. Continue until the area is covered with foam and is scrubbed. Then go to the next area (about the same size) and shampoo it. Overlap the edges of the area you just shampooed at least 2 inches. This helps prevent streaks.

The person operating the wet vacuum should pick up the dirty foam right after you scrub an area to remove all the soil. Do not over-wet the carpet. If you do, the carpet can shrink, stretch, or mildew – and smell bad.

You must “set the pile” after you have shampooed a carpet with wet foam. To set the pile, you brush the carpet pile all in one direction with a long-handled broom or brush. You can also use a special rake to set the pile that you learned about in Lesson Two. Setting the pile removes all foot and machine marks, and makes the pile stand up. This helps the carpet dry faster. It also prevents the carpet from drying with the pile yarns tangled or bent.

Do not put furniture back on the carpet while it is still wet, if possible. Furniture legs can leave stains on the carpet. But, if you must replace the furniture before the carpet is completely dry, put small cardboard squares under the furniture legs. The squares should be large enough to prevent the carpet pile from touching the furniture legs. You can buy small aluminum-coated cardboard cups for this purpose. Remove the cardboard square or cups when the carpet is completely dry. Then vacuum the carpet, using a dual-motor upright or pile brush vacuum, if possible. Clean the shampooing equipment thoroughly – immediately after you shampoo the carpet. The shampoo will be much easier to remove from the equipment when it is still wet.

FEATURES OF WET FOAM SHAMPOOING

The combination of the wet foam and the powerful single-disk floor machines do a good job of removing dirt, soil, and many stains. However, this is a job for one or two very careful people. You must be especially careful if your carpet, backing, or cushioning contains natural fibers. If the carpet gets too wet, it can be ruined. If you have someone to help you, always pick up the foam right away so that it cannot soak into the backing or padding. Also, you can damage some of the pile yarn if you run the floor machine too long in one place.

For the wet foam shampoo method to do the best job, leave the shampooed area empty until the carpet is completely dry. This normally takes from 3 to 24 hours. This method also leaves a sticky film called “shampoo residue” on the carpet. Residue usually will not be a problem if you do not shampoo the carpet too often. But, if the carpet is shampooed often, the residue acts like a dirt magnet. Dirt sticks to the residue, and makes the carpet soil more quickly.

DRY FOAM SHAMPOOING

The dry foam method allows very little water to get on the carpet. The dry foam shampooing machine compresses a shampoo solution into a foam that contains about 10% water. It sprays the foam onto one or more scrubbing brushes or sponges that work the foam down into the carpet pile.

The dry foam shampoo coats the dirt with a slippery film. The rotating brushes or sponges loosen the dirt and bring it to the carpet surface. The film helps prevent the dirt from sinking back into the carpet pile. Because foam pickup is not a separate operation in this method, one person can easily shampoo the carpet (after the furniture is moved).

Prepare the area and mix the shampoo solution before starting to dry foam shampoo an area. Move all the furniture out of the room – or to one side. Be sure to mix the shampoo as instructed on the shampoo container label, using a measuring cup and a bucket. Mix the shampoo well, and pour it into the tank on the machine. Screw the cap on the tank tightly, because the machine will not operate properly if it is loose.

Next, adjust the brush height on the machine. You will not get the carpet clean if the brushes are not set correctly. You set the brush height on most machines by turning a round knob. Adjust the knob until the brush just touches the carpet. Then plug in the machine and twist the handle forward. If the brush is set right, the machine will move forward very slowly. If the machine does not move forward, the brush is set too high. If the machine jerks forward, the brush is set too low.

Start shampooing next to a wall at one end of the room. Turn on the foam control switch located next to the handle and twist the handle forward. The machine should move forward, apply shampoo, and scrub the carpet. (Apply shampoo only when the machine is moving forward).

When you reach about 3 feet away from the other end of the room, turn off the foam control switch. When you reach the wall, release the handle. After the machine stops moving, twist the handle backward and scrub the entire same path while moving backward without applying any more foam.

When you have shampooed a strip both forward and backward, move the machine over and shampoo the next strip forward and backward. Always overlap the strip you just shampooed at least 2 inches to avoid streaks and gaps. To make sure that there are no streaks and gaps, shampoo forward and backward against the direction you shampooed first. If the carpet is very badly soiled, shampoo it a third time in a diagonal direction. Then set the pile (as you learned in Lesson Two), and let the carpet dry. Drying should take 30 minutes to one hour. When the carpet is dry, vacuum it with a dual-motor upright vacuum.

FEATURES OF DRY FOAM SHAMPOOING

The dry foam shampoo machine does a good job of removing dirt and some stains from carpet fibers. Its main advantage is that the carpet dries quickly – often the carpet can be used within one hour. Because there are no dirty suds to pick up, one person can dry foam shampoo a carpet by himself. The single disadvantage of this method is that it leaves a shampoo residue or film on the clean carpet. The residue attracts dirt and makes the carpet get dirty faster. However, the residue will not usually cause problems if you do not shampoo the carpet too often.

WATER EXTRACTION

The water extraction method is the most recent shampoo method available to the custodian. Professional carpet cleaning companies have used a form of water extraction cleaning for many years. But, until recently, the equipment was very bulky and expensive. Now, one or two people can easily use portable water extraction units.

The water extraction machine injects water into the carpet under a pressure ranging from 35 to 1500 lbs. per sq. inch. This loosens the dirt, and floats it in the solution. The machine then extracts (sucks) most of the water out of the carpet immediately, so that it cannot soak into the backing or padding. The same machine injects the water into the carpet and extracts it. A special cleaning chemical is sometimes added to the water to remove stubborn soil and stains.

Water extractors use both heated and cold water. Those that heat the water before injecting it into the carpet are called **hot water extractors** or **steam cleaners**. They do not use boiling water, however. The water is heated to only 82° C (180° F). You must be very careful when you use a hot water extractor or steam cleaner. It can shrink natural fiber materials and also dissolve some carpet dyes.

The water extractors that use cold water are much simpler. Although they do not usually shrink the carpet or damage the dye, cold water cannot remove certain soil and stains that the hot water extractor can using warm water.

There are many different types of water extractors. Some have their own wet-pickup vacuum. Others require a separate wet vacuum. All have a special wand-injector tool. The wand looks very much like the pickup tool of a wet vacuum, except that it contains a valve, a sprayer, and a pressure hose. The valve controls the amount of water that travels through the hose to the sprayer – and onto the carpet.

Before you use the water extraction method, make the area ready. Remove the furniture if possible, and assemble the equipment. If you are going to use a cleaning chemical in the water, mix it properly according to directions.

If the carpet has been shampooed repeatedly in the past with the dry foam, wet foam, or carpet mopping methods, add a defoamer to the water. The defoamer prevents the old shampoo residue from turning into

messy suds when the water strikes it. Be sure to add the defoamer to the water according to the manufacturer's instructions.

Next, check to see if the carpet has a natural fiber backing. You can check the backing by separating the pile yarns with your hand. If the backing looks like a woven plastic, it is a synthetic material. But if the backing is made from natural fibers, you must be very careful not to get it wet. It is best not to use hot water on these types of carpets. In fact, use as little water as possible.

You must allow a hot water extractor time to heat the water. This normally takes at least 15 minutes. You can use a cold water extractor right away.

FEATURES OF WATER EXTRACTION

Water extraction is considered to be the most effective carpet washing method. It can remove many stains and types of soil that no one of the other shampooing methods can. Also, this machine leaves very little or no residue. In fact, it can be used to remove the residue left by other shampooing methods.

The main disadvantage of water extraction is that it takes a lot of time. Many water extractors require two people to operate. You need patience and practice to use a water extractor properly. If you use the equipment wrong, or if you rush, you can ruin a carpet. This method ties up the room for a long time, because it can take up to 24 hours for the carpet to dry.

Because the water extraction method is the only one that will remove certain dirt and stains, and because it leaves no residue, it is often used with other methods. Use the water extractor after you have used another shampooing method two or three times. For example, suppose you shampoo your carpets twice each year with the dry foam method. The third time – after about 18 months – use water extraction to remove old shampoo residue.

DRY POWDER SHAMPOOING

The dry powder method uses a powder treated with chemicals to “shampoo” carpet and no water at all. This method is sometimes called the soil absorbent method. Just sprinkle the powder on the carpet, and work it into the pile with a hand or machine-powered brush. The dirt and soil in the carpet will stick to the powder, and you simply remove both the powder and soil with a vacuum. Use a dual-motor upright or pile brush vacuum if possible.

FEATURES OF DRY POWDER SHAMPOOING

The main advantages of dry powder are that it does not wet the carpet, and the room can remain in use while you use it. You can also do the job easily by yourself. This method removes loose soil – especially oily soil – and makes the carpet look better. However, it cannot remove any types of dirt and stains. Its intended purpose is to help maintain heavily trafficked areas between foam shampooings. Every time you use the dry powder method, some of the chemically treated powder remains in the carpet. Vacuuming does not remove all of it. Therefore, the powder builds up in the carpet if you use this method too often. Powder buildup makes the carpet get dirty more quickly.

PERIODIC CARPET SANITIZING

It is sometimes necessary to sanitize carpets used in germ-sensitive areas. Although there is no known way to truly sanitize a carpet installed on the floor, certain carpet shampoos can kill some germs. These shampoos are called germicidal or bactericidal. Some shampoos are also bacterio-static – this simply means that they slow down or stop the growth of germs for a period of time.

You should use one of these special shampoos on carpets in germ-sensitive areas (such as those in hospitals). But they do not completely sanitize or disinfect the carpet. They kill only those germs that they can reach. Many germs are embedded so deeply in the carpet pile that shampoo cannot reach them.

SOIL RETARDANTS

Soil retardants are chemicals that leave a soil-resistant coating on carpet fibers. They can be applied to a new or just shampooed carpet. The coating helps prevent dirt from sticking to the carpet, and liquid stains from sinking into the fibers. Depending upon the type of dirt and soil in your building, you may be able to lengthen the time period between shampoos by applying a soil retardant. Their disadvantage is that the soil resistant film wears off after a short period of time.

SPECIAL CARPET CARE

PREFACE

Even though you spend a lot of time and effort keeping the carpet in your building in good condition, it can develop problems like shedding, shrinking, uneven wear, and staining. Today's carpet can "take a beating" from foot and vehicle traffic. But many fibers and yarns can become damaged, stained, or faded. By knowing which type of carpet you have and the probable cause of the problem, you can restore carpet to a serviceable condition using the right methods and equipment.

This Lesson describes the more common carpet problems that you can have. It explains their probable causes, and tells you how to correct them. It also tells you which repairs you should not try to make yourself – but should leave for experts. The procedures to use for removing spots and stains in this Lesson will be especially useful to you. Spills stain carpet every day. Knowing how to remove stains is a basic part of your knowledge as a custodian.

CARPET PROBLEMS REQUIRING SPECIAL CARE

Carpet is generally easy to clean and very durable. However, under certain conditions they can become so dirty, damaged, or spotted that they require special cleaning and care, just like any other building surface. You can reduce the number of your carpet problems by always cleaning the carpet carefully and correctly, as you have learned in Lessons Two and Three.

Sometimes carpet problems result from causes that you cannot control, such as poor carpet selection or installation. But even though you cannot control these causes, they can make problems such as uneven wear, stretching, or buckling for you to deal with. Today's carpeting is so well made that there is little chance that a carpet is simply defective or poorly constructed. Therefore, you will have to solve most carpet problems yourself.

UNEVEN WEAR

A carpet must usually be replaced when only 20% of its surface is worn. The reason is that traffic patterns wear out certain portions of a carpet much faster than the rest of the carpet wears. This causes about 80% of a carpet to be wasted. This is especially true in heavily trafficked hallways and lobbies. One way to prevent such a waste is to rearrange the carpet periodically if it is installed with tackless strips. Do not try to rearrange carpet yourself. An experienced carpet installer should do the job.

A second way to prevent uneven wear – and one that you can do – is to **rearrange the furniture** and change the traffic lanes across the carpet. To do this, your supervisor may have to get permission from the person(s) who owns or occupies the room or office. A third way is to **rotate carpets**. Sometimes several offices or rooms in the same building are the same size and shape, but some are used more than others. Rotating the carpets among identical areas spread carpet wear more evenly, and increases the life of the carpeting.

A fourth way to spread out carpet wear is to use **movable carpet squares**. They come in different sizes, many different yarns and colors, and have a heavy-duty backing. A nondrying, reusable adhesive that holds the squares in place allows you to replace only the worn squares without having to replace the entire carpet. You can even rotate the squares between a heavily trafficked area and one that does not get as much traffic. This spreads out the wear more evenly. Also, if only one square is stained or damaged, you can replace it easily. Carpet squares are especially easy to install and/or remove if they are all one color.

STRETCHING AND BUCKLING

When carpets are installed wall-to-wall, they are pulled tightly against the edges of a room or area before they are attached to the floor by one of the installation methods you learned about in Lesson One. The tight pulling exerts tension on the carpet to make it lie flat. Sometimes, however, the tension causes the carpet backing to stretch out of shape. Poor installation, poor quality backing, or very damp weather can result in stretching. Stretching makes the carpet buckle (or wrinkle).

Almost any carpet will expand or loosen up a little bit in damp weather and shrink or tighten up in dry weather. Such slight expansion and shrinkage can occur without being noticed, if the carpet is laid under proper tension. The carpet fastenings will hold it to size in dry weather. But, too much stretching can produce buckling that makes the carpet look unsightly. Stretching is a serious problem that should be corrected. Do not try to do it yourself, however. An experienced carpet installer should do the job.

RIPPLING

Rippling – which is related to and affected by stretching and shrinking – is a problem that you can see when heavy loads move across the carpet surface. It looks like buckling, but has a different cause. The constant sliding and pulling action of thousands of footsteps in heavy traffic areas can cause ripples (or waves) anywhere in the carpet. Again, do not try to cure rippling yourself. An experienced carpet installer can either restretch the carpet with a powered stretcher, or wet the backing fibers with a controlled amount of moisture to correct the problem.

SEAM PROBLEMS

Seams are the weakest link in carpeting – especially wall-to-wall. Seam problems can develop anywhere two pieces of carpet are joined. Seam problems make a carpet unsightly, and also create a dangerous tripping hazard. The two most common seam problems are seams that pull apart and bulging seams.

Carpet seams pull apart for many reasons. This is a very serious problem that must be corrected right away. If it is not repaired promptly, a pulled seam can seriously damage the carpet. This is another job for an experienced carpet installer – not the custodian. But you should place a length of heavy-duty tape over the pulled seam until repairs are made.

Bulging seams means that yarn is sticking up at the seams. The yarn may be a loose strand pulled up during manufacturing, or a pile yarn that has loosened from the backing. Bulging seams are not as serious a problem, or as hard to repair, as pulled seams. To correct bulging seams, simply trim the loose yarn even with the pile surface. Do not pull the yarn. You could make an ugly gap at the seam if you do.

SHEDDING

Shedding occurs naturally in new carpets, especially if they have a cut pile. Shedding refers to yarn fibers that work loose and are removed during vacuuming. You may not notice the loose fibers until you empty the vacuum. Or, you may see fibers piling up on the carpet or drifting under furniture on a hard-surface floor nearby, because people track the fibers as they walk.

When a carpet sheds, people often think that it is losing its yarn and will soon become bare. This is not the case. There are always some loose yarn fibers in every new carpet. There is nothing that you can or should do about shedding. Regular vacuuming over a period of time will remove all the loose fibers without damaging the carpet.

However, shedding can be a serious problem if a carpet is in or near a dust-sensitive area like a computer room. There, small floating fibers could stir up the operation of delicate electronic instruments or tape surfaces. To correct the problem, use a heavy-duty or a pile brush vacuum to remove the loose fibers. If this does not cure the problem, you may have to shampoo the carpet even though it is new.

SPROUTING

Sprouting means that one or more strands of pile yarn sticks up noticeably above the surface of the pile. The two causes of sprouting are: (1) loose yarn caught by accident in the carpet during manufacturing, and (2) yarn loosened from the carpet fabric itself due to faulty backing.

To correct sprouting from either cause, just cut off the yarn at the surface of the pile. Do not pull it out, because it may be tangled with yarns attached to the backing and you could cause a gap in the carpet. The second case of sprouting is much more serious than the first cause. Yarn that is part of the carpet can become loose if the adhesive that holds the tufts on the primary back loses its holding power. This frees the yarn so that it can sprout. If the carpet loses a lot of yarn in a small area, it will become bare.

You can usually tell which condition caused the sprouting. If the case was faulty backing, you'll find spots of glue on the yarn. If the case was merely a loose yarn, the yarn will not have any glue on it. Watch the area of the faulty backing closely. If more yarn comes loose in that spot, tell your supervisor about it. He may want to contact the carpet supplier or contractor.

PILLING

Although the invention of strong synthetic fibers solved many previous carpet problems, it also created some new ones. Pilling is one of them. Pilling is the word that describes the little balls of fiber that form on the pile surface, but will not break off because the fiber is so strong. Nylon carpet pills more than other synthetic fiber carpets.

You can make the problem worse if you set the brush or beater bar on an upright vacuum too low. To check the brush and /or beater height, move the vacuum to the carpet you want to clean. Then, plug in the vacuum and turn it on. If it moves forward without pushing, the brush is set too low, and is pulling the machine. Adjust the brush heights upward until the movement stops.

All you can do to correct a pilling problem is to cut the pills off with scissors, a safety razor, or a silicone block. It is slow work, but there is no way to do it faster. Be sure to set the vacuum brush or beater bar at the correct height as you learned above.

BLEEDING

Bleeding describes the discoloration or sometimes powdery "white line" stains on a carpet that outline areas damaged by spills or moisture. The moisture may have come from dampness or chemicals in the concrete floor slab under the carpet. If the lines are tan or brown in color instead of white, it often means that the carpet backing or padding has gotten wet, and that the pile yarns have soaked up a brown coloring from the back. The dye or natural color in carpet backing or padding can make the line stains dark quick.

The first step in correcting a bleeding problem is to stop the moisture. If it is coming from the concrete slab, you may need to apply a waterproof sealer to the slab. Next, make sure that the carpet pile, backing, and padding are dry. If they are not, use a wet-tank vacuum to pull all the moisture out. Then shampoo the carpet with a water extractor as you learned in Lesson Three. A detergent in the shampoo solution may help remove the stain. You may even have to shampoo the carpet more than once. If the bleeding is very bad, a commercial cleaner should do the job.

SHADING

After a period of time, some carpet begins to show changes in color. Light or dark areas (called shading) appear, depending on which direction you view the carpet. This is a rather common problem that is easier to see on solid color carpets than on patterned ones. There is nothing wrong with a carpet that appears to change color like this. The change is due to foot traffic pressing the yarns down in different directions. This causes various carpet materials and colors to reflect light in different directions.

There is little that you can do to stop shading once it starts. Vacuuming the carpet pile all in the same direction may improve the carpet's appearance. As a last resort, you may be able to shift the carpet around so that it receives light from a different direction.

COLOR FADING

Carpet color comes either from fibers that are dyed before being made into a carpet, or from dyeing or printing the carpet with a color after the carpet is made. Dyed carpet looks better, and the colors may last longer than printed ones. Fibers dyed all the way through resist color changes from sunlight and polluted air better than fibers that receive only a little color during the printing process.

Sunlight is the main cause of color fading. As a result, it weakens most fibers, so, they do not stand up well under cleaning. Other causes of color fading are: gases from furnaces and fireplaces, fumes from cooking stoves and automobile exhausts. The gases and fumes actually combine with the oxygen and moisture in the air to form an acid that attacks and fades carpet fibers. Sometimes the fading does not show up until you shampoo the carpet.

To prevent color fading, use window shades, venetian blinds, or lined draperies to reduce direct sun rays on carpeting. Also, move the furniture on the carpet and change the traffic lanes periodically, so that all carpet areas get the same exposure to sunlight. This helps prevent color differences between the faded areas and the "like-new" areas under or behind furniture.

RAPID SOILING

Rapid soiling is one of the most common carpet problems. All carpets become soiled by tracked-in dirt, spilled food, etc. – and all carpets should stand up under this day-to-day use. But, when carpets get dirty much faster than they should, this is called rapid soiling.

How fast a carpet should get dirty is affected by:

1. **The type of building** – the carpet in a factory will usually get dirty faster than one in a doctor's office.
2. **The type and amount of soil** – an outdoor carpet at a night club entrance will get more and heavier dirt than one in a church aisle.
3. **The number of people who use it** – there is a big difference between the number of people who use the carpet in a doctor's office and the number of people who use the carpet in a public auditorium.
4. **The manners of the people who use it** – are they messy eaters? Do they wipe their shoes?

Because all of these items and others affect how fast a carpet gets dirty, rapid soiling is very hard to correct. You must solve the problem without changing the building or the habits of the people in it. You must do it by using good maintenance procedures. Among the most common causes of rapid soiling are: shampoo residue, white powder tracking, a thin carpet pile, the wrong carpet color, and wet weather.

Shampoo residue (probably the main cause of rapid soiling) is a thin sticky film that remains on the carpet after you shampoo it. The film builds up after several shampoos and holds dirt. This makes a carpet get dirty faster than it should.

The water extraction shampoo method will remove old shampoo residue, as you learned in Lesson Three. After you have used a shampoo method two or three times, use the water extractor to remove all the residue built up on your carpets. If the carpets have been shampooed many times in the past with foam or powder, add a defoamer to the recovery tank in the water extractor. The defoamer prevents the old shampoo residue from turning into unwanted suds.

Sometimes shampoo residue remains on carpets because the shampoo concentrate was not diluted or mixed properly. One way to correct this problem on a previously shampooed carpet is to shampoo the carpet again with a half-strength dilution. (Simply use one-half shampoo solution.) Another way to correct the problem is to use the water extraction method.

White Powder Tracking. A carpeted area next to a waxed or finished floor may sometimes have a white powder or dust tracked onto it that makes it get dirty faster. The dust shows up more if the carpet is a dark solid color. The dust is created when wax or floor finish dries out and breaks off, turning into a white powder that people track from the floor onto the carpet.

The only way to keep white powder off of the carpet is to prevent wax or floor finish from powdering. You can do this by applying wax or finish to the floor correctly. But, powdered floors can also be caused by very dry weather, which you cannot control. In this case, you can prevent the powder from being tracked onto the carpet by placing removable walk-off mats at the beginning and end of traffic patterns across the carpet to clean off people's shoes.

Thin Carpet Pile. Some carpets soil more rapidly because their pile is thin (not dense). Thin pile cannot support the dirt on its surface until you vacuum it. Therefore, the dirt sinks into the pile, becomes tangled in the yarns, and causes the carpet to get dirty faster. When this happens, you need something more powerful than a standard vacuum cleaner to remove the deeply embedded dirt. Use a pile brush vacuum on the carpet instead, as you learned in Lesson Two. Remember to use this machine very carefully. It can ruin the carpet if you use it incorrectly or too often.

Wrong Carpet Color. Many times the carpet color pattern itself makes dirt and soil show up more. If you can see footprints where people walk right after you clean the carpet, the color or pattern of the carpet is causing the problem. The carpet may not really be dirty, but its color makes the combination of wear and tracking look like dirt.

The only way to correct this problem is to prevent the tracking of dirt by using walk-off mats and dirt-catching devices.

CRUSHED PILE YARNS

As you learned in Lesson Two, you can prevent crushed pile yarns in a carpet by placing protective devices (cups or glides) under the legs or casters of heavy furniture. If you do not, the pile yarns become bent and crushed under the heavy load of each leg. The deep scars that result not only make the carpet look bad, but often make the spots appear to be a different color. It is almost impossible to remove these scars. But you can make them less noticeable.

First, vacuum the carpet thoroughly with an upright-type vacuum equipped with either a rotating brush or beater bar. Vacuum the crushed areas from several directions, using the brushing or beating action to

straighten the yarns. Then, shampoo the carpet with the water extraction or dry foam method. After the carpet dries, vacuum it again.

A quick way to correct small areas of crushed pile yarn is to raise the yarns by rubbing and lifting them with the edge of a coin. Then dampen them with moisture from a hand-held steam iron held about 6 inches from the carpet surface, and brush them well with a hand brush.

MILDEW

Even a small amount of moisture left in a carpet for a period of time can cause mold to grow in the carpet pile. This mold is called mildew. Mildew attacks natural materials such as cotton, wool, and jute. It not only makes an ugly stain, but produces a sour, musty odor. Mildew will destroy a carpet if you do not remove it, and the source of the moisture. To correct a mildew problem, you must:

1. Shampoo the carpet to remove the dirt and soil that mold uses as food. Shampoo the carpet thoroughly with a shampoo containing a fungicide that kills molds.
2. Dry out the carpet by turning up the heat in the building. Use a wet-tank vacuum to remove all the moisture that you can.
3. Find and remove the source of the moisture that is causing the problem. Seal damp concrete slabs under the carpet. Use a dehumidifier in humid climates.

ELECTRIC SHOCKS AND SPARKING

We are all familiar with the electric shock that a person gets when he walks across a carpet in a dry climate or during winter months, and then touches a grounded object like a light switch or a telephone. This buildup of static electricity which causes the shock is becoming more and more of a problem. This is because buildings have more and more carpeted areas: Sidewalk carpet, entranceway, reception areas, lobbies, hallways, and elevators.

A more serious problem than electric shocks is the sparking that occurs when the static electricity buildup is charged. (You have probably seen such a spark if you've turned on a light switch in the dark after walking across a carpet.) This type of spark can be very dangerous if it occurs in hazardous areas like gasoline refineries, paint factories, ammunitions arsenals (which contain gunpowder), and hospital areas where ether is used. The spark can ignite fumes and dust in the air, causing not only fires, but explosions that can tear a building apart.

Shocks and sparking from static electricity occur when the air is dry. This happens often in dry climates or when heating units or air conditioners remove the moisture from the air. The two ways to remove static electricity from carpets, and eliminate shocks and sparking are:

1. Increase the amount of moisture in the air with a humidifier.
2. Apply antistatic spray to the carpet.

Some antistatic sprays cause dirt to stick to the sprayed carpet pile. Also, you must respray the carpet after each shampooing. Seek the advice of an experienced carpet installer before using any antistatic agent.

Insects attack natural fiber yarns. They usually do not attack synthetic fiber yarns unless food has been spilled on them. The insects that do most of the damage are moths and carpet beetles. The best way to protect your carpets from insect damage is to keep them clean. Insect eggs will have little chance to hatch if

you vacuum regularly. Remember to vacuum along the baseboards and under furniture where insects deposit their eggs.

Most carpets are now permanently moth-proofed by the manufacturer. Check the label on your carpet to see if it is moth-proofed. If not, vacuum the carpet extra carefully. Be sure to remove all food stains promptly. If the carpet isn't moth-proofed, never roll and store it without having it cleaned and treated for moths by an expert.

You can kill some carpet insects with a powerful chemical solution that you spray on the carpet pile. You must use it with great care, and apply it correctly to prevent staining the carpet. If possible, a professional exterminator should apply the chemical spray.

STAIN REMOVAL

Because carpet is now used so widely, removing stains has become a routine task as well as an emergency treatment. Stain removal is easier if you do it immediately and correctly. First, you must try to find out what caused the stain. Then, following the right procedures carefully, remove the spot with a spot-cleaning kit.

You can buy a commercial spot-cleaning kit or you can make one using common household chemicals. If you buy a kit, be sure to read and study the instructions until you understand them thoroughly. You can make many stains worse by using the wrong procedure. If you are not sure what to do, ask your supervisor. Above all do not experiment with the chemicals.

Because spot-cleaning chemicals in commercial kits are harsh enough to remove stains, they may also be harsh enough to cause injury to your skin. Therefore, be sure to wear rubber gloves when using the kit.

To make a simple two-bottle spot-removing kit that is considered safe for general use:

1. **For water-base spots.** Fill a spray bottle with carpet shampoo mixed for the strongest recommended dilution, or a solution made by dissolving 1 tsp. of neutral detergent (similar to what is used to wash wool or fine fabrics) in 1 pt. water.
2. **For oil-base spots.** Fill a spray bottle with dry cleaning fluid (similar to the type used to remove spots from clothing) whose label states that it is especially intended to be used on fine fabrics.

Special Nail Polish Procedures. Nail polish is a substance that requires special care to remove from a carpet. You may need professional help in some cases. Regular nail polish remover badly discolors some carpets and both the nail polish and the remover can damage certain carpet pile yarns. Try the remover on the carpet in a hidden place first. If it does not damage the color of the pile yarns, use this step-by-step procedure to remove the polish:

1. If the polish is still wet, absorb as much of it as possible with a clean, dry cloth. Be careful not to spread the polish.
2. If the polish is dry and hard, apply a little polish remover to the spot with a medicine dropper. Let it stand for a few minutes to penetrate and soften the polish. Apply more remover if needed.
3. Scrape off as much of the loosened polish as possible with the edges of a spoon. Then apply more polish remover to the spot, and soak up as much as you can with a cloth.
4. Repeat Step 3 as many times as it takes to remove all traces of the nail polish.

Animal Odors. "Accidents" by household pets and small children frequently stain carpets. But, in addition to the stain itself, every animal stain almost always leaves an odor as the urine soaks into the carpet pile.

The deeper it soaks, the harder the odor is to remove. Some odors are almost impossible to get rid of. A pile brush vacuum may help, but setting up the equipment takes a lot of time. Usually the easiest solution is to replace the stained area, or have a professional carpet cleaner treat it with deodorizing chemicals.

CIGARETTE BURNS

Cigarette burns will damage both natural and synthetic carpet fibers. Wool yarns are very easy to repair. Burned wool fibers form a light, fine ash which you can simply scrape off with a pocket knife, or fine sandpaper.

Cigarette burns in synthetic fibers are a more serious problem. Instead of forming an ash when burned, synthetic fibers melt, and form a hard, unsightly knot or blob that is dark brown or black in color. The only way to repair the burned spot is to cut it away. If the spot is small, no one may ever notice that the pile is thin at that spot. But, if the burned section is large, you may have to replace part of the carpet.

SPOT REPAIRS

If your carpets are badly burned, eaten by insects, cut or otherwise seriously damaged, the best way to make repairs is to replace the damaged area. If the area is small, use a tool like a cookie cutter to cut out a circle of the carpet around the spot. Then, remove the damaged piece, and insert a new piece (cut in the same size and shape and by the same cutter) from a scrap of the carpet. Use a little glue to hold the patch in place. If the patch and original carpet have the same color and design, it will be hard to detect the patch when you are finished.

MIXING INSTRUCTIONS

**If mixing
instructions read**

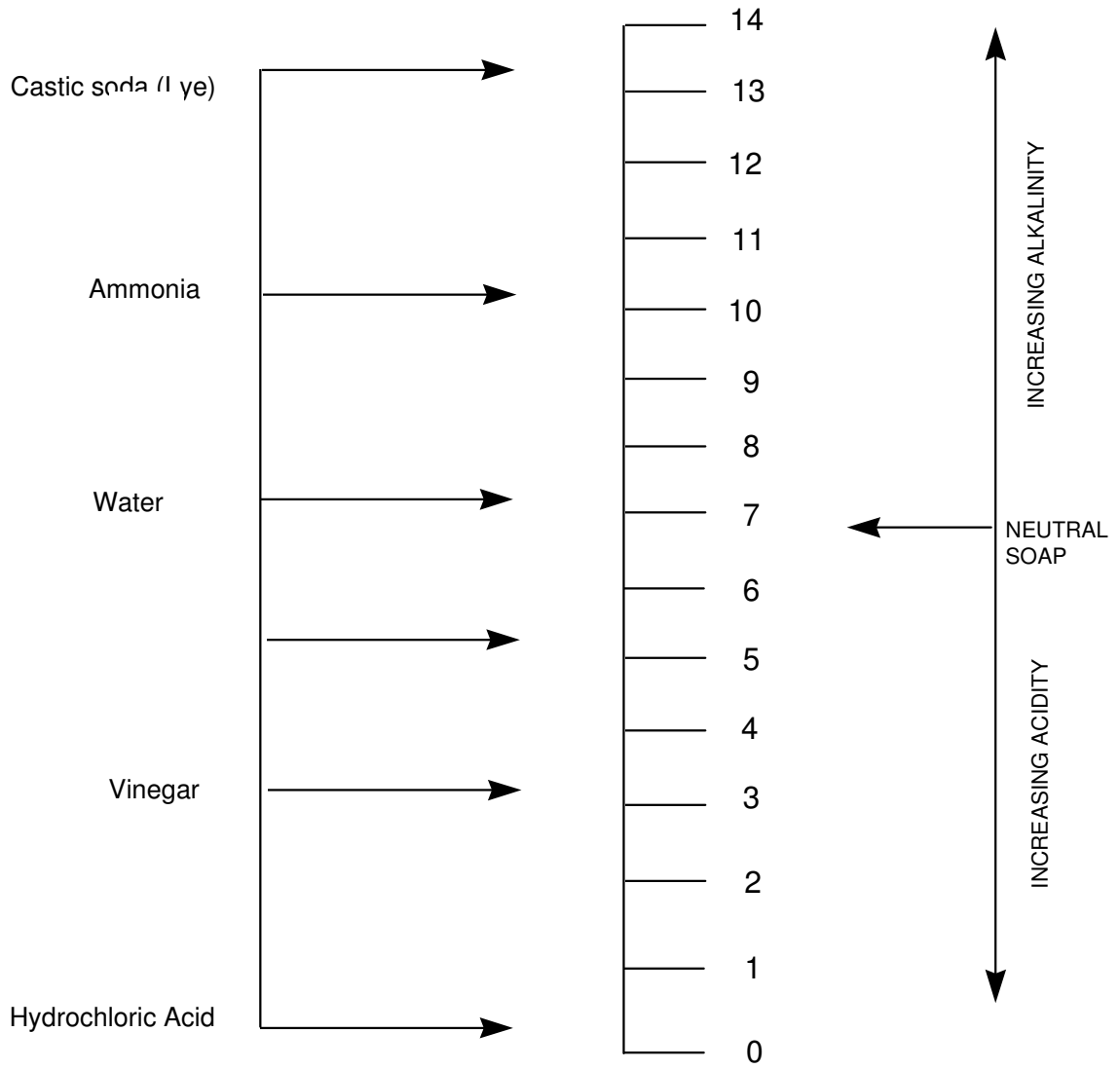
**Mix concentrate
to water***

1 to 4 - -----	32 oz. (1 qt.) per gallon
1 to 8 - -----	16 oz. (1 pt.) per gallon
1 to 10 - -----	13 oz. per gallon
1 to 12 - -----	11 oz. per gallon
1 to 16 - -----	8 oz. (1 cup) per gallon
1 to 20 - -----	6 oz. per gallon
1 to 26 - -----	5 oz. per gallon
1 to 30 - -----	4 oz. per gallon
1 to 40 - -----	3 oz. per gallon
1 to 64 - -----	2 oz. per gallon
1 to 128 - -----	1 oz. per gallon
1 to 200 - -----	2/3oz. per gallon
1 to 256 - -----	1/2oz. per gallon

- fractions of measurements have been rounded to the ounce.

1 cup	=	8 ounces
1 pint	=	16 ounces
1 quart	=	32 ounces
1 liter	=	1.0567 quarts
1 gallon	=	128 ounces
1 gallon	=	3.7853 liters

PH Scale



CARPET

PROJECT: HOW TO APPLY CARPET PROTECTOR

TOOLS & MATERIALS NEEDED:

1. Garden type sprayer with pressure gauge or power sprayer
2. Carpet protector
3. Vacuum
4. Wet Floor sign

PURPOSE:

Carpet protectors provide the chemical ability to protect carpets against soil or oil penetration. In addition, optical brightness improves carpet appearance. Anti-static properties eliminates annoying shock.

Carpet protectors prolong carpet life and reduce the task of shampooing because the soil is held on the surface for easy removal when vacuuming.

PROCEDURES:

1. Vacuum the carpet thoroughly.
2. Remove as much furniture as possible.
3. Any furniture remaining, foil should be put under the legs.
4. Remove stains.
5. Mix chemical according to the directions on the container.
6. Pour solution into a plastic, stainless steel, sprayer or an electric power sprayer.
7. If garden type sprayer is used, key pressure above 40 pounds when spraying.
8. Place Wet Floor sign in area to be cleaned.
9. Hold spray nozzle 12 inches from carpet and apply diluted solution in even, overlapping strokes at the rate of one gallon per 100 square feet.
10. When finished, thoroughly rinse spray equipment.
11. Store all supplies and equipment.

CONCLUSION:

Proper use of a carpet protector provides a reduction in carpet maintenance under normal traffic conditions.

CARPET

PROJECT: HOW TO REMOVE STAINS FROM CARPET

TOOLS & MATERIALS NEEDED:

1. Carpet stain remover
2. Small brush
3. Towels for blotting
4. Wet Floor signs

PURPOSE:

Spots or stains occur when a foreign material is deposited on the carpet. When this happens, it is important to remove it as soon as possible. It is important, also, to find out what the stain is and if it can be removed with a good all purpose carpet stain remover.

PROCEDURE FOR REMOVING STAINS:

1. Test carpet with carpet stain remover in an inconspicuous area before trying to remove the stain.
2. Vacuum the stained area or blot up the stain with a white absorbent cloth.
3. Place Wet Floor sign in area to be cleaned.
4. Hold can at a 45 degree angle and apply stain remover on the stain a layer of foam at a time. Do not overwet the stain.
5. To keep the stain from spreading while cleaning, blot and rub stain from the outside edge of the stain to the center.
6. Spray again. Let set. Agitate lightly with brush.
7. Blot with absorbent cloth.
8. Flush away the remaining stain with water using a trigger sprayer.
9. Blot dry.

CONCLUSION:

It is important to work from the outside of the stain towards the center. When removing stains, it is important that you take the time to work on the stain so it may be removed without spreading or damaging the carpet.

CARPET

PROJECT: HOW TO SHAMPOO USING THE BONNET METHOD

TOOLS & MATERIALS NEEDED:

1. Floor machine equipped with “Bonnet” pad holder
2. Bonnets or carpet pads
3. Gum remover
4. Beater brush vacuum
5. Pump up sprayer
6. Mop bucket and wringer
7. Carpet mops
8. Carpet rake
9. Wet floor signs

PURPOSE:

Bonnet cleaning of carpets is a good method of surface cleaning. This method utilizes a sprayer, a mop bucket with wringer, and a standard floor machine. The cleaning chemicals used are usually applied with a garden sprayer or by immersing the “Bonnet” into a mop bucket with the shampoo in the bucket. Then wring out and place under the floor machine for Bonnet shampooing.

BONNET SHAMPOOING PROCEDURES:

1. Vacuum walk off mats.
2. Clean door entrance mats.
3. Bonnet clean indoor mats.
4. Remove or move as much furniture as possible from the area to be Bonnet cleaned.
5. Vacuum the carpet to be cleaned using a beater vacuum.
6. Place Wet Floor signs in area to be cleaned.
7. Spot clean carpet stains using your Bonnet cleaner or carpet stain remover.
8. Pump up sprayer and spray Bonnet solution on 100 square feet of carpet.
9. Let set five to ten minutes and spray another 100 square feet of carpet.
10. Start Bonnet cleaning on the first 100 square feet.
11. Turn Bonnet over and continue to clean the second 100 square feet.
12. After the second cleaning, soak dirty pad in mop bucket.
13. While pad is soaking, spray another 100 square feet, letting it set for five to ten minutes and while the Bonnet Shampoo is working, spray another 100 square feet.
14. Wring out the soaking pad as dry as possible.
15. Now clean the first 100 square feet and continue on to Bonnet clean the second 100 square feet.
16. Use a clean Bonnet whenever the pads become dirty.
17. Use your carpet mop to get into corners and around other obstructed areas.
18. Rake the nap up.

19. Carpet should be dry in a short time.

CONCLUSION:

The Bonnet cleaning method today is a one-man operation. One man can spray 200 square feet, let the chemical work on the carpet, and ten minutes later he can start his Bonnet cleaning.

CARPET SHAMPOOING

PROJECT: HOW TO CLEAN CARPET USING AN EXTRACTOR

TOOLS & MATERIALS NEEDED:

1. An extractor
2. Vacuum, tank type with hose, wand, and rug cleaning tools
3. Hand scrub brush and bucket
4. Foil or plastic 2" squares
5. Carpet stain remover
6. Extraction Shampoo
7. Optional: upright vacuum
8. Gloves
9. Wet Floor sign
10. Gum remover

PURPOSE:

Carpet extraction provides rapid soil emulsification since most of the cleaners used for extraction are low foaming and non-corrosive. They penetrate into the carpeting and loosen the soil for easy removal while extracting.

CLEANING PROCEDURES:

1. Remove as much furniture as possible from the area to be extracted.
2. Vacuum thoroughly with a beater vacuum.
3. If a wet/dry vacuum is available, vacuum the carpet thoroughly. Thorough vacuuming is important.
4. Place Wet Floor signs in area to be cleaned.
5. Pre-treat traffic lanes and other soiled areas with extraction cleaning solution according to the directions on the container.
6. If stubborn stains are prevalent, spray stains with carpet stain remover.
7. Dilute shampoo according to the directions on the container and fill machine with water.
8. Add defoamer to the hose and tank. Follow the directions on the container.
9. Start extraction shampooing in the upper left hand corner of the room or hall.
10. Follow the machine's manufacturer directions for feeding the solution onto the carpet.
11. Feed the shampoo solution as you pull back on the wand. Avoid over-wetting the carpet.
12. Make four or five passes on the carpet - - 3 foot by 5 foot.
13. Re-vacuum or rinse the same area with the shampoo solution valve closed.
14. Continue extracting the rest of the carpet.
15. Should rinsing be required, empty the extractor and fill with rinse water.
16. Go over the carpet using water only. (follow manufacturers directions on the machine)
17. After extraction or rinsing, brush carpet pile in one direction - - nap up with a stiff brush or shag rake.

18. If furniture needs to be replaced immediately, use aluminum foil under the legs to prevent rust on carpet and damage to the legs of the furniture.
19. Avoid walking on carpet until dry.
20. When carpet is completely dry, remove foil and vacuum thoroughly.

CONCLUSION:

The life span of quality carpet can be substantially increased if shampooing is done on a regular basis. To assure long life and high appearance, it is necessary to develop a program for a cleaner carpet.

Frequent vacuuming is one key to the life of the carpet. The more often a carpet is vacuumed, the fewer particles of soil that will be left in the carpet. Dirt not only diminishes its appearance, it also increases the wear and shortens its life.

9. Coming back across the carpet to your left, one half the machine width with shampoo feed closed.
10. Continue shampooing right and left. If the machine is a 16" machine, move up and back eight inches until the room is completed.
11. Avoid over wetting
12. Hand clean around corners, edges, and other obstructions where the rotary shampoo will not reach.
13. Pick up suds around the corners and in heavy areas with a clean damp mop.
14. Use a stiff push broom and push the nap straight up so it dries thoroughly.
15. After carpet is thoroughly dry, vacuum.
16. If the furniture is to be replaced before the carpet is thoroughly dry, use aluminum foil or plastic squares under all legs. This will prevent rust and damage to the legs of furniture.

CONCLUSION:

The heavy soil is removed by the vacuum which was the first operation. Other soils which discolor the tips of the carpet fibers is removed through shampooing. When the carpet dries, this soil is removed with an ordinary vacuum. Optical brightness in shampoo helps to increase the brightness of carpet after shampooing.