Drapes Manual

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Introduction

Curtains, drapes and blinds are the three main types of fabric window coverings that are commonly used.

Because drapes hang vertically, extra sizing is often added to the fabrics to add body and make them hang with less movement. The sizing could be water-soluble and therefore makes wet cleaning unsuitable. Most drapes you will find are "dry clean only". There are of course some exceptions such as some sheers and fibreglass drapes that can be easily wet cleaned.

Fabrics can come in many colours, weaves, styles, and of course fibres.

Open-weave draperies can be made of any fibre or blend of fibres.

Style Characteristics

Curtains

Curtains are simply flat pieces of fabric, folded over and sewn along the top edge to form a pocket through which the supporting rod is inserted. The curtain is usually made two or three times wider than the window in order to give it a fuller effect.

Thin, very open weaved fabrics called "sheer" or "net" are often used in conjunction with thicker drapes to allow in light but still provide privacy.

"Cafe Curtains" are curtains that are made of two separate parts: one covers the bottom part of the window and another smaller curtain covers the top part.

Curtains are often made from washable fabrics, that can be removed and washed by hand or washing machine.

Drapes

Drapes are probably one of the most common forms of window covering used today. Drapes are made similar to curtains but the header is constructed differently. The header, as it is known, is the top part of a drapery. The header is usually the most heavily soiled portion of drapery. It comprises of the drape fabric with a stiff backing called buckram and gathering tape that forms the pleating along the top. In the gathering tape, there is a row of hanging

sockets into which hanging hooks are placed. Drapes are often made with a double or triple pinch pleat every 100 millimetres or so to allow for the wavy concertina action as the drapes are opened (compressed) or closed (extended). Weights are often sewn into the bottom hem to prevent the drape from hanging out of shape.

Drapes that hang all the way to the floor are called full-length drapes. Drapes that hang only to the bottom of the windows are called casement drapes.

A drop is made of one or more panels of fabric joined into one piece. A number of drops are usually used to cover a window. Usually a minimum of two, but more can be used depending on window width.

Often drapes are made from fabric with special linings. The lining is used to provide the room with insulation, light blocking (darkening) and protecting drapery from the sun. Some drapes are made with a separate lining that is either free hanging or permanently attached to the back of the main fabric.

When drapery has been hanging in a window for more than a year it may become weak, due to the effects of the sun, but usually can be cleaned with proper care.

Inspection of all draperies is a must prior to proceeding with cleaning. When inspecting drapery always inspect for existing watermarks, weak seams between widths and/or presence of holes or tears in the fabric as well as the normal pre-inspection items such as stains and soiling.

Valances, Cornice Boxes and Pelmets

Cornice is an upholstered board or box used to conceal the top pleats of a drapery. Valance is the term used for any fabric that covers the header of a drape or a curtain. It can be made by simply hanging fabric in a decorative manner, with bows and the like (called swags) or can be a frame that is upholstered with the same or complimentary fabric (cornice boxes or pelmets). Swag is the name for a material that is stapled to a top mounting board and draped in scallops to cover the top of the window.

Blinds and Shades

The terms "blind" refers to the construction and operation of any window covering that opens and shuts vertically as opposed to curtains and drapes that open sideways.

Austrian blinds are made of fabrics and are drawn up by strings fixed to the fabric, so that when they are drawn up the fabric hangs in scallops.

Venetian blinds are made from slats of thin metal, plastic or wood that sit in a series of string ladders. They can be opened vertically by pulling on the cord or the slats can be tipped from horizontal to vertical to adjust lighting within the room.

The exception to the rule is "vertical blinds" they are made of slats of fabric that hang on a track that can be opened and closed sideways. The slats can be rotated similar to venetian blinds to let in more or less light.

The term "shade" is used for window coverings that roll up as they are opened.

Window Coverings and Soiling Conditions

Window coverings are subject to some severe conditions, including strong sunlight, moisture, dust, pollution and dirty fingertips. They tend to filter air circulating around, coming into or going out of the room.

Sunlight, heat and moisture can accelerate any existing damage that has been caused by soiling and atmospheric conditions.

Dry solvent cleaning is the method most suitable for drape and curtain cleaning due to the type of fabric and linings that are often used. It also reduces the risk of damage or shrinkage that can be caused through water based cleaning. Also, soiling in window coverings usually have high oil content and oils respond well to dry solvent cleaning. The majority of the soil found on most draperies is particulate matter, which is insoluble. Water based soiling such as general staining, spills and the like does not respond well to dry cleaning, make sure that all these aspects are discussed with the customer prior to cleaning drapes or curtains.

Promoting Additional Services

Most people have blinds that need to be cleaned. If you have been in the carpet cleaning business for a number of years, this probably covers most of your customers.

It is important that you mention to your customers the list of all services that you can professionally deliver. Doing additional work for your existing or new customers while you are already on site can save greatly on all business running costs. These include vehicle, promotional and advertising costs. It is important always to do your best and offer a professional service without making any claims that you can not guarantee to deliver.

A satisfied customer will not only use your service again, but will work as a free advocate for your business by recommending you to friends and associates. However, don't expect a customer to remember who you are, if you don't give them something to remind them of you. There is lots of marketing books out there that can help you in this area. We recommend that

you become familiar with various marketing techniques and select those that are appropriate for your business.

Whatever marketing ideas you use will have minimal effect unless they are used consistently and in conjunction with the quality professional service.

Quality professional service means not only providing promptness and efficiency, it also includes giving value for money and excellent results.

Good Business Practice

Professional drapery cleaners are expected to provide the following:

Quality service

This incorporates a reliable, prompt and efficient service. The client should be advised as to all procedures. The attending technician or technicians should be punctual, polite, helpful, and understanding of the clients' needs in relation to their goods to be cleaned. They should also be correctly attired (wear clean, correct uniform, etc.).

Quality equipment

This means vehicles and equipment that must be readily available and in good working order at all times. All equipment should be properly labelled with the Company name, telephone numbers and address as well as any appropriate safety advice. All equipment and vehicles should be checked and maintained regularly, without waiting for breakages to occur. Each vehicle should be presentable and properly signed written. It should be clearly defined who is responsible for the maintenance of equipment and vehicles to ensure their availability and readiness.

Qualified staff

This requires that all personnel involved in all of the procedures are properly trained and skilled in their areas of involvement. This could include the receptionist (telephonist), office staff, on-site technicians and factory/warehouse staff (at times some furniture cannot be cleaned on site). This could mean attending appropriate Training courses relevant to the job specification of each member of staff involved.

Communication skills are of the utmost importance for all personnel involved in the Service industry.

Documentation

Provision of professional documentation, which means the availability of all appropriate forms, starting with the initial telephone call checklist, pre-inspection forms, through to a final account.

Chemicals, etc.

Provision of chemicals and appropriate ancillary supplies must be constantly maintained and re-stocked. All chemicals should be clearly labelled and stored in appropriately ventilated areas. For all chemicals that are used and carried either at the factory/warehouse, in each vehicle or on site material safety data sheets (MSDS) must be available.

Health and Safety

Ensuring safety is a prime responsibility of any professional. These incorporate provision of a healthy and safe environment for the technician as well as customers.

Chemical Safety

General Chemical Safety

1. Store chemicals securely in correctly labelled appropriate containers.

2. Containers used on site should be correctly labelled

3. All safety data sheets (SDS) must be available wherever chemicals are being used or carried (vehicle, on site, factory)

4. Carry and use protective equipment such as chemical resistant gloves, respirators with appropriate filter cartridges and eye protection.

5. Dispose of waste and unused chemical properly in accordance with local regulations as per Australian and New Zealand standards

6. When mixing chemicals for cleaning drapes always read the label of the container and mix chemicals according to the manufacturer’s directions

7. Always read labels and observe safety considerations

8. Never mix chlorine bleach with ammonia as it creates ammonium gas, which is poisonous

9. Do not sniff chemicals or containers to find out what it is. If in doubt, throw it out

10. Wash your hands well after handling any chemicals or containers with chemicals

11. Avoid skin contacts with chemicals. Acids and alkalies can burn the skin

12. Hydrofluoric acid rust remover has an anaesthetic effect and is dangerous because it attacks skin rapidly and the damage will not be felt immediately. It should never be used without wearing rubber gloves

13. Continuous exposure to even the mildest of chemicals can lead to problems. Nearly all chemicals can have a threshold limit value (TLV). This rates the parts per million at which exposure may become a problem

14. Always cap your chemicals immediately following their use

15. Never leave any chemicals unattended

16. Ensure that children or pets do not have access to the area while chemicals are being used

Solvents Chemical Safety

1. Always store in properly labelled, manufacturer approved containers

2. Wear protection as required

3. When dry cleaning fabrics using an extraction system it is important to use personal protective equipment designed for use with specific solvents

4. When choosing a respirator to use with any dry cleaning solvent, wear an organic vapour respirator and choose cartridges approved for the specific solvent that you are using

5. Disposal of dry cleaning solvent should be done at an approved solvent disposal site and/or in accordance with local laws

6. Do not over-heat solvent as solvents are combustible (can explode)

7. Always provide adequate ventilation during and after cleaning until all fumes have dissipated. This can include the use of drying fans to blow in fresh air

8. When using an extraction system to dry clean fabrics on location always vent the exhaust outside the structure taking care that fumes cannot build up in other areas like underground carparks, basements or go into air-conditioning air intakes and the like

Fibre Identification

The Importance of Knowing the Fibre

The customer has chosen their interior furnishings for a variety of reasons, some of which are, but not necessarily in this order:

1. Looks

2. Colour

3. Pattern

4. Style

5. Price

6. Level of comfort

They will seldom choose their furnishings based on the following:

1. Durability

2. Physical strength

3. Colourfastness

4. Construction

5. Cleanability

6. Resistance to soiling and stains

7. Specific fibre characteristics

Yet, these characteristics are of prime importance to the professional drapery cleaner. There are many different fibres and each has its own set of specific characteristics. There are advantages and disadvantages in each fibre. A person purchasing furnishings will more often than not, be purchasing for emotional reasons (appearance or feel or comfort), and will give little thought to how it is to be maintained.

As a professional cleaner we are called to bring the article back to its original condition or as near as possible to it. To achieve this result we need to understand and identify the fibres, so that correct cleaning procedures can be implemented. We must do everything that we can to remove soiling and stains without upsetting the appearance, feel or comfort of the furnishings.

We need to know in advance that a fabric can withstand certain elements of our Cleaning techniques or whether we need to make adjustments to our techniques and such to match the characteristics of a particular fibre, fabric or construction method. Customers' expectations might also need to be adjusted.

Therefore, identification of fibres and knowledge of fabric construction is of utmost importance to drapery professionals.

Fibres

A single strand of fibre is called a filament. There are two types of filaments: staple and continuous.

A staple filament is a relatively short fibre either natural or synthetic, which is twisted into yarn. They range in length between 9-15 centimetres. It can be made by cutting continuous filaments into short lengths to form staple fibres. Staple filament has to go through a blending and carding process before it is spun into yarn.

A continuous filament is a fibre that runs continuously through the length of the yarn. Continuous filament yarns are only possible in synthetic fibres and silk (a natural fibre).

Fibres can be separated into two categories: natural and synthetic (man-made fibres).

Naturally Occurring Fibres

Natural fibres are produced from living organisms: i.e. Plants, animals or insects.

Fibres derived from plants are referred to as cellulosic or vegetable fibres.

Natural cellulose fibres are cotton, linen and jute. Cellulose fibres contain a reddish-brown gum or binder called lignin. Lignin is readily dissolved in the presence of alkaline cleaning solutions. Lignin makes up about 1% of fully processed cotton and about 24% in jute.

Fibres produced by insects or animals are referred to as protein fibres. These are wool and silk.

All natural fibres are very absorbent, therefore extra drying time or forced drying is required.

Specific Characteristics of Natural Cellulosic Fibres

Cotton

1. it is a staple fibre
2. grows from the flower and seed of the cotton plant
3. Through a process called ginning seeds are removed from cotton fibres
4. the process used to untangle the fibres is called carding
5. following ginning and carding the fibres can then be spun into a fine yarn
6. it is relatively inexpensive

7. it is easily dyed and is relatively colourfast

8. it blends readily with most fibres

9. it is highly flammable

10. it is a very absorbent fibre and for that reason needs assisted drying The same applies to linen and rayon fibres

11. moisture absorbency level before saturation is 20%

12. it is generally wet cleanable

13. it will withstand high water temperatures

14. can not be cleaned with high alkaline cleaning agents (pH 10+)

15. it is sensitive to acid cleaning agents

16. it is best cleaned with a neutral cleaning agent (pH 4 5 – 8 5)

17. can be damaged by bleaching agents

18. can be permanently stained by sweat and soiling

19. can be subject to browning, which can be prevented by controlling the amount of moisture applied, pH of the chemicals used and rapid drying

20. a binder present in cotton plants that can dissolve in water based solutions and cause browning is called lignin

21. glazed, polished or chinz cotton has a shiny finish

22. Polished cotton may loose its shiny finish in heavy use areas over time due to exposure to oily soils and abrasive wear. Mainly occurs on arm rests (top arm) and head rests

Incompletely ginned cotton (Indian or Haitian)

Indian or Haitian cotton is minimally processed (not completely carded and combed), which gives it a more natural, earthy look. Incompletely ginned cotton is turning up in finer grade fabrics these days and can be difficult to identify. Any fabric that contains cotton, even some satin and jacquard fabrics may contain cotton seed particles that have not been removed in a ginning process. The brown specks found in these fabrics contain tannin, which is a vegetable dye. Presence of moisture can cause this dye to run, causing intense staining. These fabrics require special treatment and attention both when cleaning and drying. Extra time should also be allowed both for cleaning and drying. Alkaline cleaning agents will affect tannin, therefore neutral or slightly acidic cleaning agents should be used.

Linen

1. a fabric woven from fibres obtained from the stem of the flax plant
2. generally used in flat weave styles
3. a staple fibre that becomes stronger when wet
4. moisture absorbency before saturation is 20%
5. can cost more than cotton and can be quite expensive
6. it is easily dyed and is often print dyed, but can be prone to crocking (rubbing off)
7. it is very flammable
8. it is very absorbent and often requires assisted drying
9. spotting linen fabric is often difficult because it absorbs the spot or stain
10. it is wet cleanable with high temperatures
11. can be damaged by high alkaline cleaners (ph10+)
12. can be damaged by bleaching agents, mineral acids and rust removal chemicals
13. can be permanently stained with sweat and soiling

14. can become brittle with age Therefore, care should be taken not to over agitate

15. when wet cleaning, mild acid rinse should be applied at the end of the process

PROTEIN FIBRES

Wool

1. is a protein fibre

2. it is a staple fibre

3. it grows on sheep and some other animals
4. the fibre is clipped from the skin of the sheep

5. it is then cleaned, blended with wool from other sheep

6. it is then carded and combed (a process called worsting)

7. it is then spun into a yarn

8. it has unique properties of strength, durability and flame resistance

9. it is usually quite expensive (compared to synthetic fibres or cotton)

10. it is easily dyed but fastness can depend on the quality of the dyes and the dyeing process

11. can be blended with other fibres

12. it is absorbent and can hold moisture even though the surface may feel dry

13. moisture absorbency before saturation is about 17%

14. it is wet cleanable with low pH and acidic solutions

15. can be damaged by strong alkaline agents

16. the international wool secretariat and wool fibre produces recommend that wool fabrics be cleaned with solutions that have pH between 4.5 and 8.5, and that have specifically formulated for wool

17. can be damaged by using very hot water or very hot dry solvent

18. will dissolve in sodium hypochlorite (chlorine bleaches)

19. can be easily stained by food acid dyes

20. it looses strength when wet and can distort the integrity of the yarn if over- agitated

21. as wool ages the fabric becomes weaker and therefore more susceptible to reactions from cleaning chemicals

Silk

1. silk is a protein fibre

2. silk fibres are produced by silkworms

3. it is a continuous filament fibre

4. It is a very strong fibre, which means it can be made into very fine yarn and therefore a very fine fabric. It consists of two strands of fibroin (80%) which are adhered with seracin or silk gum (20%)

5. it is usually the most expensive fibre

6. it can be easily dyed but fastness can depend on the quality of the dyeing

7. it has a naturally high lustre, suits satin weaves, and can be blended with other fibres to add thickness to the fabric

8. it is flammable

9. It is relatively absorbent. Moisture absorbency before saturation is up to 30%

10. it can be wet cleaned with extreme caution because protein in silk is very sensitive to cleaning chemicals

11. cleaning temperature should be kept below 60ºc

12. do not clean with high alkaline chemicals. Like wool, it prefers the chemical pH range 4.5 to 8.5

13. can be permanently stained

14. can water stain easily

15. fabric can degrade under heavy soiling

16. when silk fabric has been exposed repeatedly to perspiration, during cleaning, the fabric can be brittle and prone to split

17. extreme care needs to be taken as the fibre can be stretched with high vacuum pressures and will not return to its original shape

18. it will snag on any slight roughness on your hand tool

19. spot and stain removal can be severely restricted due to agitation restrictions and chemical restrictions

Synthetic Or Man Made Fibres

Manmade fibres can be produced in a variety of ways and will be from two main sources.

Vegetable or cellulose: rayon and acetates

Mineral: oil, coal, and natural gas: nylon, olefine/polypropylene, acrylic, and polyester.

Glass fibre (fibreglass is sometimes used in drapery) Synthetic fibres in general are less absorbent than natural fibres, therefore less drying time is required.

Rayon is an exception due to its extreme absorbency.

Rayon

1. rayon is a man-made fibre but it is made from cellulose material (cotton or wood pulp)

2. For cleaning purposes, cleaning technicians should treat rayon as a natural cellulosic fibre.

3. manufactured by taking sheets of cellulose and treating it with an alkaline solution

4. it is then regenerated into a fibre

5. it is extruded as a continuous filament

6. it can be made into a fine, high lustre fibre and is relatively inexpensive

7. it is easily dyed but not particularly colourfast

8. can be blended but this is not usual

9. it is highly flammable (like cotton)

10. It becomes very weak when exposed to moisture, and can lose up to 76% of its strength. It is considered to be the weakest of all the fibres when wet.

11. It is very absorbent, similar to the absorbency of cotton. Moisture absorbency before saturation is up to 20%

12. it is subject to distortion and shrinkage during cleaning

13. can be damaged by using high alkaline cleaning agents (ph10+)

14. can be damaged by bleaches

15. can be permanently stained with sweat and soiling

16. can be subject to browning

17. can be easily damaged by agitation especially when wet

18. Can be sensitive to heat. Cleaning with very hot water can result with creases on fabric. Cleaning temperature is recommended to be kept below 80ºc

Acetate

1. this fibre originates from cellulose compounds but is reduced to liquid by various chemicals with names like glacial acetic, acetic anhydride and acetone

2. it is then extruded as a synthetic fibre

3. it is a continuous filament fibre

4. it is a high lustre fibre

5. it is often blended with other fibres to add lustre to the finished product

6. it is relatively inexpensive

7. it is easily dyed and is often print dyed but is not particularly colourfast

8. it is not very absorbent and will dry quickly

9. it is wet cleanable

10. it will withstand fairly high temperatures

11. can be damaged by using high alkaline or high acidic cleaning agents

12. will dissolve in acetone (nail polish remover)

13. can be permanently stained by sweat and soiling

14. can be subject to colour run

Nylon

1. nylon is a man-made polymer fibre, which is extruded and drawn under molten conditions

2. it is a very strong and resilient fibre

3. a continuous filament fibre can be cut into staple lengths for blending and carding

4. can be crimped or bulked to give a variety of textures and can be treated with a variety of finishes to give good stain and soil resistance

5. it is relatively inexpensive

6. it is easily dyed with acid dyes and is very colourfast

7. it can be blended with other fibres

8. moisture absorbency before saturation is about 4%

9. It is easily wet cleanable.

10. it will withstand very high cleaning temperatures

11. can be damaged by using high alkaline cleaners (ph10+)

12. it will completely dissolve in formic acid

13. can be stained by sweat and soils but a variety of stain removal treatments can be used

14. nylon fibres that are not treated with dye blockers are easily stained by food acid dyes such as cordials

Polyester

1. a man-made polymer extruded in molten state

2. it does not have the strength of nylon and is usually found in courser denier fibres

3. it is a continuous filament fibre that is usually dyed with disperse dyes

4. It is can be bulked or crimped to give a variety of textures. It is often used in drapery sheers

5. it is fairly inexpensive

6. it has a plastic feel and is often used with cotton yarns to give it a more comfortable feel

7. it is not very absorbent to water but is absorbent to oils

8. moisture absorbency before saturation is about 0.5%

9. it is easily wet cleanable and most soils are readily removed. It also dries fast

10. it can withstand high cleaning temperatures

11. can be damaged by using high alkaline cleaning agents (ph10+)

12. can be stained by oils in sweat and other oils due to its oleophilic properties. As the result will yellow with age

13. dry solvents may need to be used for removal of oils

14. often used to manufacture microfibre, which is a man-made fibre finer than silk (weight in rams of 9000 metres od microfibre is 1 denier)

Acrylic

1. acrylic fibre is a man-made polymer fibre

2. it is the synthetic fibre that most resembles wool in its appearance and is stronger than wool in durability performance

3. it is not as strong as nylon and is usually made in thicker deniers

4. it is a continuous filament fibre

5. it is usually cut into staple lengths and crimped to resemble the texture and appearance of wool

6. it is relatively inexpensive

7. it is usually solution dyed and is extremely colourfast and is rarely affected by most bleaching chemicals

8. it can be blended with other fibres

9. it is resistant to oils

10. moisture absorbency before saturation is about 1-2%

11. it is easily wet cleanable

12. it will withstand higher cleaning temperatures

13. By itself, can be cleaned with higher alkaline chemicals (ph10+). When blended with other fibres, the use of these chemicals is not recommended

Olefine / Polypropylene

1. Olefine is a synthetic, man-made polymer fibre. It is also commonly known as polypropylene

2. it is solution dyed and extruded as a fibre

3. does not have the strength or resilience of nylon and is usually found in thicker deniers

4. recent improvements in manufacture have seen finer, more resilient fibres being made

5. it is a continuous filament fibre

6. it can be cut into staple lengths and bulked to give a variety of textures

7. it is inexpensive

8. it is very colourfast

9. it can be blended with other fibres

10. by itself it is often used to make thick and light, open weave fabrics

11. It absorbs oils and has extremely low water absorbency. Moisture absorbency before saturation is about .01%. Olefin is a hydrophobic fibre.

12. Due to its hydrophobic properties, olefin is difficult to stain and can be described as the most difficult fibre to stain. However, if some staining does occur, olefin can be safely bleached with ½ to 1% solution of sodium hypochlorite.

13. it is easily wet cleanable

14. it has low melting temperature and if exposed to intense direct sunlight, like all synthetic fibres, may become brittle and split easily

15. due to its oleophilic (oil loving) property it attracts oily soils that may cause fibre to yellow over time

Fibre Identification Tests

It is important to note that a bunch of fibres are spun together to form a yarn. Many different yarns are woven together to make a fabric. A fabric can be composed of many different types of fibre. Even a piece of yarn may be composed of different types of fibre.

Before carrying out any drapery cleaning it is important to test the fibre to identify the presence of cellulosic or protein fibres.

Fibres can be identified by using the chemical test or burn test or combination of both. Chemical tests are more precise, however as this test can not be used for all fibres in on-location situation, the use of burn test can be very effective for identifying drapery fibres.

By observing the results of the burn test you may be able to identify, with reasonable accuracy, the fibres used in a piece of fabric. You will then be able to adjust your cleaning chemicals and procedures according to the limitations or needs of the various fibres that you identify in the piece of fabric.

Fibres that can be precisely identified by using chemical tests are wool, nylon and acetate.

Wool will completely dissolve in chlorine bleach. It is a slow process and at times might take up to 10 minutes for wool fibre to dissolve completely.

Nylon will dissolve completely and very rapidly in formic acid.

Acetate will dissolve completely in acetone (nail polish remover).

When using chemicals for fibre identification the following precautions should be taken:

1. Make sure all solutions are capped

2. Wear protective gloves when handling solutions

3. Do not inhale fumes

4. Use forceps when handling fibres submerged in solutions

5. Use correct disposal procedures for excess solutions

When performing on-location chemical test, ensure that any possible spillages cannot cause damage to customer's property.

Items Required For Burn Test

1. Butane lighter (matches are not advisable, as when lighted they give out pungent Smell, that can mask the smell of the fibre being tested).

2. Tweezers for holding fibre while being tested.

3. Scissors to cut the strand of fibre.

4. Magnifying glass can be helpful as at times only very small strands of fibre can be obtained.

Procedure:

1. Find and cut a small piece of fabric that can be cut from the drapery without causing any damage to the fabric's appearance. It can be usually found behind a cushion zipper. A sample should be taken from all parts of a fabric which appear to be different or are likely to be different.

2. It is recommended not to do the burn test over customer's property. Carry out the test over the sink or other surfaces not affected by heat or flame. Weather permitting it is advisable to do it outside.

3. Hold the cut sample of fabric by using tweezers.

4. Light the butane lighter and slowly approach the fibre with the flame, but do not ignite the fibres at that stage. Observe the reaction. Do the fibres shrivel away from the flame? If they do it is some indication that the fibre may be synthetic or protein.

5. Then move the flame to ignite the fibre. Once lit remove the butane flame.

6. If the sample continues to burn, blow it out.

7. To properly execute a fibre burn test you need to observe the following:

    7.1. flame action

    7.2. flame colour

7.3. Colour and odour of the smoke.

7.4. Was there a glow remaining for a time after the flame was extinguished?

7.5. After the sample has cooled, pinch the burnt end with your fingers.

7.6. What colour is the ash? What is the characteristic of ash? Crumbly, fine powder, hard bead or a combination of these?

CAUTION! Do not place the burning or freshly burnt fibre near your nose. It may still be very hot! With your hand, fan the odour of the burnt sample to your nose.

Assessing Result Of The Burn Test

Drapery fabrics are frequently blends of different types of fibres, therefore the technician may not always be able to identify every fibre type.

You are basically looking for fibres that can present potential problems during the cleaning process or that require specific treatment.

The burn test is an indication only. It is not considered to be a scientifically accurate test. Caution should always be exercised when cleaning drapery.

Practicing the burn test and the assessment of the results will improve the accuracy of your findings. Fabric samples can often be obtained from a drape or blind shop. Their display samples will often tell you what fibre or combination is used, so that you can practice the burn test to confirm the labelling on the sample.

The burn test chart should be studied and always be carried on site and used during burn test.

Fibre Burn Test Chart

Fibre	**Flame/smoke**	**Odour**	**Ash**
Acetate	Sputters orange flame	Acetic acid	Hard black bead
Acrylic	Orange sputters Dark smoke	Charred meat	Irregular, hard

Cotton	Scorches near flame. Yellow flame. Continues to burn. Ember when extinguished.	Burning paper	Powdery grey ash
Linen	Scorches. Yellow flames. Continues to burn. Ember when extinguished.	Burning paper	Powdery grey ash
Nylon	Blue base orange tip. Burns evenly. Puffs white when extinguished.	Celery	Black round hard bead
Olefine/ polypropylene	Draws away from flame. Blue base orange tip. Burns evenly.	Bitumen (asphalt) or hot tar	Round brown bead
Polyester	Orange flame Burns evenly Dense black smoke	Fruity	Round hard black bead
Rayon	Yellow-orange flame. Burns evenly. Grey smoke. Ember when extinguished.	Burning paper	Powdery grey ash
Silk	Sizzles orange flame. Burns unevenly.	Similar to burning hair	Round crumbly ash
Wool	Sputters orange flame. Self extinguishes.	Burning hair	Black crumbly ash

DYEING AND COLOURINGS

Dyeing is achieved in a number of ways depending on the fibre being used. The Decision to use a certain fibre will sometimes depend on the desired pattern.

To achieve a pattern that is woven in, as in a jacquard weave, the yarn must be dyed first. To achieve a pattern that is printed onto the fabric, you must select a fibre that will take in dyes or paints after the fabric is woven.

The dyer must select a type of dye that will suit the fibre to be dyed. Most common dyes currently being used are; acid dyes, disperse dyes and pigments. A basic knowledge of dyeing can help you with cleaning and stain removal. For example; primary colours, from which all dye colours are derived, are red, blue and yellow. Therefore, an orange spot on brown fabric may be a loss of blue dye.

The knowledge of colour theory will allow the technician to identify this occurrence and to treat it accordingly.

Methods Of Dying

Solution dyeing

It is a process in which dyes are added to liquid polymer prior to extrusion into fibres. The colour becomes an integral part of the fibre and is all the way through the fibre. It generally produces a very colourfast result. Fibres can be left in continuous filaments or can be cut into staple lengths for blending and carding.

Stock dyeing

It is a process in which a staple fibre has been manufactured and then dyed before it is carded and spun into yarn. Cotton and wool are often dyed using this process, and if a number of coloured fibres are blended and carded together, a multi-coloured yarn can be produced. Tweeds and Berber look fabrics are produced in this way.

Skein dyeing

Yarn is sometimes produced with undyed fibre in bulk quantities to save on costs. This undyed yarn can then be skein dyed in amounts to suit a customer's need, or for a particular run of fabric. Different coloured yarns can be woven together to form patterns such as jacquards and tartans.

Piece dyeing

It is a process that adds dye to fabrics after being manufactured. Fabric is sometimes made from undyed yarn in bulk quantities to save costs. This fabric can then be dyed in selected pieces to suit a customers' need, or for a particular run of fabric. This method can produce only one colour on a piece of fabric unless dye-inhibiting methods are first applied.

Print dyeing

It is a process in which a pattern is printed onto the surface of the fabric. Intricate and colourful designs can be produced in this manner, but it will only work on fibres that will absorb dyes or paints.

Fabrics, Weaves and Textures

A Fabric

A fabric is produced by intertwining yarns of fibre to form a flat sheet which can Then be cut into shapes that can be sewn together to form clothing, drapes or upholstery coverings.

This is accomplished on a loom. A loom can be a simple wooden frame used for Hand weaving, or a large, complex, computer controlled machine weighing several tonnes.

Yarn that runs the length of the fabric or lengthwise are called warp yarn. The yarns that run across the fabric (or 90° to the warp yarn) in the weaving process are called weft yarns.

A Weave

A weave is the way the fabric is put together, to achieve a variety of textures or patterns.

Terms such as plain (basket), satin, jacquard, brocade, brocatelle, velvet, crushed velvet, woven velvet, flocked velvet, velour, velveteen, corduroy, are particular styles achieved by different weaving methods. They can all be woven from a variety of fibres or yarns. Drapery fabrics are frequently blends of different types of fibres. They can also be mixtures of weave styles. Some sections of a pattern can be made up of velvet weave and some may be flat or satin weaves.

A Texture

A texture is the feel or physical appearance of the fabric. Various combinations of Fibre, yarn, and weaving style can achieve different textures. Textures can be created after a fabric is woven such as in moire fabrics or quilted fabrics.

Cleaning Requirements Based On Weave and Texture

Certain fabric weaves and textures require special cleaning techniques. By understanding different weaves and textures, we can choose the most appropriate cleaning and grooming processes that will achieve the best result without causing damage to the fabric's feel or appearance. It is important to remember that it is often the appearance or texture that appealed to the purchaser in the first place.

The responsibility of professional drapery cleaning technicians is to remove the most soil from the fabric without changing the colour or texture of it.

Characteristics of Weaves and Textures and Their Relationship to Cleaning

There are four basic types of weaves; plain, basket, twill and satin. All other weaves are generally derived from one of these weaves. Weave is a system or pattern of intersecting warp and filling yarns. All types of weaves should be treated with care and can be considered as non-durable, as the weave, due to its construction can be damaged in a process of cleaning.

Plain/Flat/Basket Weave

1. This is the simplest form of weaving.

2. The weft yarn is fed over one warp yarn and under the next, then over the next warp yarn and under the next and so on.

3. If the weft and warp yarns are of the same yarn type a strong flat fabric is produced.

4. By using fine yarns thin, smooth fabric is produced.

5. By using thicker yarns, thicker fabric is produced.

6. This weave is suitable for plain colours, checked striped or tartan patterns. They are achieved by simply loading the loom with different coloured yarns.

7. Fabrics woven with this type of weave are the most suitable fabrics for print dyeing because they are so flat.

8. The surfaces of fabrics are even in appearance and feel.

9. These fabrics are generally easy to clean because the flat weave is evenly tensioned in both directions. It is quite strong and can withstand quite aggressive cleaning without distorting the texture.

10. Plain weaves that require special consideration are weaves where combinations of thick (weft) and thin (warp) yarns are introduced. In this case the texture is not flat. When agitated, the edges of the yarn can be caught and disturbed. Therefore these natural, minimally twisted, cotton yarns should always be cleaned and agitated in the direction of the thicker, filling or weft yarn. An example of this weave is the older style Indian or Haitian cotton.

Satin Weave

1. Many people mistakenly believe that satin is a type of fibre or is a fabric made from silk and that this is the reason for it feeling smooth. The word “satin” actually refers to a type of weave. Usually the fibre used in a satin weave has a lustre or shiny finish.

2. The smooth finish is achieved by altering the weaving style on the loom. Unlike a plain or basket weave, where the yarns go over one and under the next and so on, the yarn in a satin weave goes over a few yarns and under one repeatedly.

3. Satin weave is considered less durable than other weaves and is characterized by the presence of floating yarns.

4. In a satin weave, the surface yarn all ends up running in the same direction giving the fabric its smooth look and feel. The effect can be felt by scratching the fingernail along the fabric and then across it. It will feel smooth one way and rough the other way.

5. The direction of the weave needs to be established for cleaning purposes. Satin weaves should always be cleaned in the direction of the yarn that feels the smoothest.

6. If a cleaning tool is dragged or brushed across the floating yarns (yarn that is not secured by the next weft or warp yarn), you can damage the effect or break the yarn.

Moire

1. Moire is a textured fabric that is sometimes mistakenly called satin because of the shine on the fabric.

2. The surface of moire appears to be a wavy watermarked pattern on a shiny material. This part of the design is impressed on the surface coating material by rollers, heat and pressure. As you move about near the fabric its surface reflects light in different directions giving a cloudy effect.

3. The moire effect can also be impressed directly onto some synthetic fibres.

4. The surface coating is often water-soluble and can be removed by wet cleaning. Dry cleaning only is recommended for this particular fabric.

Jacquard, Brocade or Brocatelle Weave

1. These are the names of weaves produced on a very complex, computer (punch card) controlled machine called a jacquard loom. Jacquard loom is able to create intricate woven fabric usually with elaborate patterns.

2. A pre-set design is “programmed in” and the loom is loaded with the yarns in a predetermined order. The loom brings the colours to the surface of the fabric only where it is required, to form the coloured pattern. When the colour is not required in the pattern it floats on the reverse side of the fabric, out of sight. A raised (brocatelle) or lowered (brocade) pattern can also be created.

3. These weaves can be identified by looking at the reverse side of the fabric. If the pattern on the back of the material appears in reversed colours to the surface yarns, it is a jacquard woven fabric.

4. Jacquards can be woven with different fibres. Some may be colour fast and some may not.

5. They are usually quite thick, as there can be a number of layers of yarn. This can slow drying times, which can lead to colour runs.

6. Different colours can be in close proximity although they may not be seen from the face side of the fabric.

7. Plenty of time should be allowed for pre-testing, as colour runs may not become evident until the fabric is dry. Plenty of times should also be allowed for testing chemicals. It is advisable at times to remove a cushion and take it back to the factory for pre-testing. When cleaning these weaves assisted drying is also recommended.

Velvet, Velours, Velveteen, Corduroy

1. These fabrics have a cut pile design, with the presence of face pile similar to cut pile carpet. Velvet fabric does not refer to the type of yarn used but is considered a type of weave. This type of weave is noted for its soft hand or feel.

2. There are a number of ways to achieve this weave and a number of different textures that can be accomplished. These will affect the depth, softness and durability of the fabric as well as the cleaning approach that needs to be implemented.

3. Velvets can lose pile from normal wear and use. Sweat and soiling can weaken adhesion, or pile fibres, or backing fibres depending on the method of Manufacture or materials used. The fabric should be thoroughly inspected prior to cleaning, mainly identifying worn out and damaged areas, that can be then pointed out to the customer before any work is initiated.

Woven Velvet

1. In woven velvet, the pile is woven in, and is an integral part of the fabric.

2. It can be made from many types of fibres. The fibre in the pile can be different to the fibre in the backing. The pile will usually have a definite lay (or nap). When rubbed, the hand will move freely one way and will meet friction or resistance the opposite way.

3. Most velvet fabrics need to be groomed at various stages in the cleaning process.

4. The pile should be lifted with a carding brush before vacuuming to loosen soiling.

5. When cleaning velvet drapery made with natural pile fibres groom the pile immediately after extraction of each section. A carding brush can be used to set the nap in the

direction of the lay of the pile to remove tooling marks. However, should the carding brush leave brush marks then a folded clean dry nappy can be used to set the nap. DO NOT a carding brush on flocked velvet as it can cause permanent damage

6. After cleaning and setting the nap, and in the very last stages of drying, the pile should be brushed with a velvet fluffing brush to fluff and soften the pile. If it is not done, the fabric can end up feeling hard and scratchy. Following the cleaning with the water-based solution of all velvet drapery, (made of either natural or synthetic fibres) the pile will have to be brushed.

7. The extra grooming required will add considerable time to the job and should be explained to the client and allowed for in job costings.

Crushed Velvets

1. A crushed velvet fabric is one that has a random, intentional distortion of the pile. This effect is achieved under hot moist (steamy) conditions, which sets the pile in different directions.

2. Hot water extraction of crushed velvet re-creates those conditions and can and generally will remove the random crush.

3. "Dry cleaning" is the recommended process but soil removal may not be as good as with wet cleaning.

4. The customer should be advised about the pros and cons of wet and dry cleaning. If the customer decides to wet clean this type of weave, then it is recommended for the disclaimer form to be signed by customer prior to starting the job. This form should incorporate all side effects of wet cleaning, primarily the loss of the crush, and customer acceptance of this occurrence. It is also recommended to advise the customer that crushed velvet drapery should be cleaned more frequently with the dry cleaning process, to reduce soiling build up.

5. Crush can sometimes be partially restored by patting the fabric dry with a scrunched up piece of towelling.

Please note; the crush in crushed velvet can be worn off and may not be restored using any cleaning process.

Flocked Velvets

1. Flocked velvet is a special case. It is important to be aware of it as it can be easily damaged in the process of cleaning. Pile in flocked velvet is attached to a backing fabric with a glue (similar to fusion bonded carpets). If the glue gets damaged the flocking can easily be removed, thus causing damage to the appearance of the fabric.

2. Solvents of any kind should not be used as they can cause damage to the glue.

3. Detergents, spotters or cleaning agents should be used with care and only after careful and thorough pre-testing as they can also cause damage to the glue.

4. Over aggressive agitation or extremes of temperatures may also cause damage to the glue.

Quilted Fabrics

1. Fabric with three layers sewn together in a stitched pattern, which creates raised areas, is referred to as a quilted fabric. It adds a third dimension to an otherwise flat fabric or pattern. It is similar to a sandwich effect where two layers of fabric, separated by a soft filling, are sewn together. The sewing is often done in stripes or squares and is usually close together to avoid too much puckering or folding of the filler. Sometimes the sewing will follow the lines of a pattern in the fabric to add a three dimensional, puffy effect to the pattern

2. It is important to check the backing fabric as well as the face fabric for colour run.

3. It is important to check that cleaning agents do not affect the filling material.

4. In addition, it is important to check the stitching that makes the quilted effect for signs of pulling. Care should be taken while cleaning that stitching is not disturbed.

5. Assisted drying is recommended due to the thickness of the overall layers of fabric.

Twill Weave

A fundamental weave characterised by diagonal lines produced by a series of floats staggered in the warp directions. The floats are normally formed by filling. Filling yarn can be any yarn running across the width of the fabric perpendicular to the warp yarn.

Novelty Yarn

A yarn produced for a special effect. Novelty yarns usually have interwoven irregularities. The finished fabric will determine the type of fibres that are required and the way the fibres are spun together to form the yarn. For example, to achieve a smooth shiny finish, we would need to use a smooth fibre and spin it into a very tight yarn, which we can then weave into smooth flat finish, like satin. If we want a multi-coloured or textured finish we could use a multi-coloured or multi-textured (novelty yarn), which is made by spinning together different types and colours of yarn in more random pattern. Novelty yarns are made of core, effect and binder yarns. When it is woven into a fabric it produces a variety of coloured and texture effects such as chenille, boucle and ratine.

The Importance of Pre-Inspection and Pretesting

The first and most important step in drapery cleaning is the pre-inspection and pre-testing. An informed opinion regarding the best method of cleaning or spotting to be used, can only be achieved following the thorough inspection and testing of the piece to be cleaned. When you are informed that a drapery fabric is expensive, you cannot be certain that it won't bleed, brown, or shrink.

Most potential problems that can be encountered in drapery cleaning can be identified with a thorough pre-inspection and pre-testing.

Always pre-test fabrics for colour (dye) stability even if you think you know the fabric and are confident that no problems exist.

Thicker fabrics such as jacquard, should be tested overnight as they have a tendency to hold more moisture and dry slower and colour bleeding can occur just before completely drying.

Following pre-inspection and pre-testing, you can discuss the price and give the customer realistic expectations regarding the possible outcomes of the drapery cleaning job. When arriving at a job site for the first time it is most important to speak to the customer and determine what type of fabric their drapery is made of. This time spent with the customer prior to proceeding with the job is most valuable as it can eliminate misunderstandings and any potential problems.

Use a pre-inspection and pre-testing list (sample provided at the end of the section) so that you do not miss anything and you can use it to discuss the job with the customer.

What to Look For In the Pre-Inspection

When we carry out our pre-inspection we are looking for things that could cause us problems before, during and after the cleaning procedures.

They are things such as:

1. Age and condition

2. Soiling

3. Spots and stains

4. Fading or other colour loss

5. Existing colour bleeding or dye run

6. The possibility of colour run or bleeding

7. Browning or other colour gain

8. Residues or results of previous cleaning

9. Metal or wood trims that could cause staining

10. Manufacturers little surprises (ink lines and such)

11. Glues or fillings that may change with age

12. Anything else that could adversely affect the success of the job. Remember: drapery fabrics that have excessive soiling may be permanently discoloured or stained.

Procedures for Pre-Inspection

1. ***Ask Questions***

Ask the customer questions like the following:

1.1. The age and any previous cleaning history of the furniture (methods used and frequency).

1.2. What the spots and stains may be and how long they have been there.

1.3. If there are any particular concerns or problems that the customer knows of.

1.4. If they are aware of any stain protective treatment applied.

2. ***Location***

Take a note of the location.

2.1. Is it or has it been exposed to sunlight?

2.2. Is it or has it been near a kitchen or other source of oily fumes (fireplace)?

2.3. Current and previous locations of the furniture that might indicate the type and frequency of usage.

2.4. Surrounding environment (high pollution, dusty, highly humid area, etc.).

2.5. Are there any smokers in the premises?

3. ***Visual Inspection***

Inspect each piece of the furnishing and make note of any problems or pre-existing conditions.

3.1. Look for pre-existing conditions that may affect the appearance of the furnishing:

3.1.1. Stains, existing water marks, spots

3.1.2. Colour damage. Colour added (e.g. browning, cordial stains) and colour loss (e.g. bleaching and fading)

3.1.3. Shrinkage

3.1.4. Loss of watermark effect on moire fabrics

3.1.5. Loss of pile set in some velvets, stiff or scratchy feel in velvets

3.1.6. Loss of glaze in polished cotton

3.1.7. Note the type and amount of general soiling

3.1.8. Weak or torn seams, presence of holes or tears

3.2. Look for signs of physical damage to the fabric:

3.2.1. Frayed edges.

3.2.2. Pilling. A good way to remove pilling from drapery is to shave the fabric with a fabric shaver or shear.

3.2.3. Tears, holes, burn marks or other signs of neglect or abuse.

3.2.4. Loose or broken stitching.

3.2.5. Presence of shrinkage.

3.2.6. Bacteria can grow in moist soiling conditions and can destroy cellulose and protein fibres. Sometimes the soiling is the only thing holding the fabric together. If you clean it incorrectly the broken down fibres may break down further.

3.2.7. Chemicals from body oils can also damage fibres.

3.3. Identify and categorise spots and stains:

One of the best ways to find out about a particular spot or stain is to ask the customer. They will usually be able to give you a historical account of it. How long it has been there and what they may have done to it to try and remove it. This is important to you in order to have the best chance of removing it. Some stains can set with time and may be impossible to remove. Some treatments used by customers can set stains that would otherwise have been easier to remove.

3.4. Some things to remember about spot and stain removal.

3.4.1. Never promise to remove any spot or stain.

3.4.2. Most upholstery consists of a blend of fibres. Your spotting or stain removal may be limited by the restrictions of the most delicate fibre in the make up of the fabric.

3.4.3. Some stains or soiling may remove easily from certain parts of a jacquard pattern and not remove from other areas. This can be due to the mixture of different fibres used in different yarns that make up the patterns.

3.4.4. You have to remember that a certain chemical may be all right to use on a particular fabric, but the backing material or fillings may be affected.

3.4.5. Sometimes, no matter what you do, certain degradation or discolouration's can remain after cleaning.

3.5. Determine the possibility of, or nature of any colour damage:

Always test a fabric for colour stability even if you are confident that no problem exists. Bleeding occurs in a fabric after cleaning when colours migrate into an adjacent area of damp fabric.

3.5.1. Colour run or wet crocking – movement of dyes to other areas of the fabric in the presence of water. It can happen straight away, but often it happens in the very last stages of drying.

3.5.2. Colour loss and colour fade. Dyes are lost due to chemical reactions, atmospheric conditions or sunlight. Both colour loss and colour fading are permanent conditions. Fading frequently found on older drapery fabric is always permanent and can never be corrected with cleaning. Dye loss is often due to the chemical called benzoyl peroxide, found in acne medications.

3.5.3. Prolonged sunlight exposure can also cause some breakdown of the fibre, consequently making it brittle and therefore can possibly be damaged when disturbed during the cleaning process.

3.5.4. Colour damage due to stains.

3.5.5. Crocking -colour transfer to another fabric in a dry state.

Note: When wet cleaning drapery, a procedure that helps stabilise dyes to keep them from bleeding involves using an acid pre-spray and/or rinse and drying fabrics quickly.

3.6. Determine the presence or possibility of browning (brown or yellowish discolouration).

3.6.1. Cellulose fibres, especially incompletely ginned cotton (Indian/Haitian), are prone to browning. Lignin cellulose, from the cell walls of plants, or dyes from the cottonseed are dissolved in water and settles on the surface of the fabric as it dries.

3.6.2. Browning of rayon and can occur more commonly when the fabric is old, when chemical residues are left in the fabric after cleaning and when drying occurs after a prolonged period of time.

3.6.3. Presence of browning or yellowing on wool fibres could indicate permanent damage.

3.6.4. Water that contains a large amount of dissolved minerals is called "hard water". When this water evaporates it can leave the mineral deposits in a fabric that is usually brownish in colour. It is advisable for the technician to check with their local water authority as to the quality of the water that they would be using.

Notes: A technique that helps prevent browning in any cellulosic fabric as the result of wet cleaning is to control the amount of moisture applied, control the pH of the chemistry used (keep it slightly acidic) and dry the fabric very rapidly. Some browning can be removed with a 3% hydrogen peroxide solution. If a hydrogen peroxide solution that is stronger than 3% is used to correct staining or browning on cotton fabrics, then fibre damage may occur.

Pre-Testing

Pre-testing of drapery is important because of the variety of reasons. The main reasons are:

1. Fabric blends may restrict cleaning results

2. It may reveal potential dye bleeding problems

3. It tells the technician which cleaning agents to use

Pre-testing is comprised of two main tests: a "burn test" and a "solution test".

A burn test can help identify fibres so that appropriate treatment can be selected. It can assist in establishing if the fibre is natural, synthetic or even a blend.

A pre-test with the cleaning solutions intended to be used on the furnishings, can alert you to possible problems like dye run or browning.

Identifying the Fabric

1. Identify the fibres used by carrying out a burn test and make a note of the presence of any fibres that you identified as being one that requires special attention.

2. Identify the style of weave and make note of weaves that may require special attention.

Chemical Pre-Test Procedure

Carry out a chemical pre-test and make note of the solutions used, and the results of your test. Note any colour transfer, browning or texture change. Test all fabric trimmings and piping or welts that may be of a different fabric to the main fabric or may contain unstable fillings.

1. Find an inconspicuous area or areas of fabric. All fibre types and colours that are used in the fabric should be tested including fabric trims and pipings.

2. Apply a small amount of each and every chemical that you intend to use in your cleaning process to the areas identified.

3. The test should be carried out with the chemicals at the temperature you intend to use them in the cleaning procedure.

4. Do not allow chemicals to come into contact with normally visible areas of fabric.

5. Allow a few minutes time for chemicals to dwell.

6. Fold some white tissue into a thick wad and press it firmly onto the test area.

7. Allow the liquid to transfer to the wad usually about a minute.

8. Remove and unfold the tissue and hold it up to the light for inspection.

9. Check for colour transfer onto the tissue.

10. If you do not see colour in the tissue, continue the test.

11. Allow the test area to dry. Assist drying with a hair drier if necessary. When using a water-based solution to test a fabric for colour migration during on-location testing, the result will not be conclusive until the test area is completely dry.

12. Using a magnifying glass, look for signs of browning or colour migration to other nearby fibres.

13. Look also for colour change and texture change.

14. If you can see colour on the tissue then you have identified a potential problem, either wrong chemical is being used, wrong procedure is being used or the fabric is not colour fast and you should not proceed with the job.

Reviewing Your Pre-Inspection and Pre-Testing

Following the pre-inspection and pre-testing discuss all your findings including aspects of concern with the client. Always seek authority from the customer (preferably written) to proceed. It is far better to be cautious than to end up with a problem.

If your inspection and tests reveal no perceived problems then you can proceed cautiously but throughout the job keep a vigilant eye for potential problems.

Improper inspection and /or communication with the customer are the major cause of complaints relating to drapery cleaning. In order to avoid problems, drapery fabrics must be tested extensively prior to cleaning.

Remember: Before you attempt to clean it is their problem. Once you start to clean it can become your problem.

The Drapery Pre-Inspection & Pre-Testing Report

Your furnishing has been examined visually and the following conditions have been noted

A burn test indicates the following fibre groups have been identified.

Cellulose Protein Polymer Other.....

A chemical pre-test indicates:

Fabric colour run	Definite	Likely	Unlikely
Texture change	Definite	Likely	Unlikely
Ticking /decking run	Definite	Likely	Unlikely

A visual pre-inspection revealed:

Fabric

Tears /burns	Worn fabric / piping	Fading	Sun damage
Colour run	Shrinkage	Skirt damage	Texture distortion

Construction / trims

Skirt damage finish /trim damage	Frame / legs damage
Mechanism damage	Fixings loose
Filling deterioration	Seams loose /open
Dust cover loose	Soiling /stains

Soils and staining

Watermarks	Oily stains	Perspiration stains
Rust stains	Dye stains	Smoke / fume stains
Urine contamination		
Pet hair	Other_____	

The above pre-existing conditions have been identified and may place limitations on the result of the cleaning. Certain conditions cannot be ascertained by visual inspection and are therefore beyond the control of the cleaning operator. (Your company name) will take all care in the handling of the customers furnishings but cannot accept any responsibility for loss or damage resulting from conditions, weather noted or unnoted, that may result in an unsatisfactory outcome of the cleaning process. The customer understands that the work will be carried out at their risk and hereby gives permission to proceed.

Authorised signature: _____Date: _____

Cleaner's signature: _____ Date: _____

The pH Factor and Its Relationship to Cleaning

All water-based solutions will have a pH value. It is important to know the pH value of any water-based chemicals or spotter that you use. Water is the key ingredient, which must be present to measure ph. Dry solvents, not being water based, will not have pH value. To understand the action of water-based chemicals the pH factor will need to be understood.

The pH of a solution refers to the relative alkalinity, acidity or neutrality of a water based solution. Ph stands for the term “power of hydrogen” according to the Oxford dictionary. It is the negative decimal logarithm of the hydrogen ion concentration in moles per litre, giving measure of acidity or alkalinity of a solution.

(e.g. Potenz power + H symbol for hydrogen)

The pH is determined by number of ions in the solution. These ions are called hydroxyl ions on the alkaline side and hydrogen ions on the acid side. The greater the acid strength, the lower the pH value. The greater the alkali strength, the higher the pH value.

The scale ranges from 0 to 14. Neutral is 7 and represents the pH of pure water. The acid side of the pH scale is represented by the values from 0 to 7, excluding7. The alkaline side of the pH scale is represented by the values of 7 to 14, excluding 7.

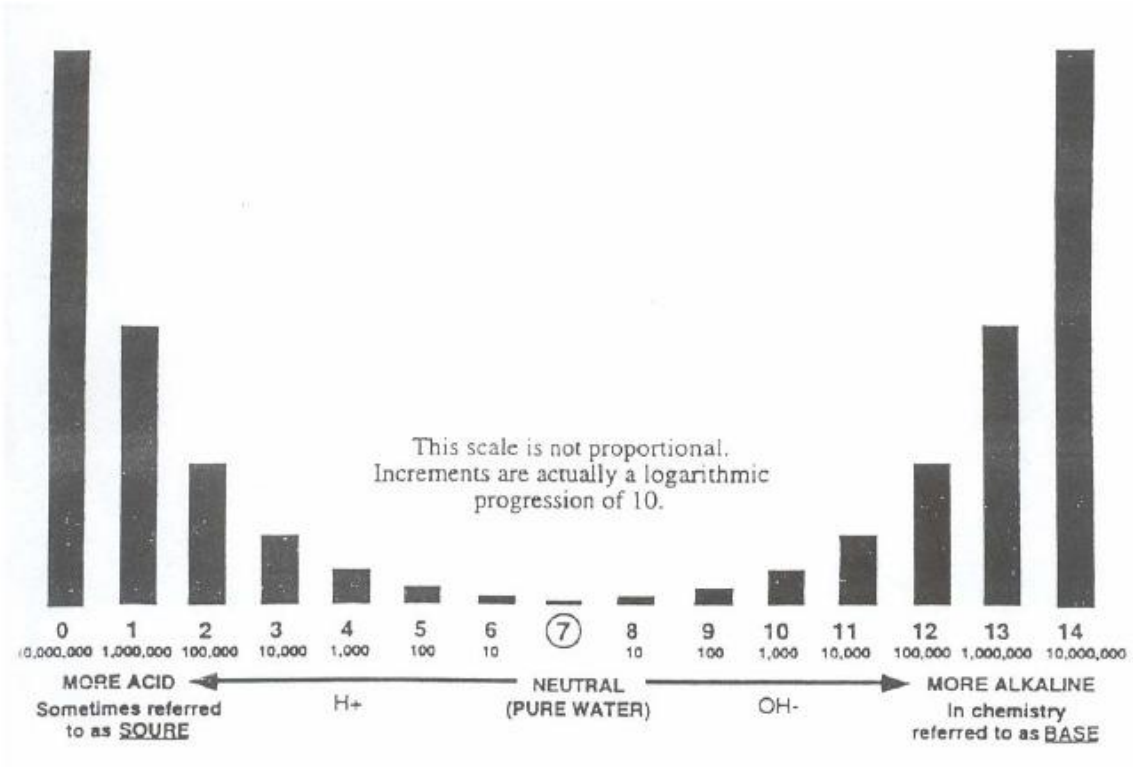
As pH strength increases or decreases, the number of ions increase or decrease. Each whole number increase or decrease on the pH scale changes by a factor of 10.

For example, a chemical with a pH of 9 is ten times more alkaline than one with a pH of 8. A chemical with a pH of 10 is one hundred times more alkaline than one with a pH of 8. A

chemical with a pH of 11 is one thousand times more alkaline than the one with a pH of 8, and so on. The only way how pH strength can be changed is to adjust it using another chemical. For example: to neutralise a chemical with a pH of 9, you would need a chemical with a pH of 5. The pH of the majority of water-soluble soils found in drapery fabrics is slightly acid therefore; most cleaning chemicals are on the alkaline side of the pH scale.

The international wool secretariat, wool fibre producers and the cleaning industry recommend that wool fabrics be cleaned with solutions that are between pH 4.5 and pH 8. Solutions stronger than this can cause permanent damage to the wool fibre.

Getting the pH balance right is very important in order to achieve optimal cleaning result and to preserve natural qualities of the fibre.



Problems Relating To pH Values

Some detergent can be highly alkaline. If a cleaning agent has an alkalinity level that is too high, (pH10+) it can cause permanent damage within seconds, and this type of damage is often irreversible.

For example:

Strong alkaline solutions will damage the cuticle and the epidermis layer of the wool fibre that will result in permanent de-lustring of the fibre. This damage cannot be corrected by applying a neutralising acid treatment.

Strong alkaline solutions can also weaken a fabric protection treatment.

Browning, in its various forms can be accredited in some way to alkalinity. Applying a neutralising dose of an appropriate acid treatment can usually prevent browning.

Strong acids can also damage some fibres. Some strong acids can permanently damage nylon fibres causing weakness or de-lustring.

The Chemistry of Cleaning

Soil is made up of three basic categories:

1. Dry soils

2. Water-soluble soils

3. Oils and fats

Dry soils will vacuum out. Water soluble soils will rinse out. Oils and fats must be dissolved or turned into a solution, emulsion or suspension before they can be extracted out. To effectively remove soils the technician must understand the principles of soil suspension.

The first step (principle) in any cleaning procedure is the removal of dry soil. Dry soil is removed by thorough vacuuming.

Soil suspension is the second step in cleaning. The four ‘fundamentals” of soil suspension are:

1. Temperature

2. Agitation

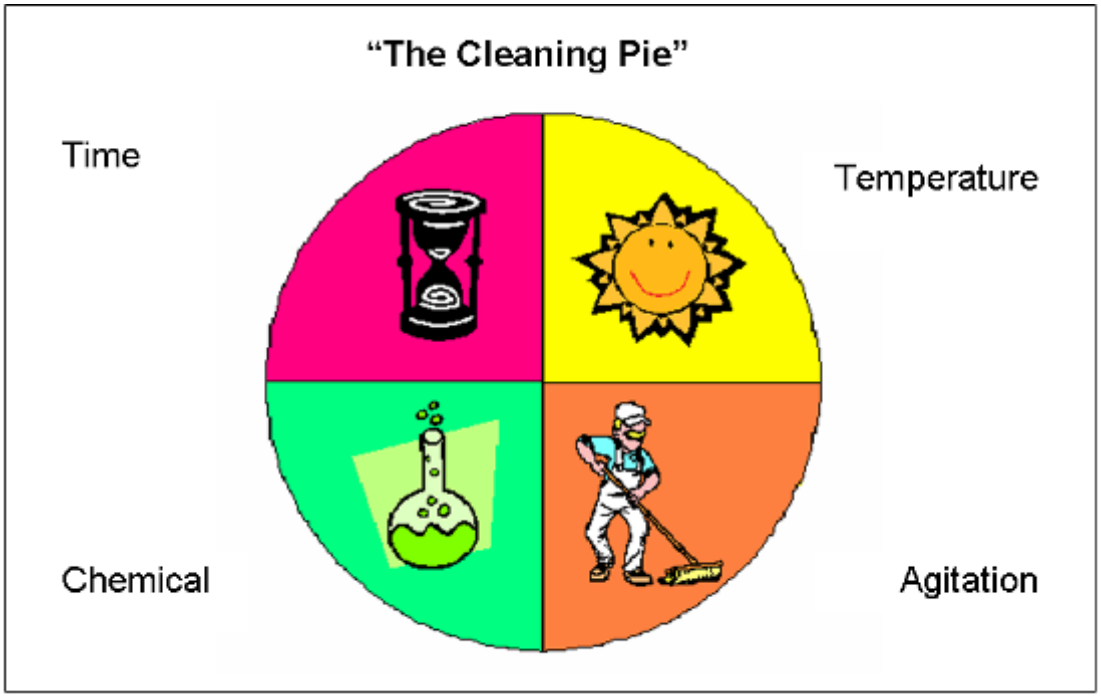
3. Chemical action

4. Time

Together these four fundamentals form the so called “the cleaning pie” or T.A.C the four first letters of the fundamentals of soil suspension. The balance and size of this pie, or the proper use of fundamentals will determine how efficiently soil suspension occurs. The full circle represents the best cleaning result. If we are to cut back on one section of the pie we will not

achieve the full result unless we increase one of the other sections to fill in the missing portion.

The Cleaning Pie – T.A.C.T



For example, if agitation needs to be cut back because the fabric cannot withstand strong agitation, then one or all other variables, such as time, chemical or temperature will need to be increased in order to achieve the desired result.

Temperature

Heat is considered to be one of the most important parts of extraction cleaning. According to recognised research and theory, developed by a Swedish scientist Svante Arrhenius, the more heat you have, the greater the cleaning power. According to his research, increase of temperature of water from 65ºc to 100ºc yields a considerable and steady increase in energy. He further proved, that for every 10º increase in temperature of water above that lower limit of 65ºc there was a corresponding increase in energy release from water by a factor of 2. This does not mean that result will be doubled, however the potential for cleaning will double. Therefore, hot water will clean much better than cold water, making the use of hot water an extremely valuable tool in cleaning.

Recommended temperature to be used for drapery cleaning, except for delicate fabrics (e.g. silk), is approximately 60-80°C, however always test first to establish safe temperature to use for particular fabrics.

1. By raising the temperature of a chemical, its molecular activity is increased.

2. Chemicals become more reactive and work more aggressively and faster.

3. Less chemical amount is required to achieve the same result.

4. The reaction time will also be reduced with the increase of temperature.

5. When heated water-based solutions are applied to fabrics, chemicals will penetrate better as surface tension will be decreased.

6. Hot solution will evaporate faster, therefore drying time will be decreased.

Bearing this information in mind, it is important to remember that high temperatures of solution can also have an adverse effect such as:

1. Dyes can become more reactive.

2. Some fabric dyes can become unstable causing colour runs.

3. Stains can also be set.

4. Extreme high temperatures may accelerate chemical reaction, which diminishes the technician's control over the procedure.

Agitation

Agitation is very important in cleaning in one form or another. It can be produced by fluid pressure in spray tools using the kinetic energy of the fluid or it can be produced by mechanical means, like a brush or bonnet mitt or by mechanical agitation systems.

These can be performed at various stages of the cleaning procedure depending on the system being used. Agitation can be separated into two categories:

1. Agitation while pre-treating fabrics.

2. Agitation during cleaning process.

Agitation can help distribute cleaning agents and loosen soiling so that it can be picked up better in the final cleaning process.

Remember the requirements of particular fabrics should be considered when choosing the method, degree and direction of agitation.

Chemicals

Selection of chemicals is an important consideration to the technician. The aim of cleaning is to remove the soiling without causing damage to the fabric. The choice of chemicals used will mostly be dependent on the chemical tolerances of the furnishings and fabrics characteristics.

Chemicals should always be used in strict compliance with the manufacturer's specifications.

If too much detergent or cleaning fluids are used then the fabric can be damaged, can become over wet and subsequently might have potential problems with drying.

Sometimes, rather than to increase the strength of the detergent mix, the application of a detergent can be repeated after rinsing the first application away. This can be achieved with extraction methods without over wetting.

Sometimes a second clean at a later date is preferable to going too hard at it the first time.

Time

Time factor can be separated into two parts: dwell time for chemicals and drying time.

Dwell time

Chemicals need time to work. The amount of time required to produce the Necessary result will depend on the chemical being used. The time that is allowed for the chemical to work is called dwell time.

Some chemicals need very little dwell time while others can take quite a while. A typical detergent pre-spray will take 5 to 20 minutes to break down soils, emulsify soils or suspend soils ready for extraction.

Increased temperature can shorten dwell times. Always consult the chemical manufacturer for optimum dwell time, as undetermined or excessively prolonged dwell time can cause problems such as colour runs, residual build-ups or damage to the fabric.

A more aggressive chemical may have a shorter dwell time but may damage fabrics faster, or may be unsuitable for some fabrics.

Drying time

Drying time is the time required for a fabric to be completely dry. Drying time will depend greatly on the following factors:

1. Method of cleaning chosen (hot water extraction, dry solvent, etc.)

2. Type of fibre. Natural fibres being more absorbent will take longer to dry. For example, wool can feel dry on the surface and yet still retain moisture for up to 24 hours.

3. Type of weave. Some weaves take longer to dry (e.g. Jacquards, quilted, etc.).

4. Temperatures and dwell time of solutions used.

5. Assisted or unassisted drying procedures (e.g. Use of blowers, atmospheric conditions).

Keeping drying time under control will ensure that the technician has control of the procedure as it minimises chances of browning or colour runs, etc. It will also help to determine the results of the cleaning, if part of the furniture is almost dry before the technician leaves the premises.

Conclusions

Identify and test each fabric so that you know its cleaning specifications, paying particular attention to limitations.

All parts of the cleaning pie (T.A.C.T) should be taken into account when cleaning drapery. For example: if over agitation is considered to be a problem then you may need to consider increasing the dwell time or temperature or chemical strength in order to achieve the maximum result. The knowledge of principles will ensure an effective cleaning and drying (avoidance of leaving furniture over-wet).

Time should be used wisely and planned carefully taking into account dwell times for chemicals and atmospheric conditions, (temperature and humidity) that could affect drying times.

Using the T.A.C.T pie with any cleaning process that you choose will help you achieve the optimum results with the least risk of damage.

Remember: Your knowledge and expertise will allow you to achieve the best possible result for the furnishing. However qualifying your job and adjusting customers' expectations is an important, vital part of the job given the limitations of the furnishings you are requested to clean.

Cleaning Chemicals

Introduction

There is a great variety of chemicals available for drapery cleaning with new chemicals coming onto the market from both local and overseas manufacturers.

Chemicals can be simply separated into two basic categories:

1. Wet cleaning chemicals

2. Dry cleaning chemicals

Wet cleaning chemicals are those that contain water or will mix with water. Dry cleaning chemicals are those that do not contain water or do not mix with water (non-aqueous)

The term 'solvent', which is often used in reference to dry cleaning chemicals, technically speaking refers to a chemical into which another chemical will dissolve. Therefore, the term' solvent' can apply to any cleaning chemical.

Water will dissolve many things, making it a versatile cleaning solvent. Sugary chemicals will dissolve easily in water. We use this principle to make a cup of tea.

It is important to understand the difference and characteristics of both wet cleaning and dry cleaning chemicals.

Dry Solvents

A dry solvent is a solvent that does not contain or mix with water and is primarily used to dissolve oil-based soils. A dry-solvent based solution is the safest and most effective solution for removing most body oils.

Dry solvents can contain harmful "volatile organic compounds" (VOC's). Volatile simply means to evaporate rapidly, and organic refers to any carbon based compound. Dry solvents are sometimes flammable or even explosive. Dry solvents should not be heated to reach the flash point, which means the temperature to which a substance must be heated in air before its vapour can be ignited by a free flame.

Devices used to reduce hazardous exposure to volatile organic compounds (VOC's) given off by some dry solvents are; exhaust hose, vapour respirator and air movers. See sub-section on 'solvents chemical safety' under health and safety section and sub-section on 'procedures for on-location dry solvent cleaning under on-site drapery cleaning section.

There are two main groups of dry solvents, those used for on-site dry cleaning, odourless mineral spirits (oms) and those used for spot cleaning which are further categorised into two groups: volatile dry solvent and non-volatile dry solvents.

Odourless Mineral Spirits (OMS)

1. The solvent most frequently used for on-location dry cleaning is a high grade of odourless mineral spirits (OMS) with a light detergent charge. This solvent is preferred because of its slower evaporation rate and its relatively low toxicity. Despite this, the fumes can be quite dangerous if allowed to build up and displace clean air.

2. OMS is flammable, and should be kept away from sparks and naked flames.

3. OMS should not be overheated. Temperature should be kept below flash point (check with your supplier for details of flash points and/or look in MSDS sheets). Vapour should not be inhaled.

4. Use of an organic vapour respirator, protective gloves and eye protection is required when handling solvents.

Volatile Dry Solvents (VDS)

1. VDS are effective in removing grease and oily substances such as tars, some pigments and inks.

2. VDS are very aggressive, may evaporate very rapidly and should be used in well-ventilated areas with maximum airflow. This can be achieved by opening doors and

windows. Smoking is not allowed while VDS is present as the formation of toxic gases may occur when the VDS is heated.

3. The technician should use eye protection, skin protection and organic vapour mask.

4. It is a good practice to re-apply Fluorochemical protectors following VDS application, as VDS is capable of removing the protection.

5. Chlorinated solvent, which is a type of VDS is still occasionally supplied by some manufacturers, however it is currently being phased out of the Australian market. Due to its toxic vapour, it is important to remember that it can only be used for spot cleaning purposes and should not be used for overall cleaning.

Non Volatile Dry Solvents (NVDS)

1. These chemicals are used on oxidised oil stains or on dried oil based paints, chewing gums.

2. NVDS evaporates slower and gives the technician more working time.

3. The same working precautions as per VDS should apply.

4. NVDS can be a combination of a wide variety of solvents and should always be applied to the towel first, before it is applied to any fibre.

5. NVDS should always be flushed with VDS to avoid leaving a residue on the fabric.

Wet Cleaning Chemicals

Detergents

The word detergent is derived from the Latin word “deterge” which simply means to wipe or clean away. Basically it’s a synthetic version of soap.

Detergents can be made to work in many ways. Basically, they work by altering the surface tension, making water wetter, to improve its penetration to reach soiling. Some will work with a lubricative effect to basically slip under the soil so it floats off into the solution. This process is called de-flocculation. Others concentrate on chemically altering the chemical structure of the soil turning it into other, more water-soluble compounds. Other detergents

concentrate on emulsification. This is where oils that normally won't mix with water, are attracted to a molecule that will happily blend with the water to form an emulsification of the whole mixture. There is also soil suspension which holds soil in a liquid environment and of course there are combinations of all these effects.

Remember water based solutions will have a pH value. The pH of wet cleaning Detergents that can be safely and effectively used on virtually all drapery fabrics should be neutral to slightly acidic. It is important to know the pH value of any detergent or cleaning agent that you use.

A detergent may contain some of the following:

1. Surfactants are used in chemical to allow oily substances to mix with water. This reduces the surface tension of the water

2. Water softening agents: used to reduce the nullifying effects of dissolved minerals in the water supply

3. Buffering agents to maintain the pH of the detergent at different dilutions.

4. Water linked odourless mineral spirits (oms) solvents to help with oily soil removal

5. Enzyme digesters are agents that break down protein into water-soluble compounds. Persistent protein-based substances are most effectively removed using enzymes

6. Optical brighteners, chemicals that are designed to remain in the fabric and convert invisible ultra violet light into visible light which gives the impression that the fabric is cleaner. Note: these have been specifically excluded in the Australian standard.

7. Corrosion inhibitors to protect metal machine parts.

8. Anti-microbial chemicals to kill or limit bacterial or mould and mildew infestation

9. Deodorants to reduce odours

10. Perfumes to make the furnishing smell good after the clean

A detergent formulation may be 'cationic, anionic or non-ionic' that describes the chemical charge of the detergent. It is important to read the label and MSDS and follow manufacturer's instructions. Cationic detergents should not be used on fabrics protected with a fluoro-chemicals protector.

Acid Rinses

An acid rinse is a chemical that is made to neutralise alkaline detergents to ensure that minimal residues are left behind in the fabric. They can be added to the rinse solution of the extraction machine or sprayed on afterwards depending on your machinery or preference.

It is highly recommended to use the same brand of acid rinse as the detergent that you use, as it will be made to neutralise the pH of that particular detergent to ensure a balanced result.

Deodorants and Antimicrobials

Deodorants are a term used for a variety of chemicals used to improve the odour.

This can be achieved in a number of ways:

1. Strong perfume can be used to cover one odour with another.

2. Odour chemicals can be changed to prevent them from leaving the source.

3. Destroying micro-organisms that give off unpleasant odours

4. All three methods may be combined.

Deodorants can contain cationic bactericides (e.g. Quaternary ammonium compounds also known as Quats), which could damage protective treatments. Please check the label carefully prior to using any chemical or deodorant.

Special Treatments

Bleaches and Dye Strippers

1. An oxidising bleach works by changing the property of a stain by adding oxygen

2. Strippers or reducing agents work by taking oxygen away from fabric or stain and making the area colourless or lighter in colour then the stain

3. To stop an oxidation reaction or prevent progressive bleaching a reducing agent (antichlor) or stripper should be used

4. To accelerate the reaction of a reducing agent (stripper) both acid solution and heat should be utilised

Fabric Protection

Silica Based Protectors

Silica based protectors are mainly good for releasing dry soil. They are predominantly soil retardants rather than protectors. They work by lowering the static electric attraction of dry soils, making them easier to be removed by vacuuming. They also fill in minor scratches to prevent dry soils becoming lodged into minute cracks in the fibre.

Silicone Based Protectors

Silicone based protectors make fibres less absorbent to water, which means that water and water-based soils are repelled. The main use for silicone protectors is waterproofing of outdoor fabrics (like canvas). Oils can easily penetrate a silicone protector.

Fluorochemical Based Protectors

Fluorochemical protectors are the main protectors used for indoor furnishings today.

Fluorochemical protection has the advantage that it will repel oil based spills as well as water based spills. Static electric attraction is also reduced which assists with dry soil removal.

The Fluorochemical base is a resin, which is diluted into a medium that will allow it to be sprayed onto, and absorbed into the fibres. The medium is called the carrier and the carrier can be solvent-soluble or water-soluble. The choice of protector will depend on whether or not the fabric or construction can handle either water or solvent.

For example: spraying solvent-based protector onto flocked velvet can weaken the adhesive used to hold the flocked fibres in place. Just as spraying water-based protector onto a moire fabric could damage the watermark affect.

Fabric protectors are best applied when the fabric is dry, although some water based protectors can be applied when the fabric is damp. Check with your supplier for further details.

Fluorochemical protectors can be damaged by high alkaline chemicals (pH 10+) and cationic substances such as quaternary ammonium compounds found in some detergents and bactericidal deodorants.

Spot And Stain Removal Chemicals

A comprehensive stain removal kit should contain:

1. Non-volatile dry solvent (NVDS) for paints and gums
2. Volatile dry solvent (VDS), dry solvent is used for dissolving oil based soils
3. Water-linked solvent, for dissolving oil based stains into a solution that will mix readily with water and then further removed with hot water extraction
4. Neutral detergent for removing soiling spots
5. Alkaline detergent for removing more stubborn spots
6. Enzyme digester to digest protein stains into more soluble compounds
7. Acetic acid (or similar) for lowering the pH
8. Ammonia solution 10% in order to raise the pH
9. Rust remover (hydrofluoric acid is most commonly used)
10. Hydrogen peroxide 3%
11. Oxidising agents
12. Reducing agents or dye strippers

Spot and Stain Removal on Fabrics

Spot and stain removal is an important aspect of cleaning. Customers do not always notice a slow build-up of general soiling but will immediately notice a new spot or spill on their furnishings. In order to select the appropriate treatment and to treat stains successfully they must be properly categorised.

Spots are areas that are lighter than the original colour of the fabric. Most spots are created by chemical spills or the application of a colour-removing chemical. Spots on fabrics can not be rectified, because they can cause permanent damage to the fibre. The customer should be advised accordingly.

Stains are areas where colour has been added to the fabric and these may be removable with care.

General points to remember:

1. Not every stain will be removed completely. When attempting to remove stains the technician should know when to stop in order to avoid causing permanent damage to the fabric, which can be caused by over-use of cleaning agent or over agitation. If a spot does not respond to normal spotting techniques please stop and point it out to the customer and advise the customer that continued efforts may damage the fabric.

2. Fabrics can look patchy when wet. Certain absorbent fibres may appear translucent (the light can shine through) when wet. Pale cottons and similar fabrics are noted for this. Anything behind the fabric can be easily seen. This translucent appearance will be noticeable at the time of pre-testing.

3. Sometimes the shadow of a stain may be visible after the majority of it has been removed. This shadow may be the result of a second material underneath the surface material or a staining material on the reverse side of the original fabric, which could not be removed with agitation. These will often disappear when the fabric returns to its normal opaque state when it is dry.

Identifying Spots and Stains

The easiest way to identify spots and/or stains is to ask the customer. You may get other clues like:

1. Colour (brown could be coffee, tea, old blood etc.)

2. Shape. (a lump could be chocolate, or a splatter could be a beverage)

3. Smell. (Urine has a distinctive smell. So does wine etc.)

4. Feel. (Sticky could be sugary or a gum. Hard could be paint)

Identify the problem if possible and then treat accordingly.

Some stains are best treated before cleaning and others may only require treating only if they still remain after cleaning.

Solvent Soluble Stains

Mainly oils, grease and fatty soils.

Cleaning procedure:

The correct procedure for removing a grease stain from fabric is to use volatile dry solvent. Volatile dry solvent should be applied directly to grease stain, and then it should be blotted with absorbent towels.

Alternatively you can apply a water linked solvent, then vacuum with the hot water extractor and rinse with water and extract again.

Detergent Soluble Stains

Mainly general soiling, sugary spills and food spills.

Cleaning procedure:

Can be treated with normal cleaning procedure. Sometimes repeat applications of detergent are required to remove stubborn soiling.

Enzyme Digestible Stains

Enzymes are used to digest mainly protein soils, food spills and other biological contamination (sweat, urine, faeces). Other examples of protein stains are blood, milk and egg stains.

Cleaning procedure:

Apply enzyme digesters and allow 20 minutes dwell time. Rinse extremely well. Remember: natural enzyme spotters are easily damaged by extreme acidity or alkalinity.

Non Soluble Stains

Mainly carbon soiling (graphite, pollution soiling)

Cleaning procedure:

A lubricative detergent and further agitation may be required to physically remove these.

Colour Loss (Spot)

Bleach marks

Fading

Not much can be done with this apart from explaining to the customer before you clean.

Other Special Stains

1. Chewing gum stains

Cleaning procedure:

Remove excess gum with the scraper, without damaging the fabric. Apply NVDS solvent, blot well and re-apply as needed. Follow with VDS. Alternatively apply a water-linked solvent, extract and rinse well with hot water extraction.

2. Ink / pen stains.

Ink stains found on drapery can be any of the following: water soluble, dry solvent soluble or insoluble.

Cleaning procedure:

Advise the customer of the difficulty associated with this type of stain. Proceed only if permission is granted, preferably in writing. First, apply dry solvent with a cloth, agitate and then absorb with a clean dry cloth. If it does not respond to treatment then it is most likely not a dry solvent soluble stain. In this case, treat the stain with a water-linked solvent. Apply a water-linked solvent, then vacuum with the hot water extractor and rinse with water, and extract again. Assess the appearance of the stain. Discuss all results with the customer. If the ink stain has not responded to solvent treatments it may be a pigment or a dye type of stain.

3. Pigment dyes & food acid dye stains

Use the same procedure as for ink removal. Then with the customers permission reducing and oxidising agents can be used for these types of stains with extreme caution.

4. Cellulosic browning. Browning of the fabric can be due to oxidation of the lignin in cellulose, present in vegetable fibres. It can be caused by spills of water-based liquids or the result of incorrect cleaning chemicals or methods or by prolonged drying times.

Cleaning procedure:

Apply 3% hydrogen peroxide solution, allow a few minutes to work, rinse and apply an acetic acid solution, and then dry vacuum well. Assist drying with air movers.

5. Rust stains Iron oxide formed by oxidation or corrosion of the surface of iron or steel. Rust can transfer from the metal surfaces onto the fabric.

Cleaning procedure:

Apply rust remover sparingly. Hydrofluoric acid is commonly used to change the colour of the rust in fabric. Oxalic acid can also be used as a rust remover. This chemical while much slower to use is a safer alternative to rust removal. Both chemicals create a chemical reaction with rust, changing it into colourless compounds. When using an acid as a rust-removing agent, technicians should neutralise and rinse it thoroughly. Rinsing is important in order to remove as much of the residue as possible. Then it should be thoroughly neutralised with an alkaline solution (remember to rinse well because neutralising hydrofluoric acid with an alkaline can produce deadly phosgene gas). Finish the process by applying acetic acid.

CAUTION: hydrofluoric acid is very dangerous to handle. Handling precautions should always be used.

6. Wax stains

Cleaning procedure:

One method for safely removing wax from drapery fabric (stable colour assumed) is to place a towel or absorbent paper over the wax and iron the towel or paper. Make sure that iron is on medium setting and never left unattended while turned on.

Unidentifiable Stains

If a stain cannot be identified, then you may still have a chance of successfully removing it if you use a range of spotters in a particular order. Refer to the manufacturer's directions but as a rule of thumb use solvents first, then neutral detergents, then alkaline solutions then acids.

Cleaning procedure:

1. Volatile dry solvent (VDS) is the first chemical to be used when attempting to suspend an unknown stain. Apply dry solvent with a cloth, agitate and then absorb with a clean dry cloth.

2. If the stain does not respond to the treatment, then use a non-volatile dry solvent (NVDS) to allow more dwell time. Most non-volatile dry spotters must be thoroughly flushed with a volatile dry spotter following use.

3. Blot volatile dry solvent well and dry thoroughly before using a water based solution.

4. Alternatively, a water-linked solvent can be applied, blotted or dry vacuumed and then rinsed well.

5. Apply a neutral detergent spotter. Allow time to dwell and rinse.

6. Then use a mild alkaline spotter. Rinse well and vacuum excess moisture. Then an acid treatment should be applied to neutralise the alkaline solution. Dry vacuum the area. Do not rinse unless you wish to repeat any of the procedures.

7. Always remember to leave the fabric (particularly those with cellulose or protein fibres) slightly acid.

General Procedures for Treating Stains

1. Identify and categorise if possible

2. Remove solid build-up first by scraping gently with a bone scraper

3. Apply chemical sparingly. Dry solvents should be applied onto the cloth first and not directly onto the fabric

4. Work from the outside of the stain in to the centre

5. When agitating a chemical into a stain the safest method is to use spotting (tamping) brush and gently tamp in the chemical

6. Allow sufficient dwell time

7. Remove excess chemical by blotting with a cloth or rinse and extract if using a water soluble chemical. Repeat the use of the chemical if it appears there is some level of success before proceeding to the next step. Always rinse water-soluble spotters thoroughly to avoid re-soiling due to residue build-up

8. If stains do not respond fully to treatments point them out to your customer and explain the risk that continued efforts might cause further damage to the furnishings

9. Stains that reappear on fabrics after cleaning and drying are usually caused by spot/stain material or chemical residue that was not completely removed

Some stains (mainly oil or coloured) will respond better if they are treated before the overall cleaning is carried out.

Curtains, Drapes and Blinds

Introduction

Curtains, drapes and blinds are the three main types of fabric window coverings that are commonly used.

Because drapes hang vertically, extra sizing is often added to the fabrics to add body and make them hang with less movement. The sizing could be water-soluble and therefore makes wet cleaning unsuitable. Most drapes you will find are "dry clean only". There are of course some exceptions such as some sheers and fibreglass drapes that can be easily wet cleaned.

Fabrics can come in many colours, weaves, styles, and of course fibres. Open-weave draperies can be made of any fibre or blend of fibres.

Curtain and Drape Cleaning Systems

Most curtains and drapes are not wet cleanable. Two exceptions are fibreglass drapes and polyester sheers, which respond well to on-location wet cleaning. There are three commonly used "dry" systems which are: immersion or in plant cleaning, non-immersion cleaning, and on-location cleaning.

In-Plant Immersion Cleaning

Drapes must be removed from the site and taken to the dry cleaning plant. This process involves the use of very expensive equipment. It would be recommended that it is carried out by reputable dry cleaning firms.

Non-Immersion Cleaning (Mobile Plants)

This process uses a solvent saturated powder instead of liquid solvent. This process involves the use of very expensive equipment. It is not commonly done in Australia.

On-Site Dry Solvent Injection And Extraction Cleaning

This is basically the same dry solvent system that is used on furniture upholstery. A heated solution of dry solvent is sprayed under pressure into the fabric through a trigger controlled spray system and is immediately vacuumed into the vacuum chamber within the same hand tool. The recovered solvent is collected in the recovery tank.

Advantages:

1. The system is very portable and will suit smaller jobs.

2. The drapes do not have to be taken down which saves time and cost.

3. Drapes are ready for normal use within a couple of hours after cleaning.

4. Heavily soiled areas can be seen and re-cleaned as required.

Disadvantages:

1. As with any dry solvent system, water based soil removal is limited.

2. Solvents and the associated fumes are inside the home.

3. Noisy, bulky machines are operating inside the home.

4. There is a lot of preparation required to protect other furnishings surfaces and occupants from solvent damage or injury.

Cleaning Curtains or Drapes with On-Site Dry Solvent Extraction

Preparation

1. Prepare, pre-test and pre-inspect as done in upholstery cleaning.

2. With drapery, check fabric coatings (on the back) and linings for damage from water or sun and make note of these.

3. Walls and other items of furniture should be carefully protected.

4. Erect a sturdy stepladder or scaffold to help you reach the header.

5. Hang plastic drop sheets or cloths from the curtain traverse rod, and attach to the walls with non-marking suction cups.

6. Check mechanisms and fixings for strength as drapes can gain considerable weight when damp.

Procedure for Cleaning Drapes

1. Start with the sheers or drapes closest to the window, and work out from these.

2. Start at the headers, which is often the most heavily soiled and work down.

3. Vacuum the front side of the drop, then lift half of the first drop from its hanging hooks and fold it back on itself. Secure it with pegs. Vacuum the backside of this first half. Then repeat with the other half. This exposes the backside of the drape for you to clean.

4. You may only need to do this for the headers on sheer or open weave fabrics.

5. Rehang the full drop to clean the front side.

6. Clean the pleated headers using the special cutaway drape tool.

7. Clean flat sections using the standard drape tool.

8. Repeated passes may be necessary on heavily soiled sections, as there is little dwell time with this process.

9. Hold the fabric in one hand and pull the tool, with the solution spray operating, across the fabric away from your hand.

10. Do not pull the tool downwards using the hooks to hold it, as the force may be too much for the fixings to handle it.

11. While you are there, clean the curtain rods or tracks with a damp cloth. Re-lubricate with silicone lubricant spray if appropriate.

12. When each drop has been finished, concertina the drape to its normal folded position, as opposed to its extended position. Gently set the pleats in place by squeezing it between your fingers and running them down till the pleat fades out into the flat section.

13. Apply a fabric relaxant solution (wrinkle remover) on fabrics containing natural fibres to help remove wrinkles after cleaning.

14. Tie the drapes loosely in the concertina position ensuring that the loose zigzag at the bottom is even. The ties should be removed when the drapes are fully dry.

15. Clean fabric covered pelmets, as you would do so with upholstery.

16. Swags and headers made from loose fabric may need to be removed or disassembled for cleaning and then reassembled when they are dry. Pay particular attention to how they were installed so that you can reassemble them correctly.

17. When all drops have been finished. Inspect your workmanship and ask the customer to also inspect the work. 18. Dispose of waste solvent in an approved manner.

Blind Cleaning

For vertical slats and venetian blinds there are two systems that can be used: ultra-sonic cleaning and hot water extraction with the use of a special blind hand tool.

Ultra-Sonic Cleaning

Ultra-sonic cleaning is a total immersion wet cleaning system that uses high frequency sound waves to provide the agitation and cleaning action. It will clean just about anything that can safely be wet with water and that will fit in the tank. The tank is portable and can be transported onto the job. Tanks are available in various sizes.

The tank is filled with water and a very small amount of specialised detergent is added to aid penetration of the water into the surface to be cleaned. A signal generator sends energy to transducers mounted in the cleaning tank. The sound waves they produce travel through the water and generate microscopic bubbles wherever the water is. This can even be inside a wet fibre. This action agitates the soil and removes it.

After the soil is removed, the articles being cleaned are lifted, drained and placed in the rinse tank and then hung up to dry. The suspended soil sinks to the bottom of the solution tank. Tank should be cleaned regularly following the manufacturer's instructions.

Advantages:

1. This is one of the most thorough cleaning processes available.

2. Chemical use is minimal.

3. Requires very little manual labour apart from removal and transporting and lifting the items in and out of the tanks.

Disadvantages:

1. Can only clean fully wettable items.

2. Can only clean items, which will fit in the tank

3. While it is portable, it is far too big to fit in a small van with other cleaning gear.

4. The machine and associated hanging requirements are expensive.

Hot Water Extraction with the Use of a Special Blind Hand Tool

The special hand tool designed for cleaning blinds (slats) is attached to a portable hot water unit. The tool is designed in such a way that it cleans both surfaces of the blind (slat) at the

same time. This cleaning process can be used with or without a pre-spray. The method used will be determined by the amount of soiling.

Procedure

Prepare, pre-test and pre-inspect as done in upholstery cleaning.

1. The bucket should be placed underneath each blade cleaned in order to catch excess moisture.

2. Blinds (slats) should be cleaned from the very top down to the bottom in one direction only.

3. Number of passes required will depend on the amount of soil on the surface.

4. Walls and surrounding furniture should be carefully protected.

5. Clean the chain separately with the appropriate cleaning solution and cleaning cloth.

6. Wipe off all spills or over-sprays as you proceed.