

Hard Floor Cleaning – course notes

Course Overview

Hard floor cleaning along with carpet cleaning are the most diverse and technically challenging aspects of cleaning. We can all pick up and mop and bucket and learn to clean a floor within 30 minutes, there is a lot more to know about hard floors and a lot more to learn than just mopping a dirty floor.

This introductory course for hard floors covers all the basic processes and machinery involved in cleaning hard floors. Stripping and refinishing of hard floor finishes and recoating hard floor finishes is covered in the course "Replace a hard floor finish".

In this course you will learn the following:

Section 1 - Understanding hard floors

Section 2 - Preparing for Cleaning

Section 3 - Cleaning Loose Soils

Section 4 - Cleaning Oily Soils

Section 5 - Buffing, Burnishing and Deep Scrubbing

Section 6 - Floor Cleaning Pads and Brushes

Section 7 - Restore work area, clean and store equipment

This course covers all required knowledge content for the following competency units:

CPPCLO2001A Maintain hard floor surfaces

CPPCLO3002A Restore hard floor surfaces

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Section 1 – Understanding hard floors

When you finish this section you will have an understanding of the following concepts and ideas:

- Identify types of flooring materials – including resilient and non-resilient
- Identify condition of hard floors
- Preventative Maintenance – Entrance Matting

1.2 Identify types of flooring materials

In this section we will review some of the most common types of flooring used in commercial buildings and how they are maintained. Generally speaking floor surfaces can be divided into:

Hard floors floors that feel hard to the touch

Soft floors floors that feel soft, such as carpet and rugs

Hard floors can then be broken into resilient and non-resilient floors

"Non-resilient" flooring is defined as a hard surface with no flexibility. This includes flooring material such as stone, granite, marble, terrazzo, ceramic tile, brick, slate, hard wood floors. All these floors are hard to touch and do not have any flexibility.

"Resilient flooring" is hard to touch but has some flexibility and is softer to touch than the non-resilient materials. Resilient flooring materials include vinyl tiles, sheet vinyl, linoleum sheet flooring (antique & modern), rubber floor tiles, vinyl-asbestos floor tiles, cork floors and tiles, asphalt based floor tiles.

The following tables review the most common flooring materials found in commercial buildings, their key characteristics and typical maintenance procedures.

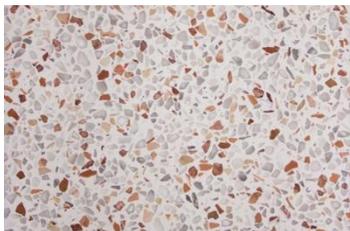
1.3 Resilient Floors

Some of the common floors you will encounter in commercial buildings include:

Resilient floors have some flexibility		
Floor Type	Characteristics	Typical Maintenance Procedures
<p>Vinyl Tiles</p> 	<p>Vinyl tiles are the most common type of commercial flooring (30cm tiles).</p> <p>They are composed of vinyl with calcium carbonate filler.</p> <p>Older tiles (20 years plus) used asbestos as filler.</p>	<p>Seal with water based Acrylic Floor Sealer.</p> <p>Colour may bleed when using alkaline detergents and strippers.</p>
<p>Sheet Vinyl</p> 	<p>Used where bacteria control is important, such as healthcare environments.</p> <p>Composed of vinyl with calcium carbonate filler.</p>	<p>Seal with water based Acrylic Floor Sealer.</p> <p>Less prone to colour bleed.</p>
<p>Rubber</p> 	<p>Made from natural rubber, and coloured with pigments. Durable & slip resistant.</p> <p>Used in high impact environments and as a safety flooring material.</p>	<p>Usually not sealed.</p> <p>Cleaned with a neutral detergent.</p> <p>Do not use any alkaline or acidic cleaners on rubber floors. They will damage the rubber.</p>
<p>Low Maintenance Vinyl</p> 	<p>Continuous sheet vinyl. Soft to walk on.</p> <p>Does not require sealing. Comes with factory Urethane finish.</p> <p>This type of floor is most commonly used in institutional environments such as healthcare, aged care and education facilities.</p>	<p>Do NOT seal. Manufacturer recommends cleaning with detergent and dry buffing.</p> <p>Do NOT use scouring pads to remove scuff marks – may permanently damage the floor.</p>

1.4 Non Resilient Floors

Some of the common floors you will encounter in commercial buildings include:

Stone Floors – Non Resilient (no flexibility)		
Floor Type	Characteristics	Typical Maintenance Procedures
<p>Slate</p> 	<p>Formed from clay and rock/shales under high pressure. Very thin and can break easily when cleaved. Usually black grey & green in colour.</p>	<p>Seldom used in commercial situations due to lower hardness and lower durability compared to other stones. Most frequently sealed with solvent acrylic sealer.</p>
<p>Limestone</p> 	<p>Made of calcite (calcium carbonate) and some magnesium. No crystalline structure, very porous, varies in hardness.</p>	<p>Very sensitive to both acidic and alkaline cleaners and susceptible to stains. Seal the floor with appropriate acrylic sealer.</p>
<p>Terrazzo / Aggregate</p> 	<p>Composite material consisting of marble, quartz, granite, glass, or other suitable chips, sprinkled into a cement base. Terrazzo is ground and polished to a smooth surface.</p>	<p>Generally sealed with water based Acrylic Floor Sealer. Solvent based acrylic resins are also used, however these present health, safety and environmental concerns.</p>
<p>Concrete</p> 	<p>Hard Wearing - Low cost material (compared to tiles), combination of cement, sand and aggregate. May have a rough or smooth surface depending upon finish.</p>	<p>May be sealed with acrylic or other types of coatings.</p>

1.5 Timber Floors

Some of the common floors you will encounter in commercial buildings include:

Timber Floors - Non Resilient (no flexibility)		
Floor Type	Characteristics	Typical Maintenance Procedures
<p>Hardwood</p> 	<p>Use a range of darker timbers – hardwoods are very durable and hardwearing.</p>	<p>Timber floors are generally all maintained in a similar fashion. Although there are a variety of techniques to sealing timber floors depending upon the finish and maintenance program required.</p> <p>The most popular maintenance programs include:</p> <p>Solvent Seal – urethane or estapol</p> <p>Water Seal – urethane or acrylic</p> <p>Tung Oil – followed by water based acrylic</p> <p>Wax – solvent paste wax</p> <p>Wax – water based carnauba wax.</p>
<p>Pine</p> 	<p>Lighter coloured timber, most flooring uses Cyprus pine, lighter colour than most hardwoods – characteristic notches.</p>	
<p>Bamboo</p> 	<p>Marketed as an environmentally sustainable product; significantly cheaper than other hard wood flooring materials.</p>	
<p>Parquetry</p> 	<p>Small hardwood timber pieces (typically 15-30cm long) made into various patterns.</p>	
<p>Cork</p> 	<p>Comes from the cork oak tree. Granulated cork compressed into moulds under heat and pressure. Characteristically soft surface, but quiet durable.</p>	

1.6 Identify condition of hard floors

In this section, we will firstly review how hard floor soils (becomes dirty) and the types of soils found on hard floors. We will then review preventative entrance matting.

Hard floor soils: The type and amount of dirt found in a building will be dependent upon:

- The type of building (office, school, shopping centre etc.)
- The number of people entering the building.

Common soils found on hard floors can be divided into two categories.

Loose soils, which are generally removed by dry cleaning procedures including, vacuuming, dust mopping, dusting and sweeping. Loose soils include:

- *litter* (could include paper, paper clips, leaves etc.)
- *dust* (very small pieces of dirt small enough to float through the air)
- *dirt* (larger pieces of dirt; walked into a building on people's shoes).

The second type of soils are called "**Oily soils**", which are generally bound to a surface by "oily and greasy films". These types of soils require wet cleaning with a detergent to remove the sticky soils from surfaces being cleaned. The detergent breaks down oily soils making them easier to remove with a wet mop or scrubbing machine.

Oily soils include:

- *stains* (marks on floors and office furniture from coffee, beverages and food)
- *oily soils and greases* (tracked onto the floor by footwear)
- *scratches* (which may be permanent or removable)
- *spillages* (marks on floors and furniture where liquid has spilled).

1.7 Preventative Maintenance - Entrance Matting

The first step in any cleaning program should be to stop dirt entering the building. This is called preventative maintenance.

Cleaning outside entrances and using correct size floor mats will stop 80% of the soil entering a building.

For entrance mats to work properly (collect dirt on people's shoes) they need to be 2-5 metres in length. Longer mats will trap more dirt. Ideally mats should be long enough for a person to walk 4 to 5 steps on the mat.

Dirt and soils walked into a building damage floors. You can see when you look at the entrance to an older building you will often see the floor is heavily worn at the entrance.

Outside entrance mats should have a coarse texture to brush soil from shoes and hold large amounts of soil in the mat.

Inside entrance mats are designed to absorb (soak up) water and dirt from people's shoes.

Cleaning Entrance Matting

Mats must be cleaned every day. If the mats fill up with soil they will no longer trap dirt.

There are many different varieties of entrance matting. You will need to refer to the manufacturer's guidelines for specific cleaning instructions.

[Watch the video](#)

Section 2 – Preparing for Cleaning

In this section we will discuss setting up your site for cleaning, how to prepare chemicals and what personal protective equipment is necessary.

When you finish this section you will understand:

- How to organise your access
- Using barricades and warning signs
- Preparing chemicals and PPE
- Safety problems with electrical equipment
- Hard Floor Cleaning Equipment
- Hard Floor Cleaning Process

2.1 How to organise your access

Before you start cleaning, make sure you have access to all parts of the area to be cleaned.

- Most routine cleaning duties do not require moving furniture. You should only move chairs when cleaning under desks.
- You may need to clean around heavy items such as filing cabinets and bookshelves.
- Check with the site manager or client before you disconnect and move electrical items, such as computers.

Which power points are suitable to use

- Check with the site manager or client before you plug any cleaning equipment into a power point.
- Some power points are only suitable for highly specialised electrical equipment, such as computers.

2.2 Using barricades and warning signs

When cleaning floors and bathrooms during working hours you may need to block access to an area until the floor is clean and dry. This is particularly the case when cleaning bathrooms. Use barricades or warning signs to prevent people from walking on wet floors. Place warning signs at the entrances and/or exits of the area you are cleaning.

Reporting

You are in a position to notice existing damage to the work site. Any damage should be reported to your supervisor immediately.

You are also in a position to notice if changes to cleaning tasks or additional cleaning activities would better meet your client's needs. If you think your cleaning specification requires changing you should discuss this with your supervisor.

2.3 Preparing chemicals & PPE

Only use detergents specifically designed for the surfaces you are cleaning.

Always read the Safety Data Sheet (SDS) for the chemical you are using. It will give you information about: What protective clothing to wear; first aid information; properties of the chemical; and health hazard information; storage and transport information.

Read the label for instructions to dilute and use the detergent.

Wear gloves and protective eye wear when diluting concentrated chemicals (detergent).

Pour the amount of detergent you need from the detergent bottle into a well-labelled measuring cup. Never tip or pour directly from the detergent container into a bucket.

2.4 Safety problems with electrical equipment

Before commencing any cleaning you should check all your equipment is in good working order. Faulty cleaning equipment must NOT be used.

You should check electrical equipment before using it each day and after using it each day.

Some of the problems you should look for include:

- Leads, plugs and electrical wiring - look for cuts, fraying and exposed wires
- Excessive vibration
- Excessive noise from the motor or gearbox
- Vacuum system not working.
- Make sure your electrical equipment has a current electrical tag.

If you are using a piece of electrical equipment and you think it is broken, you should stop using the equipment immediately.

You should place an "out of order" tag or sign on the machine so no one else uses the faulty machine and report it to your supervisor as soon as possible.

2.5 Hard Floor Cleaning Equipment

The table below list the basic cleaning equipment and personal protective equipment required to clean hard floors. You will need to understand how to use all the equipment below to demonstrate you skills in cleaning hard floor surfaces.

Task	Equipment Required	Reason
Personal Protective Equipment		Slip resistant footwear, gloves, protective eye wear, hearing protection. Slip resistant shoes to prevent slipping on wet floors. Gloves and goggles to protect skin and eyes from chemicals.
Floor detergent		Neutral floor detergent used for routine cleaning. Neutral detergent safe on all floors. Detergent breaks-down oily soils holding dirt to the floor.
Signs and barricades		Floor safety signs and barricades. Warn people of slippery floors and cleaning in progress.
Dust Mopping / Sweeping		Dust mop, broom, dust pan, scraper/ putty knife. Remove dust, dirt, litter and rubbish. Scraper used to remove gum and sticky labels
Damp Mopping		Clean Mop Bucket – 1/2-2/3 full Detergent Wet floor signs PPE Dispensing equipment To provide a clean, safe and hygienic floor. Mopping removes soils and particularly oily, in-ground soils from the floor. Mopping uses detergent action to remove soils.
Buffing/ Burnishing		Buffing Machine Buffing Pad Spray buffing solution PPE if required To repair scratches and restore shine to the floor. Regular buffing increases the life of a floor polish.
Auto Scrubbing		Auto Scrubber Detergent RED scrubbing pad PPE if required To provide a clean, safe and hygienic floor. Auto Scrubbing provides a more aggressive cleaning action compared to mopping.

2.6 Hard Floor Cleaning Process

Hard floor cleaning and maintenance is a three step process involving:

- (i) Cleaning loose soils using a dust mop (internal floors) or broom (sweeping external floors);
- (ii) Cleaning oily soils using a wet mop (small areas) or auto-scrubbing for larger areas; and
- (iii) Maintaining hard floors including buffing (burnishing) and deep scrubbing.

(i) Cleaning loose soils – Section (4)

- The first process in cleaning hard floors is to remove loose soils including; dirt, dust, litter, paper, cigarette butts etc. Loose soils are removed with a dust mop when cleaning floors inside a building and with a broom (sweeping) when cleaning floors outside a building.
- Larger external areas may be cleaned with a push sweeper or ride-on sweeper.
- When you finish dust mopping or sweeping the floor should be free of all visible dirt, dust and litter.

(ii) Cleaning oily soils – Section (5)

- The second task for cleaning hard floors is wet cleaning with a damp mop for smaller areas or cleaning with an auto-scrubber for larger areas.
- Wet cleaning with a floor detergent removes oily films and spillages from floors. Removing these oily soils and oily films improves the floors appearance and improves the floors slip resistance making it safe to walk on.
- When you finish wet mopping (or auto-scrubbing) the floor should be free of all visible soils and have a clean, even appearance.

(iii) Buffing (burnishing) and deep scrubbing – Section (6)

- This type of maintenance will depend upon the type of floor and whether it is sealed with a floor polish. Most polished floor require buffing (burnishing) on a regular basis to remove scratches, heel marks and improve shine. The frequency of buffing (burnishing) will depend upon the type of building (e.g. supermarket, office building, school etc.), area of the building (e.g. hotel lobby, administration office, school classroom etc.) and the number of people walking on the floor.
- Floors which are not polished will require deep scrubbing to remove imbedded soils which are not removed by the normal floor mopping process. These floors could include ceramic tiles, low maintenance vinyl and a large variety of other floors.
- When you finish buffing or deep scrubbing the floor should have a higher shine and be free of all visible soils, including those not removed by normal mopping.

Section 3 - Cleaning Loose Soils

The first step when cleaning a hard floor is removing loose soils such as fine dust and small amounts of loose litter. Loose soil can be removed by sweeping with a broom, a friction drive sweeper or dust mop. The equipment used for sweeping should be select based on the size of the floor being swept and the type of soil being removed.

When you finish this section you will have an understanding of the following concepts and ideas:

- Sweeping with a Broom
- Sweeping with a Friction Drive Sweeper
- Dust Mopping

3.1 Sweeping with a Broom

Floor sweeping with a broom is mostly used for cleaning external areas, warehouses and manufacturing environments.

- Broom sweeping is done by pushing soiling away from you, and in a direction selected by you that will leave the soil at a convenient and safe pickup point in the area.
- The broom is pushed and lifted in a manner that will minimise the creation of too much dust.
- Ensure that the broom handle is long enough; the handle height should be approximately equal to your own height. This helps you sweep with your body in an erect position. This also helps prevent fatigue, (tiredness) and sore backs from stooping, (bending over).
- To be efficient you should allocate collection points based on the amount of litter and soil being collected. More litter and soil will require more collection points. If you are not allocating enough collection points you're sweeping will take longer.
- Using a lobby dust pan and brush or similar and a waste collection bin or bag, move throughout the area you have just swept and collect all of the piles of dust and soil.
- Remove soil to the appropriate waste collection area.

3.2 Sweeping with a Friction Drive Sweeper

Floor sweeping with a broom is mostly used for cleaning external areas, warehouses and manufacturing environments.

Sweeping paths, halls, workshops and storage areas is usually done with friction drive sweepers. Push sweepers clean up to seven times faster than a broom, are easy to handle, ergonomically designed and sweep thoroughly with little dust.

Friction drive sweepers are pushed along by an operator. There is a drive belt attached from the wheels which drives the main ribbon brush under the unit, and the round side brush that sweeps along edges.

The sweeper collects dirt in through the front of the machine using a large rotating brush and a side brush for cleaning corners.

The soil is collected in a large box near the back of the sweeper. This is emptied manually when required.

Larger sweepers are also available as battery and petrol operated depending upon the size of the sweeper machine. For more information refer to a machinery manufactures web site such as Hako, Tennant, Karcher, or Nilfisk-Advanced.

[Watch the video](#)

3.3 Dust Mopping

A dust mop is a long-handled mop that is used to dust floors and sometimes even walls, ceilings, and high places. A dust mop is meant to be used dry, and not wet.

Dust mops are frequently made of microfiber material to attract and hold onto dust. Dust mop heads are flat and can be removed so they can be washed when required. When you finish using your dust for the day it should be thoroughly cleaned with a vacuum cleaner.

Dry dust mopping procedure

- Make sure that the surface is dry. A wet surface will make it difficult to move the dust mop across the floor and may leave marks on the floor when it dries.
- When dust mopping the floor, use a scraper to loosen and remove chewing gum, sticky labels and squashed food.
- Use a continuous smooth action when dust mopping a floor. Do NOT use a pushing or sweeping action – this will push dust into the air.
- When cleaning larger areas remove the dust and litter from the mop head at regular intervals.
- Do this by shaking the dust mop head up and down close to the floor to release loose soils. This stops the fibres from compressing (going flat and sticking together) so that the mop attracts dust.
- When finished return to the area and remove rubbish with a long-handled dustpan & broom.
- No dust or litter should be visible when you finish dust mopping.

Dust mop information	
Dust mops are made of polyester and cotton or microfibre	Dust Mop Sizes
<ul style="list-style-type: none"> • The polyester fibre becomes charged static electricity when it is pushed across the floor. • The static electricity attracts dust particles to the mop fibres. • Dust mops are 100% polyester or blended with a small amount of cotton to provide fibres some water absorbency. 	<p>Dust mops generally come in the following sizes:</p> <ul style="list-style-type: none"> • 30cm – Domestic and small office areas. • 60cm - Commercial, most common size. • 90cm – Commercial, supermarkets and large open areas. • Scissor Mops – 90cm x 2 = 180cm total mop span. Can be difficult to manoeuvre amongst people.

Watch the video x2

Section 4 - Cleaning Oily Soils

The second cleaning task in hard floor cleaning is wet cleaning with a damp mop or auto-scrubber. Wet cleaning removes oily films and spillages from hard floors. The equipment used for wet cleaning should be select based on the size of the floor being cleaned and the type of soil being removed.

When you finish this section you will understand:

Small Areas – Damp Mopping

- How to mop
- Replacing dirty mop water and mop heads
- Disposal of dirty water
- Cleaning with microfibre

Large Areas - Auto-scrubbing

- Auto-scrubbers - Important daily maintenance
- Maintaining batteries on auto-scrubbing machines

4.1 Small Areas – Damp Mopping

Smaller areas are normally wet cleaned manually with mops and buckets or microfibre hard floor cleaning tools.

Mops – Mops can be purchased in a variety of sizes and materials.

If a mop is too big or heavy for the operator it may make them tired and may lead to an accident. If the mop is too small it will take longer to clean the floor.

Mops are made of either cotton or a mixture of cotton and polyester or microfibre.

Cotton mops are very good for absorbing (holding) water but are heavy to use on the floor.

Polyester does not hold water but slides across the floor and lasts longer. Polyester alone cannot be used in mops because it will not pick-up water. Polyester is blended with cotton to make longer lasting mops that are easier to use on the floor when compared to cotton mops.

Microfibre mops will be discussed further on this section.

Why damp mop a floor?

Wet or damp mopping is used to remove in-ground soils such as marks, dirt and greasy soils which are not removed from dust mopping alone.

Removing all the soil from a floor will improve its appearance and make the floor more slip resistant.

Before you start mopping a floor you will need to prepare your chemicals and use the appropriate personal protective equipment. When cleaning hard floors only use detergents specifically designed for cleaning hard floors.

Before you mop

Before you start mopping the floor make sure you have placed WET Floor warning signs or set up barriers to prevent people entering the area being cleaned.

- WET floors are slippery and pose a risk for people slipping and falling on the wet floor.
- If you are cleaning a room with chairs, such as a lunch room place chairs on tables before cleaning the floor.
- Place bins to one side of the area to be damp mopped. This gives an open area for cleaning.
- Add the correct amount of detergent to a bucket of cold or warm water.
- **WARNING:** Do not over use your floor detergent. Floor detergent residues can themselves become sticky and quickly attract soil to the floor.

4.2 How to mop

- Ensure that the mop handle is long enough i.e., with the handle height approximately equal to your own height. This helps you KEEP YOUR BACK STRAIGHT when mopping.
- With the right hand hold the top of the mop handle.
- With the left hand loosely grip the mop handle about a third of the way down. This hand acts as a pivot.
- The right hand moves the mop handle back and forth with the left hand keeping it steady. MINIMISE SHOULDER MOVEMENT and let your arms do most of the work.
- Use a figure-8 motion when mopping floors. Overlap each mopping stroke using a continuous smooth action.
- Ensure the mop head is spread out across the floor – this ensures your mop is covering the largest possible area.
- Flip or rotate the mop head to use both sides of mop before rinsing.
- Rinse the mop in the bucket at regular intervals to release dirt from mop. How often you rinse your mop will depend upon how dirty the floor is.
- When water in the bucket becomes visibly dirty, change the water and rinse the dirty mop head in clean water. Note: mopping with dirty water leaves dirty smears on the floor when the floor dries.
- The floor should be clean and streak free when it dries.

To rinse the mop head

- Insert the mop into the bucket.
- Put hands with palms together, about a third of the way down the mop handle.
- Now jiggle the mop handle back and forth by rubbing the hands together to loosen the dirt from the mop head.
- Then lift the mop head up and down, in and out of the water four or five times (not bringing the mop head out of the bucket).
- Lift the mop head out of the bucket until the base of the handle is just above the rollers.
- Put one foot on the steadying lever on the bucket, and the other on the spring roller.
- Press downwards and pull the mop head through the rollers.
- If your company uses the new ergonomically designed buckets you will use a hand lever to wring the mop head.

Watch the video x2

4.3 Replacing dirty mop water and mop heads

If you are working in a healthcare or aged care facility you will have infection control guidelines which tell you how often you should change your mop and bucket water and use a newly laundered (clean) mop heads. This is important to prevent the potential spread of infections from one room to another.

In most general cleaning operations including offices, retail, shopping centres, schools, universities etc., you should replace your bucket water and rinse your mop when it is visibly dirty.

Disposal of dirty water

Dirty cleaning solution should only be disposed of in the sewerage system. This means the dirty water should be disposed of in cleaning sinks and toilets.

DO NOT dispose of dirty water in outside drains, gutters or storm water. These drains may empty into local waterways and pollute the local environment. This is illegal and heavy fines apply.

4.4 Cleaning with microfibre

What is microfibre?

Microfibres are so thin (100 times thinner than a single strand of human hair) that when they are woven together they create a surface area 40 times more than that of a regular cleaning cloth.

Micro-fibre cleaning cloths are generally made of two different fibres. One for soaking up oil (called polyester) and the other for soaking up water (called nylon).

Ordinary cleaning towels move or push dirt and dust from one place to another – but microfibre lifts or scoops the dirt and stores the dirt particles in the cloth, until it is washed.

Microfibre can absorb up to seven times its weight in water.

Microfibre cloths are also extremely durable. They can be washed up to 300+ times and still maintain their effectiveness.

Most soils are quickly removed with microfibre, leaving a clean, streak-free surface.

Cleaning floors with microfibre

Cleaning with a microfibre flat mop can reduce floor cleaning times by 30% or more when compared to traditional poly-cotton mopping systems. Some of the advantages of microfibre flat mops over traditional cleaning systems include:

- Microfibre flat mops cover a larger area than normal mops so floors can be cleaned faster.
- Micro-fibre flat mops are lighter and easier to use compared to tradition mopping systems.

[Watch the video](#)

4.5 Large Areas - Auto-scrubbing

Scrubbing machines are commonly referred to as auto-scrubbers.

Auto-scrubbers are used to clean large areas of floor where it is not possible or would take too long to clean with a mop and bucket.

Auto-scrubbers come in a variety of sizes from:

Small electric machines – commonly used for cleaning office areas, schools, universities, aged care etc., where the floors are not too larger. Small electric machine must be plugged into a power point. The use of electric machines is restricted by the availability of power points.

Battery operated scrubbers come in a range of sizes from small to medium and large machines. The size of machine will depend upon the size and type of area being cleaned. Small to medium machines are often used in education, healthcare and larger machines used in supermarkets and shopping centres.

Ride on scrubbing machines are used for cleaning very large floors such as large shopping centres and large industrial sites. The ride on machines are significantly faster than walk behind machines and whilst they are more expensive than walk behind machines they can significantly reduce cleaning labour costs.

This course does not cover the detailed operation of auto-scrubbers. For more information consult your manufacturer's operation manual.

[Watch the video](#)

4.6 Auto-scrubbers - Important daily maintenance

Turn off the machine, apply the brake and remove the key before cleaning or adjusting the auto-scrubber.

1. Check the squeegee for damage on a daily basis before use. Check for cuts and ensure the squeegee lays flat on the floor.
2. Make sure vacuum is working correctly and there are no blockages in the suction hose.
3. Remove and wash brush guards, pads, brushes and pad drives.
4. Remove the squeegee assembly and wash. Inspect blades for wear or damage.
5. Empty the recovery tank. Wash thoroughly with fresh water. Leave the lid off the tank until the next time you need to use the machine. This will prevent unpleasant odours from building up.
6. Clean the vacuum motor filter.
7. Check water level in the batteries.
8. Wipe down the exterior of machine with a damp cloth

4.7 Maintaining batteries on auto-scrubbing machines

Properly operated and cared for, your battery pack can give you years of service. This maintenance is simple, and not time consuming, but essential to the battery's life.

CAUTION: Always wear protective clothing, gloves, and goggles when handling batteries.

Charging

Ensure that the charger is turned off before connecting batteries.

Charge the batteries fully at the end of each shift.

Do not try to charge a battery for one hour during a shift break. This can damage a battery.

Check the battery water level every month. WARNING – if the battery water dries out, your batteries will be ruined.

DO NOT use tap water to refill batteries. You must use 'distilled' water.

Make sure you replace and tighten all vent caps on batteries after refilling/checking water levels.

[Watch the video](#)

Section 5 – Buffing, Burnishing and Deep Scrubbing

Buffing polished floors removes surface scratches revealing a cleaner, higher shine surface. The floor surface will reflect light more evenly and give off a more shiny appearance.

When you finish this section you will have an understanding of the following concepts and ideas:

- Polished floors
- Buffing/Burnishing polished floors
- Using a buffing/burnishing machine
- Swing Polishers (Buffing)
- How to use a swing polisher
- Spray Buffing

5.1 Polished floors

Polished floors are usually made of vinyl or terrazzo (stone).

Vinyl floors are found in all types of buildings from offices to schools, universities and supermarkets.

Terrazzo floors are found in many shopping centres. They are a mixture of marble chips in coloured concrete which has a smooth finish.

A polish is used to protect the floor from damage and provide a high shine on the floor.

Most cleaning chemical manufacturers will make a range of different floor polishes for different types of floors and different type of equipment (buffing machines) used to keep a high shine on the floor.

5.2 Buffing/Burnishing polished floors

Buffing is a word used to describe the polishing a floor with a 'slow speed' swing polisher. See picture opposite.

Burnishing is a word used to describe polishing a floor with a 'high speed' polisher such as a gas burnisher used for polishing floors in large supermarkets and shopping centres. See picture opposite.

Cleaning and buffing/burnishing polished floors can be a rewarding experience for many cleaning professionals. Watching the floor change for a dirty floor into a highly polished mirror finish is something to be proud of in the late hours of the night when most people are sound asleep.

Buffing/burnishing floors is a slow and expensive cleaning task. For this reason many buildings now use flooring materials that do not require buffing/burnishing.

We buff/burnish floors to:

Restore and improve the appearance

Remove scratches

Remove marks and black heel marks

Additional Information (not required for assessment)

Buffing is the older floor-care term used to describe polishing a floor with a swing polisher. The term buffing comes from applying a furniture wax to piece of furniture and buffing the furniture to a high shine with a soft cloth.

The term burnishing comes from a pottery treatment in which the surface of the pot is polished, using a hard smooth surface such as a wooden or bone spatula. Burnishing implies rough edges and imperfections are removed from the surface.

Looking at the above terminology we can infer buffing polished floors refers a slower, more traditional process, using a wax (or spray buffing chemical) to buff a dull surface to a high shine or lustre. Burnishing by comparison infers a more vigorous process (at higher speed) whereby imperfections are ground from the surface rather than gently buffed.

5.3 Using a buffing/burnishing machine

Buffing/burnishing machines come in three different versions; these being:

- Slow speed (swing polishers);
- High speed straight line machines (electric) and
- UHS (ultra high speed) propane (gas) machines.

Swing polishers are the most commonly used machine because they can be used for a large variety of cleaning tasks including buffing floors, scrubbing, deep scrubbing with brushes and stripping floors.

The following table summarises the three different types of buffing/burnishing machines, their productivity rates or the time it takes to buff/burnish 100 square metres of floor and where each type of machine is recommended for use.

Machine Description	picture	Where to use	Productivity	Where to use
Slow speed swing polisher		Buffing small areas less than 250 sq. metres. Speed (RPM) : 350 – 700 rpm Buffing Pad: Red	Takes approximately 30 minutes to polish 100 square metres	Slow speed machines are the most common and most versatile. They can be used for scrubbing, buffing and stripping floors to remove old sealer finish.
High speed electric straight line polisher		Buffing floor areas greater than 250 sq. metres. Speed (RPM): 1500-2500 rpm Buffing pad: White or tan	Takes approximately 10 minutes to polish 100 square metres (2 times faster than slow speed)	High speed machines are used to buff/burnish larger floors areas because they are faster than swing polishers. Generally used in health care and education.
UHS – Ultra High Speed Polisher		Burnishing floors areas greater than 1200 sq. m. Speed (RPM): 2000 – 2500 rpm Gas (Propane) motor Buffing pad: UHS hair pads	Takes approximately 5 minutes to polish 100 square metres (6 times faster than slow speed)	UHS gas machines are noisy. They are generally only used in retail environments with large areas of polished floors such as supermarkets and shopping centres.

5.4 Swing Polishers (Buffers)

Swing polishers are the most common floor maintenance machine. They are used for:

- Buffing polished floors; and
- Scrubbing all types of hard floors to remove soils not removed by a mop and bucket.

Buffing: A swing polisher can be used to buff polished floors including, vinyl tiled floors, sheet vinyl, low maintenance vinyl (used in health and aged care), polished terrazzo, marble and timber floors amongst others. When using a swing polisher, red or white pads are the most commonly used buffing pads.

Deep scrubbing: Swing polishers are used for a large variety of scrubbing operations including, deep scrubbing various flooring surfaces including; ceramic tiles (smooth and textured/rough surfaces), various stone floors, concrete, rubber, anti-slip floors and many other types of hard floors.

Textured and profiled floors: When cleaning textured and profiled floors it is important the machine penetrates (gets into) the texture of the surface to remove imbedded soil from the "valleys" in the texture or profile. This can only be achieved using a soft bristled brush.

5.5 Swing Polisher - some additional tips:

If the machine is vibrating you may have a damaged pad holder or brush. Do not use the machine if it vibrates too much.

Keep the electrical cord behind you. Do not run over the cord as it can become stuck in the rotating pad and tear the power cord from the socket.

Do not leave the machine in the one spot for too long as it could damage the floor.

Keep alert for people and other obstacles as you buff the floor.

Changing the pad holder or scrubbing brush

Most machines are now fitted with quick release pad holders and brushes to remove the pad holder/brush. You will need to consult your manufacturer's instruction manual for using the quick release on your buffing machine.

5.6 How to use a swing polisher

Prestart checks:

Unwind the electrical lead and check for cracks, tears or exposed wires.

Attach a pad or brush to the machine. If using a pad, make sure the pad is correctly positioned on the pad holder. If it is not positioned in the centre of the pad holder the machine will vibrate.

Pull up the wheels.

Adjust the handle to the correct height for the operator; approximately hip height.

Correct machine operation:

Place one foot forward and one foot back. This will stop you from falling backward if the machine pushes into you.

Hold the handle close to your body.

Make sure that the lead is behind you.

Squeeze the trigger - after releasing the safety button.

To move right gently lift the handle slightly (only a few millimetres).

To move left gently drop the handle slightly (only a few millimetres).

Do not fight the machine! If you have the machine balanced correctly it should only take minimal force in your arms to move the machine. Try to balance the machine and relax your arms and hands.

Overlap each section. This means that, after you buff one section, buff the edge of the section you have just done. By doing this you will make sure you do not miss any sections of the floor.

Be careful not to bump into walls, glass or corners.

After you finish buffing, dust-mop the surface to remove polish powder.

[Watch the video](#)

5.7 Spray Buffing

Spray buffing with is an older cleaning technique that is not commonly used in today's professional cleaning industry.

Spray buffing uses a liquid polish to help restore a high shine to polished floors; similar to polishing jewellery.

How to Spray Buff

You must be able to operate a swing polisher with one hand when spray buffing.

DO NOT over use spray buffing solution. Over use will clog the buffing pad with waxes, increase buffing time and leave smear marks on the floor.

You should only apply 1 spray every 3 to 4 paces along the floor.

Check the floor pad periodically and clean under running water when it becomes dirty.

Section 6 – Floor Cleaning Pads and Brushes

Floor pads and brushes are designed to clean and maintain hard floors. There are many different pad and brush types depending upon the type of cleaning and/or maintenance required. By using the correct floor pad and brush for the job you will maintain hard floors in the best condition possible. The following sections cover the most common floor pad and floor brush types and where/how they should be used.

When you finish this section you will have an understanding of the following concepts and ideas:

- Floor Cleaning Pads
- Floor Cleaning Brushes

6.1 Floor Cleaning Pads

Floor pads, as we know them today, were invented in 1958, when 3M revolutionized floor maintenance by introducing the world's first synthetic floor pad.

Floor pads are designed to strip, scrub, clean, and polish floors.

By using the correct floor pad for the job you will maintain hard floors in the best condition possible.

There are three main components that make up a floor pad:

- (i) fibre is the backbone of the floor pad;
- (ii) resin bonds and holds the fibres together; and
- (iii) abrasive minerals are added to the pad; the type of mineral will vary depending upon the type of floor pad.

Pads vary in colour from dark (black) to light (white) according to their intended application. The white pad is the softest and the black pad is the most abrasive.

Black: *Stripping Pad.* A very aggressive stripping pad. It is designed to be used to wet strip floors.

Black High Performance: *Stripping Pad.* More abrasive than a normal black pad, with a very open weave to reduce clogging when removing old floor finish.

Brown: *Deep scrubbing and dry stripping* (not commonly used). Deep scrubbing removes the top layer of finish and restores the floor to a clean and even appearance prior to recoating the floor with sealer finish.

Green: *Deep Scrubbing.* It is used for cutting back floors (removing surface layer of polish) before recoating; this pad is less aggressive than the brown pad. A medium abrasive floor pad for wet scrubbing. This pad will remove embedded soil and black marks found in heavy traffic areas without stripping your finish to the tile.

Blue: *Light Scrubbing.* Used to lightly cut back (remove the surface of floor finish) before recoating.

Red: *Cleaning and dry buffing.* Used with a slow speed swing polisher. A light abrasive floor pad for regular cleaning and buffing. Red pads are also used on auto-scrubbing machines for daily scrubbing hard floors.

White: *Dry buffing floors.* A non-abrasive dry polishing floor pad for slow speed floor machines.

There are many additional types of floor cleaning pads not covered in this basic introduction to floor pads. For more information on floor pads you can read the attached documents

Whatever pad you are using, it is important to thoroughly rinse the pad under running water when you have finished cleaning or buffing or burnishing. Cleaning your floor pads after each use increases pad life by 30% or more, and ensures optimum efficiency and performance with each clean.

[Watch the video](#)

6.2 Floor Cleaning Brushes

Brushes vary based on the type and amount of bristles used. The aggressiveness of the brush depends on the thickness of the bristles, which range from fine and soft to thick and stiff. Some manufacturers use natural bristles while others use synthetic. There may also be differences in the mounting systems, though most manufacturers now use plastic blocks.

Types of Disc Floor Brushes

Bassine is a scrubbing brush made from natural fibres. It is designed for scrubbing hard floors. They are the cheapest brush to purchase, however they do not last as long as nylon or polypropylene brushes.

Nylon brushes are used in a wide variety of scrubbing applications. Nylon offers excellent resistance to many chemicals but should not be used with acids.

Polypropylene are softer and cheaper than nylon brushes. Polypropylene brushes are used for scrubbing of most hard surfaces. They have a similar scrubbing performance to bassine brushes but last a lot longer. Polypropylene brushes are good for cleaning/scrubbing ceramic tile floors.

Silicon Carbide/ Tynnex brushes are used for deep cleaning, scrubbing and stripping floors. Silicon carbide brushes are good for cleaning/scrubbing concrete floors.

Cylindrical Brushes (additional information – not for assessment)

Cylindrical brushes are normally used when cleaning difficult floors such as profiled floor where normal floor pads do not effectively clean in the valleys in the floor tiles.

Cylindrical brushes require a specialised machine and cannot be used on a normal swing polisher or auto-scrubber.

Cylindrical brushes have improved cleaning performance on profiled and textured floors when compared to traditional disk brushes. See picture opposite.

As can be seen in the picture cylindrical brush bristles penetrate the texture under pressure applied with a downward force into the floor surface. By comparison the pressure applied by disc brush tends to glide over the profile.

Traditionally cylindrical brushes have been reserved for cleaning industrial facilities and difficult to clean floors such as profiled and uneven floors, slip resistant tiles and grouted tile floors.

Machine manufacturers are now making larger ranges of cylindrical-brush-technology scrubbing machines for use on all types of flooring materials. Some machine manufactures claim increased cleaning performance across a wide variety of floors when compared to cleaning with pads and reductions in water consumption of 30% or more.

Brush manufacturers now make a range of colour coded brushes to suit a variety of cleaning tasks including:

Brush	Hi/ Lo	Soft	Medium	Aggressive
Colour	Orange	White	Red	Green/ Black
Application	Grouted/textured and structured floors.	All-purpose daily maintenance clean.	Deep cleaning, top scrubbing	Restorative heavy duty clean, stripping.

Section 7 - Restore work area, clean and store equipment

When you finish this section you will have an understanding of the following concepts and ideas:

- Restore work area to its original layout
- Clean & store equipment
- Prepare for the next shift

7.1 Restore work area to its original layout

Restore area to its original condition:

Once you have completed cleaning an area it is important to restore the area to its original condition. Restoring a room to its original condition is also called dressing a room. It means placing furniture such as chairs under desks and making the room look both clean and tidy. Dressing a room after cleaning is an expectation of all cleaning jobs.

If you have moved any furniture such as chairs, place these back where they belong. Do not drag, pull or push furniture across a hard floor as it may scratch and damage the floor.

Ask for help to move heavy furniture.

7.2 Clean & store equipment

Cleaning and storing equipment

When you have finished restoring a hard floor, you must clean the equipment and store it and any chemicals used in a safe, organised, *accessible* (easy to reach) manner.

Not only will items be easier to find but you will also reduce the risk of injury to yourself or others caused by poorly stored or unhygienic equipment.

Buckets: Wipe buckets and rinse them with hot water and detergent until all soil marks are gone. Store them upside down on the sink in your cleaner's room.

Dust mop: Use the vacuum cleaner to clean your dust mop. Run the hand nozzle up and down the head to remove as much dust as you can.

Mops: Wash the mop head in hot water. Some mop heads may also be washed in a washing machine. Place the mop in a position to dry. Do not leave it in the mop bucket because it will smell and rot.

Buffing machine: Clean brushes or pads, to loosen any build-up of polish, spray some water on an abrasive surface, such as concrete and buff the surface with the brush or pad.

- Scrub brush or pad with a stiff-bristled brush dipped in hot water and detergent;
- Wipe the buffing machine with a damp cloth.

Dispose of chemicals

- Never pour it back into its original container. If you do this you may transfer soil and bacteria to the concentrated chemical.
- Floor cleaning chemicals, such as detergents, can be poured down a sluice sink or toilet.
- Always read the Safety Data Sheet (SDS) or the manufacturer's instructions before disposing of chemicals.

7.3 Prepare for the next shift

Prepare all your equipment so that it is ready for the next shift. It should be clean and in working order so that there is no risk of safety or hygiene problems for yourself or others.

Make sure you do the following:

Check cleaning equipment and report any faults;

Check equipment is cleaned and stored properly;

Check chemical containers for cracks or leaks; make sure they are closed properly and that you can easily read chemical labels;

Dispose of waste chemicals, waste water and solid waste safely and according to company policy;

Always wash gloves in warm water and detergent and rinse thoroughly before removing them. Take them off and place them where they can dry easily; and

Always wash your hands well with detergent and warm water; rinse them in clean water and dry with a hand towel or hand dryer.