This chapter will give you an understanding of the tools, materials and equipment you will use to apply paint coatings and how to clean and maintain them correctly. Choosing the best surface coating for the job will depend on a number of factors. What type of surface are you painting on? Is it inside or outside (interior or exterior)? Is it someone’s home, a factory, a hospital or a shop?

The previous chapter covered preparation, and how important it is in order to achieve a high standard of work. However, the thing people notice is the final result.

By reading this chapter you will know how to:

1. Prepare domestic work areas and protect surrounding areas.
2. Prepare and apply water-borne and solvent-borne coatings by brush and roller in line with manufacturers’ instructions to non-complex areas.
3. Clean, maintain and store brushes, rollers and equipment for solvent- and water-borne coatings.
4. Store paint materials.
PREPARE DOMESTIC WORK AREAS AND PROTECT SURROUNDING AREAS

Before starting any job you need to do your own risk assessment – not only to make sure that you and those around you are safe, but also to make sure that your finished work will be of a high standard.

There are many factors to consider when using paint, as different conditions may affect your finished work. These include:

- external – rain, snow, sleet, overcast sky, wind, storms, sea mist, pedestrians, vehicle traffic, pollution
- internal – dust, grease, damp, poor light conditions, occupation (if part of the area is being used), public areas
- location – rural areas, industrial areas, coastal areas.

All paint relies on the temperature to enable water and solvents to evaporate into the atmosphere so that the material can dry. If the conditions are not good, problems can occur during drying.

If it is too warm, the following may happen:

- Applied paint becomes too thin and does not cover the previous coating.
- The paint may dry too quickly while you are applying it as a result of the solvent evaporating during the oxidation process.

If it is too cold, the following may happen:

- The paint will not dry.
- It may be difficult to apply the paint.
- The paint may become too thick to apply.
- Condensation can form on the painted area.
- Surfaces can be affected by frost.

If it is too windy, the following may happen:

- Paintwork may be covered in dust/debris, affecting the standard and quality of the completed work.
- Access equipment (e.g., ladder, scaffolding towers) cannot be used safely.
- There may be damage to property during the application of the paint material (e.g., paint splattering on cars or flower beds below).
- It will not be safe to use burning-off equipment.

INDUSTRY TIP

Some paints give off fumes as they dry, so make sure that your work area is well ventilated.

ACTIVITY

Make a list of different weather conditions and how these affect the work area. Compare your list with that of a partner.
If it is too wet, the following may happen:

- The film finish may be impaired in some way (eg loss of gloss, flashing).
- Paint may not adhere (stick) to the previous coat of paint.
- It may be unsafe to work.
- It may delay the completion of the job.

Always make sure that the work area is well ventilated if working inside, not only when rubbing down or painting but also when burning off, because as the paint softens it starts to give off fumes again.

**PREPARING WORK AREAS**

You should already have an understanding of the materials and equipment needed to protect a work area, as some of this was covered in Chapter 4. Here is a little more detail.

**PROTECTING WORK AREAS BEFORE AND DURING WORK**

When working in someone’s home, it is very important to remember that any part of the house you enter needs to be protected from damage or spillage. Items that will need protecting include:

- flooring, such as carpets, rugs, tiles, wooden floors, patio floors
- access walkways to the work area
- ceiling light fittings
- door furniture such as locks, handles and hinges
- curtains and rails
- sofas and chairs
- tables and any other furniture
- wall lights and fittings
- patio areas
- plants and plant pots if you are working outside.

Where possible, portable items should be stripped from the room and stored during the painting and decorating process.

- Remove all moveable items from the room and store them in other rooms, making sure that access routes are not blocked. Furniture that is too large to be moved should be relocated to the centre and covered with protective sheeting.
Home office equipment such as computers and printers that cannot be removed from the room must be covered carefully and unplugged (check with the client first).

Take care, if working in a kitchen, that hazardous surfaces such as gas and electric hobs are not turned on, causing a fire hazard.

If the carpet is to be lifted, roll it up with the underlay and place it in the centre of the room. Cover using protective sheeting.

Remove all curtains, nets and blinds and carefully fold them up, and if possible store them in another room to stop any damage occurring. If there is more than one window you may have to label them so you know where to hang them at the end of the job.

Remove all curtain rails and fittings and store them in a safe place together, ready for refitting.

Switch off the electricity supply at the mains if possible before loosening light fittings and switches. Do not leave them loose when you are away from the work area, as this could be dangerous when the mains is turned back on.

Remove all ironmongery (furniture) from windows and doors to be painted.

Mask up where needed, but remember not to leave masking tape on longer than necessary.

Cover floors with dust sheets and secure them with masking tape.

**USE OF DUST SHEETS**

The work area needs to be protected as soon as you start to prepare surfaces for decorating, so the use of dust sheets was covered in the previous chapter. Traditional cotton twill dust sheets are the most widely used kind, but there are other types on the market that may be more suitable for specific jobs. While amateur decorators may be happy to use old bedsheets, they may not be thick enough to stop paint seeping through onto floors and carpets. Plastic or polythene sheets are cheap and can be disposable but paint and other liquid spills stay wet for a long time so there is a risk of treading paint all around the house. Using heavy-duty dropcloths will ensure that floors are adequately covered.

Adhesive plastic covering is available for floors. It comes on a roll and can be disposed of after use. The advantage of this is that it does not require additional taping to secure it.

If you are working outside you will need to consider the following:

- Protecting flower beds – if you need to access doors or windows from the outside, make sure that you do not damage plants and
ornaments. Cover with light polythene dust sheets if necessary to stop paint or debris falling on plants and pathways.

- Terraces or patios may need protecting – not just from paint and debris, but also from steps or scaffolding. Use tarpaulin to protect the ground, as it is waterproof and harder wearing than cotton dust sheets.
- PVC guttering and pipes can be removed if required by unclipping from retaining clips, so that you can paint behind them.
- Make sure that there is no danger to the public and householders, and use warning signs where necessary.

**ADDITIONAL TOOLS**

Many of the tools that you will need for preparation have been covered already, but there are a few more that might be useful at this stage.

**Screwdrivers**

You will need a selection of screwdrivers to remove light fittings, switches and door furniture:

- slotted – for straight slotted screws
- cross-head – for cross-head (or Phillips) slotted screw heads
- Pozidriv – similar to a Phillips screwdriver but has more points of contact.

**Pliers or pinchers**

These are used to remove picture hooks from walls.

**Brooms, dustpans and brushes, shovels**

These are very important tools for a painter, not only for clearing up when you have finished, but also for clearing the area before you start work.

**Masking tape**

Masking tape is a self-adhesive paper which comes in 55m lengths and 12mm, 19mm, 25mm, 38mm or 75mm widths. It has a variety of uses. Interior tape is used mainly for masking items that cannot be removed and stored, but it can also be used for taping down dust sheets to wooden floors or carpets to stop them moving and prevent tripping accidents. It can be used to protect narrow surfaces from paint or paint remover. The longer masking tape is stuck to a surface the more strongly it adheres (sticks), so take care when removing it. It is available with different strengths of adhesion – so, for example, a seven-day masking tape will be safe to leave on for seven days and will still peel off without damaging the surface. A low-tack masking tape can be used for signwriting and borders. This does not adhere as strongly to surfaces and is less likely to pull off the underlying surface.
paint. Waterproof masking tape can be used for exterior work, such as masking up door furniture, window frames or fascia boards, and particularly to cover surrounding areas when painting rendered, brick or pebbledashed walls.

OTHER FACTORS

Other factors to consider when preparing the work area include:

- **Access** – can you gain access when you need to, and can you get equipment and materials in easily? Can you get to running water to wash equipment, dilute paint and so on? Are people going to need to use the area you are working on, and will that cause any danger to you or them (for example when working on stairs or hallways)?

- **Public areas** – you may be working in a domestic environment, but the property may still be accessed by visitors. You may need to put up barriers to prevent people entering your work area for their own safety.

**ENVIRONMENTAL HEALTH AND SAFETY REGULATIONS**

As explained in Chapter 1 the way you work is governed by certain regulations, which you should keep in mind while working. Many of the materials you will be working with are considered hazardous to health and need to be treated with caution (see COSHH, pages 9–11). For example, all paints contain vapours that are known as volatile organic compounds (VOCs).
VOCs
These are vapours that evaporate into the air at room temperature from chemical substances, including those in cleaning products, cosmetics and paint. VOC emissions contribute to air pollution and affect the air we breathe. The measurement of volatile organic compounds shows how much pollution a product will emit into the air when in use. The paint industry is trying to reduce emissions, and many low-odour paints are now being produced. The European Parliament has set maximum VOC levels for different paints and varnishes (EU directive 2004/42/EC) and insists that containers should have a VOC content label so the consumer can compare products and choose an alternative if necessary. You can also ask your supplier for a copy of the data sheet.

If you are using a product that gives off vapours, you may need to put up a notice to warn people and make sure that you are using appropriate personal protective equipment (PPE). (See Chapter 1 for more information about PPE.)

Disposal of waste
You need to be very careful when disposing of hazardous waste:
- Do not pour it down the sink.
- Try not to buy more paint than you need for a job, and consider applying another coat if you have some left over.
- Empty emulsion tins must be washed out and can then be disposed of in the household waste.
- Check with your local authority for how to dispose of oil based paints and varnishes.
- Rags and cloths that have been used for applying chemical solvents should be allowed to dry and then disposed of carefully, as they can be a fire risk.

Cuts, abrasions, burns and dermatitis
Be particularly careful if you cut, graze or burn yourself when preparing or painting, as chemical substances can enter open wounds and cause infection and even blood poisoning. Make sure you cover the area with a clean waterproof dressing. Contact dermatitis can be avoided by applying barrier cream before every job and wearing gloves where necessary.

You will also need to be aware of safety risks such as dust inhalation, working with electricity and working at height, and produce a risk assessment. You can find out more about health and safety risks in Chapter 1.
PPE
PPE you may need includes:
- dust masks
- goggles
- toe-cap boots
- hard hat
- high-visibility jacket.

REASONS FOR PAINTING

There are four reasons why a paint coating would be applied to a surface, so before moving on, take a little time to see if you can think of them. To help you, remember that we use the word DIPS.

Each letter stands for one of the reasons for painting:
- Decoration
- Identification
- Preservation
- Sanitation

Decoration
We all have our own taste – what we like and do not like – but one reason for decoration is to make things look nice. You might not like the colours that the client has chosen, but you still have to apply them to the best of your ability. With experience you might be able to advise the client if you know colours do not work together. There is a whole science around the use of colour, as some colours are said to make people feel different emotions. For example, pale blue can be calming, red can make you anxious and sunny yellows can make you happy. Red walls would not be ideal in a hospital, and white or pastel colours in a nightclub would probably not give the right effect.
**Identification**
Different colours or types of surface coating can be used to identify areas or components. For example, pipework may have a British Standard colour painted on it to show whether it is carrying gas, water or other liquids. Setting industry standards ensures that all manufacturers use the same colours for identification so that mistakes are not made.

<table>
<thead>
<tr>
<th>Pipe contents</th>
<th>RAL code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>RAL 1004</td>
</tr>
<tr>
<td>Fire fighting</td>
<td>RAL 3000</td>
</tr>
<tr>
<td>Air</td>
<td>RAL 5012</td>
</tr>
<tr>
<td>Combustible liquids</td>
<td>RAL 8001</td>
</tr>
<tr>
<td>Acids and alkalis</td>
<td>RAL 4001</td>
</tr>
<tr>
<td>Water</td>
<td>RAL 6010</td>
</tr>
<tr>
<td>Other liquids</td>
<td>RAL 9005</td>
</tr>
<tr>
<td>Steam</td>
<td>RAL 9006</td>
</tr>
</tbody>
</table>

*Pipeline identification colours – British Standard BS 1710: 1980 (Part 1)*

**Preservation**
Painting can stop metal corroding and wood rotting, particularly when either is exposed to weather. An exterior door that has not been painted or has lost its paint coating will rot and need replacing, which will cost far more than regularly maintaining the door with paint or varnish. Corroding metal can also cost lives.

**Sanitation**
Coating substrates with paint prevents germs and dirt penetrating the surface, and this makes them much easier to wash and keep clean. This is particularly important in hospitals, shops and manufacturing, or where food is being prepared.
There are two main types of paint:

- **Water-borne paint** – this means that the liquid part of the paint is water.
- **Solvent-borne paint** – this means that a chemical has been used instead of water to dissolve the other components of the paint.

When paint is applied to a surface, the water or the solvent (depending on the type of paint being used) will evaporate into the air, leaving a solid film that forms a protective and decorative layer on the surface.

Water-borne paint consists of three parts:

- **Thinner** – this is either the water or solvent part of the paint that dissolves the other components and makes it possible to apply the paint to a surface.
- **Binder** – this is a resin that forms the film of the paint. The binder determines how long the paint will last and the type of finish it will have (e.g., gloss, eggshell, flat).
- **Pigment** – this gives colour to the paint and is also responsible for the paint’s ability to cover the surface.

Oil-based paint contains a fourth element known as the drier, which speeds up the drying process.

Paint dries in one of two ways:

- **Evaporation** – the water or solvent turns into a vapour in the atmosphere and disappears.
- **Chemical reaction** – as the liquid part of the paint evaporates, the binder particles are drawn together, causing them to fuse and bind the pigment into a film.

### TYPES OF SURFACE COATINGS

The combination of layers of paint is known as a paint system, and may consist of many different paints. The foundation coat of paint on a new surface is the primer or sealer, and it forms a key between the surface and the paint. The first coat bonds to the porous surface where it sinks in and grips on to it – or if the surface is non-porous, the paint film will lie on the top of it. The second coat to be applied is known as the undercoat, and this is followed by as many finishing coats as necessary.

#### Primers

A primer is the first coat of paint applied to a surface. The main purpose of a priming coat is to make the surface suitable to receive further coats.
<table>
<thead>
<tr>
<th>Primer</th>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
</table>
| **Acrylic primer/undercoat** | - Water-borne paint thinned with water – used both as a primer and an undercoat.  
  - Usually available in white, but some manufacturers supply other pastel colours.  
  - Paint brushes and equipment will need to be cleaned with water. | Brush, roller or spray.        | - Can be applied to both exterior and interior surfaces.  
  - Can be applied to woodwork (softwood) old and new plaster, cement, concrete, hardboard, building boards.  
  - Not to be used on metal as acrylic primer contains water which may cause metal to rust.  
  - Can also be used as a matt finish for interior ceilings and walls. |
| **Etch primer**        | - Designed for re-treatment of clean ferrous metals to ensure adhesion of the paint system to the surface.  
  - Paint brushes and equipment will need to be cleaned using the manufacturer’s recommended cleaning solvent. | Brush or spray.                | - For pre-treatment of untreated surfaces such as aluminium, galvanised iron, zinc, copper, brass, lead, tin, clean iron and steel. |
| **Alkali-resisting primer** | - Primer that has been designed for surfaces that are alkaline in nature.  
  - Paint brushes and equipment will need to be cleaned with solvent (white spirit). | Brush, roller or spray.        | - To prime new and old building materials that are of an alkaline nature, eg plaster, brickwork, concrete blockwork. |


<table>
<thead>
<tr>
<th>Primer</th>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilising solution</td>
<td>■ Stabilising solution comes either clear or coloured.</td>
<td>■ Brush or roller.</td>
<td>■ To stabilise old powdery surfaces before painting.</td>
</tr>
<tr>
<td></td>
<td>■ The clear solution has better penetrating properties and is easier to apply.</td>
<td></td>
<td>■ Can be used to seal plasterboard before paperhanging.</td>
</tr>
<tr>
<td></td>
<td>■ Paint brushes and equipment will need to be cleaned with solvent (white spirit).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead-free wood primer</td>
<td>■ A general-purpose wood primer.</td>
<td>■ Brush.</td>
<td>■ Harder wearing than water-borne paint, so can be used on exteriors.</td>
</tr>
<tr>
<td></td>
<td>■ Available in white and pink.</td>
<td></td>
<td>■ Can also be used on interior surfaces, particularly where children and pets may come into contact with the surface.</td>
</tr>
<tr>
<td></td>
<td>■ Provides good adhesion for the undercoat.</td>
<td></td>
<td>■ Good for hospitals, nurseries and places where food is stored.</td>
</tr>
<tr>
<td></td>
<td>■ Non-toxic, unlike lead-based primers (although lead-based primers are not sold any longer, they may still be found on some old paintwork).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Paint brushes and equipment to be cleaned with solvent (white spirit).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium wood primer</td>
<td>■ This is a dull metallic grey oil based primer.</td>
<td>■ Brush.</td>
<td>■ Used for resinous timber.</td>
</tr>
<tr>
<td></td>
<td>■ Paint brushes and equipment will need to be cleaned with solvent (white spirit).</td>
<td></td>
<td>■ Used to seal surfaces previously treated with wood preservative.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Can also seal old bitumen-coated surfaces.</td>
</tr>
</tbody>
</table>
### Undercoats and finish coats

Undercoats are designed to give a sound base for the finish.

A finish coat (top coat) is the coat of paint that will be seen at the end of the job. There are many types of finish coat, and choosing the best one for the job often comes down to personal taste.

<table>
<thead>
<tr>
<th>Primer</th>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc phosphate metal primer</td>
<td>A special rust-inhibitive (stopping) primer.</td>
<td>Brush or roller.</td>
<td>Suitable for all ferrous metal surfaces.</td>
</tr>
<tr>
<td></td>
<td>Paint brushes and equipment will need to be cleaned with solvent (white spirit).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Opacity**

The ability of paint to hide a surface – the higher the opacity the better the paint is at covering the background colour.

<table>
<thead>
<tr>
<th>Undercoat/finish coat</th>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil based undercoat</td>
<td>A heavily pigmented oil based paint that dries to a matt finish and comes in a variety of colours. Good adhesion to the primer and good opacity. Paint brushes and equipment will need to be cleaned with solvent (white spirit).</td>
<td>Brush, roller or spray.</td>
<td>Over previously painted surfaces, timber, plaster concrete and metalwork. Gives body and colour to a paint system and can be used over all primed surfaces both inside and outside.</td>
</tr>
<tr>
<td>Matt emulsion</td>
<td>A water-thinned paint suitable for painting ceilings and walls. Easier to apply than oil based paints. Matt emulsion dries to a flat/matt finish – small imperfections do not show, as no light is reflected. Paint brushes and equipment will need to be cleaned with water.</td>
<td>Brush, roller or spray.</td>
<td>Mainly used for walls and ceilings. Suitable for use over plaster, plasterboard, hardboard, brickwork, cement, rendering and wallpaper.</td>
</tr>
</tbody>
</table>
**Undercoat/finish coat**

<table>
<thead>
<tr>
<th>Undercoat/finish coat</th>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
</table>
| Vinyl silk emulsion   | ■ Similar to matt emulsion paint, but with less opacity, and dries to a sheen finish.  
■ Paint brushes and equipment will need to be cleaned with water. | ■ Brush, roller or spray. | ■ Uses the same as matt emulsion, but dries to a sheen finish which can be easily wiped down and is harder wearing.  
■ Suitable for bathrooms, kitchens, hospitals and schools. |
| Gloss finish          | ■ Interior and exterior decorative paint, used as the main protective coating in the decorating trade.  
■ Dries to a very high-gloss finish.  
■ Excellent flow when laying off.  
■ Very good flexibility, allowing the paint to expand and contract when dry.  
■ Good weather resistance.  
■ Paint brushes and equipment will need to be cleaned with solvent (white spirit). | ■ Brush, roller or spray. | ■ Decorative finish for interior and exterior surfaces.  
■ Can be used on all woodwork, plaster and metalwork. |
| Eggshell/semi-gloss finishes | ■ Interior decorative paint that dries with a sheen, also known as a silk or satin finish.  
■ This is a solvent-borne paint and will dry to a harder finish than vinyl silk.  
■ Paint brushes and equipment will need to be cleaned with solvent (white spirit). | ■ Brush, roller or spray. | ■ Decorative finish for interior surfaces, including ceilings, walls, softwood, hardwood and metal surfaces. |

**Laying off**

Finishing off an area of paintwork with very light strokes of the brush in order to eliminate brush marks.
### Undercoat/finish coat

<table>
<thead>
<tr>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A durable paint used for exterior walls (not timber surfaces).</td>
<td>Brush, roller or spray.</td>
<td>Used to protect surfaces against the weather while also giving a good decorative finish.</td>
</tr>
<tr>
<td>Good opacity and alkali resistant.</td>
<td></td>
<td>Used on new and old cement rendering, concrete, brickwork, pebbledash and other types of masonry.</td>
</tr>
<tr>
<td>The finish is tough, durable and flexible.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paint brushes and equipment will need to be cleaned with water.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A water-borne coating for interior use, which dries to an eggshell finish or a soft semi-gloss finish.</td>
<td>Brush, roller or spray.</td>
<td>Decorative finish coat for all interior surfaces.</td>
</tr>
<tr>
<td>Paint brushes and equipment to be cleaned with solvent (white spirit).</td>
<td></td>
<td>Used where there is poor ventilation (toilets, kitchens, etc) so it has low odour and is non-toxic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Requires no undercoat and dries quickly so that a second coat can be applied when required.</td>
</tr>
</tbody>
</table>

### Clear finishes and wood preservatives

Paint does not always need to provide colour. For example, timber needs painting in order to preserve it, but it is often important to let the grain of the wood show through, so a variety of clear finishes, glazes and wood preservatives are used.
The following table covers varnishes and preservatives you may come across.

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulsion varnish</td>
<td>■ A milky white material that provides a clear washable surface when dry.</td>
<td>■ Brush, roller or spray.</td>
<td>■ Protective coating on wallpaper.</td>
</tr>
<tr>
<td></td>
<td>■ Can be thinned using water.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Grease and food-stain resistant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Washable and resistant to mild chemicals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Non-toxic.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Paint brushes and equipment will need to be cleaned with water.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyurethane</td>
<td>■ Clear surface coating available in gloss, matt or eggshell finish.</td>
<td>■ Brush or roller.</td>
<td>■ Protecting new and stained timber.</td>
</tr>
<tr>
<td>varnish</td>
<td>■ Use the manufacturer’s recommended solvent to thin it.</td>
<td></td>
<td>■ Used to protect paintwork, furniture and special decorative finishes like marbling and graining.</td>
</tr>
<tr>
<td></td>
<td>■ Water, chemical and heat resistant.</td>
<td></td>
<td>■ Although hard wearing not really suitable for exposed exterior surfaces.</td>
</tr>
<tr>
<td></td>
<td>■ Good adhesion.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Paint brushes and equipment will need to be cleaned using manufacturer’s recommended solvents.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil-resin varnish</td>
<td>■ A liquid coating that becomes a clear and protective film when dry.</td>
<td>■ Brush or roller.</td>
<td>■ Protecting new and stained timber.</td>
</tr>
<tr>
<td></td>
<td>■ Hard wearing and suitable for external use.</td>
<td></td>
<td>■ Used to protect paintwork, furniture and special decorative finishes like marbling and graining.</td>
</tr>
<tr>
<td></td>
<td>■ Water and weather resistant.</td>
<td></td>
<td>■ Suitable for external use.</td>
</tr>
<tr>
<td></td>
<td>■ Dries to a high-gloss finish.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Paint brushes and equipment will need to be cleaned with solvent (white spirit).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Description</td>
<td>Method of application</td>
<td>Uses</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
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</tbody>
</table>
| Quick-drying varnish  | ■ A fast-drying, high-quality varnish that is easy to apply and has a very low odour.  
■ When applying it has a milky white appearance but when dry it forms a clear finish.  
■ Available in high-gloss or satin finishes.  
■ Paint brushes and equipment will need to be cleaned with water. | Brush, roller or spray.                | ■ Gives good protection and decoration for interior timber and re-coating a previously coated surface that is in good condition.                                                                 |
| High build wood oil   | ■ A highly durable micro-porous, translucent, semi-gloss finish that comes in a variety of colours (wood tones).  
■ Forms a very flexible film once dried that can withstand changes in timber without cracking.  
■ Paint brushes and equipment will need to be cleaned with solvent (white spirit). | Brush or roller.                        | ■ The flexible micro-porous properties of high build wood stain makes it particularly suitable for the protection and decoration of exterior timber surfaces like window frames and doors. |
| Universal preservative | ■ Clear solvent-borne liquid.  
■ Takes 16 to 24 hours to dry under normal conditions.  
■ Contains fungicide.  
■ Paint brushes and equipment will need to be cleaned with solvent (white spirit). | Brush or roller.                        | ■ Applied to new softwood that has not been treated with a preservative and suitable as a coating for weathered timber surfaces. On old timber the surface needs to be sound.  
■ Stir well before use and apply one generous coat, paying particular attention to the end grain and joints. |

**Micro-porous paint**
A paint that leaves a breathable film that allows moisture and air to be released but prevents moisture, like rain, getting in.

**Translucent**
Allows light to pass through, but prevents images from being seen clearly.
<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
<th>Method of application</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective wood stain</td>
<td>■ A specially formulated protective wood stain.</td>
<td>■ Brush and lint-free rag.</td>
<td>■ This can be used on both exterior and interior surfaces on softwood and hardwood as a decorative treatment.</td>
</tr>
<tr>
<td></td>
<td>■ Paint brushes and equipment will need to be cleaned with solvent (white spirit).</td>
<td></td>
<td>■ Not to be used on painted or varnished timber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Apply two coats of the wood stain by brush and lint-free rag. Allow to dry overnight in between coats.</td>
</tr>
</tbody>
</table>

**PAINT SYSTEMS**

Below are examples of the order of paint for paint systems.

<table>
<thead>
<tr>
<th>Paint system</th>
<th>First coat</th>
<th>Second coat</th>
<th>Third coat</th>
<th>Fourth coat</th>
</tr>
</thead>
<tbody>
<tr>
<td>New, unpainted surfaces to be painted with oil based or water-borne paints</td>
<td>Primer/sealer</td>
<td>Undercoat</td>
<td>Gloss</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primer</td>
<td>Undercoat</td>
<td>Eggshell</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Emulsion</td>
<td>Emulsion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emulsion</td>
<td>Emulsion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special primer</td>
<td>Undercoat</td>
<td>Top coat</td>
<td>Top coat</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Stain</td>
<td>Varnish</td>
<td></td>
</tr>
<tr>
<td>Previously painted surfaces</td>
<td>Undercoat</td>
<td>Gloss</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Undercoat</td>
<td>Gloss</td>
<td>Gloss</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Undercoat</td>
<td>Eggshell</td>
<td>Eggshell</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emulsion</td>
<td>Emulsion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acrylic undercoat</td>
<td>Acrylic gloss</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPLICATION TOOLS FOR SURFACE COATING**

There is a wide selection of brushes and rollers on the market, which are used to apply paints, stains and clear coatings. The following will give you an understanding of which tool to use for a particular job.

Chapter 4 covered the tools and equipment needed for preparing surfaces for decoration, and stressed the importance of buying...
good-quality tools and equipment. This is also the case for the tools and equipment required for applying surface coatings.

**BRUSHES**

All brushes are made up of five parts:

- **Handle** – usually made of a hardwood such as beech, sealed to make handling and cleaning easier and to stop water soaking into and damaging the wood. It can also be made from plastic.

- **Ferrule/stock** – this is a metal band that holds the filling and the handle together.

- **Epoxy/setting** – an adhesive which cements the filling by its roots into the stock.

- **Filament/filling** – these are usually natural bristle or synthetic man-made hairs, eg nylon.

- **Spacer** – small wood, plastic or cardboard strip that creates a reservoir to carry paint.

Natural bristle brushes are usually made from pig, hog or boar hair and are particularly suitable for applying oil based paints. Synthetic or man-made bristles are more springy and are better suited to applying water-borne paints.

**Flat paint or varnish brushes**

Available in pure bristle or synthetic hair, the cost of these brushes varies according to the quality and the quantity of the filling. They can be used for applying most types of paint and varnish coatings to a variety of surfaces, including doors, window frames and ceiling and wall areas.

![Varnish brushes](image-url)
**Washing-down brushes**

These are relatively cheap two-knot brushes, available in one size only, and used for washing down with sugar soap or detergent.

**Flat wall brushes**

These are available in a wide range of varying qualities, and may be either man-made or pure bristle. The quality is dependent on the weight and length of the filling. This type of brush is used to apply emulsion to large flat areas such as ceilings and walls, and may also be used to apply adhesive to wallpaper.

**Two-knot brushes**

These brushes are available mainly in pure bristle, and the knots are usually bound in copper wire, as it does not rust. They are used to apply water-thinned paints to rough surfaces such as cement, rendering and brickwork. They are also used to apply cement-based paints, as the bristles are not attacked by the alkali in the cement, and for washing down surfaces when using a cleaning agent such as sugar soap.

**Cement paint brushes (or block brushes)**

These brushes have man-made filling or coarse white fibre that has been set in a polished wooden handle. Cheaper block brushes are available in plastic. This is an inexpensive brush type for applying masonry finishes and cement paints to a rough surface such as cement rendering or brickwork.

**Fitch brushes**

These are available with pure bristle or synthetic filling, which is usually white and set in a round or flat ferrule. They are used for fine detailed work in areas that are difficult to reach with a paint brush.

**Radiator brushes**

These have a bristle filling attached to a long wooden handle, or a wire handle that can be bent to fit into awkward areas. They are used to apply paint to areas that are difficult to reach with a paint brush, particularly behind pipes, radiators and columns.

**ROLLERS**

Applying paint to a large flat surface may be quicker using a paint roller. Specially shaped rollers are also available for painting corners, but sometimes it can be easier to use a paint brush. The standard type of roller used by decorators is a cylinder roller, which consists of a straight cylinder with a fabric cover called a sleeve.
The choice of roller will depend on the type of coating being used and the type of substrate to be painted. There are many types, including very smooth rollers for applying finishing paints to flat doors and lambswool rollers for applying paint to a textured surface such as pebbledash. It is important to select the appropriate roller for the job. When working on ceilings or high walls, an extension pole attached to the roller may enable you to avoid using scaffolding.

**Mohair**
Rollers made from natural mohair are very expensive, but you can now buy synthetic mohair rollers, which are more affordable. Short-haired rollers are used to apply gloss paint to a smooth surface, medium-haired are for applying emulsion and long-haired rollers are for pebbledashed surfaces.

**Short-pile lambswool**
Lambswool roller sleeves are made from the wool of sheep and are used to apply water-borne or oil based paint to a smooth surface such as plaster, plasterboard or metal.

**Long-pile lambswool**
These roller sleeves have a deep pile, which is well suited to applying water-borne paints to brickwork and pebbledashed surfaces.

**Woven long pile**
All woven rollers are made of synthetic filaments. Long-pile rollers are used mainly for applying emulsion and masonry paint to pebbledashed surfaces. They come in 330mm widths, so become very heavy when loaded with paint. All woven rollers are very similar to lambswool rollers but are much cheaper, so can be thrown away after use.

**Woven medium pile**
These are used for applying emulsion, primer, rust-protection paint and varnish to small surfaces or semi-rough surfaces.

**Polyester long pile**
These are synthetic fabric rollers, with a highly absorbent 18mm pile, used for applying water-borne coatings such as emulsion and masonry paint to rough areas.

**Polyester medium pile**
These are similar to polyester long-pile rollers, but with a shorter, 12mm, pile.

**Woven short pile**
The 6mm-deep pile is used for applying emulsion, primer, rust-protection paint and varnish to small surfaces.
Small rollers
100mm rollers can be bought in long-, medium- and short-pile versions and can be made from natural or synthetic material. They are used for applying paint to small areas, for example flush doors, panels, furniture and small wall areas. They can also be used for applying paint behind a radiator.

PREPARING PAINT FOR USE
Once the surface is prepared and you have chosen the paint system to apply there is still some work to do before you start to paint. The covering you are going to use will usually come in a large container, so the paint will need to be decanted into a paint kettle, a roller tray or a bucket.

DECANTING PAINT
If the container of paint has not been used before, you must do the following:

- Remove any dust from the lid of the paint container. It may have gathered dust by being stored close to someone rubbing down.
- Open the lid using a paint tin opener. Never use the edge of a paint scraper or filling knife, as the blades are easily damaged.
- Stir the paint with a paint stirrer or palette knife until all the sediment is dispersed and the required consistency is achieved.
- Pour the required amount of paint into the paint kettle or roller tray.
- With your brush, remove any paint that may have gathered in the rim of the paint container and then wipe it clean using a rag.
- Replace the lid of the paint container so that the remaining paint does not become contaminated.

If the containers of paint have been previously used, remove any dust from the lid of the paint container and open it as described above. Also bear in mind the following points:

- The air trapped inside the container when the lid was last replaced may cause a skin to form on the surface of the paint. If there is a
skin present, it can be removed by cutting it away from the edge of the inside of the container. Lift out the skin intact if possible and dispose of it.

- Search the paint for lumps and debris by straining. Place a paint strainer on a paint kettle and pour the required amount of paint through the strainer to remove any bits of skin or contamination that may be present from the last time the container was opened.
- Remove the strainer and clean it or dispose of it.
- Clean the rim of the container using a rag and then replace the lid.

Traditional strainers will need cleaning after each use, otherwise they will clog up when the paint dries. Single-use disposable strainers are available, but these do work out more expensive. For a cheaper option you can use old tights or stockings to strain the paint, and then dispose of them.

The **viscosity** of the paint will have to be checked to make sure the paint is the correct thickness to apply to the surface. Paint that is too thick will be hard to apply, and paint that is too thin will not give sufficient coverage. Check the manufacturer’s instructions before thinning out paint.

**APPLY WATER-BORNE AND SOLVENT-BORNE COATINGS TO NON-COMPLEX AREAS**

**PAINTING LARGE AREAS**

When painting large areas, such as ceilings and walls, there are a number of things to consider.

**What do you need to reach the work areas?**

If you are working on a ceiling or a high wall you may need some form of scaffolding to reach the work area, or you may be able to manage with a pair of steps. The important thing is to plan how you are going to reach the whole area to be covered, because once you have started you will need to keep the edge going so that paint will flow into itself and not leave fat edges.

**Is the surface flat or textured?**

This will determine what tools and equipment you will need to carry out the painting.

**What is the drying time of the paint?**

The manufacturer’s instructions on the paint container will tell you how quickly the paint will dry. If the drying time is quick and you have a large area to paint, you may need a second person to help. The instructions will also tell you how long to wait before giving the surface a second coat.
**Will you need more than one person to paint the work area?**
Remember that you will need to keep the edge wet to ensure that you produce a solid paint film by eliminating brush strokes. You may need to work with a partner to achieve this.

**Is the surface porous or non-porous?**
This may affect the drying time, the consistency and the amount of paint required. See Chapter 4, page 151, for more about porosity.

**What should you use to apply the paint?**
For small areas such as doors, window frames and pipes you may need only a brush, but for larger areas you may need a roller for the area and a brush for cutting in around the edges. If two of you are working on the same area, one may cut in and the other may apply the paint using the roller.

**Where should I start?**
When painting large areas, plan where to start and where to finish to ensure that the edge does not dry off before the next application of paint. Look at the area that is going to be painted, and remember that you will need to keep the edge wet – so whether it is a ceiling, wall, or door always start at the narrowest part.

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**APPLICATION OF PAINT COATING TO CEILINGS AND WALLS**

**CUTTING IN**
When painting an area with a large brush or roller it is difficult to get into the corners and around obstructions, so before you start you will need to use a small brush to make a neat line around door frames, windows, mouldings and internal angles. Professional decorators rarely use masking tape to cut in around windows and other obstacles, as it is time consuming and paint sometimes seeps under the tape anyway. You will develop the skill to paint straight lines neatly – it may take a while to have the confidence to paint freehand, but practice makes perfect.

Once you have cut in the edges you can then fill in the area with a large brush or roller.

**WATER-BORNE PAINTS**
When applying water-borne coatings such as emulsion paint to ceilings or walls by brush, work in stages as shown on the next page. However, do not lay off in the conventional way, as you would when painting a door (see page 207). Cross-hatching is the best method when applying emulsion, to minimise the effect of brush marks (tramlines) created by the brush.
When matt emulsion dries, the light is **refracted** rather than running down the brush marks, thus making the paint appear more **opaque** and matt.

Vinyl silk emulsion highlights defects of both the surface and the brush marks, but it is easier to keep clean than matt and can be wiped over with a cloth.

If you are using oil based paint on ceilings you will need to follow the same process you used when applying paint to walls.

In order to keep the wet edge to a minimum in terms of both time and area you will need to work on small sections at a time by mentally dividing the wall into small squares.

This is the sequence for one decorator applying paint to a wall:

<table>
<thead>
<tr>
<th>One decorator paints sections 1–6</th>
<th>5</th>
<th>3</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Example area 2.5m × 5m

If two decorators are working on a large wall, one would cut in while the other decorator filled in with a roller.

This is the sequence for two decorators applying paint to a ceiling:

<table>
<thead>
<tr>
<th>One decorator paints 1–3, above, at the same time as the second decorator paints 1–3, below</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Example area 2.5m × 5m

As explained earlier, make sure you keep the edge wet. The size of the brush you use will depend on the size of the area being painted. Remember, you are aiming to keep the edge wet and at the same time to apply an even coat.

When using brushes and rollers on large surfaces such as ceilings and walls:

- cut in the edges first at the ceiling or wall line
- cut around obstacles such as electrical fittings and any fixtures
- use a suitable-sized paint brush for the cutting in.
APPLICATION PROCEDURES

The following instructions describe application procedures in different situations.

APPLYING SOLVENT-BORNE PAINTS BY BRUSH TO NON-COMPLEX AREAS

STEP 1 Apply the first application of coating to the surface using the cross-hatch method. Work in areas of approximately 300mm square along the surface and then continue down or across the surface.

STEP 2 Lay off the applied paint in the short direction, overlapping each brush stroke by a third of the width of the brush. The paint will flow into itself and make an invisible join.

STEP 3 When applying the paint, you will need to put light pressure on the brush to make the bristles work the paint to an even application.

STEP 4 Finally, lay off in the final direction, lengthways. You do not need to load any more paint on to the brush for the laying off process.

INDUSTRY TIP
You will find at first that you make mistakes when applying paint, for example putting it on too thickly or not brushing it out evenly. Don’t worry – the more you practise, the fewer mistakes you will make.

INDUSTRY TIP
Close windows and doors when applying paint to large areas – the lack of ventilation will help to slow down the drying time by slowing the evaporation rate of the solvents, and this gives a wet edge for longer. Warning: Wear a respirator when using this method, as some paints may give off fumes harmful to health.
APPLYING OIL BASED AND ACRYLIC PAINTS BY BRUSH TO DOORS

If you are painting a door that opens towards you into the room, you will need to paint the edge with the lock and fittings on first. When you are painting a door that opens away from you, you will need to paint the hinge edge first. Paint the edge before the face of the door, as once the face has been painted there may be a build-up of paint on the edge, which will be less noticeable when the paint has dried.

Here are some factors to consider when applying paint coatings to doors:

- **Is it an external door?** External doors are often made from hardwood to help protect them from the weather and should be coated with an oil based paint. Remember that paint will dry quicker outside.

- **Is it an internal door?** Internal doors are more likely to be made from softwood and not affected by bad weather, so can be painted using either oil based or acrylic paint.

- **Is the surface flush or panelled?**

- **Is the surface PVC or metal?**

- **Are there any glazed (glass) areas?**

The traditional sequence of painting a flush door starts at the top left-hand corner and ends at the bottom right, as shown on the diagram.

Always rub down between coats to remove nibs, and then use a dusting brush to remove any fine dust remaining on the surface.

**Panelled doors**

When painting or varnishing a panelled door, follow the sequence shown in the diagram. Start at the top left panel to help avoid fat edges forming. Remember to lay off following the direction of the grain.
APPLY WATER-BORNE AND SOLVENT-BORNE COATINGS TO NON-COMPLEX AREAS

Sequence for painting a panelled door

PAINTING LINEAR WORK
All rooms have some form of linear work, consisting of the following surfaces:

- door frames
- skirting boards
- mouldings.

When painting these surfaces, use a small cutting-in brush and make sure that the surfaces are not overloaded with paint, as this could result in runs and sags, spoiling the finished look of the surface.

FERROUS AND NON-FERROUS SURFACES
If the surface needs priming, use the appropriate primer followed by an undercoat and finishing coats.

The method for applying paint is the same for all surfaces:

1. Lightly rub down with fine abrasive.
2. Dust off.
3. Apply the coating and lay off to form an even coat of paint.

VARNISHING OR STAINING TIMBER SURFACES
Although this can be a separate specialist job, you may be called on to varnish a timber surface such as a door or a skirting board. On surfaces that are to be covered with opaque paint the undercoat and primer will not show through the finishing coats, but this is not the case with translucent or transparent coverings. Stains and varnishes protect timber surfaces without obscuring the beauty of the grain. It is therefore important that these surfaces are prepared in a different way from wood that is painted.
WOOD STAINS

Wood stains can be used on exterior and interior timbers and when applied they soak deep into the timber surface to emphasise the grain of the wood. They come in a variety of colours, from natural wood shades to vibrant colours intended to change the appearance of the timber. They can be sealed with clear varnish or polish after application.

Wood stain application

Before applying the wood stain make sure the surface is dry, then lightly rub down using fine silicon carbide paper, with the grain. Remove dust and apply the stain with a brush and a lint-free cloth. Lay off following the direction of the grain so that the wood stain flows and forms an even finish.

VARNISH

This is a transparent liquid that is applied to a surface to produce a hard, protective, transparent coating. Varnish can be clear, and is also available already stained in wood colours.

Varnish application

The aim is to produce an even level film free from runs, sags and pin-holing and with no dust or bittiness. It is important to apply the varnish firmly and confidently. If the coating is rubbed out too thinly and is bare in places it will be impossible to obtain an evenly distributed film, and this result in runs and a poor appearance. Previously varnished surfaces should be lightly rubbed down to de-nib them, then dusted off and the surface wiped over with a tack rag. Knots should not be sealed with knotting solution, as this will show through the varnish. Some surfaces will require more
APPLY WATER-BORNE AND SOLVENT-BORNE COATINGS TO NON-COMPLEX AREAS

preparation so will need sanding, then should be wet abraded using silicon paper.

POST-APPLICATION DEFECTS

As decorators we aim to produce a perfect finish, but mistakes can be made that need correcting. Chapter 4 listed many of the common defects you may find when preparing previously painted surfaces. These and other defects are covered here in a little more detail, focusing on what causes them and how to avoid making them in the first place:

- **Cissing** – take care not to pick up grease on the bristles of the brush, as this can cause cissing (when the paint does not form a continuous film on the surface). Check also that there is no grease on the substrate. If an area has cissed, allow it dry before wiping off, degreasing and repainting.

- **Orange peel** – this texture may be left by certain roller sleeves when applying paint to the surface. Make sure that the pile on the roller is not too thick for the job – however, most rollers will leave a slight orange-peel effect. If a smooth, flat finish is required it is best to use a brush.

- **Ladders and excessive brush marks** – these are paint defects in which the laying-off brush lines can be seen after the final laying-off process has been completed. When laying off, use light brush strokes so the paint flows into itself. To rectify these defects you will need to wait until the paint is thoroughly dry, not just touch dry. The surface will then need to be wet and dried before being recoated (see abrading in Chapter 4). Try not to break through the surface of the paint film when rubbing down, or you may have to undercoat the area again.

- **Runs** – this is a defect caused by over-application of paint, which at first sags and then turns into runs before drying. Paint needs to be applied evenly and laid off so that it flows into itself. Rectify in the same way as ladders.

- **Sags and curtains** – these are similar to runs, and should be rectified in the same way as ladders.

- **Excessive bits and nibs** – these may occur if the paint has not been strained or the surface not dusted down properly after rubbing down. They may also happen as a result of other tradespeople doing their job, or just walking by if there is dust on the floor. If the paint is the problem, stop and strain it – the problem will not just go away. Dust off the surface if necessary and make sure you don’t paint while someone is sweeping up around you. Bits and nibs on the surface will have to be...
thoroughly rubbed down when completely dry before you apply the next coat.

- Fat edges – this is a fault of application whereby a thick ridge of paint occurs on a corner or *arris*. It can be avoided by laying off at the corners with an almost dry brush. This can be a particular problem when painting doors, as paint tends to build up on the edges.

- Ropiness – also known as ribbiness or tramlines. This occurs when paint does not flow evenly and is usually caused by faulty workmanship. It could happen as a result of applying the paint unevenly or over-brushing the paint until it starts to set (not keeping the edge alive/wet).

- Misses – these are areas that have been missed when applying paint, generally through carelessness. When dry, the area will have to be re-coated and then checked to make sure the area is uniformly covered. If not, re-coat.

- Skid marks – these are usually caused by overloaded rollers skidding over the surface.

- Paint splatters and specks on surrounding areas – this could be a result of over-vigorous brush strokes or having too much paint loaded on the brush. Make sure that surrounding areas are protected before starting work. Remove splatters with the appropriate solvent – water for emulsion, white spirit for gloss paint.

**CLEAN, MAINTAIN AND STORE BRUSHES, ROLLERS AND EQUIPMENT**

As with all tools and equipment, there is little point in buying good-quality paint brushes and rollers if you do not clean and store them properly.

**CLEANING PAINT BRUSHES AND ROLLERS**

Tools that have been used for oil based paint will need cleaning with a different solvent than tools used for water-borne paint, but the aim is the same – to remove all of the remaining paint from the filling and stock of the brush. This is the process:

- Identify the type of paint that has been used, whether it was oil based or water-borne paint (you may not have been using the brush yourself).

- Pour excess paint from the kettle or roller tray back into the paint container and wipe the brush on the container to remove as much
paint as possible (some decorators use a piece of board to wipe their brush on).

- Wash the brush in the correct solvent – for oil based paint use white spirit or the manufacturer’s recommended cleaner. Use water for water-borne paint.

**Cleaning oil based paint equipment**
Follow this process when cleaning oil based paint equipment:

- Pour the cleaning agent (white spirit) into the paint kettle and use a vigorous pumping action to remove paint from the stock. Repeat until there is no evidence of any colour coming from the brush.

- Spin the brush between your two hands to remove as much of the solvent as possible (paint brush spinners can help with this job).

**Cleaning water-borne paint equipment**
Follow the same process as for oil based paint, but use warm soapy water instead.

**Cleaning rollers**
Rollers take longer to clean than paint brushes, and the longer the pile the more time consuming they are. Using cheaper roller sleeves that can be thrown away at the end of a job can be cost-effective.

If you cannot clean up your brushes and rollers at the end of the day, they can be **steeped** in water or solvent until they can be cleaned properly. Do not leave them there for too long, though, as the liquids will evaporate and the brushes and rollers will dry out, making them unusable.

**INDUSTRY TIP**
Remember to wear rubber gloves and goggles to protect your hands and eyes from paint and solvents.
Cleaning other equipment
Excess paint from used kettles, roller trays and roller buckets should be wiped back into the paint container, and the item should be washed with the appropriate solvent. Once these items have been cleaned they should be stored in a dry area, as damp may cause metal to rust.

STORING EQUIPMENT

STORING PAINT BRUSHES
Clean paint brushes should be stored in a cool, dry place. Excessive heat may cause the bristles and setting material to shrink, resulting in loose ferrules and bristles. In damp conditions mildew may develop on the bristles, which will damage the brush.

Never store the brushes with the filling pointing downwards, as this will bend the bristles and ruin the brush.

A brush keeper is used to store brushes in a wet state. The brush is kept in a bottle of solvent with an evaporating wick. The fumes from the solvent replace the air inside the brush keeper, preventing the brushes from drying out.

STORING ROLLERS
Rollers should be stored at a moderate temperature in a place where they cannot be contaminated by chemicals, oil or grease. If possible, hang them up so that the air can flow around the roller sleeve. If you cannot hang them up, stand them upright, as storing them on flat surfaces may crush the pile.

STORING PROTECTIVE SHEETING
Cotton dust sheets and other protective sheeting should be given a light shake once finished with (although not near wet paint!) and folded up ready for use. If sheets are wet or damp they should be allowed to dry before being folded and stored to prevent mildew forming on them. All protective sheeting should be stored on shelves off the floor. It is important to keep sheeting clean and dry because it will be used to protect floors another time. If need be, send it away to be cleaned.

Sheeting such as tarpaulin, PVC-coated nylon, rubber-coated cotton and heavy cotton canvas should be stored in the same way as cotton dust sheets. Rubber tarpaulin can be wiped clean using a sponge and warm water and allowed to dry before being folded and stored.

If protective sheeting is not used for some time it will need to be checked for damp. If there are signs of damp, unfold and air-dry it before re-folding and storing it.
CARE OF PPE

It is very important to keep your PPE clean and in good condition. Check it daily to make sure that it will do the job it is intended to do.

Safety boots/toe-cap boots
After use wipe away dirt and grime with a cloth, as some solvents may harm the leather. Clear the treads and clean as required.

Hard hats
A hard hat should be cleaned at least once a month or as often as necessary to remove oil, grease, chemicals and sweat. Soak in a mild solution of soap and hot water, rinse with clean water, wipe and let the air dry it. Sunlight can damage the hat, so check for cracks and splits and replace the hat if necessary.

High-visibility jackets
Wearing a high-visibility jacket is meant to make it easier for other people to see you, so you must keep it clean. Wiping it clean with a damp rag should be sufficient.

Goggles
There are lots of jobs that will require you to wear goggles (rubbing down, washing down cleaning solvents from brushes, etc). Wash them in mild soapy water to keep the lenses free from grease and dirt.

Protective gloves
Make sure that there are no tears or splits in rubber gloves, as solvents and chemicals may seep through and harm the skin (they can cause rashes and dermatitis). Cotton or latex gloves are good for light work. Wash cotton gloves regularly, or wear disposable latex gloves. Remember always to apply barrier cream, even when you are wearing gloves.

Dust mask
Your dust mask will need changing regularly depending on the type of work you are doing. For example, when you are doing heavy rubbing down or sanding the mask will need changing more often than for light rubbing down.

For more information, look back at the PPE section in Chapter 1.

STORE PAINT MATERIALS

New or partially used materials and tools and equipment will need storing correctly to ensure safety and so that they do not deteriorate. They should be stored in such a way as to protect your own health and safety and that of others. Many chemicals used by decorators have a low flash point, and if they are kept in hot conditions they are likely to explode or catch fire.
The storage area should be dry, well ventilated and frost free all year round but should not contain any naked flames, for example gas heaters or boilers, as many materials are flammable. For the same reason you should not smoke in a storage area.

Here are some things to consider when arranging storage areas:

- The storage area should be fitted with sturdy racks, with large and heavy material stored on the bottom shelves. Never store powder filler or textured finish materials on concrete floors, as floors can remain cold and damp even in warm weather and the products will be unfit for use. Small containers of filler that have been opened can be stored in airtight plastic containers.

- Oil based paints (undercoat, gloss and varnish) and water-borne paints (emulsions and masonry paints) should be stored on shelves and clearly marked with the labels turned to the front. Use them in date order.

- Oil based materials should be inverted at regular intervals to prevent settlement of the pigments and separation of the ingredients. Check that the lids are on firmly before doing this.

- Some water-borne paints, such as emulsions and acrylics, have a limited shelf life – check their use-by date.

- Some paints are susceptible to livering, where the paint thickens to a jelly-like condition (like raw liver) as a result of oxidation during storage.

- Never stack materials so high that there is a danger of them falling. Don’t over-reach to try to get a product from a high shelf – you don’t want it falling on you and covering you in paint.

- Appropriate fire extinguishers should be available in case of a fire. (See fire extinguishers and their uses in Chapter 1, page 39.)

- Make sure that lids and caps are on tightly to limit the escape of VOCs into the air.
Case Study: John and Nils

Decorators John and Nils were sent to an address by their employer and told to prepare and paint a bedroom. The client was out so they let themselves in and went upstairs to find the bedroom. They found two tins of paint in one of the rooms, so started to prepare for painting. They were told to paint two coats of emulsion on the ceiling and walls and one coat of undercoat and a coat of gloss on all woodwork.

While John started to de-nib the ceiling, Nils went to make tea. After their drink they started painting the ceiling. It was a large room so they worked on it together to keep the edge wet. They then painted a coat of paint on the walls. They worked very hard, as there was much to do, and when they were finished they washed their brushes and kettles and went home.

That evening John and Nils received a call from their boss to say that the client was outraged and wanted them back to put the damage right the next day.

What could they have done wrong?

At first glance it seems as if John and Nils did very little wrong, as the room was well painted. It was unfortunate that communication with their employer and the client was poor – no real harm was done, as they did not make a mess. The only problem was that they had painted the wrong room!

The paint had been stored in one room but it was meant for the bedroom next door. So, however good your decorating skills, make sure your communication skills are good too and if you are not sure what to do – check.
Work through the following questions to check your learning.

1 Which one of the following is not classed as a finishing coat?
   a Eggshell.
   b Undercoat.
   c Varnish.
   d Gloss.

2 When should barrier cream be applied?
   a When washing up brushes.
   b When cutting in.
   c When taking a break.
   d When starting the job.

3 Which one of the following is a water-borne paint?
   a Emulsion.
   b Eggshell.
   c Gloss.
   d Oil based undercoat.

4 What is a fat edge?
   a Where paint has run down a wall.
   b Where grease has stopped the paint from adhering.
   c Where a thick ridge of paint forms on a corner.
   d Where paint has been applied without being diluted.

5 Which one of the following is best used to protect flower beds when working outside?
   a Tarpaulin.
   b Cotton dust sheets.
   c Heavy-duty canvas dropcloths.
   d Polythene dust sheets.

6 Which one of the following is the correct order of painting?
   a Primer, undercoat, gloss.
   b Sealer, emulsion, eggshell.
   c Emulsion, undercoat, gloss.
   d Undercoat, gloss, eggshell.

7 Why is pigment used in paint?
   a It helps with the drying of the paint.
   b It gives colour to the paint.
   c It helps to thin the paint.
   d It binds the components of paint.

8 Which one of the following is another name for bristles?
   a Stock.
   b Setting.
   c Filling.
   d Spacer.

9 When applying paint to a large wall, where is it best to start from?
   a The top of the wall.
   b The right-hand side.
   c The narrowest part.
   d The left-hand side.

10 Why is it good practice for two painters to work together on a large area?
    a To get the job done quicker.
    b So they have someone to talk to.
    c So that there is less chance of splashing.
    d To keep the edge wet.
11 Which one of the following is classed as linear?
   a  Skirting boards.
   b  Walls.
   c  Doors.
   d  Ceilings.

12 What is the cause of a defect known as ‘orange peel’?
   a  Leaving grease on a surface.
   b  Poor laying off of the paint.
   c  Not removing nibs from the surface.
   d  Using a roller to apply paint to a surface.

13 Which one of the following brushes is best for painting rough surfaces?
   a  Fitch brush.
   b  Block brush.
   c  Flat brush.
   d  Varnish brush.

14 What can cause dermatitis?
   a  Brush marks.
   b  Not wearing goggles.
   c  Safety boots being too loose.
   d  Not wearing gloves.

15 What is the first thing you should do before opening a container of paint?
   a  Clean the lid to remove dust.
   b  Check that you have a strainer ready to use.
   c  Shake the container to mix the paint.
   d  Check that it is the right colour.

16 What does ‘opaque’ mean?
   a  Covering the previous coat.
   b  Not transmitting light.
   c  The thickness of the paint.
   d  The applied paint not drying.

17 Which one of the following should be used to remove surface nibs before painting?
   a  Aluminium oxide abrasive.
   b  Glass paper.
   c  Wet and dry.
   d  Emery paper.

18 What can happen if you are painting in high temperatures?
   a  The paint becomes too thick to apply.
   b  The film finish can be impaired.
   c  The paint will not dry.
   d  The paint will dry quickly.

19 Which one of the following defects is caused by grease on a surface?
   a  Runs.
   b  Cissing.
   c  Skid marks.
   d  Sags.

20 When tarpaulin is stored damp, what might it do?
   a  Stick to itself.
   b  Not lie flat.
   c  Perish.
   d  Go mouldy.