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SAMPLE MATERIAL

Plastering

LEVEL 1 DIPLOMA (6708)
LEVEL 2 DIPLOMA (6708)
LEVEL 2 TECHNICAL CERTIFICATE (7908)

Mike Gashe
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CHAPTER 3

INTERNAL PLASTERING AND FIXING DRY LINING

INTRODUCTION

This chapter covers methods of preparing backgrounds, fixing plasterboards, fixing beads, and mixing and applying traditional and modern plasters to form and finish one-, two- and three-coat plastering to interior surfaces ready for decoration, to fulfil the customer's needs. You will learn about different techniques and methods required to apply and install internal plastering materials and components to ensure surfaces are ready for decoration. Learning about different types of plasters and plasterboards and their properties will help you understand how the performance of modern buildings has evolved over the years to meet greater demands for thermal, sound, fire, heat and moisture resistance.

You will also learn about traditional and sustainable plastering materials and methods in order to preserve our heritage within historic buildings. Although modern materials and components are being manufactured, the skills and techniques of the plasterer are generally still the same when installing and finishing different surfaces.

Before you start to apply plaster you will need to familiarise yourself with the necessary tools. These will be specific to the job. Don't forget that looking after your tools and keeping them safe and well-maintained will ensure they last for a long time.

LEARNING OBJECTIVES

The table below shows how the main headings in this chapter cover the learning outcomes for each qualification specification.

Chapter section	Level 1 Diploma in Plastering (6708-13) Units 121, 122, 123, 124, 125	Level 2 Diploma in Plastering (6708-23) Units 221 and 222	Level 2 Technical Certificate in Plastering (7908-20) Unit 202	Apprenticeship Standards for Plasterer (9086) Module 11
Tools and equipment		Unit 221 Learning outcomes 3 and 4	Unit 202 Topics 2.2, 3.1 Unit 205 Topics 1.5, 3.1	
Preparing the background for plastering	Unit 121	Unit 221 Learning outcome 5.1	Unit 202 Topics 2.1, 2.3	
Preparing to fix plasterboard	Unit 123	Unit 221 Learning outcomes 1 and 2 Unit 222 Learning outcomes 1, 2, 3, 4	Unit 202 Topics 1.1, 1.2, 3.2 Unit 205 Topics 1.1, 1.2	

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Fixing plasterboard by direct bond		Unit 222 Learning outcomes 5 and 6	Unit 205 Topics 1.3, 1.4, 2.1, 2.2, 2.3	
Preparing loose plastering materials for mixing		Unit 221 Learning outcome 5.2	Unit 202 Topic 3.3	
Applying plastering systems	Units 122, 124, 125	Unit 221 Learning outcomes 5.3, 5.4, 5.5, 6	Unit 202 Topic 3.4 Unit 205 Topic 3.2	

1 INTERNAL SOLID PLASTERING AND FIXING DRY LINING

Tools and equipment

▼ Table 3.1 Tools and equipment

Tool	Use
Hawk 	The plasterer's hawk is used to hold and transfer a workable amount of plaster from the spot board to the wall. The hawk is used in conjunction with the trowel to manipulate and apply the plaster directly on to the background surface. Some plasterers prefer hawks with detachable handles as they are easier to store. Hawks were traditionally made from timber, but today modern hawks are made from polyurethane or aluminium.
Gauging trowel 	This tool has many purposes and uses within the plastering trade. Its main purpose was to gauge small quantities of plastering materials. Today, this trowel is used for reaching into awkward areas where a normal trowel won't reach.

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Features in the book

▼ Table 3.1 Tools and equipment (Continued)

Tool	Use
Bucket trowel 	Used for cleaning the rim of buckets and can also be used for cleaning and removing excess material off the straight edge and to clean plaster droppings by scraping the floor. A bucket trowel is also used to transfer mixed material from the bucket onto the spot board.
Comb scratcher 	A comb scratcher can be used to key the surface when you apply a scratch coat in preparation for the floating coat.
Tin snips 	Tin snips are used for cutting various types of trims such as angle beads, stops and rolled EML before it is fixed onto the wall plate. Always wear protective gloves when cutting EML because it is very sharp.
Spirit level 	This can be used on its own or with a straight edge, which extends its length. It is used for plumbing and levelling surfaces such as standard angle beads to window openings and returns, or for plumbing dots to form accurate screeds when floating.
Float 	Used for consolidating undercoat surfaces to form either a plain smooth finish or a key, preparing for the setting coat. These floats are generally made from polyurethane.

▼ Table 3.1 Tools and equipment (Continued)

Tool	Use
Devil float 	A devil float is made by nailing tin tacks to one end of a float edge. It is used for devilling or keying a surface. When making a devil float, space the tin tacks equally and start from the middle, fixing every 15mm. Use fixings such as galvanised nails: screws will cause damage and split the edge of the float.
Small tool 	Used in tight, difficult angles. The types shown here are leaf and square.
Mechanical drum mixer 	A mechanical mixer that is best used for mixing cement-based plasters. This type of mixing is carried out outdoors, as it can be noisy and the materials used will cause high dust levels.
Drill and whisk 	A mechanical mixing tool used for mixing lightweight undercoat and setting plasters. It is a fast and efficient way of mixing lightweight plasters.
Flat brush 	Used to apply water when finishing setting plaster.

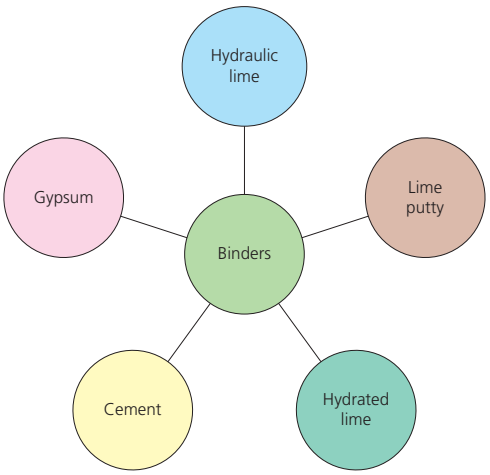
Features in the book

▼ Table 3.1 Tools and equipment (Continued)

Tool	Use
Small brushes 	Used to clean internal angles and frames.
External corner trowel 	Used to form rounded hard angles, e.g. in walls with window openings.
Plumb bob 	A heavy weight attached to a string line used to set out and transfer plumb points from above.
Internal angle trowel 	Used to form wet internal angles of finishing plaster during the setting and finishing process.

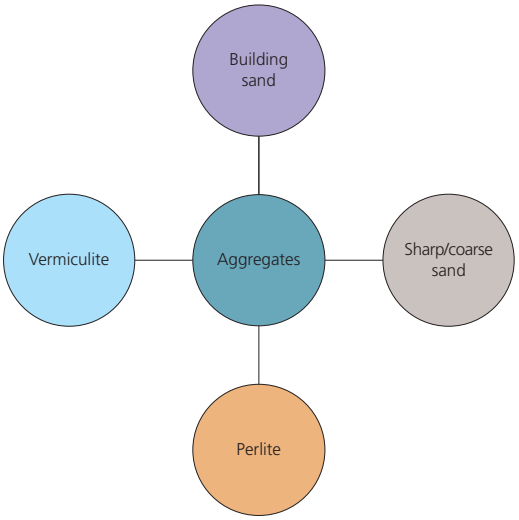
Plastering materials, additives and beads used with internal plastering systems

Before you start to plan for carrying out plastering work, you will need to familiarise yourself with the necessary materials and components needed to complete various plastering activities. These are the majority of materials you will need when preparing and applying different plastering systems.



▲ Figure 3.1 Binders

▲ Figure 3.2 Cement

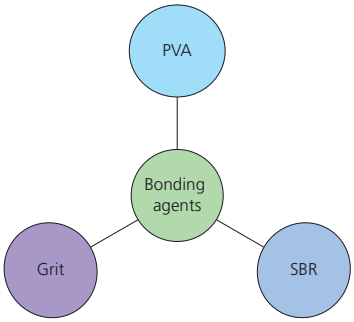


▲ Figure 3.3 Aggregates

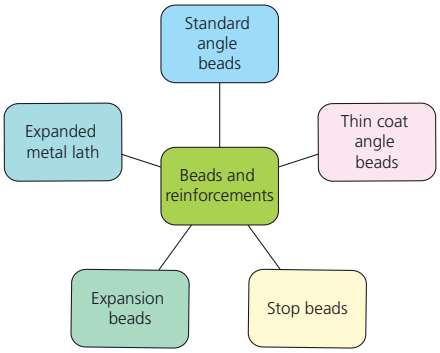
▲ Figure 3.4 Building sand

▲ Figure 3.5 Sharp/Coarse sand

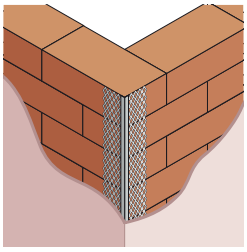
Features in the book



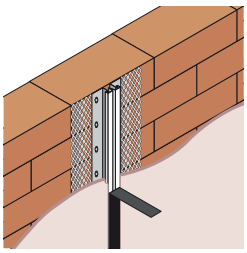
▲ Figure 3.6 Bonding agents



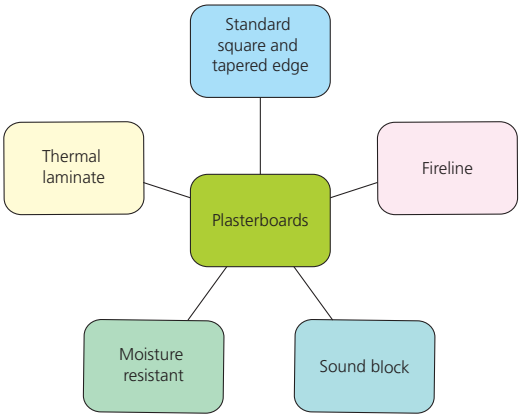
▲ Figure 3.7 Beads and reinforcements



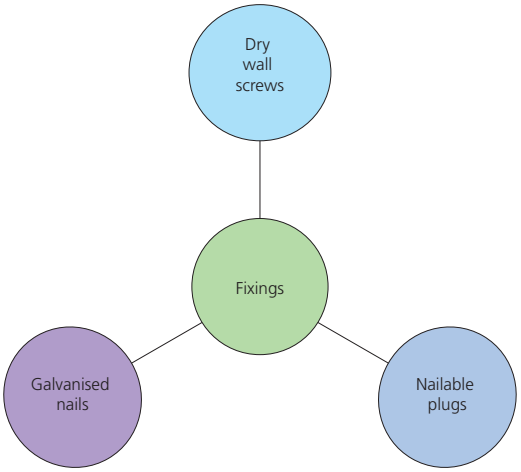
▲ Figure 3.8 Standard angle beads



▲ Figure 3.9 Expansion beads



▲ Figure 3.10 Plasterboards



▲ Figure 3.11 Fixings

▲ Figure 3.12 Dry wall screws

Preparing the background for plastering

Building methods and materials are always evolving, with many changes to the way we work and the practices we use. Modern materials have been developed and manufactured to improve the efficiency of mixing plaster and to ensure compatibility with different backgrounds, simplifying the plastering process. Despite this, over time plastering surfaces can still break down due to age, poor surface preparation or bad workmanship (including poor mixing).

The key to creating a good plaster surface is to identify and prepare the backgrounds beforehand. It is important to understand that not all backgrounds have the same properties. Some will be soft and weak, some will be hard and dense, some backgrounds could be timber studwork or joists or metal furrings. Plasterboard fixed to old timber surfaces may be need building out with a backing plaster depending on how uneven the surface is. This is quite common in old buildings that are being refurbished.

Different backgrounds need to be prepared for plastering in different ways. There are several steps that you need to follow to make sure the plaster **adheres** well to the background surface. Before you start you will need to control the suction and ensure that the background has adequate **key** to ensure adhesion.

KEY TERMS

Adheres: how well the plaster sticks to the background.

Key: referring to the background surface. A rough surface produces adequate key; smooth surfaces have less or no key.

Key terms provide clear explanations for technical language.

▲ Figure 3.13 Metal and timber backgrounds

Practical task

Practical tasks give learners activities that will help them to cement their learning.

Carry out a suction test by applying water on a solid background to see how much it absorbs

Checking the suction will tell you if the background is dry and porous. You can do this by splashing water onto the background with a brush. The quicker the water is absorbed, the higher the background's suction.

No suction or low suction (when the splashed water stays on the background's surface) will indicate that the background is hard or dense.

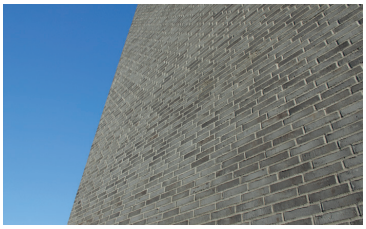
High-suction backgrounds (when the splashed water soaks in quickly) will absorb moisture from the plaster mix and may cause it to dry too quickly when applied.

Selected pages from Chapter 3

Types of backgrounds

▼ Table 3.2 Types of background

Type of background	Comment
Hollow and solid blocks 	Newly constructed buildings that have block walling need little preparation before you apply plaster to their surface because they have medium to adequate key. The surface is flat and can be plastered using traditional or modern pre-mixed plasters. Block walling built to today's specifications and standards needs only a backing coat and finish, known as 'float and set'.
Lightweight aerated blocks 	These blocks are lightweight and weak with an adequate key but have high suction levels. Cement-based mixes are not compatible with these backgrounds because they are too strong for this surface. This type of block is best suited for pre-mixed plasters that are weaker than the background direct bond dry lining. Applying a solution of PVA (polyvinyl acetate - a water-based glue that is used for preparing background surfaces by improving adhesion) diluted with water (to the manufacturer's instructions) will seal the surface and control the suction.
Plasterboard 	There are several different types of plasterboard, but they are all made with a plaster core within an outer skin of paper. Plasterboard may have square or tapered edges. Before applying plaster, both types need to be reinforced at their joints in order to prevent cracking. Plasterboard has a flat surface with low suction and only requires a finish coat, applied using a one-coat system that consists of two passes of finishing plaster at an average thickness of 3mm. Fixing plasterboard over uneven timber studwork may require **filling out**; this should be done using a bonding-grade backing plaster that contains the aggregate vermiculite.
Timber lath 	Laths were traditionally used on timber backgrounds. They consist of thin strips of wood over which plaster can be spread. It can be a time-consuming process to prepare, fix and plaster this surface. This type of background is still used in the restoration of listed buildings.

Type of background	Comment
Existing solid plaster 	This type of surface is common with solid walls that require a makeover due to poor surface condition that has developed over the years. Over skim makeovers enhance the appearance of a wall by re-skimming the surface without removing the old plaster from the background. When applying plaster to this type of surface, remember that it can only be as good as the background you plaster over. The surface needs to be solid and sound with no **hollowness**. Any flaking paint and surface grime or grease that could prevent the new plaster from bonding should be removed. This background has no key and if it is painted usually no suction, unless the background has different properties that are hidden behind the decorated wall surface. For example, if the wall has been re-plastered after having electrical services installed, it may contain different plasters on the background, creating different suction rates. This background will need a bonding adhesive applied on its surface before it can be re-plastered.
Existing plaster and plasterboard surface that has decayed over time 	There are many different types of plaster surface that may need to be replaced or restored, whether due to poor workmanship or deterioration over time. This type of surface may show signs of cracking, hollowness or a crumbling surface that cannot be decorated due to its condition. You will have to remove any existing surface finish before you are able to identify its background properties.
Clay bricks 	Clay bricks were very popular at one time and can be found in all types of buildings. A common fault with clay bricks is that they would shell their face (the outer surface would come apart), causing the plaster to 'blow' (come away from the background). This type of background is often uneven because the bricks were manufactured in kilns at great heat, which made them all a slightly different shape. They were then laid on a lime mortar bed, which is very weak. Clay bricks and lime mortar joints have a high absorption rate that will cause high suction levels. This surface will need to be treated with a bonding adhesive before plastering. Raking out the joints will also improve the key.
Concrete common bricks 	These bricks are made from coarse aggregate mixed with cement. This surface is smooth and hard, which means the key is poor and the suction is minimal. A bonding **slurry** is best suited for this surface.

KEY TERM

Hollowness: Previously plastered walls that are loose, delaminated from the background

Selected pages from Chapter 3

Removing old plasterwork from the background

Removing old plaster from backgrounds is a process known as hacking. It is important to remove all loose plaster from the surface. This can be carried out by hand or mechanically using various tools and equipment, but before you start you need to protect certain areas to prevent damage that can be caused by this type of work.

Plywood sheeting can be used to protect floors and openings such as windows and doors. Dust sheets and tarpaulins are good for protecting furniture that might be too heavy to move out of the building. Causing damage to the client's property is unprofessional and can be costly to replace!

Images and diagrams help learners absorb information and recognise materials.

▲ Figure 3.14 Hacking a surface

HEALTH AND SAFETY

When you carry out this type of work, you need to be aware of the risks caused by high dust levels and the build-up of debris. Building sites can be dangerous places with many hidden hazards. Reading the risk assessments will make you aware of the hazards involved with this type of work and identify the type of personal protective equipment (PPE) that you need to wear. You also need to follow the method statement, which will give you a safe means of work.

It is important to dispose of the loose rubble removed from the surface before it builds up around you. Using a shovel, brush and wheelbarrow is a good way of removing and transporting your rubble – using a wheelbarrow will be less strenuous on your body than using buckets and will reduce the risk of injury.

Health and safety boxes flag important points to keep yourself, colleagues and clients safe in the workplace.

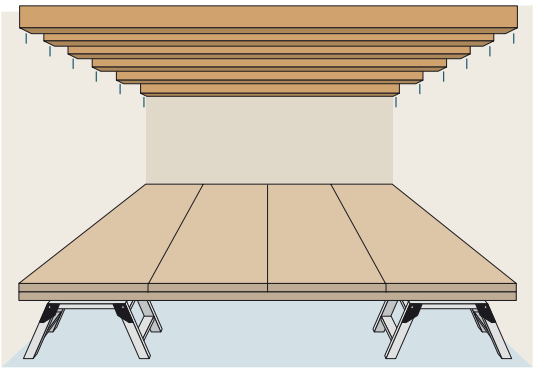
ACTIVITY

Make a list of hazards you may come across when removing old lath and plaster.

Procedure for fixing plasterboard to a ceiling

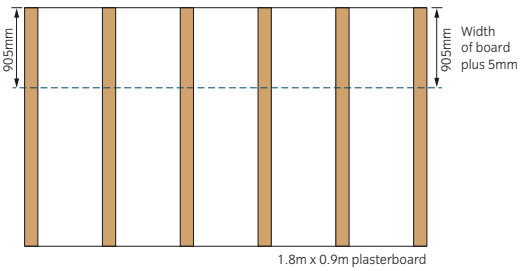
The following steps show the staggered method for installing plasterboard to a timber joist ceiling that is 10 m². Before you start to fix plasterboard, set up a staging that allows you to install your plasterboard safely and efficiently to the ceiling.

1 Mark the wall to indicate the ceiling joists.

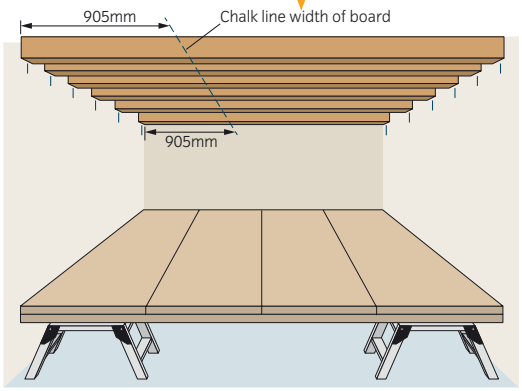


▲ Figure 3.15 Marked lines for the ceiling joists

2 Mark the width of the plasterboard, allowing an extra 5 mm on the joists at each end of the ceiling, and snap a chalk line. This will give you a guide line on the ceiling against which to install the plasterboard edge.

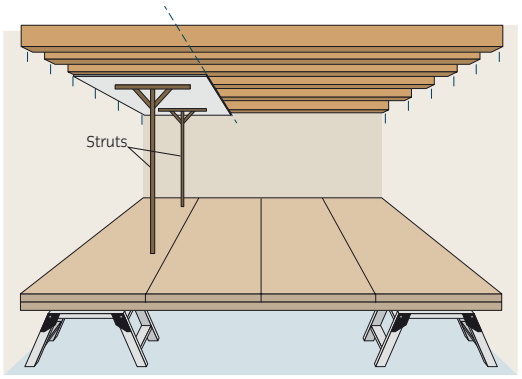


Illustrations help learners visualise tricky steps in a procedure.



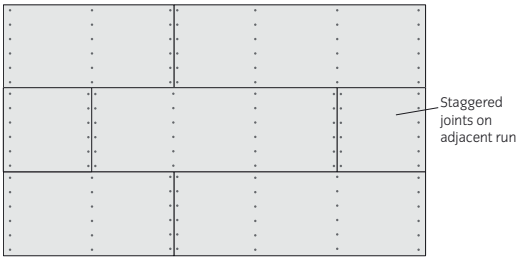
▲ Figure 3.16 Marked width of the plasterboard

3 Measure and cut the first board to the centre of the furthest joist.
4 Rasp the cut edge. This side will be positioned to the wall.
5 Using **struts** or a **dead man prop,** position the plasterboard along the chalk line, making sure the end of the board sits on the centre of the joist.



▲ Figure 3.17 Using struts

6 Once the board is correctly positioned it can be fixed to the correct fixing centres using nails at 150 mm or screws at 230 mm.
7 Continue and fit the next board, leaving a small gap of about 2 mm after butting up to the previous board. Make sure you install the board to the chalk line.
8 On the adjacent run you will need to stagger the joints. You can do this by fixing a shorter plasterboard first, followed by a full plasterboard. You have now completed the layout of the staggered ceiling.



▲ Figure 3.18 Completed layout of staggered ceiling

KEY TERMS

Plasterboard strut: used to prop the plasterboard in position prior to securing with screws.

Dead man prop: a useful piece of equipment when working on your own. It is a telescopic pole with pads on each end; the pole is adjusted to hold an item above your head just like an extra pair of hands.

Preparing loose plastering materials for mixing

Before setting up the mixing area you need to protect the floor area by placing tarpaulin or timber sheets on it to protect it from splashes and spillages that may occur when mixing. Dust sheets and cling film can be used to protect walkways and furniture.

It is extremely important to follow the specification when gauging plastering mixes and to gauge the materials accurately. Inaccurate mixing or gauging can lead to weakened mixes or mixes that are too strong.

Gauging boxes were traditionally used to measure quantities of materials. Today, plastic buckets are preferred as they are lighter and have handles, which makes the job easier.

To measure quantities and volumes of materials accurately, fill the bucket or box to the top and then 'flatten off' with a piece of timber. This will ensure that the correct proportion of each material is added to make your mix.

Selected pages from Chapter 3

Cement-based ratios for dubbing out and scratch coats can vary depending on the characteristics of the background. In some cases, the background may have penetrating or rising damp, which is quite common in old housing. This will mean that the ratio of the mix will be different compared with walls that have no damp issues but may have poor adhesion and key. The following table shows the ratio of mixes for scratch coats and dubbing out.

Improve your maths and English activities help learners to practise skills they will regularly have to use in the workplace.

IMPROVE YOUR MATHS

Ratios are used to show the proportions of a mixture.

You can increase the amount of each part, but it must be in the same ratio. For example, if you need to order sugar and coffee in a ratio of 1:5, you need 1 kg of sugar for every 5 kg of coffee.

You could double (× 2) the amount of sugar and change 1 kg to 2 kg, but if you do, you should also double the amount of coffee, i.e. 5 kg should become 10 kg.

▲ Figure 3.19 Mixing with a drum mixer

Ratio of mixes	Use
Ratio (written as 6:1:1) of: 6 sand 1 cement 1 lime plus plasticiser **Ratio (7:1:1) of:** 7 sand 1 cement 1 lime plus plasticiser	These ratios of mix would be preferred on severe uneven backgrounds, such as stone or old brickwork. In some cases, less lime is added; however, this will depend on the specification.
Ratio (3:1) of: 3 sand 1 cement plus waterproofer **Ratio (4:1) of:** 4 sand 1 cement plus waterproofer	These ratios of mix would be preferred when dubbing out and applying scratch coats to backgrounds that have been treated for rising or penetrating damp.
Ratio (4:1) of: 4 sand 1 cement	This ratio is preferred when applying scratch coats to slurry surfaces.
Ratio (5:1) of: 5 sand 1 cement	This mix would be used on uneven surfaces that have good key and only require preparing with water or PVA.
Ratio (5:2) of: 5 sand 2 lime	Used for training purposes in colleges.

IMPROVE YOUR MATHS

When gauging loose plastering materials for mixing, work out and calculate how many buckets of cement and lime you require when preparing to mix with 48 buckets of sand, if the ratio is 6:1:1 (sand, cement and lime).

INDUSTRY TIP

Adding too much water will make the plaster slide down the wall, while not enough water will make it difficult to spread.

Industry tips provide expert advice on best practice for plastering.

Mixing traditional cement-based plastering materials using machinery

Traditional sand, lime and cement materials are best mixed with a mechanical drum mixer, which will thoroughly mix the different materials that make the plaster mix.

- Clean water and any specified additive such as plasticiser should be added to the mixer first. This will prevent materials sticking to the back of the drum.
- The consistency of the mixed material should be drier, rather than wet, when mixing is in progress. This will allow the additive time to make the mix workable and easier to use when applying the plaster.
- Mixing should be carried out for at least five minutes, allowing the materials to fully mix together.
- Don't forget to wear gloves/barrier cream, goggles/glasses and boots to protect from splashes from the turning drum of the mixer.

Mixing by hand

There are some instances where smaller amounts of mix are required. This can be mixed loose on a flat surface or in a bucket. The following steps show how to mix cement-based plasters by hand.

STEP 1 First, gauge the materials.

STEP 2 Next, place the materials into a single pile.

STEP 3 Mix the materials dry (without adding water).

STEP 4 Once the materials are mixed, make a dip in the middle of the pile.

STEP 5 Measure the correct amount of plasticiser needed to improve workability. Add the plasticiser to the water.

STEP 6 Mix the plasticiser into the water.

Step-by-step instructions demonstrate how to do tasks with clear explanations and real-life examples.

Selected pages from Chapter 3

STEP 7 Pour the water into the middle of the pile of materials.

STEP 8 Using a shovel, pull the dry material slowly towards the centre, into the water.

STEP 9 Mix and turn the material. The longer you turn, the better the mix.

STEP 10 The finished mix.

INDUSTRY TIP

Don't add too much water or the mix will become too heavy, unworkable and difficult to use.

ACTIVITY

In groups of two or three, follow the procedure for mixing lime and sand mortar to a ratio of 3:1, plus plasticiser.

Pre-blended plasters

Pre-blended gypsum-based plasters can be mixed either by hand with a plunger or mechanically with a drill and whisk. When mixing, it is important to follow the manufacturer's technical instructions; these are normally printed on the back of the bag. Irregular setting can occur if you do not follow the rules of using clean water, tools and equipment when mixing this type of plaster.

Pre-blended plasters used to be mixed in baths with a rake or shovel, until a modern powerful motorised drill was developed with a whisk attachment. This tool can mix pre-blended plaster with ease.

▲ Figure 3.20 Mixing with a plunger

▲ Figure 3.21 Mixing with a drill and whisk

▲ Figure 3.22 Plastering an uneven background

Applying plastering systems

The type of plastering carried out on internal walls within buildings will be restricted by the background's surface. Internal plastering can be completed using several plastering application process or systems, for example:

- Plasterboard backgrounds require just one application known as one coat.
- New blockwork would require two coat application. This is known as float and set.
- Severely uneven surfaces may require three coat application, called scratch float and set.

Three coat work

Three coat work is generally applied on uneven backgrounds, building up the surface in three layers of plastering material to obtain the desired finish. However, some severely uneven backgrounds may need more than one scratch coat to build the surface out.

Two coat work

Two coat work is applied on flatter backgrounds, such as block and brick surfaces, which can be completed using a floating and setting coat. This has an approximate overall thickness of 13 mm; however, this may vary on uneven backgrounds. This surface does not require a scratch coat.

One coat work

One coat work is generally related to applying the finishing coat, this is carried out by applying two passes of finishing plaster on to plasterboard or devil floated backing coats. The first pass is applied approximately 2–3 mm thick and left to pull in before the second pass is applied and trowelled up to the desired finish.

One coat work also relates to applying one coat universal plaster approximately 10 mm thick and finished in one process, which replaces the two coat process of float and set.

Plumb dot and screed method

The plumb dot and screed process is the most accurate method of applying a floating coat and also the most time-consuming. If the client is prepared to pay for this method then they will benefit from having accurate, plumb plastered walls.

Timber dots are used to set out accurate plumb walls and also used to form horizontal or vertical screeds (strips of plaster). The screeds are left to set before being used as guides, allowing the plasterer to fill in between and accurately rule the surface to obtain a flat plumb wall. The surface is later consolidated and lightly keyed using a devil float once the material has pulled in.

This system may well be used today in areas such as bathrooms or kitchens due to the accuracy required to fit and fix units and sanitary tiles or where fibrous plaster is to be installed.

INDUSTRY TIP

The plumb dot and screed method was used a lot in early industry.

Selected pages from Chapter 3

STEP 1 Apply a dab of plaster approximately 150–300 mm from the ceiling and adjacent wall.

STEP 2 Set the dot into it. The distance from the wall surface to the face of the dot will be the thickness of the floating coat.

STEP 3 Directly below the top dot, set another dot approximately 300 mm from the floor.

STEP 4 Check that the dots are plumb.

STEP 5 When the dots have stiffened, apply plaster material between them to form the screeds.

STEP 6 Using the floating rule or feather edge, rule off the excess plaster between the dots. Remember to wear a hard hat when using a hop-up.

STEP 7 Fill any hollows. Repeat Steps 6 and 7 until the screed is flush with the dots and free from hollows.

STEP 8 When the screeds have stiffened sufficiently, consolidate the surface with a float and form key with a devil float. Remember to remove the dots and fill in with stiffening floating material.

STEP 9 Apply plaster between the screeds, starting at the top of the wall and working heel to toe.

STEP 10 Repeat until you reach the bottom screed.

STEP 11 Place the thinner edge of the rule across both screeds and, using a side-to-side motion, draw the edge up the screeds, ensuring that the edge remains in contact with both screeds at all times.

STEP 12 Any excess plaster will gather on the edge of the rule. This should be cleaned off the edge and returned to the spot board.

STEP 13 Fill any hollows until the plaster is flush with the screeds and all hollows are filled.

STEP 14 Repeat Steps 9 to 13 until the area between the screeds is completely covered and ruled off.

STEP 15 The finished floating coat.

▲ Figure 3.23 Plasterboarded wall

CLASSROOM ACTIVITY

After reading this chapter in groups, discuss and plan how to plaster a modern two-bedroom house built of standard blockwork containing timber partitions and ceiling joists. Decide on a two coat lightweight plastering system, performance plasterboard, fixings and fixing different types of beads.

WORKSHOP ACTIVITY 1

Working with a partner, set out a scaffold staging in a bay and fix plasterboards to a ceiling. Ensure the boards stagger on the second run then reinforce with self-adhesive scrim and apply finishing plaster in preparation for decoration.

Selected pages from Chapter 3

Scenarios provide learners with examples of the kind of briefs they can expect to receive.

WORKSHOP ACTIVITY 2

Direct bond around a pillar with plasterboard, fix thin coat angle beads to the corners and apply two passes of finishing plaster.

WORKSHOP ACTIVITY 3

Fix standard angle beads to a window wall, apply lightweight backing plaster to the wall face including the window returns and soffit, cut back at beads and devil float then apply two passes of finishing plaster.

Case study: Megan

Megan's first house was a mid-1850s Victorian terrace, which she purchased in the city. She preferred to purchase an older property rather than a newly built house. Read her story to learn how she got on.

I recently purchased a Victorian house that requires some renovation work in order to modernise and upgrade it. When I bought the house there were several plastering defects identified that were highlighted in the surveyor's recommendation report. The plaster on the ceiling is loose and there are widespread cracks on the surface and the living room wall has a large deep crack running from the ceiling line down to the floor. I am eager to get these defects corrected and have been given the name and telephone number of a qualified plasterer to contact; he has been highly recommended after completing some renovation work for a family member.

The plastering contractor has recently called by my property to give me advice on replacing and renewing the ceilings and making good the defected wall surface.

He has stipulated in his estimate that the rooms will need to be clear of furniture with adequate protection and the need to hire a portable ventilation appliance to remove the hazardous dust when taking down the lath and plaster ceilings. He suggests replacing the old ceiling with fire line plasterboard to increase the fire rating performance in line with building regulations. This should then be plastered with two passes of thistle board finish between 2–3 mm thick and polished flat and smooth to receive redecoration.

After carrying out a thorough check on the deep crack on the wall, his advice is to remove all old plasterwork from the defected wall surface, mix coarse sand and cement and fill the crevice flush with the face of the wall and then leave it to set and become hard. Once set, he has suggested fixing expanded metal lath over the cracked area with mechanical fixings as this will reinforce the weak area. The wall will need to be plastered using a lightweight plaster system and this will require three coats: scratch, float and set.

The plasterer's advice on rectifying the work is knowledgeable and precise, therefore I'm going to ask him for a written quotation for the work. This will ensure the work he carries out will be completed with a guarantee and to the required industry standards.

Megan's advice

It is important to find someone reliable and reputable to advise and carry out the renovation work as repairs and remedial work can be costly if not calculated before you purchase an older house.

Test Your Knowledge sections help to make sure learners can recall and apply their knowledge.

Test your knowledge

1 What aggregate is added during manufacture to lightweight backing plaster to improve adhesion?
- A Vermiculite
- B Perlite
- C Cement
- D Lime

2 What term is given to measuring loose materials when mixing plaster backing coats?
- A Batching
- B Gauging
- C Adding
- D Raking

3 What is the term given to the hardening process of cement and sand mixed for plastering?
- A Drying
- B Setting
- C Curing
- D Shrinkage

4 What type of defect is caused when applying finishing plaster over a high suction background?
- A Grinning
- B Shrinkage
- C Blistering
- D Crazing

5 What reinforcement is fixed over timber wall plates before plastering?
- A Expanded metal lath
- B Self-adhesive scrim
- C Scrim cloth
- D Mesh matting

6 What type of plasterboard is best used on bathroom walls?
- A Fire line
- B Vapour check
- C Moisture resistant
- D Sound block

7 When fixing plasterboard to block background, which of these is carried out by using the following fixing procedures?
- A Direct bond with drywall adhesive
- B Mechanically fixed with screws
- C Using a dry wall self-feeder
- D Fixing with galvanized nails

8 When fixing plasterboard to ceilings, what are the recommended fixing centres of the screws?
- A 260 mm
- B 300 mm
- C 230 mm
- D 350 mm

9 What is the recommended thickness when applying finishing plaster to floated backgrounds?
- A 8–9 mm
- B 6–7 mm
- C 4–5 mm
- D 2–3 mm

10 After ruling a floating coat, the next process in preparation before applying the finishing coat is to:
- A Devil float the surface
- B Key with a comb scratcher
- C Fix angle beads with plaster
- D Apply scrim to the joints

11 What type of bead is used on returns built of blockwork background?
- A Stop bead
- B Standard angle bead
- C Expansion bead
- D Mini mesh bead

12 Cutting back is a process carried out after:
- A Devil floating
- B Applying finishing plaster
- C Fixing plasterboard
- D Mixing backing plaster

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Plastering

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