Unit 319: Apply solid plaster to complex internal surfaces

# Delivery guide

Unit information

This unit is about interpreting information and adopting safe, healthy and environmentally responsible work practices. It covers selecting and using materials, components, tools and equipment in relation to applying solid plaster to complex internal surfaces.

Learners may be introduced to this unit by asking themselves questions such as:

* What is considered to be a complex internal background surface?
* What type of background requires plastering with three coat work?
* What is the difference between a chemical set and aerated set?
* What type of aggregates do we use for backing plasters?

Learning outcomes

1. Understand resource selection
2. Understand working to a contract specification
3. Comply with the given contract information to carry out the work safely and efficiently to the required specification

Suggested resources

Textbook

* Gashe, M., Byrne, K. (2020) *The City & Guilds Textbook: Plastering for Levels 1 and 2.* London: Hodder Education.

ISBN 978-1-3983-0647-9

Websites

* [Building Conservation | Traditional Lime Plaster](https://www.buildingconservation.com/articles/plaster/lime-plaster.htm)
* [British Gypsum | Plaster Coverage Tool](https://www.british-gypsum.com/technical-advice/plaster-coverage-tool)
* [British Gypsum | White Book](https://www.british-gypsum.com/literature/white-book)

* [Civil Planets | How to calculate cement sand quantity for plastering](https://civilplanets.com/how-to-calculate-cement-sand-quantity-for-plastering/)

* [CHAS | What Are RAMS Documents in Health and Safety?](https://www.chas.co.uk/help-advice/risk-management-compliance/risk-assessment-introduction/method-statement-contents/)

* [edrawsoft | Construction Gantt Chart - Key Points You Should Know](https://www.edrawsoft.com/project/construction-gantt-chart.html)

* [Google | Gantt progress chart for construction](https://www.google.com/search?rlz=1C1CHBD_en-GBGB920GB920&source=univ&tbm=isch&q=Gantt+progress+chart+for+construction&sa=X&ved=2ahUKEwjYrtD9mZfyAhUID8AKHbOGD_gQjJkEegQIChAC&biw=1920&bih=969)

Legislation

* [HSE | Reporting a health and safety issue](https://www.hse.gov.uk/contact/concerns.htm)

* [HSE | PUWER 1998](https://www.hse.gov.uk/pubns/books/puwer.htm)

| **Learning outcomes** | **Criteria** | **Delivery guidance** |
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| 1. Understand resource selection | * 1. Characteristics of the resources | * Learners to research the different types of hand tools such as: * handboard * trowels * brushes * plasterboard knives * tape measures * surform * pad saw * 90-degree square etc. * Power tools such as: * cordless screw gun * collated screw gun * paddle mixer. * Equipment required to produce complex internal plastering work such as: * sliding bevel * plumb bomb * flex trowels * twitchers internal and external. * Learners to research the benefits of and reasons for using traditional lime and cement for modern and traditional plaster applications. * Learners to research the benefits of and reasons for using modern gypsum preblended backing and finishing plasters for various application methods. * Learners to understand how one, two and three coat plastering systems are used to produce complex surfaces to form various internal finishes to form vertical, horizontal, curved, inclined, right angles and splayed surfaces to low, medium and high suction backgrounds. * Backgrounds to include: * solid masonry * timber * plasterboard * textured pre-plastered surfaces * expanded metal lath and * traditional timber lath. * Learners to collaborate, discuss and share their workplace experience and knowledge to identify and select the correct type of backing and finishing plasters, reinforcement, sealers, primers, glues, beads and fixings for preparing, applying subsequent coats, ruling, consolidating, keying and finishing to produce one, two and three coat application. * Learners to collaborate, discuss and share their workplace experience and knowledge to assess the quality and condition of plasters, limes, cement, sands, plasters, reinforcement, sealers, primers, glues, beads, timber lath, expanded metal lath and fixings and ensure they are fit for use and defect free. * Learners to collaborate, discuss and share their workplace experience and knowledge to ensure materials are stored in line with manufacturers information. * Learners to understand the ways in which materials should be protected against the weather and theft. * Learners to identify defective materials and to check accessories for poor quality, condition and contamination and ensure they are removed and set to one side. * Learners to be able to identify the characteristics, quality, uses, sustainability and limitations associated with those resources and the defects that can occur by wrong selection. Types of resources and the knowledge required include: * various types of performance plasterboard and where and when they would be used * various types of plasters and mortars and understanding of gauging and consistency * various types of beads and trims and where and when to apply and fix around windows, doors, external and internal angles * various types of insulation application such as Kingspan and rockwool and how to meet the specification for u-values in application of these materials * various types of fixings for plasterboard and beads (dry wall screws, collated dry wall screws, staples for beads, secondary plasterboard fixings) * various types of reinforcement, scrims and expanded metal lath. |
| * 1. Use of resources | * Learners to understand the need to comply with risk assessment and method statement to set up mixing and work areas, tools and equipment, types of plaster, components, accessories, beads and reinforcements for producing plastering systems. * Learners to produce Risk Assessment Method Statements (RAMS) for a small project of their choice to include plastering resources. * Learners to collaborate and discuss how to identify and report any problematic issues when preparing background surfaces, work methods and related components and to identify the correct reporting procedure including line manager, client, manufacturers etc. * Learners to know how to recognise problems associated with the resources and how to report any problems associated with the materials, components and equipment, relating to types, quantity quality and sizes. * Learners to understand who to report the problems to in order to rectify problems with the following components and material types: * plasterboard * beads and trims * plaster and mortars * reinforcement. |
| * 1. Organisational procedures to select resources | * Learners to discuss their different workplace experience for selecting materials and resources from interpreting and extracting technical information from sources such as drawing, specifications, schedules and manufacturer’s information to ensure quality of work prior and during preparation, mixing, application and finishing plastering systems to meet the required industry standard. * Learners to collaborate and discuss their workplace experience for reporting defects and inaccuracies within documentation to the appropriate person/authority. * Learners to understand the documentation used in industry and know the methods used to report problems. * Learners to understand the chain of command and who to report issues to. * Learners to know how to work safely and to understand the risks involved in using hand and power tools. They should receive the correct levels of training and understand how to perform safe working risk assessments and method statements. * Learners to know any potential hazards associated with the resources and methods of work. Learners to refer to COSHH and write a sample method statement. |
| * 1. Hazards | * Learners to understand, discuss and identify different types of hazards associated with the work schedule including use of materials and resources associated with the application of different plastering processes. * Learners to research how to produce and follow method statements and risk assessments to identify correct Personal Protective Equipment (PPE) and carry out the work safely and competently in accordance with health and safety legislation. * Learners to collaborate and discuss their responsibility for reporting accidents, hazards and near misses within the workplace to the correct level of authority and establish the correct chain of command in this process. * Learners to understand the types and uses of each piece of equipment, the work situations and general work environment that they are associated with, including: * Collective protective measures * Personal Protective Equipment (PPE) * Respiratory Protective Equipment (RPE) * Local Exhaust Ventilation (LEV). * Learners to know the methods used to dispose of waste and why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturer’s information, statutory regulations and official guidance. * Learners to be shown examples of disposal on actual construction sites and be able to identify materials that are difficult to recycle and understand how to dispose of them. * Learners to know how to respond to emergencies and to know the correct response to situations in accordance with the organisational arrangements. * Learners to be made aware of the practice of fire drills and accident reporting procedures. Learners to know the correct procedures when dealing with fires, injuries and spillages on site. |
| 1. Understand working to a contract specification | * 1. Methods of work | * Learners to research and understand their responsibility for completing set work tasks to the required standard and time frames set by planned work programmes. * Learners to complete a Gantt chart to show a work programme for a small plastering project. * Learners to collaborate, discuss and share workplace experience of the effects of not meeting planned deadlines and the follow-on effects it has on other trades and planned work programmes. |
| * 1. Tools and equipment | * Learners to collaborate and discuss how to carry out pre-checks on hand tools and power tools to ensure they are fit for use and purpose when preparing backgrounds, mixing plasters and applying traditional and modern plasters, including accessories, to form complex plastering surfaces. * Learners to research and discuss the Provision and Use of Work Equipment Regulations (PUWER) 1998. * Learners to collaborate and discuss their experiences of how to use the following competently in line with the method of work: * hand tools such as: handboard, trowels, brushes, plasterboard knives, tape measures, surform, pad saw, 90-degree square etc. * power tools such as: cordless screw gun, collated screw gun, paddle mixer. * access equipment such as: Hop ups, ladders, Podiums, tower scaffold, mobile tower scaffold, scissor lift and mobile elevating working platforms. * Learners to know how to store and maintain hand tools, power tools and access equipment during and after completing set work tasks. |
| 1. Comply with the given contract information to carry out the work efficiently to the required specification | * 1. Demonstration of work skills to plumb, measure, mark out, mix, apply and finish one-, two-and three-coat plaster | * Learners to undertake workshop activities around accuracy when setting out, measuring and marking out various plastering systems such as: ceiling work, plastering columns and bulk heads, direct bond dry lining around windows. * Learners to collaborate, discuss and share workplace experience of setting out beads, fixing, plumbing, levelling, checking margins, lining and plumbing screeds for backing coats, mixing and applying one, two and three coat plaster work to industry standards. * Learners to engage in collaborative discussions on the selection, use and maintenance of the different types of hand tools and power tools associated with producing complex plastering systems. |
| * 1. Use and maintain hand tools, portable power tools and ancillary equipment to prepare background surfaces, mix plaster and apply internal solid plaster to at least six of the following to given working instructions; internal and external angles other than 90°, splayed walls, round or arched windows, round or square columns, attached piers, beams, inclined walls or ceilings, curved surfaces, lath walls or ceilings, expanded metal lath (EML) | * Learners to engage in workshop activities when using and maintaining hand tools, portable power tools and ancillary equipment to prepare background surfaces, mix plaster and apply internal solid plaster. * Learners to research, collaborate and discuss and share workplace experience when producing: * internal and external angles * splayed walls * round or arched windows * round or square columns * attached piers * beams * inclined walls and ceilings * curved surfaces * lath walls or ceilings * expanded metal lath (EML). * Learners to engage in workshop activities to assess and carry out pre-checks to solid backgrounds for condition, suction control, key, compatibility and suitability to determine the type of plaster system and application such as: * checking plasterboard surfaces and joints including penetration of screws, position of beads, reinforcements * checking scratch dubbing out, pricking up coat surfaces for adhesion and subsequent application, adequate key and overall condition and quality of surface * checking floated backing coats for lining plumb, returns formed square, splayed, soffits and cills formed level, correct curve, correct incline, cutting back at angles and beads, consolidated key, flatness of surface, sharp angles and suction control * checking textured and solid masonry plastered surfaces for sealing, priming and applying with grit adhesive to ensure adhesion * checking all surfaces for adequate adhesion, plaster suitability and compatibility to ensure quality when applying and producing backing and finishing plaster surfaces for one, two and three coat complex plastering work * dubbing out and pricking up coats, scratch coats, floated base coats and finishing topcoats including incorporated beads. * Learners to research and discuss workplace experience of measuring and working out complex surfaces such as: * vertical * horizontal * curved inclined and splayed surface areas including returns and calculate correct quantities of traditional loose aggregates * binders and additives * bagged pre-blended plasters * primers and bonding adhesive including allowance for waste. * Learners to be able to measure linear and calculate correct quantities of standard and skim stop, angle and movement beads, including allowance for waste. * Learners to research working out quantities and allowance for waste when calculating materials. * Learners to research and discuss how to interpret information sources and to use correct skills and techniques to prepare low, medium and high suction masonry surfaces, controlling suction with water, hacking and stripping backgrounds, mechanical key using expanded metal lath and applying bonding agents and slurries. * Learners to undertake workshop activities to be able to: * select traditional loose materials and pre-blended bagged plasters * measure, gauge and carry out the mixing process by hand * use mechanical methods with a drill and whisk and drum mixer to the correct consistency and amount. * Learners to be able to measure, cut, position and fix standard and skim beads to form stops, splays, returns and movement joints. * Learners to be able to apply backing and finishing plasters and one, two and three coat plaster application using screeds and free hand methods to produce complex plasterwork such as: curved angles, bullnose angles, archways, soft angles, hard angle returns and various splayed angles. * Learners to be able to apply reinforcements for one coat plaster application. * Learners to be able to prepare background surfaces for plastering in line with manufacturer’s instructions. * Learners to be able to ensure surfaces are flat, consistent and smooth, clean and defect free to include: * wall and ceiling * returns and splayed angles * frames * services and sockets * surrounding work surfaces and area. |