Unit 320: Produce complex external render finishes

# Delivery guide

Unit information

This standard is about interpreting information, adopting safe, healthy and environmentally responsible work practices. It covers selecting and using materials, components, tools and equipment in relation to applying two- and three-coat render and produce complex finishes to external backgrounds.

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

* What is considered to be a complex external surface?
* Why are preblended and premixed renders commonly used on modern buildings?
* What type of beads are used on the external of a building?
* Why is external wall insulation used with render systems?

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

* [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/)
* [Civil Planets | How to calculate cement sand quantity for plastering](https://civilplanets.com/how-to-calculate-cement-sand-quantity-for-plastering/)
* [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)
* [Mike Wye | How to lime render](https://www.mikewye.co.uk/guidesheets/rendering/)
* [Plastering | Rendering – A Look At the Different Types of House Rendering](https://p3plastering.co.uk/rendering-look-different-types-house-rendering/)
* [Weber | Renders](https://www.uk.weber/renders)
* [YouTube | Creating ashlar features – Weber Renders & Decorative Finishes](https://www.youtube.com/watch?v=DnsS_bwVeOw)

Legislation

* [HSE | PUWER 1998](https://www.hse.gov.uk/pubns/books/puwer.htm)
* [HSE | Reporting a health and safety issue](https://www.hse.gov.uk/contact/concerns.htm)

| **Learning outcomes** | **Criteria** | **Delivery guidance** |
| --- | --- | --- |
| 1. Understand resource selection | * 1. Characteristics of the resources | * Learners to research the benefits and reasons of using traditional lime and cement for modern and traditional render applications. * Learners to research the benefits and reasons of using modern preblended renders for various application methods. They will understand how they are used to produce complex surfaces to form various finishes such as: solid masonry with low, medium and high suction, blockwork, brickwork, stone, concrete including external wall insulation and mechanically fixed expanded metal. * Learners to research, discuss and share workplace experience of how to assess the quality and condition of materials and ensure they are fit for use and defect free such as: * lime * cement * sand * additives * manufactured preblended and premixed renders * reinforcement * sealers * primers * glues * beads * timber lath * expanded metal lath and * fixings. * Learners to collaborate, discuss and share their workplace experience and knowledge to ensure materials are stored in line with manufacturer’s information and 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 modern and traditional materials and where and when they would be used * various types of mortars – 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 for insulated render systems * various types of fixings for beads (wet fixing, mechanical fixing) * various types of reinforcement, scrims and mesh cloth expanded metal lath. * Learners to know how to ensure materials are stored in line with manufacturer’s information and understand the ways in which materials should be protected against the weather and theft. |
| * 1. Use of resources | * Learners will re-visit previous RAMS (risk assessment and method statement) work to enable selection of suitable types of render components, accessories, beads and reinforcements, EWI insulation, trims and profiles for preparing different background elevations. * Learners will produce RAMS for a small project of their choice to include some of the above resources. * Learners to collaborate and discuss how to identify and report any problematic issues with background surfaces, preparation and work methods, including 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 the problems. Components and materials types: modern and traditional renders; beads and trims, mortars, reinforcement mesh cloth. |
| * 1. Organisational procedures to select resources | * Learners to collaborate and 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 and application 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 revisit, collaborate and discuss previous RAMS to know and identify hazards associated with the work schedule and materials associated with the installation and rendering process. * Learners to research how to produce and follow method statements and risk assessments to identify correct Personal Protective Equipment (PPE) in order to carry out the work safely and competently in accordance with health and safety legislation. * Learners will 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 rendering 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 the following to ensure they are fit for use and purpose when preparing backgrounds, mixing renders and applying traditional and modern renders and accessories to complex external surfaces. * Hand tools such as: handboard, trowels, brushes, craft knives, tape measures, snips, saw, 90-degree square etc. * Power tools such as: cordless 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 research and discuss the Provision and Use of Work Equipment Regulations (PUWER) 1998. * Learners to collaborate, discuss and share workplace experience for how to use hand tools, power tools and access equipment competently in line with the method of work. * 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 measure, mark out, apply and finish two and three coat render | * Learners to undertake workshop activities around plumbing, measuring and marking out various rendering applications. * Learners to collaborate, discuss and share workplace experience of setting out beads, plumb dot and screed and mixing and applying, two and three coat render work. * Learners to research and discuss: * all modern render systems * traditional render systems * key features in finished render e.g., ashlar cut, quoins, keystones and banding. |
| * 1. Use and maintain hand tools, portable power tools and ancillary equipment to prepare background surfaces, mix render and produce four of the following external render finishes to given working instructions; tyrolean, dash, ashlar joint, rough cast (harling, wet dash), scraped, textured, simulated stone, decorative | * Learners to engage in workshop activities when using and maintaining hand tools, portable power tools and ancillary equipment to prepare background surfaces, mix render materials and apply external solid render. * Learners to research, collaborate, discuss and share workplace experience of applications to some of the following procedures when producing: * right angled returns in openings * splayed angles * positioning and fixing beads * features such as quoins and cut render key stones. * Learners to research, collaborate, discuss and share workplace experience of applications for producing: * tyrolean * dry dash * ashlar joint * rough cast (harling, wet dash) * scraped * textured * simulated stone * decorative * modern systems e.g., EWI, thin coat, scraped monocouche renders. * 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 render systems. * 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 render system and application such as: * checking backgrounds to receive EWI render systems including position of specialist trims and profiles, insulation types, reinforcements and fixings associated with preblended and acrylic render systems * 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 trueness, lining, flatness, consolidation, appropriate thickness and correct standards, checking returns around openings formed square, checking angles are sharp and beads are accurate and clean, consolidated, flatness of surface, sharp angles and suction control * checking poorly keyed background surfaces for sealing, priming and applying with chemical and powder bonding adhesive to ensure correct key and adhesion * checking all surfaces for adequate adhesion, render 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 incorporation of different types of standard and specialist beads. * Learners to research and discuss workplace experience of measuring and working out complex surfaces such as: * external elevations including returns and calculating correct quantities of traditional loose aggregates, binders and additives, bagged pre-blended and premixed renders, primers and bonding adhesive including allowance for waste * external surfaces for EWI installation, insulation, fixings, trims and profiles * linear and calculate correct quantities of standard and specialist external render 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 be able 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, use and maintain the different types of hand tools and power tools associated with complex rendering systems such as: * preparing background surfaces for rendering * measuring, gauging and mixing traditional and manufactured preblended and premixed renders to required consistency, colour and strength * applying render systems to form plain and textured finishes including render features and incorporated beads to external elevations in line with manufacturer’s instructions. * Learners to research and discuss how to interpret information sources and use correct skills and techniques to prepare: * low, medium and high suction masonry background 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 to gauge and carry out the mixing process by hand and by mechanical methods using drill and whisk and drum mixer to the correct consistency, colour and amount for traditional loose materials and bagged renders. * Learners to be able to measure, cut, position and fix beads to form stops, splays, returns, drips and movement joints. * Learners to be able to apply, subsequent backing and finishing render coats to produce plasters and plain and textured surfaces including special features associated with the render application to produce: * complex rendering work * reinforcements such as mesh cloth and * expended metal lath one, two and three coat render systems. * Learners to be able to ensure surfaces are accurate, flat of an even texture and are clean and defect free including beads, returns and angles and surrounding work surfaces and areas. |