Unit 321: Install plasterboard mechanically and by direct bond

# Delivery guide

Unit information

This unit is about interpreting information and adopting safe and healthy working practices. It covers selecting materials, components and equipment, as well as preparing and fixing plasterboard to timber and metal frames and solid masonry internal backgrounds.

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

* What does mechanical fixing mean when installing plasterboard?
* What is a perimeter seal?
* What is direct bond installation?
* What is a parge coat and why is it applied?

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

* [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)
* [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, power tools and equipment required to install plasterboard mechanically and by direct bond. * Learners to research the benefits of installing standard and performance plasterboard using mechanical fixings and direct bond dry wall compound adhesive for specific installation purposes. * Learners to research how to identify and select the correct type and size of plasterboard, screw fixing length or dry wall compound for the type of background. * Learners to research how to assess the quality and condition of sheet materials, fixings and adhesive and ensure they are fit for use. * Learners to collaborate, discuss and share their workplace experience of how to ensure materials are stored in line with manufacturer’s information. * Learners to identify defective materials, check for poor quality 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 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. * Learners to understand the consequences of using the wrong materials, or materials in the wrong condition. * 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 various installation methods and procedures for timber, metal and masonry backgrounds using mechanical fixings and direct bond installation. * Learners will research how to identify and report any problematic issues with background preparation and installation of systems. * Learners will collaborate and discuss how to identify and report any problematic issues with background surfaces, preparation methods and related components and 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 problems to in order to rectify them. Components and materials types: Plasterboard; beads and trims, plasters, reinforcement. |
| * 1. Organisational procedures to select resources | * Learners to collaborate and discuss their workplace experience for selecting materials and resources when 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, mechanical fixing and installation 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 re-visit, collaborate and discuss previous RAMS to know and identify hazards associated with the work schedule and materials associated with the installation procedure for mechanical and direct bond installation. * Learners to research how to produce and follow Risk Assessment Method Statements (RAMS) 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 to 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 direct bond 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 direct bond and mechanical fix and accessories to produce complex surfaces. * Learners to research and discuss the Provision and Use of Work Equipment Regulations (PUWER) 1998. * Learners will share work place experience of how to use the following competently in line with the method of work and how to store and maintain them during and after completing set work tasks: * 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. |
| 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, cut, apply, fit, finish, position and secure | * Learners to undertake workshop activities around the accuracy of installation, setting out, measuring, marking out various mechanical and direct bond applications and installing dry lining systems. * Learners to collaborate, discuss and share workplace experience of setting out and fixing for mechanical and direct bond systems installation. * Learners to research and discuss all modern, various plasterboard and direct bond systems. * Learners to research and discuss key features in fixing and applications for dry lining installation when transferring dimensions when measuring, cutting, rasping and pre-installing plasterboard to: * plain walls and ceilings * walls and ceilings with openings * stair walls * walls with pier returns * beams and independent piers, including cutting out position of services, electrical and mechanical services and sockets. * Learners to discuss and collaborate their workplace experience of assessing and carrying out pre-checks to timber and metal backgrounds for correct stud and joist centres and true line-ability of background surface. * Learners to be able to check masonry backgrounds for strength condition and straightness for setting out fixing guidelines for dry wall adhesive. |
| * 1. Use and maintain hand tools, portable power tools and ancillary equipment to install plasterboard to given working instructions of; cladding to timber and/or metal, and masonry forming openings with reveals | * Learners to engage in workshop activities when: * using and maintaining hand tools, portable power tools and ancillary equipment to prepare background surfaces * mixing and applying direct bond * measuring cut and fix mechanical installation of plasterboard. * Learners to research, collaborate, discuss and share workplace experience of applications to some of the following procedures: * producing right angles in openings * cutting and fixing heads * cills reveals and splayed angles * positioning and fixing beads. * Learners to research, collaborate, discuss and share workplace experience for installation of applications to backgrounds such as: * timber * metal and * masonry. * Learners to research different types of performance boards and where they are suitable for application. |