Unit 322: Lay floor screed systems

# Delivery guide

Unit information

This unit is about interpreting information and adopting safe, healthy and environmentally responsible work practices. It also covers selecting and using materials, components, tools and equipment, and preparing materials and laying floor screed systems.

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

* What is a sand and cement semi dry floor?
* How do we prevent rising damp and increase thermal values in concrete floors?
* What are the two types of liquid screeds used in floor laying?
* What are the advantages and disadvantages of traditional semi dry and liquid floor screeds?

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)

* [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)
* [Google | Setting screeds to a fall](https://www.google.com/search?q=setting+screeds+to+a+fall&rlz=1C1CHBD_en-GBGB920GB920&ei=qAkNYcKQFcjIgQam56Io&oq=setting+screeds+to+a+fall&gs_lcp=Cgdnd3Mtd2l6EAM6BwgAEEcQsAM6BQghEKABOgcIIRAKEKABOggIABDqAhCPAToECAAQQzoFCAAQ)
* [YouTube | Semi Dry vs Flowing Screed. Which is Best?](https://www.youtube.com/watch?v=YdaiUxDO-sg)
* [YouTube | How to Floor Screed](https://www.youtube.com/watch?v=Ci2zUfviDTo)

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 produce floor screed systems. * Learners will research the benefits of using traditional cement and sand semi dry floor screeding materials including manufactured pre-blended, manufactured pre-blended anhydrous liquid floor screed and pre-blended cementitious liquid floor screed systems to various sub floor substrates such as: * old and newly laid concrete oversite * block and beam * insulation and heating elements for specific installation purposes. * Learners to research how to identify and select the correct type of materials such as: * fibres * reinforcement * sealers * accelerators * primers * bonding agents * movement beads * insulation * membranes * timber laths and levelling components for laying floor screeds. * Learners to research how to assess the quality and condition of materials, components and sub-floor surfaces to ensure they are fit for use and defect free. * 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, to check for poor quality and contamination and to 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 floor screed and where and when they would be used * various types of mortars and understanding of gauging and consistency * various types of beads and trims and expansion joints where and when to apply and fix around doorways and large areas * 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 damp proof membranes * various types of reinforcement such as: fibreglass 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 to understand the need to comply with risk assessment and method statement to set up: * mixing and work areas * tools and equipment * types of materials * components * accessories and * reinforcements for producing floor screed systems. * Learners to produce Risk Assessment Method Statements (RAMS) for a small project of their choice to include floor screeding resources. * Learners to re-visit previous RAMS work to enable selection of suitable types of various installation methods and procedures for: * traditional or pre-blended floor screed materials * accessories * additives * bonding agents * movement beads and reinforcements * fibres * rigid insulation * membranes * timber laths and * levelling components for various floor substrates when laying floor screeds to levels and falls. * Learners to research how to identify and report any problematic issues with: * background preparation and installation of systems * background surfaces, preparation methods and related components. * Learners to know 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 with the following components and materials types to in order to rectify them: * trims * mortars * reinforcement. |
| * 1. Organisational procedures to select resources | * Learners to collaborate and discuss their workplace experience for selecting materials, interpreting and extracting technical information from sources such as drawing, specifications, schedules and manufacturer’s information to ensure quality prior to and during preparation, mixing and laying of floor screed 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 will re-visit and discuss previous RAMS to know and identify hazards associated with the work schedule and materials associated with the installation procedure for laying semi dry and flow screeds. * Learners will research how to produce and follow RAMS (method statements and risk assessments) to identify correct 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 floor screed project. * Learners to collaborate, reflect and share workplace experience of the effects of not meeting planned deadlines and the follow-on effect 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 floor screed materials and applying screed rails, floor screeds and levelling tripods and accessories to complex surfaces to form levels. * Learners to research and discuss the Provision and Use of Work Equipment Regulations (PUWER) 1998. * Learners to research and discuss how to select tools and equipment to carry out preparation work on various types of sub floor substrates such as: * removing laitance and dust * controlling suction * measuring and gauging grout slurry * chemical bonding adhesives * bitumen liquid. * Learners to undertake workshop activities for positioning accessories such as: * rigid insulation * membranes * reinforcements * fibres * movement beads * day work joints setting out datums for accuracy and * correct transfer of levels and falls. * Learners to research and to know how to use various techniques for mixing loose and bagged floor screed materials, laying, ruling, consolidating, finishing and curing floor screeds and pouring and tamping modern liquid floor screed materials and systems. * Learners to engage in workshop activities and to know how to handle tools and power tools competently in line with the method of work. * Learners to collaborate, discuss and share workplace experience of how to use hand tools, power tools and access and levelling equipment competently in line with the method of work. * Learners to know how to store and maintain hand tools, power tools and levelling 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, clean, lay, compact and finish | * Learners to undertake workshop activities around: * transferring levels from datum points * measuring dimensions * consolidating and marking and * setting out various floor screeds including setting out levels and falls. * Learners to collaborate, discuss and share workplace experience of setting out, laying and fixing for semi dry and liquid flow screeds. * Learners to research and discuss all modern and traditional floor screeding systems and to understand the difference between anhydrous, cementitious and semi dry systems. * Learners to research and discuss key features in setting up and transferring levels, transferring dimensions and working to drainage outlets. * Learners to research and discuss how to identify and select materials such as: the correct type of traditional or modern floor screeding system and suitable materials to prepare sub floor surfaces for floor screed installation, correct materials, additives and resources for measuring, gauging and mixing using mechanical drum mixer to ensure correct consistency and strength, correct pre-blended liquid floor materials and measure, gauge and mix with drill and whisk to ensure correct consistency and strength. * Learners to engage in workshop activities to be able to measure materials and areas such as: surface areas and calculate correct quantities of materials including allowance for waste, linear and calculate correct quantities of timber laths, movement beads and perimeter insulation seals including allowance for waste. |
| * 1. Use and maintain hand tools, portable power tools and ancillary equipment to prepare surfaces, mix and lay floor screeds to given working instructions relating to the following; sand and cement screeds, level and/or to falls | * Learners to engage in workshop activities when using and maintaining hand tools, portable power tools and ancillary equipment to prepare background surfaces, mix and lay floor screeds, measure cut and fix insulation materials. * Learners to research, collaborate and share workplace experience of applications to some of the following procedures: * lay * compact * rule * consolidate and finish semi dry floor screeds * ensure surfaces are consistent and level and * correct falls. * Learners to know how to mix, pour, tamp and finish liquid-based floor screeds and to ensure surfaces are consistent, level and defect free in line with industry standard. * Learners to research, collaborate, discuss and share workplace experience of applications to backgrounds such as: timber, masonry, solid floor, floating floor. * Learners to research different types of screeding systems, semi dry and liquid flow and where they are suitable for laying. |