

# UNIT M Level 2

## From raw material to earth mix – for clay plaster

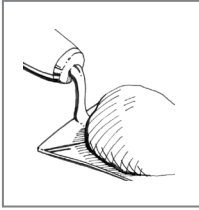
### Learning outcomes Criteria and indicators

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### Knowledge

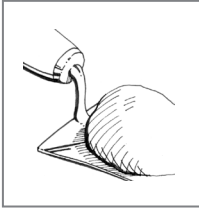
- Main constituents of earth as a raw material
- Behaviour of earth in relation to water : consistency, cohesion, reversibility
- Basic properties of earth – texture, cohesion, plasticity, colour
- Field Identification tests for earth
- Composition of clay plaster
- Differences between base coats and finish coats
- Principal performance standards for finished plaster - stability and adhesion for all coats and absence of cracks in the finish coat
- The principal cause and prevention of shrinkage cracks - proportions of aggregates and fibre, and their use and effects
- Principal additives : aggregates, fibre, pigments, their use and their effects
- Manufactured products, their use and areas of application
- Test method for determining the mixture (constituent proportions) for different plaster layers
- Calculate quantity of materials by volume and weight
- Environmental and health benefits of clay plasters
- Preparation and mixing of clay plaster :
  - Current legislative workplace requirements
  - Relevant codes of practice and current standards for quality of work and materials
  - Tools, machinery and equipment
  - The order of work in making plaster
  - Safe and healthy working practices

### Skills

- Conduct field identification tests
- Prepare raw materials: sieve, soften in water
- Make the test panels in logical sequence following instructions
- Calculate quantities of plaster for the finished job
- Assess correct quantities of constituents for each mixing cycle
- Make the mix by hand and by machine
- Make sample boards
  
- Set out materials
- Use appropriate tools, machinery and equipment to prepare raw materials and to mix
- Organise the work place
- Comply with workplace safety requirements at all times

### Competence

- Develop and explain the choice of recipes for base coat
- Follow recipes for different plasters
- Reproduce the same mix to achieve the total specified quantity
- Under supervision execute all steps for producing mixes for different layers
- Assess the consistency and homogeneity of the mix



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### Criteria for the Evaluation of Skills

Criteria	Indicators
Quality of the Plaster Mix for base coat	<ul style="list-style-type: none"> <li>• The proportions to guarantee a stable plaster are correct</li> <li>• The base coat that may have some cracks, adheres strongly to the wall</li> <li>• The grain size and fiber content is correct for the thickness of the plaster layer</li> </ul>
Workability	<ul style="list-style-type: none"> <li>• The consistency is appropriate for manual application - by float, trowel, thrown or by hand</li> </ul>
Recipe	<ul style="list-style-type: none"> <li>• Test samples are logically ordered and have a clear key</li> <li>• Test sample thickness and dimensions are the same</li> <li>• The mixes for the test samples are made according to instructions</li> <li>• The recipe chosen from the test samples is appropriate for the layer</li> <li>• The chosen recipe is clearly written down and can be repeated</li> <li>• The quantities of the different constituents have been calculated according to the recipe</li> </ul>
The Mix	<ul style="list-style-type: none"> <li>• Each mixing cycle follows the recipe</li> <li>• The plaster mix is homogenous</li> <li>• The quantity of plaster is sufficient</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>• The materials are soaked for the appropriate time</li> <li>• The materials are sized and sieved for the appropriate purpose</li> <li>• Field tests have been performed accurately</li> </ul>
Sample boards	<ul style="list-style-type: none"> <li>• Sample boards are well executed</li> </ul>

Ensure that standards of work and materials comply with relevant codes of practice and to current standards.

## Criteria for the assessment of the method of work (criteria of skills evaluation)

Unit M	Method of Work	Level 2
SUB-CRITERIA	INDICATOR	
Organisation	The examinee is able to: <ul style="list-style-type: none"> <li>locate and access tools, equipment and materials</li> <li>check the availability of building materials</li> <li>logically organise the work space and the order of tasks</li> </ul>	
Economy of materials and time	<ul style="list-style-type: none"> <li>Optimum use of materials and time - no wastage</li> </ul>	
Use of tools and machines	<ul style="list-style-type: none"> <li>Appropriate choice of tools and machines</li> <li>Machines used according to operating instructions</li> <li>Ergonomic handling and use of machines, tools, equipment and materials</li> <li>Skillful and careful handling and use of tools, machines, equipment and materials</li> </ul>	
Work place	<ul style="list-style-type: none"> <li>Tools and material are set out logically for maximum efficiency</li> <li>Tools and machines are cleaned and returned tidily to their correct place</li> <li>Surplus materials are properly collected and stored</li> </ul>	
Time	<ul style="list-style-type: none"> <li>The work is completed within the allocated time in accordance with the programme of work</li> </ul>	
Safety	Compliance with Construction site health & safety <ul style="list-style-type: none"> <li>The equipment is appropriate for purpose and has been risk-assessed</li> <li>All Protective safeguards are in place</li> <li>Erection of ladders and scaffolding according to regulations</li> </ul>	
Waste	<ul style="list-style-type: none"> <li>Waste is appropriately sorted, stored, recycled, removed and disposed of according to regulations</li> </ul>	
Communication	<ul style="list-style-type: none"> <li>Problems during the working process or any deviation from the specifications are reported</li> <li>The finished work is described / explained orally</li> <li>Progress and the various stages of work are discussed with the work team</li> <li>Instructions that are not understood are questioned</li> </ul>	