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
## Criteria for the Evaluation of Skills

### Quality of the Plaster Mix for base coat
- The proportions to guarantee a stable plaster are correct
- The base coat that may have some cracks, adheres strongly to the wall
- The grain size and fiber content is correct for the thickness of the plaster layer

### Workability
- The consistency is appropriate for manual application - by float, trowel, thrown or by hand

### Recipe
- Test samples are logically ordered and have a clear key
- Test sample thickness and dimensions are the same
- The mixes for the test samples are made according to instructions
- The recipe chosen from the test samples is appropriate for the layer
- The chosen recipe is clearly written down and can be repeated
- The quantities of the different constituents have been calculated according to the recipe

### The Mix
- Each mixing cycle follows the recipe
- The plaster mix is homogenous
- The quantity of plaster is sufficient

### Preparation
- The materials are soaked for the appropriate time
- The materials are sized and sieved for the appropriate purpose
- Field tests have been performed accurately

### Sample boards
- Sample boards are well executed

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)

<table>
<thead>
<tr>
<th>Unit M</th>
<th>Method of Work</th>
<th>Level 2</th>
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<tbody>
<tr>
<td></td>
<td><strong>SUB-CRITERIA</strong></td>
<td><strong>INDICATOR</strong></td>
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<td><strong>Organisation</strong></td>
<td>The examinee is able to:</td>
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<td>• locate and access tools, equipment and materials</td>
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<td>• check the availability of building materials</td>
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<td>• logically organise the work space and the order of tasks</td>
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<td><strong>Economy of materials and time</strong></td>
<td>• Optimum use of materials and time - no wastage</td>
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<td><strong>Use of tools and machines</strong></td>
<td>• Appropriate choice of tools and machines</td>
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<td>• Machines used according to operating instructions</td>
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<td>• Ergonomic handling and use of machines, tools, equipment and materials</td>
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<tr>
<td></td>
<td>• Skillful and careful handling and use of tools, machines, equipment and materials</td>
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<td><strong>Work place</strong></td>
<td>• Tools and material are set out logically for maximum efficiency</td>
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<td>• Tools and machines are cleaned and returned tidily to their correct place</td>
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<td>• Surplus materials are properly collected and stored</td>
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<td><strong>Time</strong></td>
<td>• The work is completed within the allocated time in accordance with the programme of work</td>
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<td><strong>Safety</strong></td>
<td>Compliance with Construction site health &amp; safety</td>
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<td>• The equipment is appropriate for purpose and has been risk-assessed</td>
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<td>• All Protective safeguards are in place</td>
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<td>• Erection of ladders and scaffolding according to regulations</td>
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<td><strong>Waste</strong></td>
<td>• Waste is appropriately sorted, stored, recycled, removed and disposed of according to regulations</td>
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<td><strong>Communication</strong></td>
<td>• Problems during the working process or any deviation from the specifications are reported</td>
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<td>• The finished work is described / explained orally</td>
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<td>• Progress and the various stages of work are discussed with the work team</td>
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<td>• Instructions that are not understood are questioned</td>
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