TRADE OF PLASTERING

PHASE 2

Module 3

Slabbing, Skimming, Dry Lining and Floors

UNIT: 11

Patch/Repair Wall and Ceiling

Produced by

SOLAS

An tSeirbhís Oideachais Leanúnaigh agus Scileanna
Further Education and Training Authority

In cooperation with subject matter expert:

Terry Egan

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Introduction

Welcome to this section of your course which is designed to introduce you the learner, to patch/repair walls and ceilings, estimate average labour outputs.

Unit Objective

By the end of this unit each apprentice will be able to:

- Plan and patch/repair dry lined walls and plaster ceilings
- Estimate and calculate average labour outputs

1.0 Repairing Dry Lined Walls and Plaster Ceilings

Key Learning Points

- Common faults and defects - loss of adhesion, shelling, blistering, crazing
- Rust staining and efforescence

1.1 Common Faults and Defects

Fault Diagnosis

It is essential to determine the cause of any defects of plasterwork before any attempt is made to remedy or repair them since unless their cause is dealt with, the majority of defects will continue to recur after repair.

The interpretation of defects of plasterwork and the determination of their causes can only be done by approaching the subject in a systematic and logical manner.

Since it is the finish of the final coat plaster which claims the attention of the casual observer, it is a common error to blame only the plastering materials or workmanship for any defects.

Actually these, although perhaps the most important, are not the only factors that may influence the final result. Many defects are due to imperfections, bad workmanship to the structural background.

Every defect in plastering is more or less connected with the whole history and treatment of the background. Consideration should be given not only to the plastering material used and to quality of workmanship but also to the climate conditions prior to, during and after the plastering process and to the correct choice of plastering system.

Besides the active influences arising from various atmospheric conditions, the effect of the physical properties of backgrounds prior to plastering should receive due consideration.

It is not possible to give simple rules for the correction of all plastering defects or failures.

Many serious defects may be shown to have causes outside the materials or techniques used in the plastering operations and it is often useless to replace the plaster without first having discovered and corrected the primary fault.

Penetration of moisture through an external wall may cause blistering, efflorescence, flaking or complete disintegration of the plaster.

To patch or replaster such a wall without first taking steps to prevent further damp penetration would be useless. Again, plastered ceilings may develop cracks because the ceiling construction permits excessive deflection and no plaster repair could be expected to be effective in preventing it.

Blistering

Blistering is caused by local expansion, this may be due to:

- High moisture content and excessive trowelling before setting action or drying takes place
- Delayed hydration caused by later moisture attacks
- Exposure to severe radiant heat

Bond Failure

Bond failure is due to:

- Poor adhesion due to undercoat being gauged too weak, mixed with dirty water, or re-tempered when partially set
- Insufficient key
- Finishing coat too strong for the undercoat

Cracking

Cracking is due to:

- Structural movements
- Incorrect mixes, including the use of strong cement/sand mixes with subsequent high shrinkage
- Use of loamy sands with a high silt content, resulting in shrinking on drying
- Plaster board joints wrongly positioned and/or left unscrimmed

Crazing

Crazing shows up as fine cracks on finished work and is due to:

- Excessive suction or exposure to rapid drying out of skimming mixes, particularly those containing lime putty
- Too much lime putty in lime putty/plaster mixes
- Re-tempering plaster skimming mixes
- The compression of the surface skin of cement mixes by use of a trowel and subsequent shrinkage on setting

Dry Out

Patches of soft chalky, white dry areas appear which are caused by excessive suction, heating systems, drying winds, or too thin application coats. Patches affected can be lightly spayed with plain water or a solution of alum in water, and allowed to dry. This may be repeated before it cures.

1.2 Rust Staining and Efforescence

Efforescence

Efforescence is the white powdery deposit on surfaces due to the presence of salts and moisture in the background or plaster mix. The salt is taken up into solution by the moisture. When the solution dries out by evaporation the salt is left as a deposit on the surface. Simple brushing off often provide the cure, unless further deposits occur through continued dampness.

Rust Staining

Caused by unprotected iron under plastered surfaces, i.e. eml, conduits etc. It is made worse by plaster mixes, also salt in sand.

2.0 Estimating and Calculating Average Labour Outputs

Key Learning Points

- Calculation of average labour outputs for in-situ work

2.1 Calculation of Average Labour Outputs for In-Situ Work

Example

A gang of seven labourers have asked for 16.90 euro per man per hour to excavate a trench 40 meters long 1 meter deep and 750 mm wide.

Four labourers begin to dig the trench at 8 a.m., and after three hours the other three labourers join them. The whole gang takes a dinner break from 12 noon to 1 p.m., they finish digging for the day at 6 p.m. What was the labour cost for digging that day?

Answer

Four labourers worked from 8 a.m. to 6 p.m., less 1 hour for lunch = 9 hours.

Three labourers from 11 a.m. to 6 p.m., less 1 hour for lunch = 6 hours

Combined hours = 4 labourers x 9hrs = 36 man hours

3 labourers x 6 hrs =18 man hours

Total man hours = 36+18 = 54

Labour cost for day = 54x€16.90 where does this figure come from? = €912.60

Example

A plasterer has been asked to tender for the plastering of the rear gable of a bungalow 9 meters long by 4 meters high to eaves level and 2 meters to apex.

There is one window 900mm by 1.1m and a patio window 3m by 2.1m.

The plasterer charges 10 euro a square meter including materials and 2 euro a meter for scudding. What will be the final estimate?

Answer

Area of rectangle = 9m x 4m	= 36 m^2
Area of triangle = 9m x 2m ÷2	= 9m^2
Total area of gable = 36m^2 +9m^2	= 45m^2
Area of window = 0.9m by 1.1m	= 0.99m^2
Area of patio window = 3m by 2.1m	= 6.3m^2
Total area of windows = 0.99m^2 +6.3m^2	= 7.29m^2
Area for plastering = 45m^2 -7.29m^2	= 37.71m^2
Costs:	
37.71m^2@ 10€	= 377.10€
37.71m^2@ 2€	= 75.42€
Total costs for scudding and plastering =377.10+75.42	= 452.52€

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27-33 Upper Baggot Street
Dublin 4