

Level 3 Advanced Technical Diploma in Plastering (450)

(7908-30)

Version 1.3 May 2019

Qualification Handbook

Qualification at a glance

Industry area	Construction
City & Guilds qualification number	7908-30
Age group	16-19 (Key Stage 5), 19+
Entry requirements	Centres must ensure that any pre-requisites stated in the <i>What is this qualification about?</i> section are met.
Assessment	To gain this qualification, candidates must successfully achieve the following assessments: <ul style="list-style-type: none"> • one externally set, externally moderated assignment • one externally set, externally marked exam, sat under examination conditions.
Additional requirements to gain this qualification	Employer involvement in the delivery and/or assessment of this qualification is essential for all candidates and will be externally quality assured.
Grading	This qualification is graded Pass/Merit/Distinction/Distinction* For more information on grading, please see Section 7: Grading.
Approvals	These qualifications require full centre and qualification approval.
Support materials	Sample assessments Guidance for delivery Guidance on use of marking grids
Registration and certification	Registration and certification of this qualification is through the Walled Garden, and is subject to end dates.
External quality assurance	This qualification is externally quality assured by City & Guilds, and its internally marked assignments are subject to external moderation. There is no direct claim status available for this qualification.

Title and level	Size (GLH)	TQT	City & Guilds qualification number	Ofqual accreditation number
Level 3 Advanced Technical Diploma in Plastering (450)	450	720	7908-30	601/7417/1

Version and date	Change detail	Section
1.1 May 2016	Small typographical errors	Throughout
	TQT added for qualifications Assessment component titles amended	1. Introduction
	Employer involvement guidance updated throughout	4. Employer involvement
	Summary of assessment methods and conditions	5. Assessment
	Moderation and standardisation of assessment updated throughout	6. Moderation and standardisation of assessment
	Awarding individual assessments Awarding grades and reporting results	7. Grading
	Enquiries about results Re-sits and shelf-life of assessment results Malpractice Access arrangements and special consideration	8. Administration
1.2 May 2017	Addition of the examination paper based module number	1. Introduction – Assessment requirements and employer involvement 5. Assessment 5. Assessment – exam Specification 7. Grading – Awarding grades and reporting results
	Removal of AO 6-8 from Synoptic Assignments	5. Assessment – Assessment Objectives
	Revised Exam Specification and AO weightings	5. Assessment – Exam Specification
	Addition of Provisional Grade Boundaries for the Synoptic Assignment	7. Grading
	Branding Changes	City and Guilds Logo

1.3 May 2019

Wording changed regarding retakes

5. Assessment –
Summary of
assessment methods
and conditions

8. Administration –
Re-sits and shelf-life
of assessment results

Contents

1	Introduction	7
	What is this qualification about?	7
	Qualification structure	9
	Total qualification time (TQT)	9
	Assessment and employer involvement	10
2	Centre requirements	11
	Approval	11
	Resource requirements	11
	Learner entry requirements	11
3	Delivering technical qualifications	12
	Initial assessment and induction	12
	Employer involvement	12
	Support materials	12
4	Employer involvement	13
	Qualification approval	13
	Monitoring and reporting learner engagement	13
	Types of involvement	14
	Types of evidence	15
	Quality assurance process	15
	Sufficiency of involvement for each learner	15
	Live involvement	15
	Timing	15
5	Assessment	16
	Summary of assessment methods and conditions	16
	What is synoptic assessment?	17
	How the assignment is synoptic for this qualification	17
	External exam for stretch, challenge and integration	17
	Assessment objectives	18
6	Moderation and standardisation of assessment	21
	Supervision and authentication of internally assessed work	21
	Internal standardisation	21
	Provision for reworking evidence after submission for marking by the tutor	21
	Internal appeal	22
	Moderation	22
	Post-moderation procedures	22
	Centres retaining evidence	23
7	Grading	24
	Awarding individual assessments	24
	Grade descriptors	24
	Awarding grades and reporting results	25

8 Administration	27
External quality assurance	27
Enquiries about results	27
Re-sits and shelf-life of assessment results	28
Factors affecting individual learners	28
Malpractice	28
Access arrangements and special consideration	28
Unit 301 Principles of organising, planning and pricing construction work	30
Unit 302 Restoring in-situ mouldings	38
Unit 303 Applying plastering materials to interiors	44
Unit 304 Applying plastering materials to exteriors	50
Unit 305 Producing reverse moulds from plaster models for architectural mouldings	57
Unit 306 Producing, fixing and finishing pre-cast architectural mouldings	63
Appendix 1 Sources of general information	70

1 Introduction

What is this qualification about?

The following purpose is for the **Level 3 Advanced Technical Diploma in Plastering (450) (601/7417/1)**

Area	Description
OVERVIEW	
Who is this qualification for?	<p>This qualification is aimed at you if you are looking to work in the construction industry specifically as an advanced craft plasterer. It will provide you with a range of specialist technical practical skills and knowledge, which will equip you to seek employment or further training in plastering.</p> <p>While there are no formal entry requirements, a Level 2 Diploma in Plastering, or equivalent industry experience is recommended.</p> <p>This qualification is suitable for anyone over the age of 16 years.</p>
What does this qualification cover?	<p>The one year full time qualification is split into two pathways: Solid and Fibrous. You will have a choice of which specialist pathway you study.</p> <p>Both pathways cover health, safety and environmental issues faced on construction sites, and how to communicate with others on the job, including supervisory skills such as planning, organising and pricing work.</p> <p>The solid pathway covers knowledge and practical skills specific to solid plastering, including how to:</p> <ul style="list-style-type: none">• Run in-situ moulds• Apply plastering materials to detailed interiors• Apply plastering materials to detailed exteriors <p>The fibrous pathway covers knowledge and practical skills specific to fibrous plastering, including how to:</p> <ul style="list-style-type: none">• Run in-situ moulds• Produce reverse moulds for detailed fibrous plaster and cement casting• Produce and fix detailed fibrous plaster and cement casts <p>Centres and providers where you do your training, work with local employers who will contribute to the knowledge and delivery of this training. Employers will provide demonstrations and talks on the industry and where possible work placements will also be provided by the employers.</p>

WHAT COULD THIS QUALIFICATION LEAD TO?

Will the qualification lead to employment, and if so, in which job role and at what level?

This qualification develops your knowledge and practical skills that are required to become an advanced craftsperson in plastering. This means you will be able to complete specialist, complex tasks and also work in a supervisory capacity in your chosen trade.

If you complete this qualification you will have an advantage when seeking employment, either on a construction site or commercial or domestic premises. You may also become self-employed working as a plasterer on new build, domestic repair and refurbishment projects.

Why choose this qualification over similar qualifications?

This particular qualification is intended and designed specifically for you if you are not currently employed in the construction industry, but wish to embark on a career as an advanced craft plasterer.

Will the qualification lead to further learning?

It can lead to a construction apprenticeship programme or a Level 3 NVQ Diploma in Plastering (Construction). On completion of the apprenticeship you will be competent as an advanced craft plasterer.

If you wish to progress to become a supervisor working on site, you may wish to study any of the following qualifications:

- Level 4 NVQ Diploma in Construction Site Supervision (Construction)
- Level 6 NVQ Diploma in Construction Site Management (Construction)

WHO SUPPORTS THIS QUALIFICATION?

Employer/Higher Education Institutions

This qualification is supported by the Federation of Master Builders.

Qualification structure

For the **Level 3 Advanced Technical Diploma in Plastering (450)** the teaching programme must cover the content detailed in the structure below. Tutors must teach the **two** mandatory units plus **either two** units from pathway A or **two** units from pathway B.

Level 3 Advanced Technical Diploma in Plastering (450)		
Unit number	Unit title	GLH
Mandatory		
301	Principles of organising, planning and pricing construction work	90
302	Restoring in-situ mouldings	120
Pathway A (Solid)		
303	Applying plastering materials to interiors	120
304	Applying plastering materials to exteriors	120
Pathway B (Fibrous)		
305	Producing reverse moulds from plaster models for architectural mouldings	120
306	Producing, fixing and finishing pre-cast architectural mouldings	120

Total qualification time (TQT)

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Level 3 Advanced Technical Diploma in Plastering (450)	450	720

Assessment and employer involvement

To achieve the **Level 3 Advanced Technical Diploma in Plastering (450)** candidates must successfully complete **all** the mandatory assessment components for the chosen pathway.

Level 3 Advanced Technical Diploma in Plastering (Solid) (450)

Component number	Title
Mandatory	
001 or 501	Level 3 Plastering - Theory exam (1)*
002	Level 3 Plastering - Synoptic assignment (1)*

Level 3 Advanced Technical Diploma in Plastering (Fibrous) (450)

Component number	Title
Mandatory	
003 or 503	Level 3 Plastering - Theory exam (1)*
004	Level 3 Plastering - Synoptic assignment (1)*

In addition, candidates **must** achieve the mandatory employer involvement requirement for this qualification **before** they can be awarded a qualification grade. For more information, please see guidance in *Section 4: Employer involvement*.

Employer involvement

Component number	Title
Mandatory	
830	Employer involvement

**Number of mandatory assessments per assessment type*

2 Centre requirements

Approval

New centres will need to gain centre approval. Existing centres who wish to offer this qualification must go through City & Guilds' **full** Qualification Approval Process. There is no fast track approval for this qualification. Please refer to the City & Guilds website for further information on the approval process: www.cityandguilds.com

Resource requirements

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following requirements:

- be technically competent in the areas in which they are delivering
- be able to deliver across the breadth and depth of the content of the qualification being taught
- have recent relevant teaching and assessment experience in the specific area they will be teaching, or be working towards this
- demonstrate continuing CPD.

Physical resources

Centres must be able to demonstrate that they have access to the equipment and technical resources required to deliver this qualification and its assessment. Centres will have well equipped workshops with a comprehensive range of hand and portable power tools that meet current industry standards. All powered equipment should be well maintained and PAT certified. Centres will have special designated areas within their bricklaying workshop (cubicles or project areas) allowing candidates to practise the requirements of the units and carry out the Practical Assignments.

Internal Quality Assurance

Internal quality assurance is key to ensuring accuracy and consistency of tutors and markers. Internal Quality Assurers (IQAs) monitor the work of all tutors involved with a qualification to ensure they are applying standards consistently throughout assessment activities. IQAs must have, and maintain, an appropriate level of technical competence and be qualified to make both marking and quality assurance decisions through a teaching qualification or recent, relevant experience.

Learner entry requirements

Centres must ensure that all learners have the opportunity to gain the qualification through appropriate study and training, and that any prerequisites stated in the *What is this qualification about?* section are met when registering on this qualification.

Age restrictions

This qualification is approved for learners aged 16 – 19, 19+.

3 Delivering technical qualifications

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific learning or training needs,
- support and guidance they may need when working towards their qualification,
- the appropriate type and level of qualification.

We recommend that centres provide an introduction so that learners fully understand the requirements of the qualification, their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

Employer involvement

Employer involvement is essential to maximise the value of each learner's experience. Centres are required to involve employers in the delivery of technical qualifications at Key Stage 5 and/or their assessment, for every learner. This must be in place or planned before delivery programmes begin in order to gain qualification approval. See *Section 4: Employer involvement* for more detail.

Support materials

The following resources are available for this qualification:

Description	How to access
Sample assessments	
Guidance for delivery	Available 2016 on the qualification pages on the City & Guilds website: www.cityandguilds.com
Guidance on use of marking grids	

4 Employer involvement

Employer involvement is a formal component of Key Stage 5 Technical qualifications. It does not contribute to the overall qualification grading, but is a mandatory requirement that all learners must meet. As such it is subject to external quality assurance by City & Guilds.

Department for Education (DfE) requirements state:

Employer involvement in the delivery and/or assessment of technical qualifications provides a clear 'line of sight' to work, enriches learning, raises the credibility of the qualification in the eyes of employers, parents and students and furthers collaboration between the learning and skills sector and industry.

[Technical qualifications] must:

- *require all students to undertake meaningful activity involving employers during their study; and*
- *be governed by quality assurance procedures run by the awarding organisation to confirm that education providers have secured employer involvement for every student.*

Extract from:

Vocational qualifications for 16 to 19 year olds, 2017 and 2018 performance tables: technical guidance for awarding organisations, paragraphs 89-90

City & Guilds will provide support and quality assurance of employer involvement.

Qualification approval

To be approved to offer City & Guilds Technicals, centres must provide an Employer Involvement planner and tracker showing how every learner will be able to experience meaningful employer involvement, and from where sufficient and suitable employer representatives are expected to be sourced.

Centres must include in their planner a sufficient range of activities throughout the learning programme that provide a range of employer interactions for learners. Centres must also plan contingencies for learners who may be absent for employer involvement activities, so that they are not disadvantaged.

As part of the approval process, City & Guilds will review this planner and tracker. Centres which cannot show sufficient commitment from employers and/or a credible planner and tracker will be given an action for improvement with a realistic timescale for completion. **Approval will not be given** if employer involvement cannot be assured either at the start of the qualification, or through an appropriate plan of action to address this requirement before the learner is certificated.

Monitoring and reporting learner engagement

Employer involvement is a formal component of this qualification and is subject to quality assurance monitoring. Centres must record evidence that demonstrates that each learner has been involved in meaningful employer based activities against the mandatory content before claiming the employer involvement component for learners.

Centres must record the range and type of employer involvement each learner has experienced and submit confirmation that all learners have met the requirements to City & Guilds. If a centre cannot provide evidence that learners have met the requirements to achieve the component, then the learner will not be able to achieve the overall Technical Qualification.

Types of involvement

Centres should note that to be eligible, employer involvement activities **must** relate to one or more elements of the mandatory content of this qualification.

As the aim of employer involvement is to enrich learning and to give learners a taste of the expectations of employers in the industry area they are studying, centres are encouraged to work creatively with local employers.

Employers can identify the areas of skills and knowledge in their particular industry that they would wish to see emphasised for learners who may apply to work with them in the future. Centres and employers can then establish the type of input, and which employer representative might be able to best support these aims.

To be of most benefit this must add to, rather than replace the centre's programme of learning.

Some examples of meaningful employer involvement are listed below. Employer involvement not related to the mandatory element of the qualification, although valuable in other ways, does not count towards this element of the qualification.

The DfE has provided the following examples of what does and does not count as meaningful employer involvement, as follows^{1,2}:

The following activities meet the requirement for meaningful employer involvement:

- *students undertake structured work-experience or work-placements that develop skills and knowledge relevant to the qualification³;*
- *students undertake project(s), exercises(s) and/or assessments/examination(s) set with input from industry practitioner(s);*
- *students take one or more units delivered or co-delivered by an industry practitioner(s). This could take the form of master classes or guest lectures;*
- *industry practitioners operate as 'expert witnesses' that contribute to the assessment of a student's work or practice, operating within a specified assessment framework. This may be a specific project(s), exercise(s) or examination(s), or all assessments for a qualification.*

In all cases participating industry practitioners and employers must be relevant to the industry sector or occupation/occupational group to which the qualification relates.

The following activities, whilst valuable, do not meet the requirement for meaningful employer involvement:

- *employers' or industry practitioners' input to the initial design and content of a qualification;*
- *employers hosting visits, providing premises, facilities or equipment;*
- *employers or industry practitioners providing talks or contributing to delivery on employability, general careers advice, CV writing, interview training etc;*
- *student attendance at career fairs, events or other networking opportunities;*
- *simulated or provider-based working environments eg hairdressing salons, florists, restaurants, travel agents, small manufacturing units, car servicing facilities;*
- *employers providing students with job references.*

¹ As extracted from: Vocational qualifications for 16 to 19 year olds
2017 and 2018 performance tables: technical guidance for awarding organisations

²This list has been informed by a call for examples of good practice in employer involvement in the delivery and assessment of technical qualifications - **Employer involvement in the delivery and assessment of vocational qualifications**

³ **DfE work experience guidance**

Types of evidence

For each employer involvement activity, centres are required to provide evidence of which learners undertook it, e.g. a candidate attendance register. The types of additional evidence required to support a claim for this component will vary depending on the nature of the involvement. E.g. for a guest lecture it is expected that a synopsis of the lecture and register would be taken which each learner and the guest speaker will have signed; expert witnesses will be identified and will have signed the relevant assessment paperwork for each learner they have been involved in assessing; evidence of contribution from employers to the development of locally set or adapted assignments.

Quality assurance process

As the employer involvement component is a requirement for achieving the KS5 Technical qualifications, it is subject to external quality assurance by City & Guilds at the approval stage and when centres wish to claim certification for learners.

Evidence will be validated by City & Guilds before learners can achieve the employer involvement component. Where employer involvement is not judged to be sufficient, certificates cannot be claimed for learners.

Sufficiency of involvement for each learner

It is expected that the centre will plan a range of activities that provide sufficient opportunities for each learner to interact directly with a range of individuals employed in the related industry. Centres must also provide contingencies for learners who may be absent for part of their teaching, so they are not disadvantaged. Any absence that results in a learner missing arranged activities must be documented. Where learners are unable to undertake all employer involvement activities due to temporary illness, temporary injury or other indisposition, centres should contact City & Guilds for further guidance.

Live involvement

Learners will gain most benefit from direct interaction with employers and/or their staff; however the use of technology (eg the use of live webinars) is encouraged to maximise the range of interactions. Where learners are able to interact in real time with employers, including through the use of technology, this will be classed as 'live involvement'.

It is considered good practice to record learning activities, where possible, to allow learners to revisit their experience and to provide a contingency for absent learners. This is not classed as live involvement however, and any involvement of this type for a learner must be identified as contingency.

Timing

A learner who has not met the minimum requirements cannot be awarded the component, and will therefore not achieve the qualification. It is therefore important that centres give consideration to scheduling employer involvement activities, and that enough time is allotted throughout delivery and assessment of the qualification to ensure that requirements are fully met.

5 Assessment

Summary of assessment methods and conditions

Component numbers	Assessment method	Description and conditions
001/501, 003/503	Externally marked exam	<p>The exam is externally set and externally marked and can be taken either online through City & Guilds' computer-based testing platform, (001,003) or as a paper based exam (501, 503).</p> <p>The exam is designed to assess the candidate's depth and breadth of understanding across content in the qualification at the end of the period of learning, using a range of question types and will be sat under invigilated examination conditions. See JCQ requirements for details: http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations</p> <p>The exam specification shows the coverage of the exam across the qualification content.</p> <p>Candidates who fail the exam at the first sitting will have a maximum of two opportunities to retake. If the candidate fails the exam three times then they will fail the qualification. (Note: the third and final retake opportunity applies to Level 3 only.) For exam dates, please refer to the Assessment and Examination timetable.</p>
002, 004	Synoptic assignment	<p>The synoptic assignment is externally set, internally marked and externally moderated. The assignment requires candidates to identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the content area. Candidates will be judged against the assessment objectives.</p> <p>Assignments will be released to centres as per dates indicated in the Assessment and Examination timetable published on our website.</p> <p>Centres will be required to maintain the security of all live assessment materials. Assignments will be password protected and released to centres through a secure method.</p> <p>There will be one opportunity within each academic year to sit the assignment. Candidates who fail the assignment will have one re-sit opportunity. The re-sit opportunity will be in the next academic year, and will be the assignment set for that academic year once released to centres. If the re-sit is failed, the candidate will fail the qualification.</p> <p>Please note that for externally set assignments City & Guilds provides guidance and support to centres on the marking and moderation process.</p>

What is synoptic assessment?

Technical qualifications are based around the development of a toolkit of knowledge, understanding and skills that an individual needs in order to have the capability to work in a particular industry or occupational area. Individuals in all technical areas are expected to be able to apply their knowledge, understanding and skills in decision making to solve problems and achieve given outcomes independently and confidently.

City & Guilds technical qualifications require candidates to draw together their learning from across the qualification to solve problems or achieve specific outcomes by explicitly assessing this through the synoptic assignment component.

In this externally set, internally marked and externally moderated assessment the focus is on bringing together, selecting and applying learning from across the qualification rather than demonstrating achievement against units or subsets of the qualification content. The candidate will be given an appropriately levelled, substantial, occupationally relevant problem to solve or outcome to achieve. For example this might be in the form of a briefing from a client, leaving the candidate with the scope to select and carry out the processes required to achieve the client's wishes, as they would in the workplace.

Candidates will be marked against assessment objectives (AOs) such as their breadth and accuracy of knowledge, understanding of concepts, and the quality of their technical skills as well as their ability to use what they have learned in an integrated way to achieve a considered and high quality outcome.

How the assignment is synoptic for this qualification

The typical assignment brief could be to respond to a design problem for a newly engineered product or adapting an existing product.

This will require the candidate to carry out experiments on a prototype to evaluate the suitability of different materials. Learners will produce a design specification, with drawings, for a design that meets the brief and produce a production plan for its manufacture. They will need to produce a report on developing the design into a commercial product.

External exam for stretch, challenge and integration

The external assessment will draw from across the mandatory content of the qualification, using a range of shorter questions to confirm breadth of knowledge and understanding. Extended response questions are included to go into more depth, giving candidates the opportunity to demonstrate higher level understanding and integration through discussion, analysis and evaluation, and ensuring the assessment can differentiate between 'just able' and higher achieving candidates.

Assessment objectives

The assessments for this qualification are set against a set of assessment objectives (AOs) which are used across all City & Guilds Technicals to promote consistency among qualifications of a similar purpose. They are designed to allow judgement of the candidate to be made across a number of different categories of performance.

Each assessment for the qualification has been allocated a set number of marks against these AOs based on weightings recommended by stakeholders of the qualification. This mark allocation remains the same for all versions of the assessments, ensuring consistency across assessment versions and over time.

The following table explains all AOs in detail, including weightings for the synoptic assignments. In some cases, due to the nature of a qualification's content, it is not appropriate to award marks for some AOs. Where this is the case these have been marked as N/A. Weightings for exams (AOs 1, 2 and 4 only) can be found with the exam specification.

Assessment objective	Level 3 Advanced Technical Diploma in Plastering (450) Typical expected evidence of knowledge, understanding and skills	Approximate weighting (Assignment)
AO1 Recalls knowledge from across the breadth of the qualification.	Knowledge of information sources in relation to working drawings, types of moulding members, geometrical setting out, drawing equipment used and it uses, types of running moulds, tools required, recognising a range of casting plasters and reinforcements and their applications, calculating quantities of materials, different methods for producing plaster mouldings, following technical guidelines for use, knowing safe methods of work.	10%
AO2 Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	Terminology used in the various aspects of plastering work, methods of work, marking out and practical techniques, Health and Safety legislation, risk management, plastering materials, determining lengths and angles, positioning, fixing, finishing, tool identification, inspection of tools equipment.	20%
AO3 Demonstrates technical skills from across the breadth of the qualification.	Planning, interpreting information, measuring skills, accuracy, cleanliness, working safely, levelling and plumbing skills, safe and correct use of tools and equipment, practical techniques, positioning and fixing, finishing.	45%
AO4 Applies knowledge, understanding and skills from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	Applying knowledge and understanding to the tasks. Materials and techniques used appropriately, correct sequence of operations carried out. Safe and clean working practices demonstrated. Task planned, prepared and completed.	10%
AO5 Demonstrates perseverance in achieving high standards and attention to detail while showing an understanding of wider impact of their actions.	Accuracy of measuring, cutting and filing, setting out, plumb, level, fixing and finishing. Systematic approach to work and cleanliness.	15%

Exam specification

AO weightings per exam

Assessment Objective	Theory exam 001/501 weighting (approx. %)	Theory exam 003/503 weighting (approx. %)
AO1 Recalls knowledge from across the breadth of the qualification.	29	30
AO2 Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	51	50
AO4 Applies knowledge, understanding and skills from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	20	20

The way the exam covers the content of the qualification is laid out in the table below:

Assessment type: Examiner marked, written exam*

Assessment conditions: Invigilated examination conditions

Grading: X/P/M/D

Theory exam 001/501		Duration: 2 hours 30 minutes	
Unit number	Unit title	Number of marks	%
301	Principles of organising, planning and pricing construction work	23	33
303	Applying plastering materials to interiors	35	50
N/A	Integration across the units	12	17
Total		70	100

Assessment type: Examiner marked, written exam*

Assessment conditions: Invigilated examination conditions*

Grading: D/M/P/X

Theory exam 003/503		Duration: 2 hours 30 minutes	
Unit number	Unit title	Number of marks	%
301	Principles of organising, planning and pricing construction work	23	33
302	Restoring in-situ mouldings	35	50
N/A	Integration across the units	12	17
Total		70	100

*These exams are sat under invigilated examination conditions, as defined by the JCQ:

<http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations>

Entry for exams can be made through the City & Guilds Walled Garden.

6 Moderation and standardisation of assessment

City & Guilds' externally set assignments for technical qualifications are designed to draw from across the qualifications' content, and to contribute a significant proportion towards the learner's final qualification grade. They are subject to a rigorous external quality assurance process known as external moderation. This process is outlined below. For more detailed information, please refer to 'Marking and moderation - Technicals centre guidance' available to download on the City & Guilds website.

It is vital that centres familiarise themselves with this process, and how it impacts on their delivery plan within the academic year.

Supervision and authentication of internally assessed work

The Head of Centre is responsible for ensuring that internally assessed work is conducted in accordance with City & Guilds' requirements.

City & Guilds requires both tutors and candidates to sign declarations of authenticity. If the tutor is unable to sign the authentication statement for a particular candidate, then the candidate's work cannot be accepted for assessment.

Internal standardisation

For internally marked work⁴ the centre is required to conduct internal standardisation to ensure that all work at the centre has been marked to the same standard. It is the Internal Quality Assurer's (IQA's) responsibility to ensure that standardisation has taken place, and that the training includes the use of reference and archive materials such as work from previous years as appropriate.

Provision for reworking evidence after submission for marking by the tutor

It is expected that in many cases a candidate who is struggling with a specific piece of work may themselves choose to restart and rectify the situation during their normal allocated time, and before it gets to the stage of it being handed in for final marking by the tutor.

In exceptional circumstances however, where a candidate has completed the assignment in the required timescales, and has handed it in for marking by the tutor but is judged to have significantly underperformed, they may be allowed to rework or supplement their original evidence for remarking prior to submission for moderation. For this to be allowed, the centre must be confident that the candidate will be able to improve their performance without additional feedback from their tutor and within the required timescales ie the candidate has shown they can perform sufficiently better previously in formative assessments.

The reworked and/or supplemented original evidence must be remarked by the tutor in advance of the original moderation deadline and the moderator informed of any candidates who have been allowed to resubmit evidence.

The process must be managed through the IQA. The justification for allowing a resubmission should be recorded and made available on request. The use of this provision will be monitored by City & Guilds.

⁴ For any internally assessed optional unit assignments, the same process must be followed where assessors must standardise their interpretation of the assessment and grading criteria.

Internal appeal

Centres must have an internal process in place for candidates to appeal the marking of internally marked components, ie the synoptic assignment and any optional unit assignments. This must take place before the submission of marks for moderation. The internal process must include candidates being informed of the marks (or grades) the centre has given for internally assessed components, as they will need these to make the decision about whether or not to appeal.

Centres cannot appeal the outcome of moderation for individual candidates, only the moderation process itself. A request for a review of the moderation process should be made to **appeals@cityandguilds.com**.

Moderation

Moderation is the process where external markers are standardised to a national standard in order to review centre marking of internally marked assessments. These markers are referred to as 'moderators'. Moderators will mark a representative sample of candidates' work from every centre. Their marks act as a benchmark to inform City & Guilds whether centre marking is in line with City & Guilds' standard.

Where moderation shows that the centre is applying the marking criteria correctly, centre marks for the whole cohort will be accepted.

Where moderation shows that the centre is either consistently too lenient or consistently too harsh in comparison to the national standard, an appropriate adjustment will be made to the marks of the whole cohort, retaining the centre's rank ordering.

Where centre application of the marking criteria is inconsistent, an appropriate adjustment for the whole cohort may not be possible on the basis of the sample of candidate work. In these instances a complete remark of the candidate work may be necessary. This may be carried out by the centre based on feedback provided by the moderator, or carried out by the moderator directly.

Moderation applies to all internally marked assignments. Following standardisation and marking, the centre submits all marks and candidate work to City & Guilds via the moderation platform. The deadline for submission of evidence will be available on Walled Garden. See the *Marking and moderation - Technicals Centre Guidance* document for full details of the requirements and process.

In most cases candidate work will be submitted directly to the moderator for moderation. This includes written work, photographic and pictorial evidence, or video and audio evidence. For some qualifications there will be a requirement for moderators to visit centres to observe practical assessments being undertaken. This will be for qualifications where the assessment of essential learner skills can only be demonstrated through live observation. The purpose of these visits is to ensure that the centre is assessing the practical skills to the required standards, and to provide the moderators with additional evidence to be used during moderation. These visits will be planned in advance with the centre for all relevant qualifications.

Post-moderation procedures

Once the moderation process has been completed, the confirmed marks for the cohort are provided to the centre along with feedback from the moderator on the standard of marking at the centre, highlighting areas of good practice, and potential areas for improvement. This will inform future marking and internal standardisation activities.

City & Guilds will then carry out awarding, the process by which grade boundaries are set with reference to the candidate evidence available on the platform.

Centres retaining evidence

Centres must retain assessment records for each candidate for a minimum of three years. To help prevent plagiarism or unfair advantage in future versions, candidate work may not be returned to candidates. Samples may however be retained by the centre as examples for future standardisation of marking.

7 Grading

Awarding individual assessments

Individual assessments will be graded, by City & Guilds, as pass/merit/distinction where relevant. The grade boundaries for pass and distinction for each assessment will be set through a process of professional judgement by technical experts. Merit will usually be set at the midpoint between pass and distinction. The grade descriptors for pass and distinction, and other relevant information (eg archived samples of candidate work and statistical evidence) will be used to determine the mark at which candidate performance in the assessment best aligns with the grade descriptor in the context of the qualification's purpose. Boundaries will be set for each version of each assessment to take into account relative difficulty.

Please note that as the Merit grade will usually be set at the arithmetical midpoint between pass and distinction, there are no descriptors for the Merit grade for the qualification overall.

Grade descriptors

To achieve a pass, a candidate will be able to

- Demonstrate the knowledge and understanding required to work in the occupational area, its principles, practices and legislation.
- Describe some of the main factors impacting on the occupation to show good understanding of how work tasks are shaped by the broader social, environmental and business environment it operates within.
- Use the technical industry specific terminology used in the industry accurately.
- Demonstrate the application of relevant theory and understanding to solve non-routine problems.
- Interpret a brief for complex work related tasks, identifying the key aspects, and showing a secure understanding of the application of concepts to specific work related tasks.
- Carry out planning which shows an ability to identify and analyse the relevant information in the brief and use knowledge and understanding from across the qualification (including complex technical information) to interpret what a fit for purpose outcome would be and develop a plausible plan to achieve it.
- Achieve an outcome which successfully meets the key requirements of the brief.
- Identify and reflect on the most obvious measures of success for the task and evaluate how successful they have been in meeting the intentions of the plan.
- Work safely throughout, independently carrying out tasks and procedures, and having some confidence in attempting the more complex tasks.

To achieve a distinction, a candidate will be able to

- Demonstrate the excellent knowledge and understanding required to work to a high level in the occupational area, its principles, practices and legislation.
- Analyse the impact of different factors on the occupation to show deep understanding of how work tasks are shaped by the broader social, environmental, and business environment it operates within.
- Demonstrate the application of relevant theory and understanding to provide efficient and effective solutions to complex and non-routine problems.
- Analyse the brief in detail, showing confident understanding of concepts and themes from across the qualification content, bringing these together to develop a clear and stretching plan, that would credibly achieve an outcome that is highly fit for purpose.
- Achieve an outcome which shows an attention to detail in its planning, development and completion, so that it completely meets or exceeds the expectations of the brief to a high standard.

- Carry out an evaluation in a systematic way, focussing on relevant quality points, identifying areas of development/ improvement as well as assessing the fitness for purpose of the outcome.

Awarding grades and reporting results

The overall qualification grade will be calculated based on aggregation of the candidate's achievement in each of the assessments for the mandatory units, taking into account the assessments' weighting. The **Level 3 Advanced Technical Diploma in Plastering** will be reported on a four grade scale: Pass, Merit, Distinction, Distinction*.

All assessments **must** be achieved at a minimum of Pass for the qualification to be awarded. Candidates who fail to reach the minimum standard for grade Pass for an assessment(s) will not have a qualification grade awarded and will not receive a qualification certificate.

The approximate pass grade boundaries for the synoptic assignments in this qualification are:

Synoptic Assignment	Pass Mark (%)
002	43
004	43

Please note that each synoptic assignment is subject to an awarding process before final grade boundaries are confirmed.

The contribution of assessments towards the overall qualification grade is as follows:

Solid Pathway

Assessment method	Grade scale	% contribution
Theory exam (001/501)	X/P/M/D	40%
Synoptic Assignment (002)	X/P/M/D	60%

Fibrous Pathway

Assessment method	Grade scale	% contribution
Theory exam (003/503)	X/P/M/D	40%
Synoptic Assignment (004)	X/P/M/D	60%

Both synoptic assignments and exams are awarded (see 'Awarding individual assessments', at the start of Section 7, above), and candidates' grades converted to points. The minimum points available for each assessment grade is listed in the table below. A range of points between the Pass, Merit and Distinction boundaries will be accessible to candidates. For example a candidate that achieves a middle to high Pass in an assessment will receive between 8 and 10 points, a candidate that achieves a low to middle Merit in an assessment will receive between 12 and 14 points. The points above the minimum for the grade for each assessment are calculated based on the candidate's score in that assessment.

	Pass	Merit	Distinction
Theory exam: 40%	6	12	18
Synoptic assignment: 60%	6	12	18

The candidate's points for each assessment are multiplied by the % contribution of the assessment and then aggregated. The minimum points required for each qualification grade are as follows:

Qualification Grade	Points
Distinction*	20.5
Distinction	17
Merit	11
Pass	6

Candidates achieving Distinction* will be the highest achieving of the Distinction candidates.

8 Administration

Approved centres must have effective quality assurance systems to ensure valid and reliable delivery and assessment of qualifications. Quality assurance includes initial centre registration by City & Guilds and the centre's own internal procedures for monitoring quality assurance procedures.

Consistent quality assurance requires City & Guilds and its associated centres to work together closely; our Quality Assurance Model encompasses both internal quality assurance (activities and processes undertaken within centres) and external quality assurance (activities and processes undertaken by City & Guilds).

For this qualification, standards and rigorous quality assurance are maintained by the use of:

- internal quality assurance
- City & Guilds external moderation.

In order to carry out the quality assurance role, Internal Quality Assurers (IQAs) must have and maintain an appropriate level of technical competence and have recent relevant assessment experience. For more information on the requirements, refer to *Section 2: Centre requirements* in this handbook.

To meet the quality assurance criteria for this qualification, the centre must ensure that the following procedures are followed:

- suitable training of staff involved in the assessment of the qualification to ensure they understand the process of marking and standardisation
- completion by the person responsible for internal standardisation of the Centre Declaration Sheet to confirm that internal standardisation has taken place
- the completion by candidates and supervisors/tutors of the record form for each candidate's work.

External quality assurance

City & Guilds will undertake external moderation activities to ensure that the quality assurance criteria for this qualification are being met. Centres must ensure that they co-operate with City & Guilds staff and representatives when undertaking these activities.

City & Guilds requires the Head of Centre to

- facilitate any inspection of the centre which is undertaken on behalf of City & Guilds
- make arrangements to receive, check and keep assessment material secure at all times,
- maintain the security of City & Guilds confidential material from receipt to the time when it is no longer confidential and
- keep completed assignment work and examination scripts secure from the time they are collected from the candidates to their dispatch to City & Guilds.

Enquiries about results

The services available for enquiries about results include a review of marking for exam results and review of moderation for internally marked assessments.

For further details on enquiries and appeals process and for copies of the application forms, please visit the **appeals page** of the City & Guilds website at **www.cityandguilds.com**.

Re-sits and shelf-life of assessment results

Re-sits and shelf-life of assessment results Candidates who have failed an exam or wish to re-take it in an attempt to improve their grade, can do so **twice**. The best result will count towards the final qualification. See guidance on individual assessment types in Section 5

Factors affecting individual learners

If work is lost, City & Guilds should be notified immediately of the date of the loss, how it occurred, and who was responsible for the loss. Centres should use the JCQ form, JCQ/LCW, to inform City & Guilds Customer Services of the circumstances.

Learners who move from one centre to another during the course may require individual attention. Possible courses of action depend on the stage at which the move takes place. Centres should contact City & Guilds at the earliest possible stage for advice about appropriate arrangements in individual cases.

Malpractice

Please refer to the City & Guilds guidance notes *Managing cases of suspected malpractice in examinations and assessments*. This document sets out the procedures to be followed in identifying and reporting malpractice by candidates and/or centre staff and the actions which City & Guilds may subsequently take. The document includes examples of candidate and centre malpractice and explains the responsibilities of centre staff to report actual or suspected malpractice. Centres can access this document on the City & Guilds website.

Examples of candidate malpractice are detailed below (please note that this is not an exhaustive list):

- falsification of assessment evidence or results documentation
- plagiarism of any nature
- collusion with others
- copying from another candidate (including the use of ICT to aid copying), or allowing work to be copied
- deliberate destruction of another's work
- false declaration of authenticity in relation to assessments
- impersonation.

These actions constitute malpractice, for which a penalty (eg disqualification from the assessment) will be applied.

Where suspected malpractice is identified by a centre after the candidate has signed the declaration of authentication, the Head of Centre must submit full details of the case to City & Guilds at the earliest opportunity. Please refer to the form in the document *Managing cases of suspected malpractice in examinations and assessments*.

Access arrangements and special consideration

Access arrangements are adjustments that allow candidates with disabilities, special educational needs and temporary injuries to access the assessment and demonstrate their skills and knowledge without changing the demands of the assessment. These arrangements must be made before assessment takes place.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the *JCQ access arrangements and reasonable adjustments* and *Access arrangements - when and how applications need to be made to City & Guilds* for more information. Both are available on the City & Guilds website: <http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or indisposition at the time of the examination. Where we do this, it is given after the examination.

Applications for either access arrangements or special consideration should be submitted to City & Guilds by the Examinations Officer at the centre. For more information please consult the current version of the JCQ document, *A guide to the special consideration process*. This document is available on the City & Guilds website: <http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

Unit 301 Principles of organising, planning and pricing construction work

UAN:	J/507/3230
Level:	3
GLH:	90

What is this unit about?

The purpose of this unit is to introduce the learner to the wider construction industry, to give a broader context to the trade they are studying. The construction industry is a vital part of the economy and plays an important role in all our lives. It affects where we live, where we study, where we work, how we travel and how we spend our leisure time. This unit provides learners with an understanding of the way the building process is managed.

Development of a safe, secure and sustainable built environment is essential. Nowadays, this development must take place without harming the natural environment. Care for the environment and the use of sustainable technology is implicit in the content of this unit. The unit will enable learners to gain an overview of the way a construction site is run, completed and occupied efficiently, safely and with a minimal impact to the environment. This is tightly controlled by regulations and a team of inspectors who ensure these regulations are carried out. Additionally, any construction project will have its own management structure to ensure the construction project runs smoothly. This involves communicating efficiently, and there are many ways of ensuring information is passed from person to person using traditional and modern electronic means.

No prior knowledge of the built environment sector is required but learners should possess basic numeracy and literacy skills in order to understand the content properly.

Learning outcomes

In this unit, learners will

1. understand the way the construction industry is regulated
2. understand energy efficiency and sustainable materials for construction
3. understand how to estimate quantities and price work for construction
4. understand how to plan work activities for construction
5. understand how to communicate effectively in the workplace
6. understand and use drawings and associated software.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Understand the way the construction industry is regulated

Topic 1.1: Health and safety regulations

Topic 1.2: Planning permission and building control

Topic 1.1

Learners must be aware of the different health and safety regulations that apply to the construction industry. The focus of this topic **isn't** about the practical application of carrying out health and safety but how these regulations affect all aspects of risk management from the initial design phase through to its eventual demolition.

Regulations

- Health and Safety at Work Act
- Reporting Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
- Control of Substances Hazardous to Health (COSHH)
- Construction (Design and Management) (CDM) regulations
- Provision and Use of Work Equipment Regulations (PUWER)
- Manual Handling Operations Regulations
- Personal Protective Equipment (PPE) at Work Regulations
- Work at Height Regulations
- Control of Noise at Work Regulations
- Control of Vibration at Work Regulations
- Electricity at Work Regulations
- Lifting Operations and Lifting Equipment Regulations (LOLER).

Topic 1.2

Learners must be aware that construction is tightly controlled by Building and Planning Regulations and how these affect the building process. The learner will have an overview of the building regulations and the area they refer to. An in-depth knowledge of the content of the building regulations is **not** a requirement at this stage.

The learner will be aware of the planning process and how this affects the construction industry. An in-depth knowledge of planning is **not** required, but they should be aware of permitted development, outline and detailed planning permission, and listed building consent.

Learning outcome 2: Understand energy efficiency and sustainable materials for construction

- Topic 2.1:** Sustainable development
- Topic 2.2:** Thermally insulated materials
- Topic 2.3:** Construction methods for insulation
- Topic 2.4:** Energy saving measures

Topic 2.1

Learners will need to have a basic understanding of current guidance on sustainable building.

- Code for sustainable homes – Building Research Establishment Environmental Assessment Methodology (BREEAM)
- Voluntary standards eg Passive house
- Building regulations.

Topic 2.2

Learners must develop an understanding of the properties of thermally insulating materials and be able to compare them in relation to cost, environmental impact and performance (eg U-values).

Materials such as Polyisocyanurate (PIR), expanded polystyrene (EP) fibre glass, sheep wool, mineral wool, double/triple/secondary glazed units, multi-foil insulation, phenolic insulation board

Topic 2.3

Learners must develop an understanding on the uses of insulation, where they are placed and how buildings are designed to incorporate insulation (within new and existing buildings).

- Correct selection of insulating materials
- Positioning of insulation.

Topic 2.4

Learners will need to have a basic understanding of methods for reducing energy use and the environmental impact of a building.

- Renewable energy sources (eg solar, photovoltaic, ground or air source, wind turbines)
- Design features such as air tightness, lighting, water harvesting
- Local and sustainable materials
- Energy Performance Certificates (EPCs).

Learning outcome 3: Understand how to estimate quantities and price work for construction

- Topic 3.1:** Tendering process
- Topic 3.2:** Calculate quantities of building materials
- Topic 3.3:** Prepare a quote

Topic 3.1

Learners must understand the process of tendering for work. The learner should be able to explain the difference between quoting and estimating. Learners should also understand the types of tenders

- open
- closed.

As part of the tendering process, learners should have an understanding of penalty clauses and retention payments.

Topic 3.2

Learners must understand the process of calculating quantities of materials for building work. The processes should include

- specifications/drawings
- preparing a material list using a schedule
- bill of quantities
- calculations (percentages for waste, linear, area and volume)
- selection of suppliers (preferred, nominated, locally sourced).

Topic 3.3

Learners will be able to prepare a quote for a given building project including

- labour
- materials
- overheads
- plant and equipment
- profits
- VAT.

Learning outcome 4: Understand how to plan work activities for construction

Topic 4.1: Planning construction works

Topic 4.2: Statutory safety documentation

Topic 4.1

Learners must develop an understanding of the reasons and methods for planning construction work activities. The learner must understand why the planning of work activities is vital to efficient use of materials, cost and completing within the contracted time.

- Planning methods to include: bar charts (Gantt chart) and critical path analysis
- Timing of labour, plant and material requirements

Learners must understand how to produce a programme of works in relation to planning a small building project.

Topic 4.2

Learners must understand the reasons for completing a risk assessment and a method statement and be able to apply them to a work activity. At this level they should be able to guide others through the completion of a risk assessment.

Learners must understand the purpose of a permit to work.

Learning outcome 5: Understand how to communicate effectively in the workplace

Topic 5.1: Written and oral communication

Topic 5.1

Learners must develop an understanding of the different methods used to convey information between members of the building team. These may be verbal, on paper or electronic. The nature of communication is rapidly changing and an emphasis must be placed upon keeping up to date with such developments. Learners will be able to

- produce a written communication for a client
- prepare a toolbox talk
- coordinate a work activity
- prepare an agenda for a meeting.

Learning outcome 6: Understand and use drawings and associated software

Topic 6.1: Manual drafting

Topic 6.2: Computer Aided Design (CAD)

Topic 6.3: Building Information Modelling (BIM)

Topic 6.1

Learners must develop a range of the skills required to produce appropriate construction drawings. This will include drawing practice to develop specific skills and the application of these skills to produce a range of drawings in accordance with British Standards and other standard conventions.

Learners will have an awareness of the use of orthographic and isometric projections. Learners will be able to produce a drawing to scale using appropriate symbols and hatchings and elevations and plans.

Topic 6.2

Learners should be aware of the range of computer drawing software packages available, and the hardware required to run them. They do not need an in-depth working knowledge of each system, but they do need to know that there is a range of options, and that these vary considerable in complexity and cost.

Learners will be able to compare advantages and disadvantages of Computer Aided Design (CAD) programs to traditional drawing methods.

It would be an advantage for learners to develop CAD software skills however this will not be assessed.

Topic 6.3

Learners need to be aware of Building Information Modelling (BIM) and how it is used in the built environment today. BIM is not a software package, a computer-generated 3D model of a building, or even a method of simulation, communication or sharing data. It is a collaborative integrated approach to building design, construction and management through the whole lifecycle. Learners should know the advantages of BIM and how it is used on projects. This should consider

- 3D Modelling
- change management
- building simulation

- data management
- building operation.

Learners should be aware of requirements for the integration of BIM being driven by the government. They also need to be aware of the different software packages used and how these integrate with each other and the different stages of the process.

Guidance for delivery

This unit should be one of the first units delivered in this qualification because it informs much of the content of the other units. Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, research using the internet and/or library resources and the use of personal and/or industrial experience will all be valuable. Delivery should stimulate, motivate and educate the learner. Structured site visits will prove enjoyable and useful, as would guest speakers drawn from local employers, trade unions and professional associations. Such guest speakers will bring up-to-date experience of working in today's built environment sector.

The unit has a broad content, covering how the construction industry is regulated in both safety, quality and environmental areas, how work is tendered for, estimated and priced, how work is planned and how communications take place.

Teaching and learning strategies must help learners to develop a clear and simple understanding of how the construction industry functions. This can be done by examining the industry from a variety of perspectives, breaking the knowledge down into bite-sized pieces and then asking the learners to work out how they fit together to form a united whole. This should be based on real-life case studies.

Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities and risk assessments must be undertaken prior to any visits to sites, or any other places of interest.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.

Useful support for links with industry is given below:

- National Education and Business Partnership Network – **www.nebpn.org**
- Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) - **www.warwick.ac.uk/wie/ce**
- Construction Industry Joint Council - Working rule agreement for the construction Industry UK **www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf**
- Born to build - **www.borntobuild.org.uk**
- The UK Contractors Group - **www.ukcgroup.org.uk/representing-industry/open-doors-weekend**

Suggested learning resources

Books

Construction Technology Published by: Heinemann, 2011 ISBN: 0-435-04682-9	Greeno R, Chudley R, Topliss S, Hurst M
Sustainable Practices in the Built Environment Published by: Butterworth-Heinemann, 2001 ISBN: 0-750-65153-9	Langston C A
Introduction to Building Published by: Pearson, 1997 ISBN: 0-582-30200-5	Osbourn D, Greeno R
Construction and the Built Environment: Level 2 Higher Diploma Published by: Heinemann, 2008 ISBN: 0-435-49991-2	Manley S, Charters M, Francis C, Topliss S, Doyle M
Level 3 Diploma in Bricklaying Published by: City and Guilds ISBN-13: 978-0851933030	Beattie, J; Tucker, T; Burdfield, M & Fearn, C
Level 3 Diploma in Site Carpentry & Bench Joinery Published by: City and Guilds ISBN: 978-0-85193-304-7	Burdfield, M; Redfern, S. Fearn, C

Journals

- Building Construction News
- Architects' Journal - AJ
- Building Design
- Housebuilder
- Property Week
- New Civil Engineer
- CIBSE Journal

Websites

Construction Industry Training Board	www.citb.co.uk
Construction Industry Research and Information Association	www.ciria.co.uk
The Health and Safety Executive	www.hse.gov.uk
National House Building Council	www.nhbc.co.uk
Chartered Institute of Building	www.ciob.org.uk
Green Building	www.greenbuilding.co.uk
BREEAM	www.breeam.org
Building Research Establishment Group	www.bre.co.uk
Passivhaus (Passive House)	www.passivhaus.org.uk

Unit 302 Restoring in-situ mouldings

UAN:	Y/507/3264
Level:	3
GLH:	120

What is this unit about?

The purpose of this unit is to provide the learner with the knowledge and practical skills to form, set out and run in-situ moulds.

The unit will cover the process of using internal and external materials used in restoration and running in situ moulds. The unit looks at tools and materials, it also explores the preparation for running in situ moulds and how to run internal and external in-situ moulds.

Learners who have completed this unit can progress into working as a skilled plasterer in a range of sectors including commercial, restoration, heritage and conservation work.

Learning outcomes

In this unit, learners will

1. understand the types of listed buildings
2. prepare and restore surfaces
3. run and finish in-situ mouldings.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Understand the types of listed buildings

- Topic 1.1:** Types of building
- Topic 1.2:** Material analysis
- Topic 1.3:** Types of in-situ moulding
- Topic 1.4:** Types of background

Topic 1.1

Learners must identify and evaluate types of listed buildings.

- Grade 1, Grade 2, conservation, heritage, buildings of national importance.

Topic 1.2

Learners must develop an understanding of why different materials are analysed, selected and used for restoration.

- Grading of sand, types of lime, mix ratios, sourcing of materials, type of reinforcement.

Topic 1.3

Learners must develop an understanding of the different type of internal and external in-situ moulding.

- Plain moulding sections
- Ornate to include identifying pattern repeats.

Topic 1.4

Learners must develop an understanding of the different types of backgrounds when reinstating traditional plastering materials and mouldings.

- Oak keels, hardwood laths, riven laths, corbelled brickwork, types of bracketing.

Learning outcome 2: Prepare and restore surfaces

- Topic 2.1:** Information sources
- Topic 2.2:** Preparing backgrounds
- Topic 2.3:** Construct running moulds
- Topic 2.4:** Process for running

Topic 2.1

Learners must develop an understanding of information sources to include: drawings and manufacturers information.

Types of drawing

Elevation, detailed drawing, 1:1/full size, section through, reflective ceiling plan.

Manufacturer's information

Health and safety information, product data sheets, product user guide.

Topic 2.2

Learners must understand and demonstrate how to check the background before running in

situ.

- Check for defects, stability, and condition of background.

Learners must also understand and demonstrate the processes for applying traditional plasters to internal and external backgrounds and setting out of rules.

Processes

Pricking up, scratch, consolidate, float

Topic 2.3

The learner must be able to construct running moulds for in-situ work and matching to existing designs.

Parts of a running mould

Squeeze, template, profile, stock, slipper, brace, and muffle.

Topic 2.4

The learner must understand when to use different methods of coring out. The learner must also be able to core out to timber and solid backgrounds.

- Solid, bracketing.

The learner must develop an understanding of the following when setting out for in-situ moulding work.

- Running straight, running curved/elliptical (gig stick, centre points, trammel, peg mould), running raking sections.

Learning Outcome 3: Run and finish in-situ mouldings

Topic 3.1: Mix ratios

Topic 3.2: Apply materials

Topic 3.3: Run mouldings

Topic 3.4: Finish mouldings surfaces

Topic 3.1

Learners must be understand how to mix the following materials used for in-situ work which includes preparing and sieving the sand.

Internal work

Mix lime putty/casting plaster – ratio 1:1

External work

Mix sand/cement – ratio 2:1

Sand/lime – ratio 2½:1

Learners must demonstrate in practice that they can mix materials for internal and external in-situ mouldings.

Topic 3.2

Learners must understand the process for applying and be able to apply the following materials

for running in-situ for internal mouldings: lime putty, casting plasters.

Learners must understand the process for applying and be able to apply the following materials for running in-situ for external mouldings: lime, sand, cement.

Topic 3.3

Learners will need to understand the importance of constructing running moulds that are robust and fit for purpose depending on the size of the run work.

- Single slipper, double slipper, double stock, braced stock, braced slipper, hanging moulds, peg moulds, hinged moulds.

Learners must be able to run mouldings in-situ on various types of internal surfaces.

- straight, curved, raking.

Learners must be able to set up and form short breaks and returns.

Topic 3.4

The learner must have an understanding of, and be able to form internal and external mitres. Learners also must have an understanding and be able to select and use the tools and equipment required. Learners must be able to finish in-situ mouldings for internal work but need only have the knowledge for external in-situ mouldings.

Stages

Members in line, control suction, coring out of mitres.

Tools

Internal: joint rules, small tools, busks, gauging trowel.

External: wooden joint rules, small tools, floats, gauging trowel.

Guidance for delivery

Staff delivering this unit will have an opportunity to use a wide range of techniques, lectures, guest speakers, industry experts, discussions, case studies, DVDs and video footage. Tutors are advised to use seminar presentations, site visits, supervised practical activities, research using internet and/or library resources and the use of personal and/or industrial experiences as appropriate

An understanding and demonstration of health and safety must be integrated at all times into the lessons. Centres would benefit from links with local construction companies or the building department of a local authority who will carry out a selection of work that can be related and applied to lessons. Staff should apply learning within real-life working environments, as this is vital for learner engagement, motivation and development.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Attending work placements is an opportunity for the learner to show their commitment and skills which could possibly lead to future employment.

Employers could also contribute to learners' progress by acting as guest speakers.

Learners would benefit from attending career events in order to establish what opportunities are available and what employers expect and require from future employees. Local and national companies should be invited to attend career events and college open days in order for students to show case their work.

Heritage Groups should be invited to explain the work involved and materials used when restoring listed buildings and buildings within conservation areas. Plastering manufacturers should also be invited to speak at colleges to update on the new products and materials available to include short up-skill courses on how to use new materials.

Learners engaging with employers for this unit would benefit from working using traditional and modern skills within the conservation area to enhance their knowledge and skill required when working with listed and protected buildings.

As the learners progress on the course, colleges could place videos and photographs of learners work on their websites and social networking sites in order to attract possible future employers. Learners should be encouraged to compete at regional and national competitions to show their skills and ability.

Suggested learning resources

Books

Plastering Plain and Decorative, 4th Edition
Published by Donhead
ISBN-10: 187339487X,
ISBN-13: 978-1873394878

Millar, W, Bankart, G

Plastering: A Craftman's Encyclopedia
Published by Crown, 1987
ISBN-10:0517556529
ISBN-13:978-0517556528

Stagg, W. D, Pegg, B. F

Websites

SmartScreen
The plasters forum
Pozament
Lime mortars

www.smartscreen.co.uk
www.plasterersforum.com
www.pozament.co.uk
www.limemortars.co.uk

Unit 303 Applying plastering materials to interiors

UAN:	D/507/3265
Level:	3
GLH:	120

What is this unit about?

A solid plasterer is regarded as a very highly skilled individual. Traditional and modern methods and techniques are used to obtain a high standard of finish to meet design needs within both the private and commercial sectors of the construction industry. A plasterer is responsible for assessing and preparing background surfaces as well as applying a variety of materials using a range of methods to meet industry demand.

This unit will provide all learners with the knowledge and practical skills required to prepare background surfaces, apply backing coats and finishing coats to the interiors of buildings.

Learning outcomes

In this unit, learners will

1. prepare surfaces for plastering
2. apply backing coat plasters
3. apply finishing coat plasters.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Prepare surfaces for plastering

Topic 1.1: Backgrounds

Topic 1.2: Tools and equipment

Topic 1.3: Information sources

Topic 1.4: Applying materials

Topic 1.1

Learners must be able to identify the different types of blocks and bricks that are used to construct superstructures and the different levels of suction that can be present when applying materials to these backgrounds.

- Aerated blocks, breeze blocks, concrete blocks, engineering bricks, fletton bricks, stock bricks, clay bricks, stone.

Suctions

High, medium, low.

Learners must develop an understanding and evaluate the different methods that can be used to prepare background surfaces ready for the application of backing coats.

- Scraping down, grinding/raking out of mortar joints, brushing down, hacking, removal, chemical keys (bonding agents), EML, rib lath, mechanical keys, water.

Topic 1.2

Learners must develop an understanding of why hand tools and power tools are selected and used when preparing background surfaces.

Hand Tools

Lump hammer, broom, bolster, floor scraper, skutch hammer, claw hammer, paint brushes, paint rollers, tin snips, spirit levels, window gauge, tape measure, straight edge, timber rules.

Power Tools

SDS hammer drill, rotary scabblers/strippers, angle grinders, mechanical breaker.

Topic 1.3

Learners must develop an understanding of the information that is provided with all products that are used for preparing background surfaces.

- Health and safety information, product data sheets, technical guidelines for use.

Topic 1.4

Learners must develop the skills and understanding to apply and install accessories and fixings, when preparing background surfaces for internal plastering.

Backgrounds

Walls, ceilings, beams, piers, returns.

Chemicals

Sealers, primers, neutralizers, fungicidal washes, bonding agents.

Plastering accessories

Rib lath, EML, angle beads, stop beads, expansion beads, arch formers.

Fixings

Screws, washers, raw plugs, staples, galvanized nails, plaster dabs.

Learning outcome 2: Apply backing coat plasters

- Topic 2.1:** Product suitability
- Topic 2.2:** Information sources
- Topic 2.3:** Materials
- Topic 2.4:** Tools and equipment
- Topic 2.5:** Applying backing plasters

Topic 2.1

Learners must develop an understanding and evaluate a range of products for their suitability when applying backing coats to internal backgrounds.

- Building construction (cavity construction, solid construction, damp issues)
- Type and strength of background
- Practicality of use (level of works e.g. ground floor, first floor, second floor etc)
- Costs (labour and materials)
- Product coverage
- Method of application (hand or spray applied).

Topic 2.2

Learners must develop an understanding of the information that is provided with all products that are used when applying backing coats.

- Health & safety information
- Product data sheets
- Technical guidelines for use.

Topic 2.3

Learners must develop an understanding of the different types of materials that can be used for applying backing coats to various backgrounds. Learners must also know how to select the appropriate materials to apply backing coats to various backgrounds:

Materials

Types of lightweight backing plasters, sand cements, sand & hydraulic limes, ready mixed mortars, additives such as plasticisers, accelerators, retarders, waterproofers, hydrated lime.

Topic 2.4

Learners must develop an understanding of the various tools and equipment that are used for mixing, applying and keying backing coats plasters. Learners must also know how to select the appropriate tools and equipment when mixing, applying and keying backing coat plasters:

Mixing equipment

Drum mixer, plasterers whisk, shovel, mixing bath, joddy mixer, gauging vessels, rake

Applying

hawk & trowel, straight edges, radius rules, levels, spot board & stand, diminished rules

Finishing

Comb scratcher, devil float.

Topic 2.5

Learners must be able to identify the various types of surfaces and evaluate different methods that can be used to produce floating coats that are level and plumb. Learners must be able to select the most appropriate method to apply backing coat plasters to various surfaces.

Types of surfaces

Flat walls, ceilings, curved walls, piers, columns and beams.

Methods

Plumb and dot, broad screeds, freehand screeds.

Application of coats

Dubbing out, scratch coat, floating coat.

Learners must be able to demonstrate these skills on completion of applying backing coat plasters.

Skills

Acceptable tolerances, providing an adequate key, cutting in and cleaning of wall, ceiling and skirting lines, cleaning of beads, timber door linings and window frames, removal of plaster from service points (EG electrical boxes).

Learning outcome 3: Apply finishing coat plasters

- Topic 3.1:** Product suitability
- Topic 3.2:** Information sources
- Topic 3.3:** Tools and equipment
- Topic 3.4:** Applying finishing plasters

Topic 3.1

Learners must develop an understanding and evaluate various products that can be used to provide a finish to interiors of buildings.

- Compatibility/suitability of finishing plasters, preparation of different surfaces, high traffic areas, costs, product coverage, method of application, standard of finish.

Topic 3.2

Learners must develop an understanding of the information that is provided with all products that are used when purchasing finishing coat plasters.

- Health & safety information
- Product data sheets
- Technical guidelines for use.

Topic 3.3

Learners must develop an understanding of the various tools and equipment that are used for mixing, applying and finishing. Learners must also know how to select the appropriate tools and equipment when mixing, applying and finishing.

Finishing Tools

Finishing trowel, internal angle trowel, flat brushes, spatulas/blades, polyurethane trowel.

Topic 3.4

Learners must understand and be able to apply and create a finish using various types of finishing plasters.

- Two coat application smooth troweled finish, finishing to internal angles, cutting in and cleaning of internal wall, ceiling and skirting lines, cleaning of beads, timber door linings and window frames, removal of plaster from service points (EG electrical boxes).

Guidance for delivery

Staff delivering this unit will have an opportunity to use a wide range of techniques, lectures, guest speakers, industry experts, discussions, case studies, DVDs, plasters forum and video footage. Tutors are advised to use seminar presentations, site visits, supervised practical activities, research using internet and/or library resources and the use of personal and/or industrial experiences as appropriate.

Staff should apply learning within real-life working environments, as this is vital for learner engagement, motivation and development. It would be an advantage for learners on this course to gain work experience in plastering to further enhance their skills.

An understanding and demonstration of health and safety must be integrated at all times into the lessons.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Attending work placements is an opportunity for the learner to show their commitment and skills which could possibly lead to future employment. Employers could also contribute to learners' progress by acting as guest speakers.

Learners would benefit from attending career events in order to establish what opportunities are available and what employers expect and require from future employees. Local and national companies should be invited to attend career events and college open days in order for students to show case their work.

Heritage Groups should be invited to explain the work involved and materials used when restoring listed buildings and buildings within conservation areas. Plastering manufacturers should also be invited to speak at colleges to update on the new products and materials available to include short up-skill courses on how to use new materials.

Learners engaging with employers for this unit would benefit from working on small and large scale contracts to develop awareness of using different plastering products, systems and time schedules that are currently used in industry.

As the learners progress on the course, colleges could place videos and photographs of learners work on their websites and social networking sites in order to attract possible future employers. Learners should be encouraged to compete at regional and national competitions to show their skills and ability.

Suggested learning resources

Books

- | | |
|---|-------------------------|
| Plastering Plain and Decorative, 4 th Edition
Published by Donhead
ISBN-10: 187339487X,
ISBN-13: 978-1873394878 | Millar, W, Bankart, G |
| Plastering: A Craftman's Encyclopedia
Published by Crown, 1987
ISBN-10:0517556529
ISBN-13:978-0517556528 | Stagg, W. D, Pegg, B. F |

Websites

- | | |
|--------------------|--|
| SmartScreen | www.smartscreen.co.uk |
| The plasters forum | www.plasterersforum.com |
| Pozament | www.pozament.co.uk |
| Lime mortars | www.limemortars.co.uk |
| Sto Ltd | www.sto.co.uk/en/home/home.html |

Unit 304 Applying plastering materials to exteriors

UAN:	H/507/3266
Level:	3
GLH:	120

What is this unit about?

A solid plasterer is regarded as a very highly skilled individual. Traditional and modern methods and techniques are used to obtain a high standard of finish to meet design needs within both the private and commercial sectors of the construction industry. A plasterer is responsible for assessing and preparing background surfaces as well as applying and forming a range of different complex render finishes depending levels of exposure and desired appearance. This unit looks at modern and traditional render finishes.

This unit will provide all learners with the knowledge and practical skills required to prepare background surfaces, apply backing coats and finishing coats to the exterior of buildings.

Learning outcomes

In this unit, learners will

1. prepare surfaces for rendering
2. mix and apply backing coats
3. apply finishing coat renders.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Prepare surfaces for rendering

- Topic 1.1:** Backgrounds
- Topic 1.2:** Preparing background surfaces
- Topic 1.3:** Tools and equipment
- Topic 1.4:** Information sources
- Topic 1.5:** Fixing beads and accessories

Topic 1.1

Learners must be able to identify the different types of masonry that are used to construct superstructures and the different levels of suction that can be present when applying materials to these backgrounds.

Backgrounds

Aerated blocks, breeze blocks, concrete blocks, engineering bricks, fletton bricks, stock bricks, smooth concrete, stone, painted surfaces, timber backgrounds, various types of insulation.

Suctions

High, medium, low.

Topic 1.2

Learners need to know the areas that will require protection and evaluate the most suitable method to use depending on the work being carried out.

Areas

Windows, doors, flat roofs, pitched roofs, patios, shrubbery, pavements.

Method

Cutting templates for window and doors, sheeting up of areas.

Learners must also identify the external fittings that will require either removing or easing before work commences.

External fittings

Guttering downpipes and brackets, outside lights, burglar alarms, satellite dishes, cables.

Learners must be able to evaluate the different methods that can be used to prepare background surfaces ready for the application of backing coats.

Methods

Scraping down, grinding/raking out of mortar joints, brushing down, removal of existing render, chemical keys (spatterdash, stippling, Bonding agent and slurry), mechanical keys, water.

Learners must also be made aware of methods that can be used to remove paint finishes that have already been applied to external finishes: sand blasting, chemical removal, jet washing, scabbling.

Topic 1.3

Learners must develop an understanding of why different hand tools and power tools are selected and used when preparing the work area and background surfaces.

Hand Tools

Lump hammer, broom, bolster, floor scraper, skutch hammer, claw hammer, brushes, paint rollers, tin snips, spirit levels, utility knife, tape measure.

Power Tools

SDS hammer drill, rotary scabblers/strippers, angle grinders, jigsaw, nail gun, cordless screwdriver, mechanical breaker.

Topic 1.4

Learners must develop an understanding of the information that is provided with all products that are used for preparing background surfaces.

Health & safety information, product data sheets, technical guidelines for use, drawings (elevation).

Topic 1.5

Learners must develop the skills and understanding to apply and install various products

- Hard angles and fixing beads.

Plastering Accessories

Stainless steel rib lath, EML, stainless/plastic steel angle beads, stop beads, expansion beads, bell cast/ drip beads, stop beads, polyurethane mesh, types of insulation, timber battens, timber rules.

Fixings

Stainless steel screws, washers, raw plugs, staples, wire, galvanized nails, nailable plugs (for EWI).

Chemicals

Sealers/primers, neutralizers, fungicidal washes, paint removers, bonding agents.

Learning outcome 2: Mix and apply backing coats

Topic 2.1: Principles of rendering

Topic 2.2: Types of materials

Topic 2.3: Information sources

Topic 2.4: Tools, equipment and plant

Topic 2.5: Applying backing coats

Topic 2.1

Learners must develop an understanding of the key principles that are taken into consideration before selecting, mixing or applying backing coats to external backgrounds.

- The nature and condition of the background (strength, key and type of suction)
- The nature and conditions of exposure (weather & location of structure)
- The type of render (sand & cement, pre mixed bagged renders, silicon and acrylic)
- The type of finish (smooth or textured), the thermal value of the building (EWI).

Learners need to develop an understanding of how the different types of weather conditions can affect materials when applying backing coats: frost, sun, wind, rain.

Learners must develop an understanding of the importance of protecting backing coats and the products that can be used to protect freshly applied materials.

- Elements of weather, curing/drying times, products such as (hessian, plastic sheeting, tarpaulins, temporary polythene tube downpipes) .

Topic 2.2

Learners must develop an understanding of the different types of materials that are used when

applying backing coats to the exteriors of buildings.

- Grading & types of sand, cements (OPC, white cement, sulphate resisting.)
- Additives (plasticisers, waterproofers, accelerators, retarders, bonding agents)
- Pre mixed polymer modified base coats
- Reinforcements (polypropylene mesh, glass fibres, hessian).

Topic 2.3

Learners must develop an understanding of the information that is provided with all products that are used when mixing and applying backing coats.

- Health & safety information
- Product data sheets
- Technical guidelines for use.

Topic 2.4

Learners must develop an understanding of the range of equipment and tools that are used when mixing, applying and keying backing coats.

Mixing equipment: drum mixer, plasterers whisk, shovel, mixing vessel, gauging vessels, spraying machine and wheelbarrow.

- Applying: hawk & trowel, straight edges, levels, spot board & stand.
- Finishing/keying: comb scratcher, float, broom.
- Plant machinery: barrow hoists, ginny wheel

Topic 2.5

Learners must be able identify, evaluate and apply different methods when producing backing coats that are level, linable and flat. Learners must be able to select the most appropriate method when applying backing coats.

- Methods (Screeds and freehand), application of coats (dubbing out, scratch coat, float coat), recommended thicknesses per coat, selecting appropriate type/size of beads, appropriate key depending on specified finish.

Learners must develop an understanding of how to cut in and clean down areas that will come into contact with rendering materials. Learners must be able to demonstrate the following skills: cleaning of beads, door and window frames, soffits, barge boards, lead work.

Learning Outcome 3: Apply finishing coat renders

Topic 3.1: Information sources

Topic 3.2: Types of materials

Topic 3.3: Tools and equipment

Topic 3.4: Applying render finishes

Topic 3.1

Learners must develop an understanding of the information that is provided with all products that are used when mixing, applying and finishing.

- Health & safety information
- Product data sheets
- Technical guidelines for use.

Learners must understand and be able to interpret different types of drawings and extract information when applying render finishes.

Types of drawings

Detailed, elevation.

Information

Appearance of completed work, datum points, method of fixing, repositioning of services.

Topic 3.2

Learners must develop an understanding of the different types of materials that are used for creating a finish.

- Grading & Types of sand
- Cements (OPC, white cement, sulphate resisting)
- Hydrated Lime
- Sizes and types of aggregates ranging from 6-12mm
- Additives (plasticisers, waterproofers, accelerators, retarders.)
- Pre-mixed coloured through one and two coat renders.
- Pre-mixed silicone and acrylic render.

Topic 3.3

Learners must develop an understanding of the range of equipment and tools that are used when mixing, applying and finishing.

Mixing equipment

Drum mixer, plasterers whisk, shovel, mixing vessels, gauging vessels, and wheelbarrow.

Applying

Hawk & trowel, harling/panning on trowel, spatula, straight edges, spot board and stand, tyrolean machine.

Finishing

Plastic float, types of finishing floats, wooden float, sponge float, scraping tool, scraping straight edge, ashlar jointing tools.

Topic 3.4

Learners must develop the practical skills and understanding of how different materials are mixed for different types of external finishes in relation to:

- mix ratios depending on strength of backing coats
- correct consistency of material for application
- addition of coarse aggregate
- colour consistency.

Learners must develop the understanding and be able to apply and produce different types of finishes to include:

- smooth renders to include ashlars designs and brick render
- peddle dash/ dry dash
- rough casting/wet dash
- scraped texture
- rubbed texture
- tyrolean.

Learners must develop an understanding of how to cut in and clean down areas that will come into contact with rendering materials.

Learners must be able to demonstrate these skills:

- cleaning of beads, door and window frames, soffits, barge boards, lead work.

Guidance for delivery

Staff delivering this unit will have an opportunity to use a wide range of techniques, lectures, guest speakers, industry experts, discussions, case studies, DVDs, plasters forum and video footage. Tutors are advised to use seminar presentations, site visits, supervised practical activities, research using internet and/or library resources and the use of personal and/or industrial experiences as appropriate.

Staff should apply learning within real-life working environments, as this is vital for learner engagement, motivation and development. It would be an advantage for learners on this course to gain work experience in plastering to further enhance their skills.

An understanding and demonstration of health and safety must be integrated at all times into the lessons.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Attending work placements is an opportunity for the learner to show their commitment and skills which could possibly lead to future employment. Employers could also contribute to learners' progress by acting as guest speakers.

Learners would benefit from attending career events in order to establish what opportunities are available and what employers expect and require from future employees. Local and national companies should be invited to attend career events and college open days in order for students to show case their work.

Heritage Groups should be invited to explain the work involved and materials used when restoring listed buildings and buildings within conservation areas. Plastering manufacturers should also be invited to speak at colleges to update on the new products and materials available to include short up-skill courses on how to use new materials.

Learners engaging with employers for this unit would benefit from working with small, large and high rise buildings. Using traditional and modern premixed renders will enhance your knowledge on the various types of finishes that are used in a range of climates.

As the learners progress on the course, colleges could place videos and photographs of learners work on their websites and social networking sites in order to attract possible future employers. Learners should be encouraged to compete at regional and national competitions to show their skills and ability.

Suggested learning resources

Books

Plastering Plain and Decorative, 4th Edition
Published by Donhead
ISBN-10: 187339487X,
ISBN-13: 978-1873394878

Millar, W, Bankart, G

Plastering: A Craftman's Encyclopedia
Published by Crown, 1987
ISBN-10:0517556529
ISBN-13:978-0517556528

Stagg, W. D, Pegg, B. F

Websites

SmartScreen
The plasters forum
Knauf plasters
Weber render
Stow renders
Parex renders

www.smartscreen.co.uk
www.plastersforum.com
www.knauf.org
www.weber.com
www.stow.co.uk
www.parexrenders.co.uk

Unit 305 Producing reverse moulds from plaster models for architectural mouldings

UAN:	K/507/3267
Level:	3
GLH:	120

What is this unit about?

A fibrous plasterer is regarded as a very highly skilled individual. They produce architectural mouldings for the interior and exteriors of buildings within both the commercial and private sectors of the construction industry. This unit will provide all learners with the knowledge and practical skills required to produce plaster models and reverse moulds to maintain our historic buildings and create both modern and bespoke architectural features to meet the design needs of any building, client or architect.

The purpose of this unit is for learners to develop their practical skills and knowledge to produce ornate plaster models and reverse moulds, ready for the production of precast architectural mouldings.

Learning outcomes

In this unit, learners will

1. produce squeezes
2. understand and use different sources of information
3. understand how to select hand tools, power tools, materials and equipment
4. understand methods of constructing running moulds
5. use different methods to produce reverse moulds.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Produce squeezes

Topic 1.1: Types of architectural mouldings

Topic 1.2: Taking squeezes

Topic 1.1

Learners must be able to identify the different types of architectural mouldings.

- Plain moulding sections
- Ornate to include identifying pattern repeats.

Topic 1.2

Learners must develop an understanding of the most appropriate method to use, materials, equipment and tools required for taking squeezes to match original architectural mouldings.

Learners will be required to take a squeeze.

- Method/process: rubber, plaster, removal of piece, cut and mark zinc in situ
- Materials: silicone, catalyst, thixotropic, casting plaster, hessian, release agents, timber batten, zinc
- Tools: small tool, gauging trowel, paint brush, hand saw
- Equipment: scales, mixing vessels, mixing sticks.

Learning outcome 2: Understand and use different sources of information

Topic 2.1: Manufacturers information

Topic 2.2: Working drawings

Topic 2.3: Moulding sections

Topic 2.1

Learners must develop an understanding of how to use manufacturer's information with the products when producing plaster models and reverse moulds.

- Health and safety information,
- Product data sheets, technical
- Guidelines for use.

Topic 2.2

Learners need to develop an understanding of the different types of drawings that will be used for producing detailed plaster models and reverse moulds.

- 1 to 1 scale, detail drawings.

Topic 2.3

Learners must identify and be able to reproduce moulding details that are commonly found on architectural mouldings.

- Plain moulding details: ovolo, cyma recta, cavetto, scotia, torus, astragal, cyma reversa, ogee, corona, drip, throat, weathering
- Ornate enrichments: dental block, egg & dart, acanthus leaf, Greek key, modillion block, fluted, bead and reel, swag & drop, date leaf, French leaf.

Learning Outcome 3: Understand how to select hand tools, power tools, materials and equipment

Topic 3.1: Hand tools and power tools

Topic 3.2: Materials

Topic 3.3: Workshop Equipment

Topic 3.1

Learners must develop an understanding of the hand tools and power tools that are required to work as a fibrous plasterer within a workshop environment.

- Hand tools: metal scribe, jewellery snips, callipers, needle files, bradle, hammer, squares, metal rule, compass, coping saw, hand saw, gents Saw, small tools, joint rules, busks, picking tools, gauging trowel, wire cutter
- Power tools: chop saw, jigsaw, cordless screwdriver.

Topic 3.2

Learners must be aware of the variety of materials that are used by a fibrous plasterer within a workshop environment, and also develop an understanding as to why materials are selected and used for certain projects when producing plaster models and reverse moulds.

- Sundries items: zinc, panel pins, nails, screws. types of casting plasters
- Additives: retarders, vermiculite. paraffin, methylated spirits
- Reinforcements: hessian, laths, continuous filament matt, chop strand
- Flexible moulding compounds: hot melt compound, silicone rubbers
- Fibre glassing materials: gel coats, acetone, resin, filament matting, catalyst
- Sealing agents: shellac, boiled linseed oil, coloured PVA, damp seal
- Release agents: tallow, waxes, petroleum jelly
- Modelling material: clay.

Topic 3.3

Learners will need to develop an understanding of the equipment that is needed to set up a fibrous plastering workshop.

Equipment

Splash brushes, mixing vessels, lath tank, canvas bin, slosh tank, plaster bench, box rules, running rules, hot melt compound machine, clay board.

Learning outcome 4: Understand methods of constructing running moulds

- Topic 4.1:** Straight moulds
- Topic 4.2:** Curved/ Elliptical moulds
- Topic 4.3:** Diminished moulds

Topic 4.1

Learners will need to be aware of the importance of constructing running moulds that are robust and fit for purpose depending on the size of the run work.

Single slipper, double slipper, double stock, braced stock, braced slipper.

Topic 4.2

Learners will need to develop a good understanding of the ways running moulds are constructed and either run or spun to provide the most practical solution when producing curved mould work on both curved and flat backgrounds.

Types of gig stick eg Hinged, pivot blocks, peg mould, peg mould and rail. half-slippered, gun trammels, major & minor axis, construction of trammel board.

Topic 4.3

Learners will need to develop an understanding of the various ways running moulds are constructed and run off, when producing diminished architectural mould work.

Eccentric rule, triple hinged, double hinged, twisted .

Learning outcome 5: Use different methods to produce reverse moulds

- Topic 5.1:** Methods
- Topic 5.2:** Reverse moulds

Topic 5.1

Learners must develop an understanding and use the methods required for producing different types of reverse moulds.

Running, pouring, forming, turning, spinning.

Topic 5.2

Learners must be able to identify different types of reverse moulds and understand their uses. They must also be able to demonstrate the different methods required when producing casts from reverse moulds.

Drum, case mould, insertion mould, flood mould, loose piece mould.

Guidance for delivery

Staff delivering this unit will have an opportunity to use a wide range of techniques, lectures, guest speakers, industry experts, discussions, case studies, DVDs and video footage. Tutors are advised to use seminar presentations, site visits, supervised practical activities, research using internet and/or library resources and the use of personal and/or industrial experiences as appropriate. Site visits are the most important of the many learning tools and learners should be provided with the opportunity to visit as many housing sites as possible, preferably at different stages of construction, in order to see the process in real life, as it happens.

Visiting guest speakers could also add to the relevance of the subject to bring the learning to life. This can be combined with site visits where time is short, and where it is more convenient for those providing the learners with the benefit of their on-site experience.

An understanding and demonstration of health and safety must be integrated at all times into the lessons. Centres would benefit from links with local construction companies or the building department of a local authority who will carry out a selection of work that can be related and applied to lessons. Staff should apply learning within real-life working environments, as this is vital for learner engagement, motivation and development.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Attending work placements is an opportunity for the learner to show their commitment and skills which could possibly lead to future employment.

Employers could also contribute to learners' progress by acting as guest speakers.

Learners would benefit from attending career events in order to establish what opportunities are available and what employers expect and require from future employees. Local and national companies should be invited to attend career events and college open days in order for students to show case their work.

Heritage Groups should be invited to explain the work involved and materials used when restoring listed buildings and buildings within conservation areas. Plastering manufacturers should also be invited to speak at colleges to update on the new products and materials available to include short up-skill courses on how to use new materials.

Learners engaging with employers for this unit would benefit from carrying out work experience in fibrous workshops to learn the techniques and skills required to produce new mouldings and reproduce existing mould work for modern and traditional buildings.

As the learners progress on the course, colleges could place videos and photographs of learners work on their websites and social networking sites in order to attract possible future employers. Learners should be encouraged to compete at regional and national competitions to show their skills and ability.

Suggested learning resources

Books

Plastering Plain and Decorative, 4th Edition
Published by Donhead
ISBN-10: 187339487X,
ISBN-13: 978-1873394878

Millar, W, Bankart, G

Plastering: A Craftman's Encyclopedia
Published by Crown, 1987
ISBN-10:0517556529
ISBN-13:978-0517556528

Stagg, W. D, Pegg, B. F

Websites

SmartScreen
The plasters forum
Stevensons of Norwich

www.smartscreen.co.uk

www.plasterersforum.com

www.stevensons-of-norwich.co.uk

Unit 306 Producing, fixing and finishing pre-cast architectural mouldings

UAN:	T/507/3269
Level:	3
GLH:	120

What is this unit about?

A fibrous plasterer is regarded as a very highly skilled individual. They produce architectural mouldings for the interior and exteriors of buildings within both the commercial and private sectors of the construction industry.

This unit will provide all learners with the knowledge and practical skills required to produce, install and finish pre-cast architectural mouldings and features to both the interiors and exteriors of buildings to meet design specifications for both historic and modern construction projects and the production of sets and props within the film industry.

Learners who have completed this unit can progress into working as a fibrous plasterer in a range of sectors including commercial, restoration, heritage, conservation and film industry.

Learning outcomes

In this unit, learners will

1. produce mouldings
2. fix casts
3. finish casts.

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome 1: Produce mouldings

- Topic 1.1:** Product suitability
- Topic 1.2:** Producing casts
- Topic 1.3:** Materials
- Topic 1.4:** Tools and equipment
- Topic 1.5:** Information sources

Topic 1.1

Learners must identify and evaluate various products that can be used for producing pre-cast architectural mouldings to the interiors and exteriors of buildings to meet specific design requirements in relation to the following

- durability (ie weather conditions)
- strength/impact resistance of cast (ie areas prone to knocks or bangs)
- weight of cast (ie grid loadings when fixing)
- match to existing (ie restoration projects)
- imitation properties (ie appearance of stone, metal, marble)
- exposure properties (ie flammable).

Learners must develop an understanding of the different types of casts that can be produced from reverse moulds, for both the interior and exterior of buildings.

Topic 1.2

Learners must develop the skills and understanding of the different methods that are used for producing pre-cast architectural mouldings to both the interiors and exteriors of building. Learners must be able to produce the following types of casts.

- Plaster casts - firstings & secondings, one gauge method
- Sand & Cement casts - dry casting/packing, slip casting
- Lime casts - dry casting/packing
- Jesmonite casts - slip casting, solid pour, laminating
- Glass reinforced polyester casts – laminating.

Topic 1.3

Learners must develop an understanding of why different materials are selected and used for the production of pre-cast architectural mouldings to the interior and exterior of buildings. Learners must also be able to select the appropriate materials for producing casts.

Plaster casts

Various grades of casting plasters, hessian, laths, continuous filament matt, chop strands, plaster retarders, plaster accelerators, release agents and sealants.

Sand and cement casts

Mix ratios, types and grading of sand, cements, hydrated lime, stainless steel EML, mortar dyes, accelerators, retarders, release agents, dowels.

Lime Casts

Mix ratios, types and grading of sand, hydraulic and non hydraulic lime, horse hair, goats hair, release agents, dowels.

Jesmonite Casts

Different composites, gel coats, stone fillers, metal fillers, stone finishes, pigments, quadaxial fabric, chop strands, retarders, release waxes, thixotrope, sealers.

Glass reinforced polyester (GRP)

Resins, gel coats, acetone, catalyst, core matt, continuous filament matt, chop strand, pigments, release waxes, balsa wood.

Topic 1.4

Learners must develop an understanding of the range of equipment that is used for producing pre-cast architectural mouldings in relation to the following casts.

Plaster Casts

Splash brushes, bowls, buckets/mixing vessels, retarder/accelerator measuring jug, scissors, canvas Knife.

Sand, Cement and Lime Casts

Drum mixer, whisk, vibrating table, concrete poker, bowls, brushes, shaped tamping sticks, float.

Jesmonite Casts

Weighing scales, mixing sticks, bowls, brushes, compaction roller, glass cutting bench.

Glass Reinforced Polyester (GRP)

Laminating roller, catalyst dispenser, air roller/ compaction roller, laminating brushes, mixing sticks, mixing vessels, trimming knives, acetone bucket, glass cutting bench.

Topic 1.5

Learners must develop an understanding of the information that is required to produce and label casts prior to delivery and installation.

General Information

Health and Safety information, product data sheets, technical guidelines for use.

Production Information

Dimensions of cast, types of materials, positioning of lath rebates, position of laths/additional metals, intended method of fixing, quantity required, start date and completion date.

Fixing Information

Principal contractor, location of contract, quantity number, date produced, date delivered to site, installation location numbers.

Learning outcome 2: Fix casts

- Topic 2.1:** Working drawings
- Topic 2.2:** Methods of fixing
- Topic 2.3:** Materials
- Topic 2.4:** Tools and equipment

Topic 2.1

Learners must understand and be able to interpret different types of drawings and extract information when installing pre-cast architectural mouldings.

Types of drawings

Detailed, elevation, key plan, reflected ceiling plan, layout.

Information

Appearance of completed work, datum points, method of fixing, position of services, position of MF/unistrut grid, position of cast, fixing points.

Topic 2.2

Learners must develop an understanding as to why different methods are used when fixing both curved and plain, pre cast architectural mouldings. Learners must also be able to use a range of fixing methods:

- wire and waded
- screwed
- bonded
- doweled.

Topic 2.3

Learners must develop an understanding of how and when to use the different types of materials when fixing.

Materials

Plasters, hessian, adhesives, galvanized wire, stainless steel screws, hit resins.

Topic 2.4

Learners must develop an understanding of how, when and why different tools and equipment are used.

Laser level, top cutters, box rules, curved templates, cleats, wedges, T struts, mitre box, chalk line, power drills, cordless screwdrivers, hit resin kits.

Learning Outcome 3: Finish casts

Topic 3.1: Types of joints

Topic 3.2: Tools

Topic 3.3: Materials

Topic 3.1

Learners must develop the skills and understanding to finish all joints after fixing casts.

Joints

Internal mitres, external mitres, wall line, ceiling line, straight joints, rebated joints.

Topic 3.2

Learners must develop an understanding of how, when and why different tools are used for finishing precast architectural mouldings to the interiors and exteriors of buildings.

Tools

Gauging trowel, small tool, joint rules, shaped busks, air roller/compaction roller, laminating brushes, paint brushes, sealant gun.

Topic 3.3

Learners must develop an understanding of how and when to use the different types of materials for finishing pre cast architectural mouldings to the interiors and exteriors of buildings.

Materials

Plaster, hessian, gel coat, styrene based resin, water based resin, continuous filament matt, sealants, sealer.

Guidance for delivery

Staff delivering this unit will have an opportunity to use a wide range of techniques, lectures, guest speakers, industry experts, discussions, case studies, DVDs and video footage. Tutors are advised to use seminar presentations, site visits, supervised practical activities, research using internet and/or library resources and the use of personal and/or industrial experiences as appropriate

An understanding and demonstration of health and safety must be integrated at all times into the lessons. Centres would benefit from links with local construction companies or the building department of a local authority who will carry out a selection of work that can be related and applied to lessons. Staff should apply learning within real-life working environments, as this is vital for learner engagement, motivation and development.

Employer engagement

Employer engagement is an excellent way to maximise the learners' experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Attending work placements is an opportunity for the learner to show their commitment and skills which could possibly lead to future employment. Employers could also contribute to learners' progress by acting as guest speakers.

Learners would benefit from attending career events in order to establish what opportunities are available and what employers expect and require from future employees. Local and national companies should be invited to attend career events and college open days in order for students to show case their work.

Heritage Groups should be invited to explain the work involved and materials used when restoring listed buildings and buildings within conservation areas. Plastering manufacturers should also be invited to speak at colleges to update on the new products and materials available to include short up-skill courses on how to use new materials.

Learners engaging with employers for this unit would benefit from carrying out work experience alongside fibrous plasters fixing a range of different mouldings that have been pre produced. Learners would learn the skills required for preparing , installing and making good mouldings to various surfaces with intricate designs.

As the learners progress on the course, colleges could place videos and photographs of learners work on their websites and social networking sites in order to attract possible future employers. Learners should be encouraged to compete at regional and national competitions to show their skills and ability.

Suggested learning resources

Books

Plastering Plain and Decorative, 4th Edition
Published by Donhead
ISBN-10: 187339487X,
ISBN-13: 978-1873394878

Millar, W, Bankart, G

Plastering: A Craftman's Encyclopedia
Published by Crown, 1987
ISBN-10:0517556529
ISBN-13:978-0517556528

Stagg, W. D, Pegg, B. F

Websites

SmartScreen
The plasters forum
Stevensons of Norwich

www.smartscreen.co.uk

www.plasterersforum.com

www.stevensons-of-norwich.co.uk

Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on www.cityandguilds.com.

City & Guilds Centre Manual

This document provides guidance for organisations wishing to become City & Guilds approved centres, as well as information for approved centres delivering City & Guilds qualifications. It covers the centre and qualification approval process as well as providing guidance on delivery, assessment and quality assurance for approved centres.

It also details the City & Guilds requirements for ongoing centre and qualification approval, and provides examples of best practice for centres. Specifically, the document includes sections on:

- the centre and qualification approval process
- assessment, internal quality assurance and examination roles at the centre
- registration and certification of candidates
- non-compliance and malpractice
- complaints and appeals
- equal opportunities
- data protection
- management systems
- maintaining records
- internal quality assurance
- external quality assurance.

Our Quality Assurance Requirements

This document explains the requirements for the delivery, assessment and awarding of our qualifications. All centres working with City & Guilds must adopt and implement these requirements across all of their qualification provision. Specifically, this document:

- specifies the quality assurance and control requirements that apply to all centres
- sets out the basis for securing high standards, for all our qualifications and/or assessments
- details the impact on centres of non-compliance

The **centre homepage** section of the City & Guilds website also contains useful information on

Walled Garden: how to register and certificate candidates on line

Events: dates and information on the latest Centre events

Online assessment: how to register for e-assessments.

Useful contacts

UK learners General qualification information	E: learnersupport@cityandguilds.com
International learners General qualification information	E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	E: business@cityandguilds.com

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication.

If you have a complaint, or any suggestions for improvement about any of the services that we provide, email: **feedbackandcomplaints@cityandguilds.com**

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group is a leader in global skills development. Our purpose is to help people and organisations to develop their skills for personal and economic growth. Made up of City & Guilds, City & Guilds Kineo, The Oxford Group and ILM, we work with education providers, businesses and governments in over 100 countries.

Copyright

The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute and may not be copied, reproduced or distributed without prior written consent. However, approved City & Guilds centres and candidates studying for City & Guilds qualifications may photocopy this document free of charge and/or include a PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching candidates working towards a City & Guilds qualification, or for internal administration purposes
- candidates may copy the material only for their own use when working towards a City & Guilds qualification

The Standard Copying Conditions (see the City & Guilds website) also apply.

City & Guilds

1 Giltspur Street

London EC1A 9DD

www.cityandguilds.com