PROGRAM OUTLINE

Bricklayer
(Mason)
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www.itabc.ca

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BRICKLAYER (MASON)
PROGRAM OUTLINE

APPROVED BY INDUSTRY
APRIL 2012

BASED ON
2011 NATIONAL OCCUPATIONAL ANALYSIS (NOA)

Developed by
Industry Training Authority
Province of British Columbia
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Section 1
INTRODUCTION
Bricklayer (Mason)
Foreword

A Program Outline is an ITA Program Standards communication tool. It reflects the full scope of knowledge and skills required to competently perform an occupation anywhere in B.C.

The Program Outline must guide development of curriculum and learning resources because all ITA assessment tools are designed to measure achievement of the competencies and learning tasks it describes for an occupation (e.g., level exams, certification exams, practical assessments).

The Program Outline informs industry, training providers, instructors, the public, apprentices, and sponsors of the occupation's requirements for certification, including:

- The program Credentialing Model
- General Areas of Competence (GACs) and specific competencies required by individuals to perform proficiently in this occupation
- Learning tasks and content that must be mastered in order for an individual to be deemed competent
- Achievement Criteria for demonstrating practical competencies

It further informs technical training delivery regarding:

- Levels at which competence mastery is required
- Suggested time allocation for each topic
- Facility requirements
- Required tools and equipment
- Reference materials
- Instructor qualifications
- Assessment guidelines

Practical instruction by demonstration and student participation should be integrated with classroom sessions. Safe working practices, even though not always specified in each operation or topic, are an implied part of the program and should be stressed throughout the apprenticeship.

The performance described in each Achievement Criteria is a suggested performance and is not meant to stifle flexibility of delivery. Training providers are welcome to substitute other practical performances that measure similar skills and attainment of the competency. Multiple performances may also be used to replace individual performances where appropriate.

SAFETY ADVISORY

Be advised that references to the WorkSafeBC safety regulations contained within these materials do not/may not reflect the most recent Occupational Health and Safety Regulation (the current Standards and Regulation in BC can be obtained on the following website: http://www.worksafebc.com). Please note that it is always the responsibility of any person using these materials to inform him/herself about the Occupational Health and Safety Regulation pertaining to his/her work.
Introduction

Acknowledgements

The Program Outline was prepared with the advice and direction of an industry steering committee convened initially by the Construction Industry Training Organization (CITO). Members include:

- Alan Exner
- Mike Hazard
- Brian Magowan
- Bill McEwen
- Terry Mills
- Dan Morais
- Eric Sigurdson
- Rob Tuzzi

Industry Subject Matter Experts retained to assist in the development of Program Outline content:

- Danny Breslin
- Mike Hazard
- Geoff Higginson
- Karl Lukan
- Dan Morais
- Rob Skujins
- Peter Zirpke

Industry Subject Matter Experts retained as outline reviewers:

- Brian Magowan
- George McCall
- Dan Morais

The Industry Training Authority would like to acknowledge the dedication and hard work of all the industry representatives appointed to identify the training requirements of the Bricklayer (Mason) occupation.
## How to Use this Document

This Program Outline has been developed for the use of individuals from several different audiences. The table below describes how each section can be used by each intended audience.

<table>
<thead>
<tr>
<th>Section</th>
<th>Training Providers</th>
<th>Employers/ Sponsors</th>
<th>Apprentices</th>
<th>Challengers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Credentialing Model</strong></td>
<td>Communicate program length and structure, and all pathways to completion</td>
<td>Understand the length and structure of the program</td>
<td>Understand the length and structure of the program, and pathway to completion</td>
<td>Understand challenger pathway to Certificate of Qualification</td>
</tr>
<tr>
<td><strong>Program Assessment</strong></td>
<td>Communicate program completion requirements and assessment methods</td>
<td>Understand the various assessment requirements for the program</td>
<td>Understand the various assessment requirements for the program</td>
<td>Understand the assessment requirements they would have to fulfill in order to challenge the program</td>
</tr>
<tr>
<td><strong>OAC</strong></td>
<td>Communicate the competencies that industry has defined as representing the scope of the occupation</td>
<td>Understand the competencies that an apprentice is expected to demonstrate in order to achieve certification</td>
<td>View the competencies they will achieve as a result of program completion</td>
<td>Understand the competencies they must demonstrate in order to challenge the program</td>
</tr>
<tr>
<td><strong>Training Topics and Suggested Time Allocation</strong></td>
<td>Shows proportionate representation of general areas of competency (GACs) at each program level, the suggested proportion of time spent on each GAC, and percentage of time spent on theory versus practical application</td>
<td>Understand the scope of competencies covered in the technical training, the suggested proportion of time spent on each GAC, and the percentage of that time spent on theory versus practical application</td>
<td>Understand the scope of competencies covered in the technical training, the suggested proportion of time spent on each GAC, and the percentage of that time spent on theory versus practical application</td>
<td>Understand the relative weightings of various competencies of the occupation on which assessment is based</td>
</tr>
<tr>
<td><strong>Program Content</strong></td>
<td>Defines the objectives, learning tasks, high level content that must be covered for each competency, as well as defining observable, measureable achievement criteria for objectives with a practical component</td>
<td>Identifies detailed program content and performance expectations for competencies with a practical component; may be used as a checklist prior to signing a recommendation for certification (RFC) for an apprentice</td>
<td>Provides detailed information on program content and performance expectations for demonstrating competency</td>
<td>Allows individual to check program content areas against their own knowledge and performance expectations against their own skill levels</td>
</tr>
</tbody>
</table>
### Introduction

<table>
<thead>
<tr>
<th>Section</th>
<th>Training Providers</th>
<th>Employers/Sponsors</th>
<th>Apprentices</th>
<th>Challengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Provider Standards</td>
<td>Defines the facility requirements, tools and equipment, reference materials (if any) and instructor requirements for the program</td>
<td>Identifies the tools and equipment an apprentice is expected to have access to; which are supplied by the training provider and which the student is expected to own</td>
<td>Provides information on the training facility, tools and equipment provided by the school and the student, reference materials they may be expected to acquire, and minimum qualification levels of program instructors</td>
<td>Identifies the tools and equipment a tradesperson is expected to be competent in using or operating; which may be used or provided in a practical assessment</td>
</tr>
</tbody>
</table>
Section 2
PROGRAM OVERVIEW

Bricklayer (Mason)
Program Overview

Program Credentialing Model

Apprenticeship Pathway
This graphic provides an overview of the Bricklayer (Mason) apprenticeship pathway.

C of Q = Certificate of Qualification
C of A = Certificate of Apprenticeship
C of C = Certificate of Completion
WBT = Work-Based Training

CROSS-PROGRAM CREDITS
Individuals who hold the credentials listed below are entitled to receive partial credit toward the completion requirements of this program

None

* Suggested duration based on 30-hour week
** Level 3 Practical Competency Assessment must be completed prior to writing the Interprovincial Red Seal Exam
Challenge Pathway

This graphic provides an overview of the Bricklayer (Mason) challenge pathway.

Completion Requirements
Interprovincial Red Seal Exam
Practical Competency Assessment*

Prerequisites
Approved challenge application, including:
Trade-Related Work Experience: 7,500 hours

*C of Q = Certificate of Qualification

*Practical Competency Assessment must be completed prior to writing the Interprovincial Red Seal Exam

CROSS-PROGRAM CREDITS

Individuals who hold the credentials listed below are entitled to receive partial credit toward the completion requirements of this program
None
**Program Overview**

**Occupational Analysis Chart**

**BRICKLAYER (MASON)**

**Occupation Description:** Bricklayer (Mason) means a person who places and repairs mortar, bricks, concrete blocks, steel reinforcing, masonry grout, stone units pre-cast concrete units, refractory units and materials, caulking, masonry flashing and membranes and such other work as is usually done by a mason.

<table>
<thead>
<tr>
<th>Use Safe Work Practices</th>
<th>Manage Workplace Hazards</th>
<th>Apply OHS Regulations and WorkSafeBC Standards</th>
<th>Use Fall Protection Systems and Equipment</th>
<th>Use Personal Protective Equipment</th>
<th>Use Fire Safety Procedures</th>
<th>Apply WHMIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>A1</td>
<td>A2</td>
<td>A3</td>
<td>A4</td>
<td>A5</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use Tools and Equipment</th>
<th>Use Hand Tools and Measuring Equipment</th>
<th>Use Power Tools</th>
<th>Use Ladders, Scaffolds, and Elevated Platforms</th>
<th>Use Rigging and Hoisting Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>B1</td>
<td>B2</td>
<td>B3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organize Work</th>
<th>Use Mathematics</th>
<th>Use Drawings, Specifications and Documentation</th>
<th>Communication</th>
<th>Handle Materials</th>
<th>Lay out Wall and Coursing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>C1</td>
<td>C2</td>
<td>C3</td>
<td>C4</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>1 2 3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perform Routine Mason Practices</th>
<th>Prepare the Site</th>
<th>Apply Surface Techniques</th>
<th>Install Envelope Materials</th>
<th>Use Mortars, Grouts and Bonding Agents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D</td>
<td>D1</td>
<td>D2</td>
<td>D3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Use Safe Work Practices**
- A1: Manage Workplace Hazards
- A2: Apply OHS Regulations and WorkSafeBC Standards
- A3: Use Fall Protection Systems and Equipment
- A4: Use Personal Protective Equipment
- A5: Use Fire Safety Procedures
- A6: Apply WHMIS

**Use Tools and Equipment**
- B1: Use Hand Tools and Measuring Equipment
- B2: Use Power Tools
- B3: Use Ladders, Scaffolds, and Elevated Platforms
- B4: Use Rigging and Hoisting Equipment

**Organize Work**
- C1: Use Mathematics
- C2: Use Drawings, Specifications and Documentation
- C3: Communication
- C4: Handle Materials
- C5: Lay out Wall and Coursing

**Perform Routine Mason Practices**
- D1: Prepare the Site
- D2: Apply Surface Techniques
- D3: Install Envelope Materials
- D4: Use Mortars, Grouts and Bonding Agents
<table>
<thead>
<tr>
<th>Program Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Apply Masonry Systems</strong></td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td><strong>Install Stone Veneer</strong></td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td><strong>Rebuild Masonry Work</strong></td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td><strong>Install Ornamental and Sculptured Masonry</strong></td>
</tr>
<tr>
<td>I</td>
</tr>
</tbody>
</table>

**Note:** The numbers represent the order or priority of tasks within each category.
# Program Overview

## Training Topics and Suggested Time Allocation

### Bricklayer (Mason) – Level 1

<table>
<thead>
<tr>
<th>Line</th>
<th>Topic</th>
<th>% of Time</th>
<th>Theory</th>
<th>Practical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Line A</strong></td>
<td>Use Safe Work Practices</td>
<td>5%</td>
<td>80%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>A1</td>
<td>Manage Workplace Hazards</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Apply OHS Regulations and WorkSafeBC Standards</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Use Fall Protection Systems and Equipment</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>Use Personal Protective Equipment</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>Use Fire Safety Procedures</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>Apply WHMIS</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Line B</strong></td>
<td>Use Tools and Equipment</td>
<td>15%</td>
<td>80%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>B1</td>
<td>Use Hand Tools and Measuring Equipment</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Use Power Tools</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Use Ladders, Scaffolds, and Elevated Platforms</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>B4</td>
<td>Use Rigging and Hoisting Equipment</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Line C</strong></td>
<td>Organize Work</td>
<td>22%</td>
<td>40%</td>
<td>60%</td>
<td>100%</td>
</tr>
<tr>
<td>C1</td>
<td>Use Mathematics</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Use Drawings, Specifications and Documentation</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>Communication</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>Handle Materials</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>Lay Out Wall and Coursing</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Line D</strong></td>
<td>Perform Routine Mason Practices</td>
<td>20%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>D1</td>
<td>Prepare the Site</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>Install Envelope Materials</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D4</td>
<td>Use Mortars, Grouts and Bonding Agents</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Line E</strong></td>
<td>Apply Masonry System</td>
<td>35%</td>
<td>15%</td>
<td>85%</td>
<td>100%</td>
</tr>
<tr>
<td>E1</td>
<td>Build Non Load-Bearing Masonry Walls</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Line H</strong></td>
<td>Perform Restoration</td>
<td>3%</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3</td>
<td>Clean and Seal Masonry Surfaces</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Percentage for Mason Level 1**  100%
## Program Overview

### Training Topics and Suggested Time Allocation

#### Bricklayer (Mason) – Level 2

<table>
<thead>
<tr>
<th>Line</th>
<th>Activity</th>
<th>% of Time</th>
<th>Theory</th>
<th>Practical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Organize Work</td>
<td>5%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>C1</td>
<td>Use Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Use Drawings, Specifications and Documentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Perform Routine Mason Practices</td>
<td>3%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>D2</td>
<td>Apply Surface Techniques</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Apply Masonry Systems</td>
<td>27%</td>
<td>30%</td>
<td>70%</td>
<td>100%</td>
</tr>
<tr>
<td>E2</td>
<td>Build Load-Bearing Walls and Columns</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3</td>
<td>Build Horizontal Masonry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E5</td>
<td>Install Surface Bonded Masonry Units</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Apply Stone Systems</td>
<td>10%</td>
<td>75%</td>
<td>25%</td>
<td>100%</td>
</tr>
<tr>
<td>F1</td>
<td>Install Stone Veneer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>Install Stone Cladding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Build Chimneys, Fireplaces and Refractory Materials</td>
<td>50%</td>
<td>30%</td>
<td>70%</td>
<td>100%</td>
</tr>
<tr>
<td>G1</td>
<td>Lay Masonry Units</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Perform Restoration</td>
<td>5%</td>
<td>70%</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>H1</td>
<td>Rebuild Masonry Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>Restore Existing Masonry Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Percentage for Mason Level 2**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>
## Training Topics and Suggested Time Allocation

### Bricklayer (Mason) – Level 3

<table>
<thead>
<tr>
<th>Line</th>
<th>Topic</th>
<th>% of Time</th>
<th>Theory</th>
<th>Practical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Organize Work</td>
<td>10%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>C1</td>
<td>Use Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Use Drawings, Specifications and Documentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Apply Masonry Systems</td>
<td>5%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>E4</td>
<td>Build and Install Pre-Fabricated Masonry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Build Chimneys, Fireplaces and Refractory Materials</td>
<td>15%</td>
<td>75%</td>
<td>25%</td>
<td>100%</td>
</tr>
<tr>
<td>G2</td>
<td>Install Refractory Materials for Heat-Resistant Applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3</td>
<td>Install Corrosion Resistant Materials for Corrosion Resistant Applications</td>
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<tr>
<td>I2</td>
<td>Install Ornamental and Sculptured Masonry</td>
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<td>I3</td>
<td>Build Arches</td>
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**Total Percentage for Mason Level 3** 100%
Section 3

PROGRAM CONTENT

Bricklayer (Mason)
Level 1

Bricklayer (Mason)
Line (GAC): A USE SAFE WORK PRACTICES
Competency: A1 Manage Workplace Hazards

Objectives
To be competent in this area, the individual must be able to:
- Recognize hazards in worksite scenarios.
- Assess worksite hazards for a given jobsite.
- Demonstrate correct emergency procedures for a given hazard.
- Minimize hazards by applying safe work practices at a given worksite.

LEARNING TASKS

1. Describe hazards in the Mason trade
   - Differences between acute and chronic medical conditions
   - Sharp objects - glass and metal
   - Overhead hazards/moving equipment
   - Electrical
   - Flammable and explosive materials
   - Atmospheres
     - Flammable
     - Explosive
     - Oxygen-deficient
   - Environmental
     - Weather
     - Work area
   - Slips, trips and falls
   - Toxic substances
     - Bio hazards
     - Heavy metals
     - Asbestos
     - Industry products
   - Respiratory
     - Silicosis
     - Asbestos related illnesses
   - Repetitive strain injuries
   - Back injuries
   - Other
     - Head phones
     - Cell phones
LEARNING TASKS

2. Describe a confined space

3. Identify equipment used when working in a confined space

4. Assess worksite hazards for a given jobsite

CONTENT

- Definition
  - Legal definition
  - Health and safety definition
  - Hazard classifications
- Levels of confined space certification
- Section 9 of OHS
- Responsibilities of worker and employer
- Procedures
  - Access/egress
  - Hole/ fire watch
  - Air quality testing
  - Lock out and isolation
  - Ventilation
  - Cleaning/purging/venting/inerting
  - Rescue procedures
- Entry permits
- Respiratory systems
- Ladders
- Tripod
- Harnesses
- Air tester
- As per job requirements
LEARNING TASKS

5. Describe and interpret worksite safety policies

CONTENT

- Site orientations
  - Hazard assessment
  - Conditions
  - Meeting requirements
  - Reporting hazards and incidents
  - Investigations
  - Committees
  - Employee orientation
  - First-aid
  - Hearing
  - Records and statistics
  - Non-compliance procedures

- First aid facilities
- Record keeping
- Reporting to first aid attendant
- Tape identification (red, yellow)
- Minimum standards
- Acts and Regulations

6. Demonstrate emergency procedures

CONTENT

- Emergency shutoffs
- Fire control systems
- Eye wash facilities
- Emergency exits
- Emergency contact/phone numbers
- Marshalling/mustering areas
- Emergency horn protocol
- Emergency rescue procedures

7. Control workplace hazards

CONTENT

- Lifting techniques
- Safety inspection
- Equipment inspection
- Engineering controls
- Administrative controls
- Lock-out/ tag-out
- OHS programs
  - Regulatory
  - Contractor specific
Program Content
Level 1

Line (GAC): A USE SAFE WORK PRACTICES
Competency: A2 Apply OHS Regulations and WorkSafeBC Standards

Objectives
To be competent in this area, the individual must be able to:
- Locate the parts of the Occupational Health and Safety Regulations applicable to the Mason workplace.
- Interpret the parts of the Occupational Health and Safety Regulations applicable to the Mason workplace.

LEARNING TASKS

1. Locate terms used in the Workers Compensation Act

2. Locate the conditions under which compensation will be paid

3. Locate the general duties of employers, employees and others

4. Locate the Workers Compensation Act requirements for the reporting of accidents

5. Locate the “Core Requirements” of the Occupational Health and Safety Regulation

CONTENT

- Definitions, Section 1 of the Act
- Part 1, Division 2 of the Act
- Part 2, Division 3, Sections 115-124 of the Act
- Part1, Division 5, Sections 53 and 54 of the Act
- Definitions
- Application
  - Rights and responsibilities
  - Health and safety programs
  - Investigations and reports
  - Workplace inspections
  - Right to refuse unsafe work
  - Recognition, correction and reporting of unsafe work conditions and practices
- General conditions
  - Building and equipment safety
  - Emergency preparedness
  - Preventing violence
  - Working alone
  - Ergonomics
  - Illumination
  - Indoor air quality
  - Smoking
LEARNING TASKS

6. Locate the “General Hazard Requirements” of the Occupational Health and Safety Regulation

CONTENT

- Chemical and biological substances
- Substance specific requirements
- Noise, vibration, radiation and temperature
- Personal protective clothing and equipment
- Confined spaces
- De-energization and lockout
- Fall protection
- Tools, machinery and equipment
- Ladders, scaffolds and temporary work platforms
- Rigging and hoisting equipment
- Mobile equipment
- Transportation of workers
- Traffic control
- Electrical safety

7. Interpret Occupational Health and Safety information that is relevant to the Mason trade

- As per documentation
Line (GAC): A USE SAFE WORK PRACTICES
Competency: A3 Use Fall Protection Systems and Equipment

Objectives
To be competent in this area, the individual must be able to:
• Recognize fall hazards.
• Apply fall protection controls for a given workplace scenario.

LEARNING TASKS
1. Describe fall protection equipment

CONTENT
• Fall arrest/restraint/work positioning equipment
  o Beam roller
  o Lanyard
  o Carabiner
  o Shock-absorbing devices
  o Retractable devices
  o Rope grab
  o Vertical and horizontal lines
  o Cable/nylon tie-off slings
  o Harnesses and waist belts
  o Standards (CSA, ASTM, ANSI)
• Inspection and maintenance
• Worksite awareness
• OHS Regulations Part 11

2. Describe fall protection systems

• Railings/scaffolds
• Barricades and control zones
• Safety monitor
• Nets
• Rigging hardware
• Anchor points
• Assembly
• Ladder systems
• Vertical and horizontal systems

3. Inspect, assemble and disassemble fall protection equipment and systems

• OHS Regulations Part 11
• Assembly/disassembly
• Routine/scheduled inspection and maintenance
  o Required reference material
LEARNING TASKS

4. Develop a fall protection plan
   - Identify work area and hazards
   - List and choose equipment
   - Rescue procedures
   - Hierarchy of fall protection procedures

5. Use a harness as per industry standards
   - Inspection
   - Use
   - As per specifications
     o D ring positioning
     o Snugness of fit

Achievement Criteria

Performance
The individual will perform a safety harness fit test.

Conditions
The individual will be given:
- A harness
- Instructions

Criteria
The individual will score 100 percent on a rating sheet that reflects the following criteria:
- Manufacturer’s recommendations
- Proper inspection
- D ring position
- Snugness of fit
Program Content
Level 1

Line (GAC): A USE SAFE WORK PRACTICES
Competency: A4 Use Personal Protective Equipment

Objectives
To be competent in this area, the individual must be able to:
- Identify the appropriate personal protective equipment (PPE) for given workplace hazards.
- Demonstrate proper use of PPE.
- Maintain PPE according to manufacturer’s specifications.

LEARNING TASKS

1. Describe PPE requirements
   - Legal requirements
   - Job/employer requirements
   - Safety footwear
   - Eye protection
   - Ear protection
   - Head protection
   - Gloves
   - Respiratory protection
   - Fit test for respirator
   - Clothing
     - Hi visibility
     - Thermal
     - Cooling
   - Fall protection
     - Visual indicators
   - Use of irritant to verify proper fit

2. Demonstrate proper use of PPE
   - Use
   - Proper fit and seal test
   - Inspection before use

3. Maintain PPE
   - Maintenance
   - Storage
Line (GAC):   A    USE SAFE WORK PRACTICES
Competency:   A5    Use Fire Safety Procedures

Objectives
To be competent in this area, the individual must be able to:

- Identify the four classes of fires.
- Apply preventative fire safety precautions when working near or handling hazardous materials.
- Select and use fire extinguishers for the given class of fire and environmental condition.

LEARNING TASKS

1. Apply preventative fire safety precautions for classified combustibles, flammables, and explosive materials

2. Describe the considerations and steps to be taken prior to fighting a fire

3. Demonstrate proper use of fire extinguishers

CONTENT

- Classes A-D
- Symbols and colours
- NFPA
- Safe handling and storage of fuels
  - Diesel
  - Gasoline
  - Propane
  - Natural gas
  - Acetylene
  - Chemicals
- Lubricants
- Contaminated rags
- Combustible explosive dusts
- Aerosols
- WHMIS Classifications
- Labelling
- Ignition source
- PPE
- Personal safety
- Knowledge of equipment
- Warning others and fire department
- Evacuation protocols
- Training
- Awareness of fire suppression/fighting systems
- PASS
  - Pull
  - Aim
  - Squeeze
  - Sweep
Line (GAC): A USE SAFE WORK PRACTICES
Competency: A6 Apply WHMIS

Objectives
To be competent in this area, the individual must be able to:
- Attain WHMIS Certification.

LEARNING TASKS
1. Attain WHMIS certification

CONTENT
- Arrange WHMIS training
- Documentation of certification
Line (GAC):  B  USE TOOLS AND EQUIPMENT
Competency:  B1  Use Hand Tools and Measuring Equipment

Objectives
To be competent in this area, the individual must be able to:
• Describe hand tools.
• Describe measuring equipment.
• Use hand tools and measuring equipment appropriate for a given task.
• Inspect and maintain hand tools and measuring equipment according to manufacturer’s specifications.

LEARNING TASKS

1. Describe hand tools used in the Mason trade
   • Refer to tool list in appendix
   • Uses
   • Trowels
   • Hammers
   • Levels
   • Jointers

2. Describe measuring equipment used in the Mason trade
   • Refer to list in appendix
   • Mason tapes
   • Spacing rule/gauge tape
   • Laser levels
   • Storey poles
   • Transit
   • Laser level
   • Gauge
   • Rod/storey pole

3. Demonstrate proper use of hand tools
   • Selection of proper tools according to job/task
   • Procedures according to manufacturer’s recommendations
   • Safety
   • Adjustments
   • Ergonomics

4. Demonstrate proper use of measuring and layout equipment
   • Selection of proper layout and measuring equipment according to job/task
   • Procedures according to manufacturer’s recommendations where applicable
   • Basic measuring and layout
LEARNING TASKS

5. Inspect and maintain hand tools and measuring and layout equipment

CONTENT

- As per job requirement and manufacturer specifications
- Maintenance, cleaning
- Storage
Objectives
To be competent in this area, the individual must be able to:

- Demonstrate proper use, set up and adjustment of power and powder-actuated tools appropriate for a given task.
- Demonstrate proper use, set up and adjustment of pneumatic and hydraulic tools appropriate for a given task.
- Describe welding and cutting tools.
- Inspect and maintain power, powder-actuated and pneumatic tools and hydraulic tools according to manufacturer's specifications.

LEARNING TASKS

1. Describe gas and electric power tools used in the Mason trade
   - Refer to tool list in appendix
   - Gas-powered
   - Electrically powered
   - Battery operated
   - Uses
   - Terminology

2. Describe powder-actuated tools
   - Types of fastening tools
   - Selecting shot and fastener
   - Training requirements

3. Describe pneumatic and hydraulic tools
   - Pneumatic
     - Grinders
     - Air guns
     - Jack hammers
   - Chisels
   - Hoses
   - Hydraulic
     - Winches
     - Splitters

4. Describe welding and cutting tools
   - Safety
   - Types
   - Materials
   - Licensing and training requirements
## LEARNING TASKS

5. Demonstrate proper use, set up and adjustment of power, powder-actuated and pneumatic and hydraulic tools

6. Inspect and maintain power, powder-actuated and pneumatic and hydraulic tools according to manufacturer’s specifications

## CONTENT

- Proper use
- Procedures/operations
- Training requirements
- Set-up
- Safe use
- Adjustment
- Inspection
- Maintenance
- Storage
- Stewardship

## Achievement Criteria

**Performance**

The individual will use a saw to cut material.

**Conditions**

The individual will be given:

- Electric table saw
- Specifications
- Masonry units

**Criteria**

The individual will score 70% or better on a rating sheet that reflects the following criteria:

- Safety
- Accuracy of cut (according to specifications)
- Proper use of saw
- Clean-up
Program Content
Level 1

Line (GAC): B USE TOOLS AND EQUIPMENT
Competency: B3 Use Ladders, Scaffolds and Elevated Platforms

Objectives
To be competent in this area, the individual must be able to:

- Use ladders, scaffolds and elevated platforms for a given task.
- Maintain access and hoisting and rigging equipment.

LEARNING TASKS

1. Describe ladders, scaffolding and elevated platforms

CONTENT

- Ground-based scaffolds
  - Rolling
  - Stationary
  - Ladder jack
  - Tubular
  - Mechanical
  - Hydraulic
  - Jack-up
  - Aluminum and wooden planks
  - Components
    - Planks
    - Outriggers and cross braces
    - Hand rails and posts,
    - Kick boards
    - Mud sills
    - Adjustable screw jacks/wheels
- Ladders
  - Extension
  - Step
- Aerial work platforms
  - Suspended
  - Swing stages
  - Boatswain chair/harness
  - Boom lifts
- Components
- Safety
  - Hazard recognition
  - Fall prevention, restraint and arrest
  - Height restrictions
  - OHS, site-specific
  - Competency levels for inspection and erection
  - Maintaining three point contact
LEARNING TASKS

2. Set up, move and level ladders and scaffolding
   - Selection
   - Site hazards
   - Inspecting for defects
     - Rusting
     - Split planks
     - Broken rungs
   - Set up, layout and levelling
   - Restrictions
     - Height
     - No-step zones
     - Load limitations, no opaque coatings
   - Securing
   - Moving ladders
   - Competency levels for inspection and erection

3. Set up an elevated platform
   - Selection
   - Site hazards
   - Set up, layout and levelling
     - Tie-in to existing wall
     - Installing mud sills
   - Restrictions
     - Height
     - Load limitations
   - Securing

4. Maintain scaffolding and ladders
   - Maintenance
   - As per manufacturer’s specifications
   - Storage

Achievement Criteria

Performance
The individual will set up the first lift of a scaffold.

Conditions
The individual will be given:
- Scaffold and components
- Instructions

Criteria
The individual will score 100% on a rating sheet that reflects the following criteria:
- Safety
- Level races in proper spot
- Proper base support
- Proper use of components
Program Content  
Level 1

Line (GAC): B USE TOOLS AND EQUIPMENT
Competency: B4 Use Rigging and Hoisting Equipment

Objectives
To be competent in this area, the individual must be able to:
- Describe hoisting, rigging, and lifting equipment.
- Tie knots, bends and hitches.
- Select and use hoisting, lifting, and rigging equipment.

**LEARNING TASKS**

| 1. | Describe the principles of lifting and hoisting |
| 2. | Describe hoisting, lifting and rigging equipment |
| 3. | Describe lifting and hoisting communication |

**CONTENT**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Mechanical advantage</td>
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<td>Lifting and hoisting</td>
</tr>
<tr>
<td>4.</td>
<td>Accessories</td>
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</table>

- Forklifts
- Power cups
- Cranes
- Boom trucks
- Engine hoist (Cherry picker)
- Loaders
- Tirfors
- Come-alongs
- Tuggers
- Chain falls

- Slings/chokes
- Shackles
- Chains
- Tag lines
- Snatch blocks
- Turnbuckles
- Certification where required

- Purpose of proper communication
- Hand signals
- Communication with the operator
- Communication with others
LEARNING TASKS

4. Tie knots, bends and hitches

5. Use hoisting, lifting and rigging equipment

CONTENT

- Types
  - Half hitch
  - Clove hitch
  - Figure of eight
  - Bowline
  - Trucker’s hitch
- Purposes
- Limitations

- Safety
- Certification requirements
- Estimation of weights
- Equipment capacities
- Equipment selection
- Lifting location
- Operating procedures
- Securing of loads
- Equipment inspection
- Equipment maintenance
- Equipment storage
- Disposal procedures

Achievement Criteria

Performance
The individual will tie the appropriate knot for a given application.
- Half hitch
- Clove hitch
- Figure of eight
- Bowline
- Trucker’s hitch

Conditions
The individual will be given:
- Rope
- Instructions (application)

Criteria
The individual will score 100% or better on a rating sheet that reflects the following criteria:
- Properly tied knots
- Appropriate knot for given application
Line (GAC): C  ORGANIZE WORK
Competency: C1  Use Mathematics

Objectives
To be competent in this area, the individual must be able to:
• Perform basic mathematical calculations.

LEARNING TASKS

1. Use fractions to solve problems
   • Add, subtract, multiply, divide
   • Simplify fractions

2. Use decimal fractions to solve problems
   • Add, subtract, multiply, divide
   • Convert between decimals and fractions
   • Decimal notation

3. Solve problems of ratio and proportion
   • Ratio
   • Proportion
   • Unknown quantities

4. Convert between metric and imperial measurements
   • Convert between metric and imperial
     o Feet, inches/metres, millimetres
     o Pounds, tons/kilograms, tonnes
   • Use of conversion tables
Line (GAC): C ORGANIZE WORK
Competency: C2 Use Drawings, Specifications and Documentation

Objectives
To be competent in this area, the individual must be able to:
- Describe masonry units.
- Identify basic views on drawings.

LEARNING TASKS

1. Describe masonry units
   - Types
   - Sizes
     - Nominal versus actual
   - Specifications
   - Colours
   - Manufacturing techniques
   - Composition
   - Textures

2. Identify basic views on drawings
   - Plan
   - Section
   - Elevation
   - Scale of drawings

3. Describe general work-related documentation
   - As per job requirements
Line (GAC): C ORGANIZE WORK
Competency: C3 Communication

Objectives
To be competent in this area, the individual must be able to:
• Describe the Mason trade.
• Describe methods of communication used in the Mason trade.
• Use appropriate communication methods for completing a given task.

LEARNING TASKS

1. Describe the Mason trade

2. Describe duties and responsibilities of apprentices and employers

3. Describe methods of communication used in the Mason trade

4. Demonstrate proper use of electronic communication media

5. Recognize signage used in the Mason trade

CONTENT
• History
• Scope evolution of masonry

• Scope employer duties
• Scope of apprentice duties
• Joint responsibilities
• Relationship between apprentice and employer

• Listening/ talking
• Verbal
• Written
• Hand signals
• Interpersonal skills
• Trade terminology

• Use of:
  o Cell phones
    – Safety
    – Emergency purposes
    – Company/site policy
    – Restricted use
  o Two-way radios
  o Fax machines
  o Computers

• Men working above
• Tapes (yellow, red)-associated hazards
LEARNING TASKS

6. Use appropriate communication methods for completing a given task

CONTENT

- Other trades
- Industry people
- Customers
- Safety authorities
- Suppliers and manufacturers
- Apprentices (mentoring)
- General respect for others
- Barriers to effective communication
  - Body language
  - Tone of voice
  - Facial expression
  - Accent/language differences
  - Site noise
  - PPE
Line (GAC): C ORGANIZE WORK
Competency: C4 Handle Materials

Objectives
To be competent in this area, the individual must be able to:
- Describe considerations and responsibilities involved when handling, ordering and coordinating materials.
- Handle materials according to job requirements.

LEARNING TASKS

1. Describe considerations and responsibilities when handling, ordering and coordinating materials

CONTENT
- Safety/OHS
- Storage/protection of materials
  - Sand
  - Cement
  - Masonry
  - Sealants
- Scheduling
- Transportation
  - Method of transportation
  - Reference to TDG
- Environmental considerations/standards
- Labelling
  - WHMIS
  - Worksite specific
- Disposal
- Recycling
- Identification of masonry-related materials

2. Demonstrate proper procedures for lifting heavy materials

CONTENT
- Manual
  - Ergonomics
- Mechanical lifting
  - Forklifts
  - Pallet jacks

3. Handle materials on site

CONTENT
- According to job requirements/policies
- Safety procedures
- Shipping and storage considerations
- Quality control/assurance issues
- Security
Line (GAC): C ORGANIZE WORK
Competency: C5 Lay Out Wall and Coursing

Objectives
To be competent in this area, the individual must be able to:
• Lay out wall and coursing.

LEARNING TASKS

1. Describe layout principles
   • Layout principles
   • Location of openings
   • Calculations related to gauge
   • Building codes
   • Plans and specifications
   • Standards

2. Determine layout and location
   • Plans and specifications
   • Locating start and finish points
   • Determining elevations
   • Snap lines
   • Locating openings
   • Determine bond
   • Dry bond

3. Lay first course
   • Weep vents
   • Horizontal and vertical reinforcement
   • Flashings
   • Considering planned openings

4. Level, plumb and align masonry work
   • Sequence of leveling plumbing and alignment
   • Tools and equipment
   • Building leads
   • Compensating for uneven surfaces

5. Build installation guides
   • Jack lines
   • Storey poles
   • Leads
   • Corner poles
LEARNING TASKS

6. Finish joints

CONTENT

- Types of joints
  - Concave
  - Rake and flat
  - Extruded
  - Struck
  - Weathered
  - Brushed
  - V joints
- When to finish joints
- Select method of finishing joints
- Brush finished joints

Achievement Criteria

Performance  The individual will build a block lead.

Conditions  The individual will be given:
  - Tools and equipment
  - Instructions
  - Materials

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
  - Safety
  - Level
  - Plumb
  - Alignment
  - Height gauge
  - Jointing
Line (GAC): D PERFORM ROUTINE MASON PRACTICES
Competency: D1 Prepare the Site

Objectives
To be competent in this area, the individual must be able to:
• Prepare the job site according to job requirements.

LEARNING TASKS
1. Organize the job site
   • Communicating with other trades
   • Regulations and specifications
   • Protecting finished work
   • Access to materials and utilities
   • Access to work area
   • Coordinating deliveries
   • Waste disposal
   • Estimating and confirming the amount of material required
   • Types of materials
   • Fuel storage
   • Building temporary enclosures
   • Storing and protecting materials
   • Loading limitations of storage location

2. Weatherize the job site
   • Tarp systems
     o Insulated tarps, sail and shrink wrap
     o Engineering
   • Types of heaters
     o Salamanders, furnaces and construction heaters
   • Types of heater power sources
     o Propane, diesel, electric, natural gas and kerosene
   • Warm sand and water for preparing mortar
   • Install tarp system
   • Building temporary roof
   • Recognizing hazards of fuels and combustible materials
   • Setting up heaters and fuel tanks
   • Ensuring adequate ventilation for propane heaters
Line (GAC): D PERFORM ROUTINE MASON PRACTICES
Competency: D3 Install Envelope Materials

Objectives
To be competent in this area, the individual must be able to:
- Prepare vertical and horizontal substrates.
- Install insulation.
- Describe building envelope concepts.
- Install membrane.
- Install anchoring/tie systems.
- Level/plumb masonry work.

LEARNING TASKS

<table>
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<th>Learning Task</th>
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<tr>
<td>1. Prepare vertical and horizontal substrates</td>
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<td>o Wood</td>
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<td>o Drywall</td>
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<td>• Causes of surface deterioration</td>
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<td>• Wash and dry substrate</td>
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<td>2. Describe how to maintain integrity of building envelopes</td>
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<td>• Specifications</td>
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<td>3. Install insulation</td>
<td>• Safety (PPE)</td>
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<td></td>
<td>o Ceramic fibre (super wool)</td>
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<tr>
<td></td>
<td>o Extruded</td>
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<td></td>
<td>o Fibreglass</td>
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<td></td>
<td>o Spray-on</td>
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<tr>
<td></td>
<td>o Rock wool</td>
</tr>
<tr>
<td></td>
<td>o Mineral-refractory grade</td>
</tr>
</tbody>
</table>
LEARNING TASKS

4. Install membrane

5. Install anchoring/tie systems

CONTENT

- Insulation performance
- Fasteners
- Adhesives
- Cutting and fitting insulation
- Sealing joints
- Fastening insulation to substrate and membrane
- Importance of adhering to substrate
- Applying spray-on insulation

- Manufacturers’ specifications
- Types of membranes
  - Torch-on
  - Self-adhesive
  - Troweled
- Effects of ultraviolet rays and moisture on membranes
- Applying primers before installing membranes
- Applying membranes to shed water
- Sealing seams and tears
- Installing protection/drainage boards or membranes below grade

- Types of substrate
- Substrate condition
- Anchoring/tie systems
  - Screwed-in-place
  - Embedded
- Types of anchors
  - Drop-in
  - Pin bolts
  - Wedge
  - Screws
  - Self-tapping
- Types of ties
  - Wire
  - Adjustable
  - Corrugated metal
- Codes and standards
- Apply epoxy and acrylic to secure anchors
- Drill and screw in anchors to solid substrate
Line (GAC): D

PERFORM ROUTINE MASON PRACTICES

Competency: D4 Use Mortars, Grouts and Bonding Agents

Objectives
To be competent in this area, the individual must be able to:

- Use mortars.
- Use concrete or grout for block fill.
- Use bonding agents.

LEARNING TASKS

1. Describe mortars

   - Types
     - Heat-setting and air setting
     - Refractory heat-resistant and corrosion resistant
     - Restoration mortars
   - Strengths
   - Purpose
   - Applications
   - Principle functions of mortar components
     - Aggregate
     - Cementitious materials
     - Lime
     - Potable water
   - Codes and specifications

2. Describe grouts

   - Types
     - Coarse
     - Fine
   - Principle functions of grout components
     - Cement
     - Water
     - Air
     - Aggregate
     - Admixtures
   - Purpose
   - Applications
   - Properties
     - Slump
     - Strength
     - Compression
     - Segregation
LEARNING TASKS

3. Describe admixtures

4. Mix and use mortars

CONTENT

- Types
  - Accelerators
  - Retardants
- Purpose
- Application
  - Weather
  - Surface types
  - Specialty applications
  - Component properties
- Safety
- Admixtures
  - Accelerators
  - Retardants
  - Dyes
  - Waterproofing components
- Mixing procedures
  - Ratio
  - Batching
  - Mixing time
- Testing
  - Colorimetric
  - Strength tests
  - Slump tests
  - Bond tests
- Applying mortar using methods such as buttering and spreading
- Assessing mortar condition and usability
- Adjusting mortar consistency for particular use
- Assessing mortar components such as sand, cement, water and admixture
LEARNING TASKS

5. Use concrete or grout for block fill

CONTENT

- Types of concrete or grout and their properties
- Concrete and grout components
  - Sand
  - Cement
  - Aggregates
  - Water
- Codes and specifications
- Concrete or grout tests
  - Slump tests
  - Compression tests
  - Segregation tests
- Reinforcing materials
- Consistency required to fill block
- Grouting procedures
  - Installing grout using equipment
  - Preparing grout
  - Consolidating grout
  - Assessing wall prior to filling
  - Adjusting grout consistency
  - Confining grout to cells
  - Preventing excessive mortar fins in interior
  - High lift and low lift pouring
  - Clean outs

6. Use bonding agents

CONTENT

- Polymers, epoxies, resins, caulking and latex
- Codes and specifications
- Conditions and use
- Bonding agents’ shelf and pot life
- Component properties
- Preparing bonding agents
- Preparing surfaces
- Applying bonding agents using methods such as toweled, brushed on and caulked
- Adjusting bonding agent consistency
Line (GAC): E  APPLY MASONRY SYSTEMS
Competency: E1  Build Non Load-Bearing Masonry Walls

Objectives
To be competent in this area, the individual must be able to:
- Build non load-bearing masonry walls.
- Install flashings.
- Install ties.
- Describe principles of rain screen technology.
- Install masonry units for non load-bearing walls.

LEARNING TASKS

1. Describe types of non load-bearing masonry walls
   - Veneer walls
   - Interior partitions
   - Exterior curtain walls
   - Firewalls

2. Describe flashings
   - PVC
   - Rigid
   - Self-adhesive
   - Rubber
   - Metal

3. Install flashings
   - Application techniques
   - Location of flashings
   - Counter flashing and step flashing
   - Applicable section of building code
   - Cutting flashing to fit
     - Minimum overlap on joints
     - Minimum up-stand
   - Overlap
   - End dams
   - Cleaning and preparing bearing surfaces
   - Affixing flashing
   - Sealing cuts in flashing

4. Install ties
   - Location
   - Spacings
   - Type of fasteners
   - Types of ties
     - Compatibility of metals
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<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
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<tr>
<td>5. Describe principles of rain screen technology</td>
<td>• Tools</td>
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<tr>
<td></td>
<td>o Air space</td>
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<td></td>
<td>o Size</td>
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<td>o Cleanliness</td>
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<td>o Venting</td>
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<td>o Horizontal breaks</td>
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<td>o Shelf angle</td>
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<td>o Pressure equalization</td>
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<td>• Installation of flashings and ties</td>
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<td></td>
<td>• Membranes and insulation</td>
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<tr>
<td></td>
<td>• Importance of full joints</td>
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<tr>
<td>6. Describe masonry units for non load-bearing walls</td>
<td>• Types</td>
</tr>
<tr>
<td></td>
<td>o Clay brick</td>
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<td></td>
<td>o Concrete brick</td>
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<td></td>
<td>o Sand-lime brick</td>
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<tr>
<td></td>
<td>o Concrete block</td>
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<tr>
<td>7. Install masonry units for non load-bearing walls</td>
<td>• Preparation</td>
</tr>
<tr>
<td></td>
<td>o Sizes of bricks and blocks</td>
</tr>
<tr>
<td></td>
<td>o Bond such as one third, running bond, English and Flemish</td>
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<td></td>
<td>o Stack pattern/stack bond</td>
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<tr>
<td></td>
<td>o Types and consistencies of mortar</td>
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<tr>
<td></td>
<td>• Installation</td>
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<tr>
<td></td>
<td>o Movement joints</td>
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<td>• Expansion joints</td>
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<td>• Control joints</td>
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<td>• Caulking</td>
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<td></td>
<td>o Building leads</td>
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<td></td>
<td>o Setting horizontal and vertical lines</td>
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<td></td>
<td>o Cutting units</td>
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<td>o Lay units to the top of the line</td>
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<td></td>
<td>o Bonding around openings</td>
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<td></td>
<td>o Installing lintels such as pre-cast and angle iron</td>
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<tr>
<td></td>
<td>o Following gauge and measurements</td>
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<tr>
<td></td>
<td>o Installing accessories such as electrical, mechanical, and plumbing</td>
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<td></td>
<td>o Accessories</td>
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<td></td>
<td>• Importance of full joints</td>
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<td>• Bed and head joints</td>
</tr>
</tbody>
</table>
Achievement Criteria

Performance  The individual will build a brick veneer with a block backup.

Conditions  The individual will be given:

- Instructions
- Tools
- Materials

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:

- Safety
- Plumb
- Level
- Square
- Gauge
- Clean cavity
- Alignment
- Jointing
- Use of mortar
- Clean work area
- Proper set up of work station
- Proper installation of hardware
Objectives
To be competent in this area, the individual must be able to:
- Prepare surfaces.
- Clean surfaces.
- Apply caulking to surfaces.
- Apply sealants and coating materials for restoration work.

LEARNING TASKS

1. Prepare surfaces
   - Blast materials
     - Sand
     - Water
     - Baking soda
     - Glass
   - Protecting surrounding areas
   - Following environmental regulations

2. Clean surfaces
   - Safety
   - Operating procedures for cleaning surfaces
   - Pre-soak
   - Manufacturers specifications
   - Cleaners such as acids and stain removers
   - Choosing appropriate cleaner
   - Mixing ratios
   - Applying chemical cleaners
   - Rinsing

3. Apply caulking to surfaces
   - Safety
   - Types of caulking
   - Penetrations
   - Movement joints
   - Backer materials
   - Firestop
LEARNING TASKS

4. Apply sealants and coating materials for new and restoration work

CONTENT

- Safety
- Knowledge of sealants
  - Caulking and polyurethane
- Waterproofing materials
  - Silicone and solvent-based, water-based
- Application methods
  - Brushing
  - Rolling
  - Spraying
  - Trowelling
- Hazards of sealants and coatings
- Protecting surrounding area
- Preparing surface with a coating to allow for easy removal of graffiti
Level 2

Bricklayer (Mason)
**Line (GAC):** C  **ORGANIZE WORK**  
**Competency:** C1  **Use Mathematics**  

### Objectives

To be competent in this area, the individual must be able to:
- Perform basic mathematical calculations.

### LEARNING TASKS

<table>
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<th>CONTENT</th>
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</thead>
<tbody>
<tr>
<td>1. Review Level 1</td>
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<td>2. Solve problems of ratio and proportion</td>
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<tr>
<td>3. Convert between metric and imperial measurements</td>
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<tr>
<th>CONTENT</th>
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<tbody>
<tr>
<td>Fractions</td>
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<td>Decimal fractions</td>
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<tr>
<td>Ratio</td>
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<tr>
<td>Proportion</td>
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<tr>
<td>Unknown quantities</td>
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<tr>
<th>CONTENT</th>
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<tbody>
<tr>
<td>Convert between metric and imperial</td>
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<tr>
<td>Feet, inches/metres, millimetres</td>
</tr>
<tr>
<td>Pounds, tons/kilograms, tonnes</td>
</tr>
<tr>
<td>Using conversion tables</td>
</tr>
</tbody>
</table>
Line (GAC): C ORGANIZE WORK
Competency: C2 Use Drawings, Specifications and Documentation

Objectives
To be competent in this area, the individual must be able to:
- Describe the types and basic uses of drawings and specifications used in the Mason trade.
- Describe documentation used in the Mason Trade.
- Use drawings, specifications and documentation appropriate for a given task.
- Estimate material requirements for a given task.

LEARNING TASKS

<table>
<thead>
<tr>
<th>CONTENT</th>
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</thead>
<tbody>
<tr>
<td>1. Describe types of drawings and terms used in the Mason trade</td>
</tr>
<tr>
<td>- Types</td>
</tr>
<tr>
<td>- Architectural</td>
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<tr>
<td>- Structural (Engineering)</td>
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<tr>
<td>- Sketches</td>
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<tr>
<td>- Hierarchy of drawings</td>
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<tr>
<td>- Basic architectural terms</td>
</tr>
<tr>
<td>- Specifications</td>
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<tr>
<td>2. Identify drawing symbols and abbreviations</td>
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<tr>
<td>- Types of symbols and abbreviations</td>
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<tr>
<td>3. Describe drawing concepts</td>
</tr>
<tr>
<td>- Site plans</td>
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<tr>
<td>- Floor plans</td>
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<tr>
<td>- Reference to</td>
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<tr>
<td>- Interior and exterior elevations</td>
</tr>
<tr>
<td>- Building sections</td>
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<tr>
<td>- Details</td>
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<tr>
<td>- Schedule</td>
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<tr>
<td>- Specifications</td>
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<tr>
<td>4. Describe documentation</td>
</tr>
<tr>
<td>- Jurisdictional and national codes</td>
</tr>
<tr>
<td>- CSA and other industry standards</td>
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<tr>
<td>- Manufacturer specifications</td>
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<tr>
<td>5. Draw basic sketch of a wall</td>
</tr>
<tr>
<td>- 3-dimensional sketching concepts</td>
</tr>
<tr>
<td>- Labelling of dimensions</td>
</tr>
<tr>
<td>- Plan, elevation and section</td>
</tr>
<tr>
<td>6. Estimate material requirements for a given job/task</td>
</tr>
<tr>
<td>- Basic calculations-area, volume</td>
</tr>
</tbody>
</table>
Program Content
Level 2

Line (GAC): D PERFORM ROUTINE MASON PRACTICES
Competency: D2 Apply Surface Techniques

Objectives
To be competent in this area, the individual must be able to:
- Apply parging.
- Waterproof/damp-proof masonry surfaces.
- Finish joints.

<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
</tr>
</thead>
</table>
| 1. Apply parging | - Types of parging material  
| | o Type M, type N and type S  
| | - Ratios for mixing parging material  
| | - Types of mesh such as wire and fibre  
| | - Types of anchors to secure wire mesh  
| | - Application techniques  
| | o Scratch coat  
| | o Finish coat  
| | - Dampen substrate  
| | - Fasten mesh to substrate  
| | - Apply bonding agents to substrate  
| | - Mix parging material  
| | - Set up straight edges to screed parging  
| 2. Waterproof/damp-proof masonry surfaces | - Applications of waterproofing and damp-proofing  
| | - Types of waterproofing and damp-proofing materials  
| | o Silicone-based  
| | o Solvent-based  
| | o Alkaline-based  
| | - Environmental hazards  
| | - Selecting materials according to locations such as above grade and below grade  
| | - Apply materials using methods such as troweling, spraying, brushing and rolling  
| | - Protecting surrounding area  
| | - Cleaning surface before applying materials  

Objectives
To be competent in this area, the individual must be able to:
- Build load-bearing walls.
- Build foundation walls.
- Build retaining walls.
- Install reinforcing systems.
- Build columns and pilasters.

LEARNING TASKS
1. Describe load-bearing walls

CONTENT
- Types
  - Structural
    - Above grade
  - Foundation walls
    - Below grade
  - Retaining walls
  - Cavity walls
- Purpose
  - Carry loads in addition to their own weight
  - Resist stresses and forces
- Cavity wall system components
  - Back-up wall
  - Membrane
  - Insulation
  - Exterior wythe
- Blocks
- Mortars
  - Type M and type S
- Lintels
  - Angle iron
  - Lintel blocks/Bond beam
  - Cast in place
  - Precast
- Accessories
  - Anchors, anchor plates and bolts
- Coordination with other trades
- Reinforcing systems
- Load points
LEARNING TASKS

2. Build structural walls

3. Describe foundation walls

4. Build foundation walls

CONTENT

- Finished height of wall
- Horizontal and vertical coursing
- Codes and regulations
- Building back-up wall
- Bracing and support walls
- Lay units to line
- Setting lines
- Building leads
- Maintain bond
- Shoring up openings
- Installing lintels and beams

- As per job requirements

- Blocks
- Mortars – Type M and Type S
- Lintels - angle iron, lintel blocks, cast in place and bond beam
- Waterproofing and damp-proofing methods
- Accessories
  - Anchors
  - Anchor plates
  - Bolts
- Coordination with other trades
- Drainage systems
- Finished height of wall
- Load points
- Horizontal and vertical coursing
- Codes and regulations
- Brace and support walls
- Lay units to line
- Setting lines
- Building leads
- Maintaining bond

- As per job requirements
LEARNING TASKS

5. Describe retaining walls

6. Build retaining walls

7. Describe reinforcing systems

8. Build reinforcing systems

CONTENT

- Types and sizes of masonry units
- Ground conditions
- Drainage
- Mortars
- Retaining wall systems and designs
- Footings and foundations
- Membranes
- Finished height of walls
- Capping of wall
- Grades and elevation
- Corbel, batter and slope retaining walls
- Install drainage systems
- Install membranes - drainage blankets and geotextile
- Lay units to design - straight, curved and angled
- Install reinforcement and tie backs

- As per job requirements

- Types of reinforcing material - rebar, wire mesh, stirrups, column and zone ties
- Size
- Reinforcement wire
- Building code requirements - overlap, spacing and bearing points
- Reinforced wall systems
- Specifications for reinforcing
- Place reinforcing materials in specified locations
- Confine grout to cells
- Prevent excessive mortar fins in interior
- Place clean-outs

- As per job requirements
LEARNING TASKS

9. Describe columns and pilasters

10. Build columns and pilasters

CONTENT

- Blocks
- Mortars
- Accessories
  - Anchors
  - Plates
  - Bolts
- Finished height of column and pilaster
- Codes and regulations
- Reinforcing systems
- Bonds and patterns
- Laying masonry units to bond
- Aligning column and pilasters
- Setting anchor plates and bolts at specified elevations

Achievement Criteria

Performance
The individual will build a block wall and install horizontal and vertical rebar.

Conditions
The individual will be given:
- Tools
- Materials
- Instructions
- Drawing

Criteria
The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Safety
- Plumb
- Level
- Gauge
- Alignment
- Clean cells
- Placement of horizontal and vertical steel
- Jointing
Program Content
Level 2

Line (GAC): E APPLY MASONRY SYSTEMS
Competency: E3 Build Horizontal Masonry

Objectives
To be competent in this area, the individual must be able to:
- Prepare horizontal substrate.
- Prepare masonry units for horizontal surfaces.
- Lay masonry units on horizontal surfaces.

LEARNING TASKS

1. Describe horizontal masonry surfaces
   • Patios, walkways, stairways, driveways

2. Prepare horizontal substrate
   • Excavation considerations
   • Soil conditions
   • Drainage
   • Membranes
   • Codes and regulations
   • Slope and grade
   • Application
     o Mortared and mortarless
   • Forming and pouring concrete
   • Compact materials used
   • Screeding
     o Production and maintenance of even surfaces
   • Edging

3. Prepare masonry units for horizontal surfaces
   • Types of masonry units
     o Pavers and flagstone
     o Brick, cobblestone, pre-cast concrete, slabs
   • Selection and cutting of units

4. Lay masonry units on horizontal surfaces
   • Knowledge of bonds and patterns
   • Layout of pattern
   • Mortars and aggregates used
   • Bonding agents and additives
   • Alignment of units
   • Following lines, slopes, grades, and angles
   • Staying on bond and keeping the pattern
   • Aligning units for aesthetic reasons
   • Sealing the surface
Program Content
Level 2

- Release agent and cleaning
Program Content
Level 2

Line (GAC):   E   APPLY MASONRY SYSTEMS
Competency:   E5   Install Surface Bonded Masonry Units

Objectives
To be competent in this area, the individual must be able to:
• Prepare surfaces for surface bonded masonry units.
• Apply surface bonded masonry units.

LEARNING TASKS

1. Describe surface bonded masonry units
   • Thin components applied to surfaces
   • Used for aesthetic purposes

2. Prepare surfaces for surface bonded masonry units
   • Mortar and bonding agents used
   • Restrictions and standards regarding permitted height of unsupported surface-bonded masonry units
     o Canadian Standards Association
     o National Building Code of Canada
   • Installation of building paper (where applicable)
   • Installation of wire mesh
   • Application of mortar over wire mesh
   • Scratching of mortar

3. Apply surface bonded masonry units
   • Types of materials
     o Brick, stone, glass, concrete, manufactured stone
   • Mortar and bonding agents used
   • Layout of dimensions
   • Types of bonds and patterns
   • Gauging of height
   • Laying out units to the bond and pattern
   • Pre-buttering back of surface bonded masonry units
   • Applying and finishing joints for surface bonded masonry units
Line (GAC): F  APPLY STONE SYSTEMS
Competency: F1  Install Stone Veneer

Objectives
To be competent in this area, the individual must be able to:
• Prepare stone for veneer.
• Lay stone for a given application.

LEARNING TASKS

1. Describe stone types
   • Natural stone
     o Basalt
     o Granite
     o Sandstone
     o Limestone
     o Ledge stone
     o Marble
     o Field stone
     o River rock
   • Manufactured stone

2. Describe stone shapes
   • Cornerstones
   • Sills
   • Lintels
   • Risers
   • Runner

3. Describe stone patterns
   • Ashlar
   • Random and rubble
   • Sneck
   • Bonding rules

4. Describe cutting and dressing stone
   • Selection
     o Wall stone
     o Corner stones
   • Cutting techniques
   • Tools
   • Dressing
     o Tracing
     o Breaking
     o Pitch
     o Shaping
LEARNING TASKS

5. Describe mortar

6. Install stone

CONTENT

- Types
- Consistency
- Application methods
  - Dry pack
  - Full bed
- Shimming and shoring stones
- Building stone corners
- Abrading stone to match finish

Achievement Criteria

Performance
The individual will cut, dress and install a stone detail in a project.

Conditions
The individual will be given:
- Materials
- Tools
- Instructions
- Drawing

Criteria
The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Safety
- Safe use of tools
- Selection of stone free of defects
- Size of stone
- Joint size
- Shape of stone
- Plumb
- Level
- Gauge
- Alignment
- Clean up
Line (GAC): F APPLY STONE SYSTEMS
Competency: F2 Install Stone Cladding

Objectives
To be competent in this area, the individual must be able to:
• Prepare walls for stone cladding.
• Prepare stones for cladding.
• Install stones.

LEARNING TASKS

1. Describe stone cladding

2. Prepare wall for stone cladding

3. Prepare stone for cladding

4. Cut and finish stone

5. Install stones

CONTENT

• Types
  o Granite, marble and limestone

• Sizes

• Supporting back-up wall

• Setting horizontal and vertical grid lines

• Rigging

• Stone types and sizes

• Properties of stone
  o Density, porosity

• Prefabricating sections such as mitring corners and adhering units with epoxies

• Adjusting and altering stone to suit building imperfections

• Prefabricating sections such as mitring corners and adhering units with epoxies

• Kerfing

• Drilling dowel holes for anchors and lifting stones

• Rigging

• Anchoring systems

• Bonding agents
  o Caulking
  o Epoxies

• Calculating weight

• Aligning units

• Using shims

• Connecting to anchoring systems

• Fastening stone temporarily

• Vertical and horizontal string lines

• Aligning stones to be aesthetically pleasing
Line (GAC): G BUILD CHIMNEYS, FIREPLACES AND REFRACTORY MATERIALS
Competency: G1 Lay Masonry Units

Objectives
To be competent in this area, the individual must be able to:
• Describe the building of foundation supports for fireplaces and chimneys.
• Build hearths and fireboxes.
• Build chimneys and install dampers and flue linings.

LEARNING TASKS

1. Describe the building of foundation supports for fireplaces and chimneys
   • Foundation materials
     o Concrete
     o Concrete blocks
   • Codes and regulations
   • Establishing heights
   • Laying out dimensions
   • Excavating/compacting
   • Reinforcing concrete
   • Forming and pouring concrete

2. Build hearths and fireboxes
   • Types of hearth
     o Raised
     o Cantilevered
     o Floor level
   • Function of fireplaces
   • Types
     o Rumford
     o Two-sided
     o Conventional
   • Flues
   • Codes and regulations
   • Materials
   • Firebrick and clay
   • Laying out dimensions
   • Calculation of flue sizes
   • Calculation of firebox
   • Laying firebrick floor
   • Installing ash dump and air intake
   • Shaping fire box to match damper size
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<td>• Types and sizes of flues and fireboxes</td>
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<td>• Codes and regulations</td>
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<td>• Calculating size of firebox</td>
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<td>• Building backup work</td>
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<td>• Installing steel angles</td>
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<td>• Creating smoke shelf</td>
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<td>• Corbel bricks to create smoke chamber</td>
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<td>• Types and sizes of heaters</td>
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<td>• Corbelling brick to create smoke chamber</td>
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<td>• Parging inside of smoke chamber</td>
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<td>• Installing flue liner</td>
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<td>• Installing cap</td>
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<td>• Installing step flashing</td>
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<td>5. <strong>Face fireplaces and masonry heaters</strong></td>
<td>• Materials</td>
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<tr>
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<td>o Stone</td>
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<td>o Tile</td>
</tr>
<tr>
<td></td>
<td>• Codes and regulations</td>
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<tr>
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<td>• Determining dimensions</td>
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<td></td>
<td>• Laying out bonds and heights</td>
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<td></td>
<td>• Installing lintels</td>
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<tr>
<td></td>
<td>• Corbelling and installing mantles</td>
</tr>
<tr>
<td></td>
<td>• Installing accessories</td>
</tr>
<tr>
<td></td>
<td>• Fans, vents, doors, intake</td>
</tr>
</tbody>
</table>


Achievement Criteria

Performance  The individual will build a fireplace from ground to the first flue.

Conditions  The individual will be given:
- Ash dump
- Fresh air intake
- Damper
- Flue liners
- Facing brick
- Back up brick
- Fire brick
- Fire clay
- Tools
- Instructions
- Drawing

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Proper dimension of fire box
- Proper ratio of flue liner to fire box
- Back up walls
- Proper construction of smoke chamber
- Parging of smoke chamber
- Corbel brick to create the smoke chamber
- Proper fire place facing construction
- Skirt dimension
- Bonding of facing to rough-in
Line (GAC): H PERFORM RESTORATION
Competency: H1 Rebuild Masonry work

Objectives
To be competent in this area, the individual must be able to:
- Disassemble unit masonry construction.
- Reinstall masonry and accessories.

LEARNING TASKS

1. Disassemble unit masonry construction
   - Masonry construction techniques
   - Masonry load patterns
   - Identifying causes of deterioration
   - Identifying hazards when moving masonry
   - Assessing support and anchoring requirements
   - Recording placement of units
   - Removing mortar and units
   - Salvaging reusable materials
   - Cleaning masonry units

2. Prepare restoration work area
   - Types of mortar
   - Removing mortar from standing wall and back-up wall
   - Repairing back-up wall
   - Cleaning and restoring components
     - Anchors, ties, shelf angles

3. Reinstall masonry and accessories
   - Types of mortars
   - Types of tie systems
   - Reinstalling components such as flashings, electrical and plumbing
   - Colouring mortar to match previous or existing work
Achievement Criteria

Performance  The individual will remove and reinstall several units from a project wall.

Conditions  The individual will be given:
- Materials
- Tools
- Instructions

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Safety
- Match existing wall
- Full joints
Line (GAC): H  PERFORM RESTORATION
Competency: H2  Restore Existing Masonry Work

Objectives
To be competent in this area, the individual must be able to:
• Remove deteriorated components.
• Repoint joints.

Learning Tasks

<table>
<thead>
<tr>
<th>CONTENT</th>
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<tbody>
<tr>
<td>1. Remove deteriorated components</td>
</tr>
<tr>
<td>• Types of mortars</td>
</tr>
<tr>
<td>• Types of components</td>
</tr>
<tr>
<td>• Removing deteriorated elements back to solid masonry using tools such as saws, drills and chisels</td>
</tr>
<tr>
<td>• Identification of failures in material such as hairline cracks, spalls and de-lamination</td>
</tr>
<tr>
<td>2. Repoint joints</td>
</tr>
<tr>
<td>• Moisture evaporation of mortar</td>
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<tr>
<td>• Types of mortar</td>
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<tr>
<td>• Bonding properties of mortar</td>
</tr>
<tr>
<td>• Adhesives</td>
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<tr>
<td>o Colouring and bonding agents</td>
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<tr>
<td>• Cleaning joints</td>
</tr>
<tr>
<td>• Filling, compressing and tooling joints</td>
</tr>
<tr>
<td>• Hydrating masonry surfaces</td>
</tr>
<tr>
<td>• Adding adhesives to mortar</td>
</tr>
<tr>
<td>• Protecting surfaces from environmental conditions</td>
</tr>
</tbody>
</table>

Achievement Criteria

Performance Conditions
The individual will rake out an area of deteriorated joints and repoint them.
The individual will be given:
• Materials
• Tools
• Instructions

Criteria
The individual will score 70% or better on a rating sheet that reflects the following criteria:
• Safety
• Depth of rakeout
• Clean joints
• Dampen mortar joints
• Fully repointed joints
• Match existing wall
• Proper procedure
Level 3
Bricklayer (Mason)
Line (GAC): C ORGANIZE WORK

Competency: C1 Use Mathematics

Objectives
To be competent in this area, the individual must be able to:
- Perform basic mathematical calculations.
- Solve geometric problems.
- Lay out arches.

LEARNING TASKS

1. Review Level 2
   - Ratio and proportion
   - Imperial and metric conversions

2. Solve geometrical problems
   - Volume, area, perimeter
   - Circle radius, diameter

3. Perform layout of arches
   - Calculating angles and radii
   - Rise and span
Program Content
Level 3

Line (GAC): C ORGANIZE WORK
Competency: C2 Use Drawings, Specifications and Documentation

Objectives
To be competent in this area, the individual must be able to:
• Estimate the quantity of materials for a given project.

LEARNING TASKS
1. Review Level 2

2. Estimate project materials

CONTENT
• Types of drawings
• Symbols and abbreviations
• Drawing concepts
• Documentations
• Sketching

• Quantities
• Allowance for waste
Line (GAC): E APPLY MASONRY SYSTEMS
Competency: E4 Build and Install Pre-Fabricated Masonry

Objectives
To be competent in this area, the individual must be able to:
• Build pre-fabricated masonry.
• Install pre-fabricated masonry.

LEARNING TASKS

1. Describe pre-fabricated masonry
   • Purpose
   • Fabrication method
     o Off site
     o Made of masonry units, steel, grout and mortar
   • Types
     o Brick panels
     o Lintels
     o Brick sills
     o Brick columns

2. Build pre-fabricated masonry
   • Form release agents
   • Storage, stacking, transport
   • Colour matching and testing for restoration
   • Effects of temperature and humidity
   • Preparation of forms or jigs to accept material
   • Installation of material to forms or jigs
   • Installation of accessories
     o Reinforcing anchoring, and bearing plates
   • Alignment and leveling of units
   • Grouting
   • Removal of forms or jigs
   • Preparation for delivery

3. Install/erect prefabricated masonry
   • Rigging considerations
   • Fastening systems
   • Grouting and caulking procedures
   • Alignment and setting in place of panels and anchors
Program Content  
Level 3

Line (GAC): G BUILD CHIMNEYS, FIREPLACES AND REFRACTORY MATERIALS

Competency: G2 Install Refractory Materials for Heat-Resistant Applications

Objectives
To be competent in this area, the individual must be able to:
• Remove existing heat resistant materials.
• Prepare for installation of heat resistant materials.
• Install heat resistant materials.

LEARNING TASKS

1. Remove existing heat resistant materials
   • Materials
     o Bricks
     o Basic refractory mortar
     o Insulation back-up
   • Equipment
   • Safety codes and regulations, MSDS
   • Lockout procedures
   • PPE for refractory material removal
   • Working in confined spaces
   • Work procedures
     o Cutting
     o Grinding
     o Hammering
   • Taking out materials
   • Disposing of hazardous materials
   • Clean up

2. Prepare for installation of heat resistant materials
   • Specifications
   • Types of materials
     o Bricks (alumina/silica, insulator, plastic)
     o Carbon
     o Castables
     o Blanket
     o Board insulation
   • Codes and regulations
   • Building forms and arches
LEARNING TASKS

3. Prepare mortar and accessories for heat-resistant materials

4. Install heat resistant materials

CONTENT

- Types of refractory material
  - Mortar and brick
  - Safety codes and regulations
- Installation sequence of brick and tile according to number and quality
- Forms and arches
- PPE for refractory materials installation
- Installation of forms and arches
- Pouring, spraying and vibrating castables
- Laying firebrick
- Installing insulation (blankets and modules)
- Ramming plastic
- Ensuring expansion and contraction provisions of materials

- Materials
  - Mortar and brick
  - Safety codes and regulations and MSDS
  - Installation sequence of brick and tile according to number and quality
  - Forms and arches
  - PPE for refractory material installation
  - Installing forms and arches
  - Pouring, spraying and vibrating castables
  - Laying firebrick
  - Installing insulation (blanket and modules)
  - Ramming plastic
  - Ensuring expansion and contraction provisions of materials
Line (GAC): G  BUILD CHIMNEYS, FIREPLACES AND REFRACTORY MATERIALS

Competency: G3  Install Corrosion Resistant Materials for Corrosion Resistant Applications

Objectives
To be competent in this area, the individual must be able to:
- Remove corrosion resistant materials.
- Prepare for installation of corrosion resistant materials.
- Prepare mortar and accessories for corrosion resistant materials.
- Install corrosion resistant materials.

LEARNING TASKS

1. Remove existing corrosion resistant materials
   - Lockout procedures
   - Codes and regulations
   - Hazards
     - Ammonia
     - Chlorine
     - Hydrogen sulphate
   - Materials
     - Acid-resistant bricks
     - Acid-resistant tiles
     - Refractory non-corrosive mortar
     - Membrane concrete
     - C-Mag
   - Cutting, grinding and hammering materials
   - Taking out materials
   - Working in confined spaces

2. Prepare for installation of corrosion resistant materials
   - Types of materials
     - Number -2 acid brick
     - C-Mag
     - Acid resistant tile
     - Concrete
   - Codes and regulations
   - Spark testing membranes
   - Building forms
   - Installing membranes
LEARNING TASKS

3. Prepare mortar and accessories for corrosion resistant materials

4. Install corrosion resistant materials

CONTENT

- Types of refractory non-corrosive mortar
  - Air setting
  - Polyurethane
  - Resins

- Materials
  - Mortar and brick

- Forms

- Installation sequence of brick and tile according to number and colour

- Codes and regulations

- PPE for refractory material installation

- Installation of forms

- Pouring, spraying and vibrating castables

- Laying brick

- Laying tile

- Spraying gunite

- Pouring concrete

Achievement Criteria

Performance

The individual will build a free-standing acid-resistant tile mock up.

Conditions

The individual will be given:

- Tools
- Instructions
- Materials
- Plan

Criteria

The individual will score 70% or better on a rating sheet that reflects the following criteria:

- Safety
- Level
- Hammer cut
- Plumb
- Alignment
- Jointing
Line (GAC): H PERFORM RESTORATION
Competency: H2 Restore Existing Masonry Work

Objectives
To be competent in this area, the individual must be able to:
- Reface masonry units.
- Repair masonry units.

LEARNING TASKS

1. Reface masonry units
   - Refacing and repair techniques
     - Dutchman
     - Cutting
     - Doweling
   - Components such as stone and brick
   - Types of mortar used for refacing
     - Epoxy
     - Acrylics
   - Drilling and dowling masonry surfaces
   - Applying sufficient mortar for refacing
   - Supporting refaced units while curing

2. Repair masonry units
   - Resurfacing techniques
   - Repair techniques
     - Stitching, pinning and using spiral ties
   - Types of mechanical anchoring systems
   - Spiral ties, web anchors, pin bolts
   - Chemical anchoring systems
     - Epoxy tubes, threaded rods, screen tubes
   - Drilling masonry for pining and stitching
   - Mixing patching material
   - Patching holes
   - Setting dowels
   - Using expandable grout
Line (GAC): I PERFORM SPECIALIZED MASONRY WORK
Competency: I1 Install Glass Blocks

Objectives
To be competent in this area, the individual must be able to:
• Prepare the site to install glass blocks.
• Lay glass blocks.

LEARNING TASKS

1. Describe glass blocks
   • Purpose
   • Decorative/aesthetic
   • Security
   • Insulation
   • Transfer of light

2. Prepare the site to install glass blocks
   • Types and sizes of glass blocks
   • Anchoring
   • Calculating dimensions
   • Determining gauge of mortar joints
   • Setting channels
   • Installing expansion strips
   • Flashings

3. Lay glass blocks
   • Types and sizes of glass blocks
   • Manufacturer’s instructions
   • Laying blocks
     o Stabilizing
     o Spacers
     o Cleaning
     o Maintaining elevation
     o Layout to pattern and design
     o Install accessories such as vents and soap/shampoo dish
   • Reinforcing
   • Mortar
   • Grouting or pointing
   • Full joints
Achievement Criteria

Performance  The individual will build, joint and clean a glass block panel.

Conditions  The individual will be given:
- Tools
- Instructions
- Materials

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Safety
- Level
- Plumb
- Alignment
- Jointing
- Gauge
- Cleanup
- Neatness
## Line (GAC): I PERFORM SPECIALIZED MASONRY WORK

### Competency: I2 Install Ornamental and Sculptured Masonry

**Objectives**

To be competent in this area, the individual must be able to:

- Prepare the surface for ornamental and sculptured masonry.
- Install ornamental and sculptured masonry units.

**LEARNING TASKS**

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<tr>
<td></td>
<td>• Stone, brick, marble, clay, pre-cast concrete</td>
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<td>• Purpose</td>
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<td>• Installations</td>
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<tr>
<td></td>
<td>o Serpentine walls, gateposts, garden walls</td>
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<tr>
<td></td>
<td>o Terracotta, carved stone, carved brick, pre-cast</td>
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<tr>
<td></td>
<td>concrete</td>
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<td></td>
<td>o Piers</td>
</tr>
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<td>o Chimney pots</td>
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<td>o Columns, fences, handrails, cornices</td>
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<tr>
<td>2. Prepare the surface for ornamental and sculptured masonry</td>
<td>• Types of surfaces</td>
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<tr>
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<td>o Brick</td>
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<td>o Concrete</td>
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<tr>
<td></td>
<td>o Marble</td>
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<td>• Types of bonds and patterns</td>
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<tr>
<td></td>
<td>o Running</td>
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<td>o Stack</td>
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<td>o Herringbone</td>
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<td></td>
<td>o Basket weave</td>
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<td>• Types of mortars</td>
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<td>• Reference to sketch or numbered unit</td>
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<tr>
<td></td>
<td>• Matching mortar to material</td>
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<td>• Calculating dimensions</td>
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<td>• Determining gauge of mortar joints</td>
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<td>• Sketching bond and pattern</td>
</tr>
</tbody>
</table>
**LEARNING TASKS**

3. Install ornamental and sculptured masonry units

**CONTENT**

- Types of materials
  - Stone
  - Brick
  - Concrete
  - Terracotta
  - Marble
- Factors affecting durability
  - Local frost level
  - Foundation
  - Batter and backing
  - Mortar
  - Height
  - Movement joints
  - Flashing and capping
- Types of bonds and patterns
  - Running, stack
  - Herringbone
  - Basket weave
- Types of mortars
- Laying out the location of installation
- Determining the location of pilaster in wall
- Laying out for tying in or bonding intersections
- Maintaining the bond

**Achievement Criteria**

**Performance**
The individual will build a brick wall with a herringbone pattern.

**Conditions**
The individual will be given:
- Materials
- Tools
- Instructions

**Criteria**
The individual will be given:
- Proper pattern
- Proper dimensions
- Proper angles
- Level, plumb and alignment
- Jointing
- Safety
- Cleanliness
Line (GAC):  I PERFORM SPECIALIZED MASONRY WORK
Competency:  I3 Build Arches

Objectives
To be competent in this area, the individual must be able to:
• Prepare sites for arches.
• Build, place, and remove templates.
• Install arch masonry units.

LEARNING TASKS
1. Describe arches
   • Purpose
     o Built for ornamental or structural purposes
     o Span areas for support purposes
     o Alternative to steel support
     o Aesthetics
       – Gives an impression of height
     • Arch components and terminology
     • Styles
       o Gothic roman, segmental, jack arch

2. Prepare sites for arches
   • Materials
   • Types and sizes of arch
   • Location of arch
   • Reinforce surrounding masonry
   • Install anchors and ties for masonry arch
   • Build support system for template

3. Build templates
   • Types and sizes of arch
   • Materials
     o Wood, metal (klin ring), extruded foam
   • Application of geometric concepts and basic math
   • Construction techniques of templates
   • Design of template
   • Assembly of template
   • Determining type, location, span, rise and depth of arch
   • Determining structural strength requirements for templates
LEARNING TASKS

4. Place templates

5. Install arch masonry units

6. Remove templates

CONTENT

- Incorporating template on support system
- Adjusting template for level and plumb
- Shimming and shoring

- Materials
  - Brick, stone and mortar

- Installation procedures
  - Determining angle of skew-back
  - Laying out and align to bond
  - Determining center of arch
  - Cutting creepers around arch
  - Full joints

- Shaping masonry voussoirs (arch brick)

- Mortar setting times
- Removing shims
- Removing support
- Removing template without damaging arch material
- Pointing and jointing mortar in arch
- Cleaning up

Achievement Criteria #1

Performance  The individual will design a template for an arch.

Conditions  The individual will be given:

- Materials
- Tools
- Instructions

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:

- Proper dimensions and shape
Achievement Criteria #2

Performance  The individual will build an arch.

Conditions  The individual will be given:
- Materials
- Tools
- Instructions

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Proper dimensions and shape
- Proper cuts
- Alignment
- Jointing
- Proper joint spacing and gauging
- Level and plumb
- Bond
- Safety
Section 4

TRAINING PROVIDER STANDARDS
Facility Requirements

Classroom Area
- Comfortable seating and tables suitable for learning
- Compliance with the local and national fire code and occupational safety requirements
- Overhead and/or multimedia projectors with a projection screen
- Whiteboard with marking pens and erasers
- Lighting controls to allow easy visibility of the projection screen while allowing students to take notes
- Windows must have shades or blinds to adjust sunlight
- Heating/Air conditioning for comfort all year round
- In-room temperature control to ensure comfortable room temperature
- Acoustics in the room must allow audibility of the instructor
- Access to a computer with internet access
- Appropriate reference material for student and instructor use

Shop Area
- Adequate space for a tool crib and storage
- Minimum 10 foot ceiling height in shop areas
- Minimum 200 sq. ft./student (not including tool crib and storage)
- Adequate heating, lighting
- Adequate ventilation
- Refuse and recycling bins for used shop materials.
- First-aid equipment.
- Shops will support practical requirements as outlined in the Program Outline

Lab Requirements
- N/A

Student Facilities
- Adequate lunch room as per WorkSafeBC requirements
- Adequate washroom facilities as per WorkSafeBC requirements
- Personal Storage lockers
- Clean-up (personal hygiene) facilities for students

Instructor Office Space
- Desk and secure filing space
- Computer
- Staff lounge appropriate for the number of staff
Tools and Equipment

Shop Equipment

Required Power, Hydraulic and Pneumatic, Powder-actuated, and Welding Tools and Equipment

- Circular saw
- Compressors
- Couplers
- Diamond or abrasive disk
- Dollies / pump jacks
- Drill
- Grinder
- Jig saw
- Masonry table saw
- Mortar box
- Mortar buggy
- Mortar mixer
- Portable masonry saw
- Vacuum cleaner

Required Hoisting and Lifting Equipment and Scaffolding

- Bracing
- Forklift
- Handcart
- Ladders
- Planks
- Scaffolding
- Scaffolds and their components

Required Measuring and Layout Tools and Equipment

- Bricklayer’s tape
- Chalk line
- Gauge rod / storey pole
- Laser level
- Line block
- Mason’s level
- Mason’s line
- Mason’s spacing rule
- Plumb-bob
- Square
- Straightedge

Required Hand Tools

- Brushes
- C-clamps
- Caulking gun
- Caulking tool
- Chisels
  - Flat
  - Brick Set
  - Pitching
  - Plugging
  - Pointed
  - Splitting
  - Straight
  - Toothed
- Pliers
- Portable sprayer
- Pry bar
- Raker-wheel type
- Sandbox
- Sandscreen
- Scrapers
- Screwdrivers
- Shims/spacers
- Shim driver
- Shovels
- Slicker
- Socket set / wrench
Program Content
Section 4

- Curry comb
- Grout bag
- Hammers
  - Brick
  - Bush
  - Claw
  - Dead blow
  - Face
  - Mash
  - Refractory (rawhide)
  - Rubber mallet
  - Sledge hammer
- Hawk
- Jointer
- Knives
- Line holders
- Line pins
- Line trigs
- Level
- Manual splitter
- Mortar hoe
- Pallet jack

- Sponges
- Staple gun
- Straps and chokers
- Tarpaulin (tarp)
- Templates
- Trammels points
- Trimmers
- Trowels
  - Bucket
  - Buttering
  - Duck billed
  - Margin
  - Mason's
  - Pointing
  - Tuck pointer
- Venting tool
- Water bucket
- Water drum
- Water hose
- Wheelbarrow
- Wire snips

Required Personal Protective Equipment and Safety Equipment

- Apron
- Eye protection
- Eye wash station
- Face shields
- Fire blankets
- Fire extinguisher
- First aid kit
- Fresh air respirator
- Gas detection equipment
- Gloves
- Hard hat
- Hearing protection
- Heat and cold protection
- Insulated gloves
- Lock-out tags / locks
- Respiratory protection
- Safety boots / footwear
- Safety harness and fall arrest system
- Safety vest
- Skin barrier cream

Student Tools (supplied by student)

Required

- Steel toed boots
- Hard hats
Reference Materials

Required Reference Materials

- **BC Building Code**
  - Section 9.20
  - Section 9.21
  - Section 9.22

- **CSA Masonry Standard**
  - A82-06 Fired Masonry Brick Made from Clay or Shale
  - A65.1-04 Concrete Block Masonry Units
  - A179-04 Mortar and Grout for Unit Masonry
  - A370-04 Connectors for Masonry
  - A371-04 Masonry Construction for Buildings

- **Health and Safety Regulations**

- **Measurement and Calculation for the Trades**
  - BC Construction Industry Skills Improvement Council

- **Technical Manual**
  - Masonry Institute of BC (Available online at [http://www.masonrybc.org](http://www.masonrybc.org))

  - Canadian Masonry Contractors Association
  - ISBN 978-0-9737209-3-8

- **Building Trades Blueprint Reading-Part 1 Fundamentals – 5TH Addition Elmer W. Sundberg**
  - American Technical Society
  - ISBN 0-82669-0441-6

Recommended Resources

- **Book of Successful Fireplaces**
  - Structures Printing Co.

- **Masonry Skills, 5th Addition (2003)**
  - Richard T. Kreh
  - Delmar Publishers Inc.

- **Recommended Practices and Guide Specifications for Masonry Construction – Cold Weather**
  - International Masonry Industry All-Weather Council
Instructor Requirements

Occupation Qualification
The instructor must possess:
- Bricklayer BC Certificate of Qualification with an Interprovincial Red Seal Endorsement, or
- Bricklayer Certificate of Qualification from another Canadian jurisdiction with an Interprovincial Red Seal Endorsement

Work Experience
A minimum of 10 years experience working in the industry as a journeyperson.

Instructional Experience and Education
It is preferred that the instructor also possess one of the following:
- The instructor must possess or be working towards a BC Provincial Instructor Diploma
Appendix A
Glossary of Verbs
<table>
<thead>
<tr>
<th>Verb</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjust</td>
<td>To bring to a more satisfactory state; to bring the parts of to a true or more effective relative position.</td>
</tr>
<tr>
<td>Align</td>
<td>To bring into alignment.</td>
</tr>
<tr>
<td>Analyze</td>
<td>To examine critically so as to determine appropriate procedures, process, or course of action.</td>
</tr>
<tr>
<td>Apply</td>
<td>To put to use especially for some practical purpose.</td>
</tr>
<tr>
<td>Assemble</td>
<td>To fit together the parts of.</td>
</tr>
<tr>
<td>Assess</td>
<td>To determine the value, significance, or extent of; to appraise.</td>
</tr>
<tr>
<td>Calculate</td>
<td>To arrive at a precise numerical answer – often through the use of mathematical formulas.</td>
</tr>
<tr>
<td>Construct</td>
<td>To make or form by combining or arranging parts or elements.</td>
</tr>
<tr>
<td>Control</td>
<td>Lessen the intensity of, temper, hold in restraint, hold or keep within limits</td>
</tr>
<tr>
<td>Define</td>
<td>To set forth the meaning of a word or expression.</td>
</tr>
<tr>
<td>Demonstrate</td>
<td>To exhibit, show clearly or perform, to a competency standard, a process or competence.</td>
</tr>
<tr>
<td>Describe</td>
<td>To set forth the properties or characteristics of an object; to give a detailed or graphic account of a process or procedure. (To use correct terminology, sequencing and inter-relationship of the elements is implied where required.)</td>
</tr>
<tr>
<td>Determine</td>
<td>To arrive at, or locate, information by a simple process (e.g. by rule of thumb).</td>
</tr>
<tr>
<td>Explain</td>
<td>To show the logical development or relationships of.</td>
</tr>
<tr>
<td>Evaluate</td>
<td>To determine the significance, worth, or condition of usually by careful appraisal and study.</td>
</tr>
<tr>
<td>Identify</td>
<td>To use the correct terminology to describe objects, both individually and collectively; to state their application or use, and to point out and name them.</td>
</tr>
<tr>
<td>Inspect</td>
<td>To look into, or at carefully. To examine, or observe, critically in order to detect flaws, errors, etc.</td>
</tr>
<tr>
<td>Install</td>
<td>To set up for use or service.</td>
</tr>
<tr>
<td>Interpret</td>
<td>To make sense of; to give meaning to.</td>
</tr>
<tr>
<td>List</td>
<td>To give in point form, several items of information; no sequence or inter-relationship is implied.</td>
</tr>
<tr>
<td>Locate</td>
<td>To seek out and determine the location of.</td>
</tr>
<tr>
<td>Maintain</td>
<td>To keep in good condition; to keep functional, and in good repair.</td>
</tr>
<tr>
<td>Obtain</td>
<td>To gain or attain usually by planned action or effort.</td>
</tr>
<tr>
<td>Operate</td>
<td>To perform a function: exert power or influence.</td>
</tr>
<tr>
<td>Overhaul</td>
<td>To check thoroughly for needed service, and to make the repairs, replacements, adjustments, etc., necessary to restore to good working order.</td>
</tr>
<tr>
<td>Perform</td>
<td>To carry out; to do in a formal manner or according to prescribed ritual.</td>
</tr>
<tr>
<td>Read</td>
<td>To look at carefully so as to understand the meaning of; to attribute meaning.</td>
</tr>
<tr>
<td>Verb</td>
<td>Definition</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rebuild</td>
<td>To restore to an original state.</td>
</tr>
<tr>
<td>Remove</td>
<td>To move by lifting, pushing aside, or taking away or off.</td>
</tr>
<tr>
<td>Repair</td>
<td>To put back into good condition after damage or wear; to mend or fix.</td>
</tr>
<tr>
<td>Replace</td>
<td>To put something new in the place of.</td>
</tr>
<tr>
<td>Select</td>
<td>To choose the most appropriate object, process or procedures, given a specific situation; (when used in relation to an object it also implies the ability to identify and describe).</td>
</tr>
<tr>
<td>Service</td>
<td>To remove, maintain, repair, or replace items and/or components.</td>
</tr>
<tr>
<td>Set up</td>
<td>To assemble the parts of and erect in position.</td>
</tr>
<tr>
<td>Sketch</td>
<td>To make a sketch, rough draft, or outline of.</td>
</tr>
<tr>
<td>State</td>
<td>To set out briefly (in the equivalent of a sentence or two) an idea.</td>
</tr>
<tr>
<td>Test</td>
<td>To try something against a criterion or standard.</td>
</tr>
<tr>
<td>Troubleshoot</td>
<td>To investigate a problem; to look at, or into, critically and methodically in order to find out the causes, facts, conditions, etc.</td>
</tr>
</tbody>
</table>
Appendix B
Assessment Guidelines
Program: Bricklayer (Mason)
Training providers delivering Bricklayer (Mason) apprenticeship in-school technical training are required to enter the following information in ITA Direct Access for each apprentice:

- An in-school mark in the form of a percentage
  (Minimum 70% is required for a pass)

Training Provider Component: In-School Technical Training
The in-school mark for each level is derived from a combination of theory and practical assessments. This mark is then combined with the ITA Standard Level Examination to determine a final mark for the level.

Calculation tables showing the subject competencies, level percentage weightings and level examination weightings are shown in the Grading Sheet: “Subject Competencies and Weightings” section of this document.

Bricklayer (Mason) Level 1, 2 & 3 in-school marks are calculated by:

- Totaling the level theory competency results as noted in the competencies and weightings tables and multiplying the total by 40% for Level 1, 2 & 3 to produce a weighted theory result;
- Totaling the level practical competency results as noted in the competencies and weightings tables and multiplying the total by 60% for Level 1, 2, & 3 to produce a weighted practical result;
- Adding the theory and practical competency results together to determine the final in-school result.

Successful completion of the in-school training for each level is defined as an in-school mark of 70% or greater.

ITA Component: ITA Standardized Level Examinations - Level 1, 2 & 3
ITA Direct Access (ITADA) automatically calculates the final mark for a level once the in-school training and standard level exam marks are entered into the system. This mark is calculated by blending the standardized exam percentage score and the in-school technical training percentage score to determine the final mark for the level.

In-school technical training (combined theory & practical) is weighted at 80% and the ITA standardized exam is weighted at 20%. These two scores are combined to determine the final level mark. This result is the final mark that is recorded in ITA Direct Access.

- A mark of 70% or greater is required to pass the level when combining the final in-school percentage score and the final ITA standardized level exam percentage score.
Appendix B
Assessment Guidelines

Interprovincial (Red Seal) Exam

In order to achieve certification with the Red Seal Endorsement, Bricklayer (Mason) apprentices are required to write the Bricklayer (Mason) Interprovincial (Red Seal) exam after completing all levels of in-school technical training. Apprentices must have passed all levels of in-school technical training or be approved challengers to sit the exam. A score of 70% or greater is required for a pass.

Interprovincial (Red Seal) exams should be requested by training providers via the usual ITA procedure. The ITA will administer and invigilate Interprovincial (Red Seal) exams and score and record exam results in ITA Direct Access.
# Appendix B
## Assessment Guidelines

### Grading Sheet: Subject Competency and Weightings

<table>
<thead>
<tr>
<th>PROGRAM: IN-SCHOOL TRAINING:</th>
<th>BRICKLAYER (MASON) LEVEL 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITA DIRECT ACCESS CODE: 0003BR</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LINE</th>
<th>TRAINING TOPICS &amp; SUGGESTED TIME ALLOCATION</th>
<th>THEORY WEIGHTING</th>
<th>PRACTICAL WEIGHTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Use Safe Work Practices</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>B</td>
<td>Use Tools and Equipment</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>C</td>
<td>Organize Work</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>D</td>
<td>Perform Routine Mason Practices</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>E</td>
<td>Apply Masonry Systems</td>
<td>15%</td>
<td>85%</td>
</tr>
<tr>
<td>H</td>
<td>Perform Restoration</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Calculated by the Training Provider**

**BRICKLAYER (MASON) in-school theory & practical subject competency weighting**

<table>
<thead>
<tr>
<th></th>
<th>Theory Weighting</th>
<th>Practical Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Training Provider enters final in-school mark into ITA Direct Access**

X%

---

**Calculated by ITA: In-school Mark**

ITA Direct Access calculates the percentage weighting once the in-school mark is entered. Combined theory and practical subject competency multiplied by 80%.

**Calculated by ITA: Standard Level Exam Mark**

ITA Direct Access will calculate the percentage weighting once the standard level exam marks have been entered. The exam score is multiplied by 20%.

**Calculated by ITA: Final Mark**

The final mark for determining credit is calculated by ITA Direct Access.

FINAL%
### Program: Bricklayer (Mason) Level 2

#### Training Provider: ITA Direct Access

<table>
<thead>
<tr>
<th>LINE</th>
<th>Training Topics &amp; Suggested Time Allocation</th>
<th>Theory Weighting</th>
<th>Practical Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Organize Work</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>D</td>
<td>Perform Routine Mason Practices</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>E</td>
<td>Apply Masonry Systems</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>F</td>
<td>Apply Stone Systems</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>G</td>
<td>Build Chimneys, Fireplaces and Refractory Materials</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>H</td>
<td>Perform Restoration</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Calculated by the Training Provider**

**Bricklayer (Mason) in-school theory & practical subject competency weighting**

<table>
<thead>
<tr>
<th>Theory Weighting</th>
<th>Practical Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Training Provider enters final in-school mark into ITA Direct Access**

X%

---

**Calculated by ITA:**

- **In-school Mark**
  
  ITA Direct Access calculates the percentage weighting once the in-school mark is entered. Combined theory and practical subject competency multiplied by 80%

- **Standard Level Exam Mark**
  
  ITA Direct Access will calculate the percentage weighting once the standard level exam marks have been entered. The exam score is multiplied by 20%

- **Final Mark**
  
  The final mark for determining credit is calculated by ITA Direct Access. FINAL%
### PROGRAM: IN-SCHOOL TRAINING: 
**ITA DIRECT ACCESS CODE:** BRICKLAYER (MASON) LEVEL 3 0003BR

<table>
<thead>
<tr>
<th>LINE</th>
<th>TRAINING TOPICS &amp; SUGGESTED TIME ALLOCATION</th>
<th>THEORY WEIGHTING</th>
<th>PRACTICAL WEIGHTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Organize Work</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>E</td>
<td>Apply Masonry Systems</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>G</td>
<td>Build Chimneys, Fireplaces and Refractory Materials</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>H</td>
<td>Perform Restoration</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>I</td>
<td>Perform Specialized Masonry Work</td>
<td>20%</td>
<td>80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>100%</th>
<th>100%</th>
</tr>
</thead>
</table>

**Calculated by the Training Provider**

**BRICKLAYER (MASON) in-school theory & practical subject competency weighting**

40% 60%

**Training Provider enters final in-school mark into ITA Direct Access**

X%

---

**Calculated by ITA: In-school Mark**

ITA Direct Access calculates the percentage weighting once the in-school mark is entered. Combined theory and practical subject competency multiplied by 80%

**Calculated by ITA: Standard Level Exam Mark**

ITA Direct Access will calculate the percentage weighting once the standard level exam marks have been entered. The exam score is multiplied by 20%

**Calculated by ITA: Final Mark**

The final mark for determining credit is calculated by ITA Direct Access. FINAL%