PROGRAM OUTLINE

Lather (Interior Systems Mechanic) (Wall and Ceiling Installer)
WALL AND CEILING INSTALLER
PROGRAM OUTLINE

APPROVED BY INDUSTRY
FEBRUARY 2017

BASED ON
NOA 2012

Developed by
Industry Training Authority
Province of British Columbia
# TABLE OF CONTENTS

Section 1 INTRODUCTION................................................................................................................ 3
   Foreword ........................................................................................................................... 4
   Acknowledgements ........................................................................................................... 5
   How to Use this Document.............................................................................................. 6

Section 2 PROGRAM OVERVIEW.................................................................................................... 8
   Program Credentialing Model ........................................................................................... 9
   Occupational Analysis Chart........................................................................................... 10
   Training Topics and Suggested Time Allocation............................................................. 13
   Training Topics and Suggested Time Allocation............................................................. 14
   Training Topics and Suggested Time Allocation............................................................. 15

Section 3 PROGRAM CONTENT.................................................................................................... 16
   Level 1 Wall and Ceiling Installer .................................................................................... 17
   Level 2 Wall and Ceiling Installer .................................................................................... 51
   Level 3 Wall and Ceiling Installer .................................................................................... 82

Section 4 ASSESSMENT GUIDELINES..................................................................................... 114
   Assessment Guidelines – Level 1................................................................................. 115
   Assessment Guidelines – Level 2................................................................................. 116
   Assessment Guidelines – Level 3................................................................................. 117

Section 5 TRAINING PROVIDER STANDARDS ........................................................................ 118
   Facility Requirements.................................................................................................... 119
   Tools and Equipment ................................................................................................. 120
   Reference Materials .................................................................................................... 122
   Instructor Requirements............................................................................................... 123

Appendices ................................................................................................................................... 124
   Appendix A Acronyms................................................................................................. 125
   Appendix B Previous Contributors............................................................................... 126
Section 1
INTRODUCTION
Wall and Ceiling Installer
Foreword

This Lather (Interior Systems Mechanic) (Wall and Ceiling Installer) Program Outline is intended as a guide for instructors, apprentices, and employers of apprentices as well as for the use of industry organizations, regulatory bodies, and provincial and federal governments. It reflects updated standards based on the 2012 National Occupational Analysis (NOA) and was developed by British Columbia industry and instructor subject matter experts.

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.

This Program Outline includes a list of recommended reference textbooks that are available to support the learning objectives and the minimum shop requirements needed to support instruction.

Competencies are to be evaluated through written exams and practical assessments. A passing grade is achieved by getting an overall mark of 70%. See the Assessment Guidelines for more details. The types of questions used on these exams must reflect the cognitive level indicated by the learning objectives and the learning tasks listed in the related competencies.

Achievement Criteria are included for those competencies that require a practical assessment. The intent of including Achievement Criteria in the Program Outline is to ensure consistency in training across the many training institutions in British Columbia. Their purpose is to reinforce the theory and to provide a mechanism for evaluation of the learner’s ability to apply the theory to practice. It is important that these performances be observable and measurable and that they reflect the skills spelled out in the competency as those required of a competent journeyperson. The conditions under which these performances will be observed and measured must be clear to the learner as well as the criteria by which the learner will be evaluated. The learner must also be given the evaluation criteria.

The performance spelled out in the 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 WorkSafe BC 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](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.
Acknowledgements

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

- Steward Baird  Finishing Trades Institute of B.C.
- Jim Ewing  DC 38
- Terry Lewis  Maclean Bros. Drywall
- Mike Schlogel  Littco Enterprises Ltd.
- Drew Smith  BC Wall & Ceiling Association
- Kevin Weston  DC 38
- Al Williams  Finishing Trades Institute of B.C.

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 Lather (Interior Systems Mechanic) (Wall and Ceiling Installer) 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>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, measurable 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><strong>Achievement Criteria</strong></td>
<td>Defines observable, measureable performance expectations for competencies with a lab component.</td>
<td>Defines observable, measureable performance expectations for competencies with a lab component.</td>
<td>Defines observable, measureable performance expectations for competencies with a lab component.</td>
<td>Defines observable, measureable performance expectations for competencies with a lab component.</td>
</tr>
<tr>
<td>Defines for this trade, achievement criteria is performed in a lab setting and does not indicate workplace standards.</td>
<td>For this trade, achievement criteria is performed in a lab setting and does not indicate workplace standards.</td>
<td>For this trade, achievement criteria is performed in a lab setting and does not indicate workplace standards.</td>
<td>For this trade, achievement criteria is performed in a lab setting and does not indicate workplace standards.</td>
<td></td>
</tr>
<tr>
<td><strong>Training Provider Standards</strong></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>
<tr>
<td><strong>Appendix – Glossary of Acronyms</strong></td>
<td>Defines program specific acronyms.</td>
<td>Defines program specific acronyms.</td>
<td>Defines program specific acronyms.</td>
<td>Defines program specific acronyms.</td>
</tr>
<tr>
<td>Defines the weighting of theory and practical (lab) marks by GAC to be used to calculate an apprentice’s in-school mark for each level. The practical weighting is a reflection of performance on the achievement criteria for each level.</td>
<td>Defines the weighting of theory and practical (lab) marks by GAC to be used to calculate an apprentice’s in-school mark for each level. The practical weighting is a reflection of performance on the achievement criteria for each level.</td>
<td>Defines the weighting of theory and practical (lab) marks by GAC to be used to calculate an apprentice’s in-school mark for each level. The practical weighting is a reflection of performance on the achievement criteria for each level.</td>
<td>Understand the relative weightings of various competencies of the occupation on which assessment is based.</td>
<td></td>
</tr>
<tr>
<td><strong>Assessment Guidelines</strong></td>
<td>Defines the weighting of the in-school mark to the standard level exam mark (where applicable) in order to calculate an apprentice’s final mark for each level. Assessment Guidelines also define the weighting of the in-school mark to the standard level exam mark.</td>
<td>Defines the weighting of the in-school mark to the standard level exam mark (where applicable) in order to calculate an apprentice’s final mark for each level. Assessment Guidelines also define the weighting of the in-school mark to the standard level exam mark.</td>
<td>Defines the weighting of the in-school mark to the standard level exam mark (where applicable) in order to calculate an apprentice’s final mark for each level. Assessment Guidelines also define the weighting of the in-school mark to the standard level exam mark.</td>
<td></td>
</tr>
</tbody>
</table>
Section 2

PROGRAM OVERVIEW

Wall and Ceiling Installer
Program Overview

Program Credentialing Model

C of Q = Certificate of Qualification
C of A = Certificate of Apprenticeship

RECOMMENDATION FOR CERTIFICATION

Wall and Ceiling Installer Level 3
Technical Training: 180 hours
Work-Based Training: 6,000 hours total
Interprovincial Red Seal Exam

Wall and Ceiling Installer Level 2
Technical Training: 180 hours
Work-Based Training: Accumulate hours
ITA Standardized Written Exam

Wall and Ceiling Installer Level 1
Technical Training: 180 hours
Work-Based Training: Accumulate hours
ITA Standardized Written Exam

APPRENTICESHIP - DIRECT ENTRY

CROSS-PROGRAM CREDITS

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

C of Q Carpenter
Technical Training: None
Work-Based Training: 1,200 hours*

C of Q Construction Craft Worker
Technical Training: None
Work-Based Training: 1,200 hours*

C of Q Drywall Finisher
Technical Training: None
Work-Based Training: 1,200 hours*

C of Q Glazier
Technical Training: None
Work-Based Training: 1,200 hours*

*Individuals who are holders of one or more certificates will only be awarded credit for 1,200 Work-Based Training hours total.
### Program Overview

**Occupational Analysis Chart**

**WALL AND CEILING INSTALLER**

**Occupation Description:** A “Wall and Ceiling Installer” performs job layout using blueprints, and installs, handles, erects and applies materials that are component parts in the construction of ceilings and walls. Wall and Ceiling Installers install support frameworks for ceiling systems, interior and exterior walls, build interior partitions and install drywall and other sheathing on walls and ceilings. They also install curtain walls, fire and sound systems, acoustical installations, access flooring, demountable partitions, shielded walls, and apply building envelope technologies. Wall and Ceiling Installers were previously designated as Lathers or Interior Systems Mechanics in BC.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Task Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>Apply Safe Work Practices</td>
</tr>
<tr>
<td></td>
<td>Use Personal Protective Equipment</td>
</tr>
<tr>
<td></td>
<td>Control Workplace Hazards</td>
</tr>
<tr>
<td></td>
<td>Apply GHS 2015 (WHMIS)</td>
</tr>
<tr>
<td></td>
<td>Apply OHS Regulations and WorkSafeBC Standards</td>
</tr>
<tr>
<td></td>
<td>Attain First Aid Certification</td>
</tr>
<tr>
<td></td>
<td>Apply Fall Arrest Procedures</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>Apply Codes, Standards and Documentation</td>
</tr>
<tr>
<td></td>
<td>Apply Codes and Regulations</td>
</tr>
<tr>
<td></td>
<td>Apply Fire Assembly Requirements</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>Use Trade Related Skills</td>
</tr>
<tr>
<td></td>
<td>Use Blueprints and Specifications</td>
</tr>
<tr>
<td></td>
<td>Apply Trade Math</td>
</tr>
<tr>
<td></td>
<td>Plan a Project</td>
</tr>
<tr>
<td></td>
<td>Use Trade Related Communication Skills</td>
</tr>
<tr>
<td></td>
<td>Describe Construction Trade Structure and Concepts</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>Use Ladders, Scaffolds and Lift Equipment</td>
</tr>
<tr>
<td></td>
<td>Use Ladders, Scaffolds and Aerial Lifts</td>
</tr>
<tr>
<td></td>
<td>Describe Rigging and Hoisting Practices</td>
</tr>
<tr>
<td>Program Summary</td>
<td>Module</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Install Acoustical Ceilings</td>
<td>K</td>
</tr>
<tr>
<td>Build Basic Acoustical Ceilings</td>
<td>K1</td>
</tr>
<tr>
<td>Build Specialty Acoustical Ceilings</td>
<td>K2</td>
</tr>
<tr>
<td>Install Specialty Systems</td>
<td>L</td>
</tr>
<tr>
<td>Install Traditional Lath and Trims on Walls and Ceilings</td>
<td>L1</td>
</tr>
<tr>
<td>Build Access Floor Systems</td>
<td>L2</td>
</tr>
<tr>
<td>Build Demountable Partitions</td>
<td>L3</td>
</tr>
<tr>
<td>Install Specialty Ceilings</td>
<td>L4</td>
</tr>
<tr>
<td>Install Drywall Taping &amp; Finishing</td>
<td>M</td>
</tr>
<tr>
<td>Describe Drywall Finishing Process</td>
<td>M1</td>
</tr>
<tr>
<td>Install Drywall Compounds, Tape, Beads, Trims and Expansion Joints</td>
<td>M2</td>
</tr>
<tr>
<td>Install Exterior Building Envelope Technologies</td>
<td>N</td>
</tr>
<tr>
<td>Install Air and Vapour Barriers</td>
<td>N1</td>
</tr>
<tr>
<td>Install Exterior Finishes</td>
<td>N2</td>
</tr>
<tr>
<td>Install Rainscreen Systems</td>
<td>N3</td>
</tr>
</tbody>
</table>
## Program Overview

### Training Topics and Suggested Time Allocation

**LATHER (INTERIOR SYSTEMS MECHANIC) (WALL AND CEILING INSTALLER) – 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>A</td>
<td>APPLY SAFE WORK PRACTICES</td>
<td>14%</td>
<td>90%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>A1</td>
<td>Use Personal Protective Equipment</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Control Workplace Hazards</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Apply GHS 2015 (WHIMIS)</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>Apply OHS Regulations and WorkSafeBC Standards</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>Apply Fall Arrest Procedures</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>USE TRADE RELATED SKILLS</td>
<td>20%</td>
<td>90%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>C1</td>
<td>Use Blueprints and Specifications</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Apply Trade Math</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>Use Trade Related Communication Skills</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>Describe Construction Trade Structure and Concepts</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>USE LADDERS, SCAFFOLDS AND LIFT EQUIPMENT</td>
<td>5%</td>
<td>80%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>D1</td>
<td>Use Ladders, Scaffolds and Aerial Lifts</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>Describe Rigging and Hoisting Practices</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>USE TOOLS AND EQUIPMENT</td>
<td>10%</td>
<td>60%</td>
<td>40%</td>
<td>100%</td>
</tr>
<tr>
<td>E1</td>
<td>Use Hand Tools</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2</td>
<td>Use Power Tools</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3</td>
<td>Use Powder-Actuated and Gas-Actuated Tools</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>E4</td>
<td>Use Measurement and Layout Tools</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>INSTALL INSULATION</td>
<td>7%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>F1</td>
<td>Install Thermal and Acoustic Insulation</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td>Control Mold</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>INSTALL NON LOAD BEARING METAL FRAMING</td>
<td>26%</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
</tr>
<tr>
<td>G1</td>
<td>Build Walls, Ceilings and Bulkheads</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>INSTALL GYPSUM WALLBOARD PRODUCTS</td>
<td>18%</td>
<td>60%</td>
<td>40%</td>
<td>100%</td>
</tr>
<tr>
<td>I1</td>
<td>Install Gypsum Wallboard</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Percentage for Wall and Ceiling Installer Level 1</strong></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Program Overview

### Training Topics and Suggested Time Allocation

**LATHER (INTERIOR SYSTEMS MECHANIC) (WALL AND CEILING INSTALLER) – LEVEL 2**

<table>
<thead>
<tr>
<th>Line</th>
<th>Topic</th>
<th>% of Time Allocated to:</th>
<th>% of Time</th>
<th>Theory</th>
<th>Practical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>APPLY CODES, STANDARDS AND DOCUMENTATION</td>
<td>10%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>Apply Codes and Regulations</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Apply Fire Assembly Requirements</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>USE TRADE RELATED SKILLS</td>
<td>17%</td>
<td>70%</td>
<td>30%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>Use Blueprints and Specifications</td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Apply Trade Math</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>INSTALL INSULATION</td>
<td>5%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>Install Vapour Barriers and Sealants</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>INSTALL NON LOAD BEARING METAL FRAMING</td>
<td>25%</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>G1</td>
<td>Build Walls, Ceilings and Bulkheads</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td>Install Wood and Metal Backing</td>
<td></td>
<td></td>
<td>✔ ✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3</td>
<td>Install Pressed Steel Frames</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4</td>
<td>Install Access Panels</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>INSTALL GYPSUM WALLBOARD PRODUCTS</td>
<td>15%</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>I1</td>
<td>Install Gypsum Wallboard</td>
<td></td>
<td></td>
<td>✔ ✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I2</td>
<td>Install Materials for Lead Radiation Shielding</td>
<td></td>
<td>✔ ✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I3</td>
<td>Install Security Mesh</td>
<td></td>
<td></td>
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<tr>
<td>J</td>
<td>INSTALL FIREPROOFING AND SOUNDPROOFING</td>
<td>5%</td>
<td>80%</td>
<td>20%</td>
<td>100%</td>
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</tr>
<tr>
<td>J2</td>
<td>Install Materials for Fireproofing and Smoke Seals</td>
<td></td>
<td>✔ ✔</td>
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<tr>
<td>J3</td>
<td>Install Shaft Wall Assemblies</td>
<td></td>
<td></td>
<td>✔ ✔</td>
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<tr>
<td>K</td>
<td>INSTALL ACOUSTICAL CEILINGS</td>
<td>12%</td>
<td>60%</td>
<td>40%</td>
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<tr>
<td>K1</td>
<td>Build Basic Acoustical Ceilings</td>
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<td>✔ ✔</td>
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</tr>
<tr>
<td>M</td>
<td>INSTALL DRYWALL TAPING AND FINISHING</td>
<td>8%</td>
<td>40%</td>
<td>60%</td>
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<td>M1</td>
<td>Describe Drywall Finishing Process</td>
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<td>✔ ✔</td>
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<tr>
<td>M2</td>
<td>Install Drywall Compounds, Tape, Beads, Trims and Expansion Joints</td>
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<td>✔ ✔</td>
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<td>N</td>
<td>APPLY EXTERIOR BUILDING ENVELOPE TECHNOLOGIES</td>
<td>3%</td>
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<td>100%</td>
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<tr>
<td>N1</td>
<td>Install Air and Vapour Barriers</td>
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</table>

**Total Percentage for Wall and Ceiling Installer Level 2**

100%
# Program Overview

## Training Topics and Suggested Time Allocation

**LATHER (INTERIOR SYSTEMS MECHANIC) (WALL AND CEILING INSTALLER) – LEVEL 3**

<table>
<thead>
<tr>
<th>Line</th>
<th>Training Topic</th>
<th>% of Time Allocated to:</th>
<th>Theory</th>
<th>Practical</th>
<th>Total</th>
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<tr>
<td></td>
<td><strong>% of Time</strong></td>
<td><strong>% of Time</strong></td>
<td><strong>%</strong></td>
<td><strong>%</strong></td>
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<tr>
<td>Line C</td>
<td><strong>USE TRADE RELATED SKILLS</strong></td>
<td>15%</td>
<td>60%</td>
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<td>C1</td>
<td>Use Blueprints and Specifications</td>
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</tr>
<tr>
<td>C2</td>
<td>Apply Trade Math</td>
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<tr>
<td>C3</td>
<td>Plan a Project</td>
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<tr>
<td>Line H</td>
<td><strong>INSTALL LOAD BEARING METAL FRAMING</strong></td>
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<td>45%</td>
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<td>H1</td>
<td>Build Wind Load and Axial Load Bearing Walls</td>
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<td>H2</td>
<td>Install Exterior Walls and Panelized Systems</td>
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<tr>
<td>H3</td>
<td>Install Floor Joists</td>
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<td>H4</td>
<td>Describe Roof Rafters</td>
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<td>Line J</td>
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<td>100%</td>
<td>0%</td>
<td>100%</td>
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<td>J1</td>
<td>Install Soundproofing Materials</td>
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<td></td>
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<tr>
<td>Line K</td>
<td><strong>INSTALL ACOUSTICAL CEILINGS</strong></td>
<td>10%</td>
<td>50%</td>
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<td>100%</td>
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<tr>
<td>K2</td>
<td>Build Specialty Acoustical Ceilings</td>
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<td>Line L</td>
<td><strong>INSTALL SPECIALTY SYSTEMS</strong></td>
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<td>L1</td>
<td>Install Traditional Lath and Trims on Walls and Ceilings</td>
<td></td>
<td></td>
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<tr>
<td>L2</td>
<td>Build Access Floor Systems</td>
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<td></td>
</tr>
<tr>
<td>L3</td>
<td>Build Demountable Partitions</td>
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<tr>
<td>L4</td>
<td>Install Specialty Ceilings</td>
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<td>Line N</td>
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<td>95%</td>
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<td>N2</td>
<td>Install Exterior Finishes</td>
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<td></td>
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</tr>
<tr>
<td>N3</td>
<td>Install Rainscreen Systems</td>
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<td><strong>Total Percentage for Wall and Ceiling Installer Level 3</strong></td>
<td>100%</td>
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</table>
Section 3

PROGRAM CONTENT

Wall and Ceiling Installer
Level 1

Wall and Ceiling Installer
Line (GAC): A APPLY SAFE WORK PRACTICES
Competency: A1 Use Personal Protective Equipment

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

- Select Personal Protective Equipment (PPE) required for a given task.

LEARNING TASKS

1. Describe personal protective work clothes and equipment

   • Clothing
     - Personal apparel
     - Interior/exterior environments
     - Weather related gear
     - Hazardous waste suits
     - Disposable coveralls

   • Equipment
     - Safety hard hat
     - Respiratory protection
     - Eye protection/face shields
     - Hearing protection
     - Work gloves
     - Safety footwear
     - Knee pads

2. Select PPE required for a given task

3. Maintain PPE

4. Use Personal Protective Equipment

   • According to job/site requirements
   • Organization
   • Storage
   • Maintenance (according to Manufacturer specifications, WorkSafeBC/OHS)

   • According to task

Achievement Criteria
Performance The learner will select and fit PPE for a given task.
Conditions The learner will be given:

- Instructions.
- Equipment.

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

- Proper selection of PPE for the task.
- Proper fit/adjustment of the PPE.
Line (GAC): A APPLY SAFE WORK PRACTICES
Competency: A2 Control Workplace Hazards

Objectives
To be competent in this area, the individual must be able to:
- Identify workplace hazards.
- Control workplace hazards.

LEARNING TASKS
1. Identify workplace hazards

<table>
<thead>
<tr>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental conditions – e.g. proper lighting</td>
</tr>
<tr>
<td>Tools and equipment</td>
</tr>
<tr>
<td>Slipping and tripping hazards</td>
</tr>
<tr>
<td>Waste materials</td>
</tr>
<tr>
<td>Surplus materials</td>
</tr>
<tr>
<td>Sharp protrusions – e.g. nails</td>
</tr>
<tr>
<td>Barricades and warning tape</td>
</tr>
<tr>
<td>Footing for scaffolding and ladder equipment</td>
</tr>
<tr>
<td>Signage related to hazards</td>
</tr>
<tr>
<td>Overhead</td>
</tr>
<tr>
<td>Electrical</td>
</tr>
<tr>
<td>Seasonal</td>
</tr>
<tr>
<td>Improper ventilation</td>
</tr>
<tr>
<td>Compressed gas</td>
</tr>
<tr>
<td>Adhesives</td>
</tr>
<tr>
<td>Powder-actuated charges</td>
</tr>
<tr>
<td>Silicosis</td>
</tr>
<tr>
<td>Cementious products</td>
</tr>
<tr>
<td>Wood preservatives</td>
</tr>
<tr>
<td>Paints, varnishes, solvents and primers</td>
</tr>
<tr>
<td>Dust and particulates</td>
</tr>
<tr>
<td>Fire hazards</td>
</tr>
</tbody>
</table>

2. Maintain a safe work environment

<table>
<thead>
<tr>
<th>Employer or Prime/General Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure materials and goods are systematically supplied and properly placed</td>
</tr>
<tr>
<td>Provide safe working equipment as required</td>
</tr>
<tr>
<td>Ensure sufficient task lighting</td>
</tr>
<tr>
<td>Provide “Danger” signage and barricades where required</td>
</tr>
<tr>
<td>Provide “No Smoking” signage</td>
</tr>
</tbody>
</table>
LEARNING TASKS

3. Control workplace hazards

CONTENT

where required

- Provide dust barriers and hoarding
- Guardrail requirements
- Ensure access ways are kept free from obstructions
- Ensure fall protection is in place

- Employee
  - Be physically and mentally prepared for work
  - Adhere to safety rules and regulations
  - Maintain placement of warning signage, guardrails, and barricades
  - Keep work area free from debris
  - Install materials appropriately and safely
  - Store materials, tools and equipment in designated areas
  - Use tools, equipment, ladders and scaffolds appropriately and safely
  - Use personal protective equipment as required

- Organized work area
- Storage of tools, equipment and materials
- Appropriate signage
- Training of new workers
- Awareness of safety regulations
- Maintain clean work area
- Store tools, equipment and materials
- Provide adequate lighting for working
- Organize and maintain tools and equipment
- Eliminate slipping and tripping hazards
- Dispose waste materials properly
- Eliminate sharp protrusions – e.g. nails
- Use barricades and warning tape to control or prevent traffic
- Ensure firm, level ground when using scaffolding and ladder equipment
- Training of new workers
LEARNING TASKS

CONTENT

• Adhere to safety regulations
• As per job requirements
• As per WorkSafeBC
• As per site specifications
• As per employer safety manual
Line (GAC): A APPLY SAFE WORK PRACTICES
Competency: A3 Apply GHS 2015 (WHMIS)

Objectives
To be competent in this area, the individual must be able to:
• Interpret Safety Data Sheets (SDS) sheets.
• Use GHS 2015 (WHMIS) and related materials.

LEARNING TASKS
1. Explain the purpose of GHS 2015 (WHMIS)
   • Canada-wide legislated system
   • Provides information on workplace hazardous materials
   • How to safely use, store and handle hazardous materials
   • Although nation-wide, employer GHS 2015 (WHMIS) compliance is regulated and enforced by WorkSafeBC

2. Describe the three elements of the GHS 2015 (WHMIS) system
   • WHMIS labels
   • Safety Data Sheets (SDS)
   • WHMIS education and training programs

3. Describe supplier, employer and worker responsibilities regarding GHS 2015 (WHMIS)
   • Supplier
     o Classify controlled products
     o Supply proper labels and SDS
     o Keep information on labels and SDS current
   • Employer
     o Educate and train workers
     o Provide safe work practices
     o Ensure availability of proper and up-to-date labels and SDS
   • Worker
     o Understand content and significance of labels and SDS
     o Follow safe work procedures
     o Know how to find SDSs
     o Notify employers about problems with labels and SDS

4. Identify the warning labels and symbols on hazardous materials
   • Supplier labels must appear on all controlled products received at workplaces in Canada and contain the following information:
     o Product identifier (name of product)
LEARNING TASKS

5. Describe hazardous materials common to the construction workplace

6. Describe "Routes of Entry" of hazardous materials into the body

7. Use workplace labels

8. Describe the safety implications of information on SDS

CONTENT

- Hazard symbols
- Risk phrases (words that describe the main hazards of the product)
- Precautionary statements
- First aid measures
- Reference to SDS
- Supplier identifier

- Labels for the six classes of hazardous materials
- Dusts and particulates including fiberglass, drywall, cement, wood
- Caulking compounds
- Solvents
- Adhesives and glue
- Compressed gases
- Expandable foam insulation
- Taping compounds
- Concrete curing compounds
- Powder-actuated charges
- Muriatic acid
- Paints/varnishes
- Wood preservatives

- Respiratory
- Oral ingestion
- Skin absorption

- Information required on secondary containers:
  - Product name
  - Safe handling procedures
  - Reference to SDS

- Product information
- Hazardous ingredients
- Physical data
- Fire and explosion hazards
- Reactivity data
- Health hazards
- First aid measures
- Preventative measures
- Preparation information
Program Content
Level 1

Line (GAC): A APPLY SAFE WORK PRACTICES
Competency: A4 Apply OHS Regulations and WorkSafeBC Standards

Objectives
To be competent in this area, the individual must be able to:
• Apply OHS and WorkSafeBC regulations.

LEARNING TASKS
1. Describe WorkSafeBC functions and procedures
   • Inspects places of employment
   • Investigates accidents and causes of industrial disease
   • Assists in developing health and safety programs
   • Provides rehabilitation and retraining for injured workers
   • Assists in creating a safe place to work

2. Describe employer roles and responsibilities
   • Register with WorkSafeBC
   • Create a safe work environment that allows workers to ask safety questions
   • Provide training to ensure a safe workplace
   • Provide required safety equipment (excludes footwear and headgear)
   • Report workplace injury or disease to WorkSafeBC
   • Provide transportation to medical provider for injured worker if necessary
   • Employer receives verbal confirmation of instructions given to employee

3. Describe employee rights and responsibilities
   • Receive training in safe work procedures and hazard recognition
   • Receive safety equipment required to perform work
   • Right to refuse unsafe work
   • Right to participate in Health and Safety Committees
   • Responsibility to adhere to safety rules and regulations
   • Report workplace injuries
   • Verbally confirms instructions from employer
<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
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<tbody>
<tr>
<td>4. Apply regulations</td>
<td>• Interpretation of the National Building Code</td>
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<td></td>
<td>• Body protection (head, feet and hands)</td>
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<td>• Eye and ear protection</td>
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<td></td>
<td>• Respiratory equipment</td>
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<td>• Ventilation</td>
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<td></td>
<td>• Power tool equipment</td>
</tr>
<tr>
<td></td>
<td>• Ladders and scaffolds</td>
</tr>
<tr>
<td></td>
<td>• Aerial lift equipment</td>
</tr>
<tr>
<td></td>
<td>• Completion of safety documentation such as accident reports and hazard assessments</td>
</tr>
<tr>
<td>5. Adhere to describe injury-reporting procedures</td>
<td>• Identify first aid room</td>
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<tr>
<td></td>
<td>• Get first aid</td>
</tr>
<tr>
<td></td>
<td>• Get medical attention</td>
</tr>
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<td></td>
<td>• Notify the supervisor</td>
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<tr>
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<td>• WorkSafeBC requirements</td>
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<td>6. Describe first aid practices</td>
<td>• CPR</td>
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<tr>
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<td>• Bandaging</td>
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<tr>
<td></td>
<td>• Slings</td>
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<td>• Splints</td>
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<td>• Compression</td>
</tr>
<tr>
<td></td>
<td>• 911 protocol</td>
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</table>
Objectives
To be competent in this area, the individual must be able to:
- Set up fall arrest and restraint systems.
- Use fall protection equipment and systems.

<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
</tr>
</thead>
</table>
| 1. Describe a fall protection plan | • Employer responsibility  
• Where permanent guardrails are not in place  
• Written plan in place before a risk of falling begins  
  o Fall hazards  
  o Fall protection system  
  o Fall rescue plan and instructions  
  o Instructions to workers on how to use safety equipment |
| 2. Set up a fall restraint system | • Fall restraint prevents falls  
• Used when travel restriction systems of guardrails cannot be utilized  
  o Safety belts or full body harness  
  o Lanyards  
  o Lifelines  
  o Rope grabs  
  o Anchors |
| 3. Set up a fall arrest system | • Fall protection system that will stop a worker’s fall before the worker hits the surface below  
• Full body harness connected by lanyards to life lines or secure anchors  
  o Full body harness  
  o Lanyards  
  o Lifelines  
  o Rope grabs  
  o Anchors  
• Use of safety nets  
• According to job requirements and safety regulations |
| 4. Use Personal Protective Equipment | |

**Program Content**
**Level 1**

Line (GAC): A  APPLY SAFE WORK PRACTICES
Competency: A6  Apply Fall Arrest Procedures
Achievement Criteria

Performance  The learner will perform a fit test.
Conditions    The learner will be given:
              • A 5-point harness with a D-clip at the back.
Criteria      The learner will score 70% or better on a rating sheet that reflects the following criteria:
              • D-ring position (between shoulders).
              • Snugness of fit.
Program Content
Level 1

Line (GAC): C USE TRADE RELATED SKILLS
Competency: C1 Use Blueprints and Specifications

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

- Identify purpose of blueprints.
- Identify elements of a blueprint.

LEARNING TASKS

1. Read an architect’s scale

2. Identify the types of lines, symbols and abbreviations used in blueprints

   - Lines
     - Grid or bay lines
     - Break lines
     - Object line
     - Hidden object lines
     - Symbols and abbreviations
     - Dimension lines
     - Directional lines

3. Describe purpose of blueprints

4. Identify sections and elements of a set of blueprints

   - Specifications
   - Blueprint cover sheet
   - Working drawings
     - Architectural
   - Schedules
   - Symbols and abbreviations
   - Scale

CONTENT

- Imperial
- Metric
- Conversions
- Lines
- Symbols
- Abbreviations
- Purpose
  - Communicate work requirements and coordination with all trades
  - Drawings, specifications, and schedules
  - Layout walls and ceilings
- Types of projections
  - Isometric
  - Orthographic
- Perspective
Achievement Criteria

Performance  The learner will interpret a print, and answer questions related to measurement, location and layout.

Conditions  The learner will be given:
  • A print.
  • Instructions.
  • Questions.

Criteria  The learner will score 70% or better on a rating sheet that reflects the following criteria:
  • Accuracy of answers.
Line (GAC): C USE TRADE RELATED SKILLS

Competency: C2 Apply Trade Math

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

• Apply trade math concepts.
• Apply conversions in the imperial and metric systems.

LEARNING TASKS

1. Apply trade math concepts
   • Mathematical concepts
   • Operations
     o Multiplication
     o Addition
     o Subtraction
     o Division
   • Fractions
   • Decimals

2. Apply conversions in the imperial and metric systems.
   • Within the imperial system
     o Feet to inches
     o Square inches to square feet
   • Within the metric system
     o Millimetres to centimeters
     o Centimeters to metres
Line (GAC): C USE TRADE RELATED SKILLS
Competency: C4 Use Trade-Related Communication Skills

Objectives
To be competent in this area, the individual must be able to:
• Use communication tools and media.
• Communicate with others.
• Coordinate work with other trades.

LEARNING TASKS
1. Describe methods of communication
   • Listening
   • Verbal
   • Written
   • Drawings
   • Trade terminology
   • Two-way radios
   • Computers
   • Interpersonal skills
   • Signage
   • Overhead hazards
   • Control zone - tapes (yellow, red, etc)

2. Communicate with others
   • Other trades
   • Industry people
   • Apprentices (mentoring)
   • Completion of work-related documents such as records, time sheets and deficiency lists

3. Coordinate work with other trades
   • Interest groups
     o Architects and engineers
     o General contractor
     o Construction manager
     o Site superintendent
     o Sub-trades
     o Inspectors
     o Crew foreman/supervisor
     o Lead hand
     o Journeypersons
     o Apprentices
   • Sub trade schedules
   • Requirements of other trades on site
   • Coordinating work through general contractor
   • Anticipating and solving problems
LEARNING TASKS

4. Describe types of signals

5. Recognize hand signals used to control hoist operations

CONTENT

- Communication and cooperation with others
- Hand signals
- Bell/horn signals
- Light signals
- Radio signals
- WorkSafeBC Regulations
- Raise load
- Lower load
- Raise boom
- Lower boom
- Retract/extend boom
- Swing boom
- Stop
- Move slowly
- Dog (stop) everything
- Dual motion signals
Line (GAC): C USE TRADE RELATED SKILLS
Competency: C5 Describe Construction Trade Structure and Concepts

Objectives
To be competent in this area, the individual must be able to:
- Define trade structure and concepts.
- Use trade terminology.

LEARNING TASKS
1. Describe work performed by Wall and Ceiling Installers
   - Installation tasks
   - Fire proofing
   - Sound proofing
   - Technologies
   - Systems
   - Wall and Ceiling trades
     - Metal stud framer
     - Gypsum wallboard installer
     - Wire lath installers
     - Ceiling installers
   - Structural metal framing
   - Access flooring
   - Drywall taping and finishing

2. Describe the construction industry hierarchy
   - Owners
   - Architects
   - Engineers
   - Managers
   - Sub-contractors
   - Labour contractors

3. Use construction terminology
   - According to glossary of terms and definitions as defined in Association of Wall and Ceiling Contractors manual
Line (GAC): D USE LADDERS, SCAFFOLDS AND LIFT EQUIPMENT
Competency: D1 Use Ladders, Scaffolds and Aerial Lifts

Objectives
To be competent in this area, the individual must be able to:
- Use ladders, scaffolds and elevated platforms.
- Maintain access and hoisting equipment.

LEARNING TASKS
1. Describe scaffolding and elevated platforms

CONTENT
- Types and applications
- Scaffolds
  - Utility
  - Mechanical
  - Ground-based
  - Rolling
  - Stationary
  - Ladder jack
  - Tubular
  - Hydraulic
  - Jack-up
- Aerial work platforms
- Swing stages
- Step ups
- Boatswain’s chair
- Stilts
- Components
  - Stirrups
  - Planks
  - Outriggers and cross braces
  - Hand rails and posts
  - Kick boards
  - Mud sills
  - Adjustable screw jacks/wheels
  - Aluminum and wooden planks
- Safety
  - Hazard recognition
  - Fall arrest, restraint and prevention
  - Height restrictions
  - OHS and site-specific
  - Competency to build scaffolds (up to three high) for inspection and erection
LEARNING TASKS

2. Describe types of ladders

3. Use ladders and scaffolding

4. Use an elevated platform

5. Maintain scaffolding and ladders

CONTENT

- Maintaining three point contact

- Single free standing and extension
- Step
- Trestle and extension trestle
- Job built ladders

- Selection
- Site hazards
- Inspections
- Set up, layout and levelling
- Restrictions
- Securing
- Moving ladders
- Competency levels for inspection and erection
- Adherence to manufacturer specifications and WorkSafeBC regulations and/or engineered drawings

- Selection
- Site hazards
- Set up, layout and levelling
- Tie-in to existing wall
- Install mud sills
- Restrictions

- Maintenance
- As per manufacturer’s specifications
- Storage
- Transportation

Achievement Criteria

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

Conditions   The learner will be given:
- Scaffold and components.
- Instructions.

Criteria      The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety.
- Level.
- Braces in proper spot.
- Proper base support.
- Proper use of components.
Program Content  
Level 1

<table>
<thead>
<tr>
<th>Line (GAC):</th>
<th>D</th>
<th>USE LADDERS, SCAFFOLDS AND LIFT EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency:</td>
<td>D2</td>
<td>Describe Rigging &amp; Hoisting Practices</td>
</tr>
</tbody>
</table>

Objectives
To be competent in this area, the individual must be able to:
• Describe rigging and hoisting.

**LEARNING TASKS**

1. Describe safe rigging and hoisting practices

**CONTENT**

• WorkSafeBC Regulations
• Identify hazards
  o Unknown safe working loads
  o Defective components
  o Unsafe equipment
  o Wind/weather conditions
  o Power lines
• Personal protective clothing and equipment
• Housekeeping
• Handling of loads supported by cranes
• Correct material storage
Line (GAC): E USE TOOLS AND EQUIPMENT
Competency: E1 Use Hand Tools

Objectives
To be competent in this area, the individual must be able to:
• Use hand tools.
• Maintain hand tools.

LEARNING TASKS
1. Describe hand tools
   • Types
   • Purpose
   • Application
   • Parts
   • See Tools and Equipment for complete list of tools

2. Use hand tools
   • Safety
   • According to WorkSafeBC regulations
   • According to job requirements

3. Maintain hand tools
   • Maintenance procedures
   • Adjustments
   • According to manufacturer’s instructions
   • Storage
Line (GAC): E  USE TOOLS AND EQUIPMENT
Competency: E2 Use Power Tools

Objectives
To be competent in this area, the individual must be able to:
- Use power and pneumatic tools.
- Maintain power and pneumatic tools.

<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe power and pneumatic tools</td>
<td>• Types</td>
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<tr>
<td></td>
<td>• Components</td>
</tr>
<tr>
<td></td>
<td>• Purpose</td>
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<td></td>
<td>• Application</td>
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<td></td>
<td>• See Tools and Equipment for list</td>
</tr>
<tr>
<td>2. Use power and pneumatic tools</td>
<td>• Safety</td>
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<tr>
<td></td>
<td>• According to WorkSafeBC regulations</td>
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<tr>
<td></td>
<td>• According to job requirements</td>
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<tr>
<td>3. Maintain power and pneumatic tools</td>
<td>• Maintenance procedures</td>
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<td></td>
<td>• Adjustments</td>
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<td></td>
<td>• According to manufacturer’s instructions</td>
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<td></td>
<td>• Storage</td>
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</tbody>
</table>
Line (GAC): E USE TOOLS AND EQUIPMENT
Competency: E3 Use Powder-Actuated and Gas-Actuated Tools

Objectives
To be competent in this area, the individual must be able to:
• Use gas and powder-actuated tools.
• Maintain gas and powder-actuated tools.

LEARNING TASKS

1. Describe powder-actuated tools

   • Types
   • Components
   • Purpose
   • Application
   • See Tools and Equipment for list of powder-actuated tools

2. Use powder-actuated tools

   • Safety
   • According to WorkSafeBC regulations
   • According to job requirements
   • Types of charges
     o Low to high velocity
   • Types of fasteners
   • Methods of propulsion
     o Co-acting
     o Impact
     o Contact
     o Electric
     o Gas

3. Maintain powder-actuated tools

   • Maintenance procedures
   • Adjustments
   • According to manufacturer’s instructions
   • Storage

4. Describe gas-actuated tools

   • Types
   • Components
   • Purpose
   • Application
   • See Tools and Equipment for list of gas-actuated tools

5. Use gas-actuated tools

   • Safety
   • According to WorkSafeBC regulations
   • According to job requirements
LEARNING TASKS

6. Maintain gas-actuated tools
   • Maintenance procedures
   • Adjustments
   • According to manufacturer’s instructions
   • Storage

7. Describe job restrictions
   • Substrate restrictions
   • Correct equipment for the substrate
   • Ticketing

Achievement Criteria

Performance The learner will demonstrate proper set-up, safe use, disassembly and maintenance of powder-actuated tools

Conditions The learner will be given:
   • Tools.
   • Instructions.

Criteria The learner will score 70% or better on a rating sheet that reflects the following criteria:
   • Safety.
   • Adherence to procedures.
   • Proper maintenance and cleaning.
   • Inspection for defects.
Program Content
Level 1

Line (GAC): E USE TOOLS AND EQUIPMENT
Competency: E4 Use Measurement and Layout Tools

Objectives
To be competent in this area, the individual must be able to:
• Use measurement and layout tools.

LEARNING TASKS

1. Describe types of measurement and layout tools
   • Types
   • Purpose
   • Application
   • Parts
   • See Tools and Equipment for complete list of tools

2. Use measurement and layout tools
   • Safety
   • According to WorkSafeBC regulations
   • According to job requirements

3. Maintain measurement and layout tools
   • Maintenance procedures
   • Adjustments
   • According to manufacturer’s instructions
   • Storage
Line (GAC): F INSTALL INSULATION  
Competency: F1 Install Thermal and Acoustic Insulation

Objectives
To be competent in this area, the individual must be able to:
• Install thermal insulation.
• Install acoustical insulation.

LEARNING TASKS

1. Describe principles of thermal insulation
   • Preventing heat loss
   • Conduction
   • Convention Radiation
   • Insulating values
   • Causes of heat loss
     ◦ Below grade in foundation walls and slabs
     ◦ Above grade in foundation walls
     ◦ In walls

2. Describe types of thermal insulation
   • Flexible fibreglass insulation batts
   • Blown insulation
   • Spray insulation
   • Rigid fibreglass insulation sheathing
   • Semi–rigid fibreglass wall insulation
   • Mineral fibre
   • Extruded polystyrene
   • Fibreglass insulation for commercial construction
     ◦ Acoustic/thermal batts
     ◦ Partition batts
     ◦ Thermal Kraft-face batts
     ◦ Reflective thermal foil-faced batts
     ◦ Fire-resistant batts
     ◦ Extended-flange batts
     ◦ Loose-fill fibreglass

3. Install thermal insulation
   • Types
     ◦ Flexible
     ◦ Loose fill
     ◦ Rigid
     ◦ Reflective
     ◦ Expandable foam
   • Fill wall and/or ceilings to specified
LEARNING TASKS

4. Describe the principles of acoustical insulation

- Noise problems
- Airborne sound
- Structure borne sound transmissions (floors and ceilings)
- Control of airborne sound
- Lightweight double-leaf acoustic wall assemblies
- Insulation density
- Sound flanking
- Control of structure borne sound

5. Describe acoustic wall assemblies

- Gypsum board
  - Types
  - Thickness
  - Layers
- Wall studs
  - Wood
  - Steel
  - Size
- Resilient channels
- Insulation materials
  - Mineral fibre
  - Fibreglass insulation
  - Acoustic batts
  - Partition batt
  - Spray foam
- Shaft wall system
- High density ceiling tiles and wall panels and sound baffles

6. Describe types of acoustical insulation

- Types of sound barriers
  - Acoustical batt insulation
  - Plenum baffles
LEARNING TASKS

7. Install acoustical insulation

CONTENT

- Lead sheeting
- Steel stud and drywall
- Pre-finished sound panels
- Acoustical rigid fibreglass board with black facing
- Acoustical black fibreglass with black surface
- Acoustical rigid duct board
- Foil backed rigid duct board
- Duct liner
- Acoustical ceiling batts
- Loose-filled fibreglass insulation
- Blown insulation
- Spray on insulation
- Commercial ceiling systems
- Panels
- Sealants
- Insulation tape and strips
- Mechanical fasteners and adhesives (Refer to Tools and Equipment)
- Framing assemblies
- To manufacturer’s instructions
- Lead sheeting and approved fastening system
Objectives
To be competent in this area, the individual must be able to:
- Describe mold, its causes and related issues.
- Describe susceptibility to mold.
- Describe occupational health and safety requirements.
- Prevent mold.
- Apply mold remediation and mitigation methods.

LEARNING TASKS

1. Describe mold
   - Form of fungi – many species
   - Remediation levels (1, 2, 3)
   - Present indoors and outdoors
   - Temperature, moisture and nutrients creates ideal breeding
   - Recognition through smell or odour
   - Colonization on building materials
   - Professional mold identification and training for mold removal

2. Explain issues related to mold
   - Health of workers and occupants
   - Removal of mold in existing buildings
   - Construction processes to reduce/prevent mold growth
   - Lawsuits

3. Describe the building components that are commonly susceptible to mold growth
   - Gypsum board
   - Wood products
   - Ceiling tiles
   - Wallpaper
   - Carpets
   - Exposed soil in crawl spaces

4. Describe occupational health and safety requirements
   - Identify WorkSafeBC and OHS Regulations and guidelines
   - Training of workers
   - Reference to SDS for disinfectants and detergents
   - Personal Protective Equipment (PPE)
   - Containment of area
     - Level 1, 2, 3 remediation
   - Limited access of others to contaminated area
<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Prevent mold</td>
<td>• Prohibition of smoking, drinking and eating in work area</td>
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<tr>
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<td>• Decontamination rooms</td>
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<td>• Worker orientation</td>
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<td>• Mold prevention plans, reporting and record keeping</td>
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<td>• Responsibilities of building designers, manufacturers, builders and owners</td>
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<tr>
<td></td>
<td>• Eliminate wet, moist environments</td>
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<td>• Use of protective barriers during susceptible building stages</td>
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<td>• Use of water resistance materials</td>
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<td>• Proper storage and handling of building materials</td>
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<td></td>
<td>• Monitor installations and reject wet materials</td>
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<td>• Drying techniques prior to closing up of building components</td>
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<tr>
<td>6. Apply mold remediation and mitigation methods</td>
<td>• Assessing levels of growth</td>
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<td>• Rectification of underlying cause of mold growth</td>
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<td>• Professional determination of removal procedures</td>
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<td>• PPE</td>
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<td>o Respiratory</td>
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<td>o Remediation/hazmat apparel</td>
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<td>• Dust suppression methods</td>
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<td>• Isolation and containment of work area to prevent dust or spore dispersion</td>
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<td>• Negative air pressure system</td>
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<td>• Detergents and disinfectants to clean surfaces</td>
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<td></td>
<td>• HEPA vacuums and air filtration</td>
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<td>• Storage of materials</td>
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<td>• Waste disposal</td>
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<td>• Inspections</td>
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<tr>
<td></td>
<td>• Maintaining proper conditions to prevent re-growth</td>
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<td></td>
<td>• As per job requirements</td>
</tr>
</tbody>
</table>
Line (GAC): G INSTALL NON LOAD BEARING METAL FRAMING
Competency: G1 Build Walls, Ceilings and Bulkheads

Objectives
To be competent in this area, the individual must be able to:
• Frame walls, ceilings and bulkheads.

LEARNING TASKS
1. Describe substrate types and properties
   • Structural substrates
     o Concrete
     o CMU masonry
     o Brick
     o Steel
     o Wood
   • Sheathing type substrates
   • Relation to fastening systems

2. Describe types of wall assemblies
   • Direct attachment wall furring
     o Furring channel (hat track)
     o Wood furring strips
     o Z-furring channel
     o Resilient channel
   • Free standing wall furring
     o Metal track and studs
     o Pony walls
   • Metal stud walls
     o Floor-to-ceiling – straight
     o Floor-to-ceiling – curved
   • Freestanding

3. Describe types of ceiling assemblies
   • Metal stud
   • Furred
   • Direct attachment

4. Describe types of bulkhead assemblies
   • Curved
   • Sloped
   • Flat
   • Engineered
   • Angled
   • Stepped
LEARNING TASKS
5. Layout walls, ceilings and bulkheads
   • Read blueprints/specification
   • Install grid/bay lines
   • Layout locations of walls
   • Verify layout
   • Establish elevations
   • Establish openings
   • Mark location of stud
   • Squaring
   • Dividing
   • Establish radius points

6. Frame bulkheads
   • Drops/cosmetic bulkheads
     o Vertical
     o Horizontal

7. Frame walls
   • Floor-to-ceiling straight walls
   • Floor-to-ceiling curved walls
   • Freestanding walls
   • Metal-stud ceiling
     o Identify and select materials
     o Perform layout
     o Verify layout
     o Install perimeter metal track
     o Cut and install ceiling joists
     o Install inserts, hangers and carriers as required on long spans
     o Install gypsum wall board

8. Frame ceilings, drops and bulkheads
   • Furred ceiling
     o Direct attachment method
   • Cutting and fastening methods
Line (GAC): INSTALL GYPSUM WALLBOARD PRODUCTS
Competency: I1 Install Gypsum Wallboard

Objectives
To be competent in this area, the individual must be able to:
• Install gypsum wallboard.

LEARNING TASKS
1. Describe types of gypsum and their uses
   • GWB types
     o Standard
     o Fire-resistant
     o Moisture-resistant
     o Backing
     o Vinyl
     o Predecorated
     o Coreboard
     o Exterior sheathing
     o Veneer
     o Controlled-density (CD)
     o Foil-backed
     o Gypsum lath
     o Abuse-resistant
     o Glass mat panels
     o Concrete glass fibre-reinforced backer board
     o Sound-deadening
     o Mold resistant
     o Decorative strips
   • Square edge
   • Tapered edge
2. Install gypsum wallboard
   • Lifting and carrying requirements
   • Fastening requirements
     o Specified fastener types
     o Spacing
   • Staggering joints
   • Horizontal application
   • Vertical application
LEARNING TASKS
3. Store gypsum materials

CONTENT
- Proper storage of material
  - Preparation of storage area
  - General safety considerations and WorkSafeBC regulations
  - Ways to avoid damaging gypsum board
  - Ways to avoid cracking gypsum board
  - Ways to avoid rough edges
  - Determining number of people needed to move drywall
  - Using drywall roller dollies
  - Ensure that proper load bearing is maintained
  - Weather considerations
  - Inspection of drywall upon delivery
- Determining sequence in which materials are to be used
Level 2

Wall and Ceiling Installer
Program Content
Level 2

Line (GAC): B APPLY CODES, STANDARDS AND DOCUMENTATION
Competency: B1 Apply Codes and Regulations

Objectives
To be competent in this area, the individual must be able to:
• Apply codes, standards and regulations.

LEARNING TASKS

1. Describe building codes

CONTENT
• AWCC Wall and Ceiling Specification Standards
  o Wall framing and stud spacing
  o Ceilings
  o Fire separations
  o Fasteners
  o Insulation
  o Vapour barrier
  o Building envelope
  o Seismic
• Structural and seismic installations
  o Engineered drawings
• Fire and sound ratings
• National Building Code
• British Columbia Building Code
• Municipal Building Codes or Bylaws

2. Describe quality control and assurance standards

CONTENT
• Underwriters Laboratories of Canada (ULC)
• Canadian Standard Association (CSA) codes
• AWCC Wall & Ceiling Specifications Standards Manual
• American Standard for Testing Materials (ASTM)

3. Apply codes, standards and regulations

CONTENT
• As per job requirement
• Use standards
  o Size of component parts
  o Spans and tolerances of component parts
  o Installation recommendations
Program Content
Level 2

Line (GAC): B APPLY CODES, STANDARDS AND DOCUMENTATION
Competency: B2 Apply Fire Assembly Requirements

Objectives
To be competent in this area, the individual must be able to:
• Apply fire assemblies and their ratings when building walls and ceilings.

<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe fire resistance ratings</td>
<td>• Wall and partitions, floor, ceilings, or columns</td>
</tr>
<tr>
<td></td>
<td>• Resistance of intense heat and flame</td>
</tr>
<tr>
<td></td>
<td>• Based on individual components of assembly</td>
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<tr>
<td></td>
<td>• Based on results of acceptable testing methods</td>
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<td></td>
<td>• Flame spread ratings</td>
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<td>• Fire blocking/stopping</td>
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<tr>
<td>2. Describe fire rated wall and ceiling assemblies</td>
<td>• Fire and smoke rated assemblies</td>
</tr>
<tr>
<td></td>
<td>• Time rated assemblies</td>
</tr>
<tr>
<td>3. Apply fire assembly requirements</td>
<td>• Types of systems</td>
</tr>
<tr>
<td></td>
<td>• Relate system to wall type</td>
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<td></td>
<td>• Reference to a design number</td>
</tr>
</tbody>
</table>
Line (GAC): C USE TRADE RELATED SKILLS
Competency: C1 Use Blueprints and Specifications

Objectives
To be competent in this area, the individual must be able to:
• Interpret blueprint elevations, floor plans, cross sections, schedules and details.

LEARNING TASKS
1. Interpret blueprint elevations, floor plans, cross sections and details

CONTENT
• Specifications
• Blueprint cover sheet
  o Title block information
  o Legend
  o Index/ table of contents
• Working drawings
• Working floor plan
• Elevation drawings
  o Interior
  o Exterior
• Cross sections
• Detail drawings
  o Shop drawings
• Schedules
  o Window details
  o Door details
  o Wall legend
  o Room finish schedules
• Views

Achievement Criteria
Performance The learner will interpret a print and answer questions related to measurement, location and layout.
Conditions The learner will be given:
• A print.
• Instructions.
• Questions.
Criteria The learner will score 70% or better on a rating sheet that reflects the following criteria:
• Accuracy of answers.
Line (GAC): C       USE TRADE RELATED SKILLS
Competency: C2    Apply Trade Math

Objectives
To be competent in this area, the individual must be able to:
• Calculate area and perimeter.
• Calculate dimensions using geometry

LEARNING TASKS
1. Calculate area and perimeter for various shapes and combinations of shapes
2. Calculate dimensions of various shapes
3. Perform calculations on geometric shapes

CONTENT

- Shapes
  - Squares
  - Triangles
  - Circles
  - Parallelogram
  - Trapezoid
  - Multi-step problems involving complex shapes
- Hypotenuse of a right triangle
- Altitude of a right triangle
- Base of a right triangle
- Radius of a circle
- Measurement, properties and relationship
  - Points
  - Lines
  - Angles
  - Curves
  - Planes
  - Shapes
- Pythagorean theory (3-4-5)
- Protractor
- Framing square
- Bisecting angles
- Establish radius point
- Framing arches
- Establish diameter of circle
- Layout circle around and within triangle
- Layout elliptical arch
- Layout curved wall to connect with given points
- Layout segmented arch
Objectives
To be competent in this area, the individual must be able to:
• Install vapour/air barrier and sealants.

LEARNING TASKS
1. Describe the principles of vapour/air barriers and sealants

   CONTENT
   • Vapour barrier
     o To separate warm and cold environments
     o Usually placed on warm side of insulation
     o Keeps water vapour from cooling and condensing
     o Air movement may transport and deposit moisture laden air through small openings
   • Air barrier
     o Used to prevent infiltration and exfiltration of air
     o Excessive air leakage causes building failures
   • Mechanism of air leakage
     o Stack effect
     o Wind
     o Fan pressurization
   • Air barrier requirements
     o Continuity
     o Structural integrity
     o Air impermeability
     o Durability

2. Describe types of vapour/air barriers and materials

   CONTENT
   • Foil back gypsum board
   • Two coats of alkyd paint applied to gypsum wallboard
   • Exterior claddings
     o Metal
     o Composite
     o Cementitious
     o Wood
     o Vinyl
   • Polyethylene plastic
   • Aluminum foil
   • Caulks and sealants
LEARNING TASKS

3.  Describe vapour/air barrier systems

CONTENT
- Gypsum board
  - Accessible gypsum board approach
  - Non-accessible gypsum board approach
- Cladding air barrier systems
- Asphalt impregnated paper
- Curtain wall systems
- Sheet metal wall systems
- Masonry wall systems
  - Thermo fusible membranes
  - Peel and stick membranes

4.  Install caulking and sealant

CONTENT
- Added protection against air infiltration
- Importance of surface preparation
- Proper selection of appropriate compound
- Sealant type
  - Interior
  - Exterior
  - Typical use
  - Joint application
  - Advantages/disadvantages

5.  Install vapour and air barriers

CONTENT
- Framing assemblies
  - Wood and metal
- To building code and local municipal standards
- Mechanical fasteners and adhesives
  (Refer to Tools and Equipment)
Line (GAC): G INSTALL NON LOAD BEARING METAL FRAMING
Competency: G1 Build Walls, Ceilings and Bulkheads

Objectives
To be competent in this area, the individual must be able to:
• Frame advanced walls, suspended ceilings, and bulkheads.

LEARNING TASKS
1. Describe type of wall assemblies
   • Shaft walls
   • Chase walls
   • Fire ratings
   • Sound walls

2. Describe types of ceiling assemblies
   • Suspended (independent)
   • Dependent

3. Describe types of bulkheads assemblies
   • Structural (carrying weight)
   • Decorative

4. Describe interior framing systems
   • Interior partitions
   • Ceiling suspensions systems
   • Column and beam
   • Fire and sound resistance rated partitions and ceiling systems
   • Deflection considerations
   • Bracing

5. Install wall and ceiling furring – direct attachment method
   • To specifications
   • Install furring channel (hat track)
     o Vertical application
     o Horizontal application
   • Framing/furring outside/inside corners
   • Framing/furring window openings
   • Z-furring channel application
   • Resilient bar furring channels

6. Use jigs and templates
   • Types of jigs
     o Multi-use
     o Single-use
   • Types of templates such as manufactured or job built
   • Material used for jigs and templates
     o Wood and plywood
     o Drywall, steel studs and track
   • Applications of jigs and templates such as building bulkheads
LEARNING TASKS

7. Frame walls

8. Perform cutting, fitting and fastening methods for gypsum wallboard ceilings

9. Frame ceilings, drops and bulkheads

CONTENT

- Determining when to build and use jigs and templates
- Assemble and square jigs and templates
- Shaft walls
  - To specifications
  - Inspections
- Chase walls
- Wood, concrete and steel substrates
- Inserts
- Hangers
  - Q-Deck punch
  - Step punch
  - Pole applications
- Carriers
  - Proprietary systems
- Tying off
- To specifications
- Proprietary systems
- Suspended ceiling (dependent/independent)
  - Identify and select materials
  - Perform/verify layout
  - Install inserts
  - Cut and install hangers
  - Secure, install and level carriers
  - Secure furring channel to carriers
Line (GAC): G

INSTALL NON LOAD BEARING METAL FRAMING

Competency: G2  Install Wood and Metal Backing

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

• Install wood and metal backing.

LEARNING TASKS

1. Describe types of wood and metal backing

2. Install wood and metal backing

CONTENT

• Plywood/wood and wide metal strapping
  o Proprietary systems
  o Shop drawings

• Wood and metal backing requirements and placement

• Metal strapping gauges
  o Metal stud gauges

• Determining metal backing location
  o As per elevation drawings
  o As per manufacturer’s specifications
  o As per shop drawings

• Cutting and shaping backing
  o Kerf cuts

• Fastening wood and metal backing

• Tools and equipment
  o Table saw
  o Pop riveter
  o Circular saw
  o Drill

• Fasteners
Line (GAC): G INSTALL NON LEAD BEARING METAL FRAMING
Competency: G3 Install Pressed Steel Frames

Objectives
To be competent in this area, the individual must be able to:
• Install metal door and window frames.
• Install specialty metal door and window frames.

LEARNING TASKS

1. Describe types of metal frames
   • Transoms frames
   • Sidelight frames
   • Window frames
   • Expandable frames
   • Fire ratings

2. Describe types of metal door frames
   • Door frames
     o 1 piece fully welded
     o 3 piece knock down
     o Expandable

3. Install metal door frames
   • Interpret door schedules
   • Identify/select specified frame
   • Determine door swing
   • Check dimensions and throat size
     o Wall schedule
   • Install 1 piece frames
   • Install 3 piece frames
   • Use shims
   • Level, plumb and square frames
   • Anchor, brace and fasten frame
   • Temporary spreaders
     o Frame defects
     o Removal
   • Placement of frame in correct location
   • Jamb stud requirements
   • Jamb clips

4. Install specialty metal door and window frames
   • Interpret door/window schedules
   • Identify/select specified frame
   • Elevations
   • Check fire ratings of door/wall assemblies
   • Determine door swing
   • Check dimensions and throat size
LEARNING TASKS

CONTENT

- Install 1 piece frames
- Use shims
- Level, plumb and square frames
- Anchor, brace and fasten frame
  - Temporary spreaders
  - Frame defects
  - Removal
- Placement of frame in correct location
- Determining secure side of window
  - Jamb stud requirements
- Jamb/shoe clips

Achievement Criteria

Performance  The learner will install a pressed steel metal frame.

Conditions  The learner will be given:

- Materials.
- Equipment.
- Instructions.

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

- Plumb.
- Level.
- Square.
Objectives
To be competent in this area, the individual must be able to:
• Install access panels.

LEARNING TASKS
1. Describe types and properties of access panels
   • Removable panels/doors
   • Provide utility service in walls/ceilings
   • Fire rated or non-fire rated
   • Requirements for fire-rated access panels
   • Construction:
       o Steel
       o Plastic
       o Gypsum board
       o Wood
       o Composite
   • Combination of materials
   • Panel components
       o Lay in
       o Flush mount
       o Hinged
       o Latch assemblies

2. Install access panels
   • Identify and select specified panel
   • Coordinate panel location with other sub trades and designers
   • Follow manufacturer’s installation instructions
   • Site specific suppliers
   • Scheduling of installation
   • Caution when cutting through drywall
       o Avoiding damage to mechanical/electrical
   • Install plumb, level, square, rigid
   • Adjust doors, latches, locks
   • Close and latch once complete
   • Support frames if required
Line (GAC): I INSTALL GYPSUM WALLBOARD PRODUCTS
Competency: I1 Install Gypsum Wallboard

Objectives
To be competent in this area, the individual must be able to:
- Install complex gypsum wallboard components.

LEARNING TASKS

1. Apply fitting and cutting methods

   CONTENT
   - Cutting and measuring drywall
     - Gyproc knife
     - Key hole saw
     - Wallboard saw
     - T-square
     - Router
     - Off-angles
     - Board lifter
     - Panel lifter
   - Locate and cut access holes
     - 90° angles (to accept various types of corner beads)

2. Apply fastening methods

   CONTENT
   - Fasteners
     - Screws
     - Nails
     - Adhesives
   - Securing layers of gypsum board to metal and wood supports
   - Fastening methods
     - Screw spacing: non-fire rated GWB
     - Screw spacing: fire-rated GWB
     - Nailing requirements
     - Fastener penetration: metal to wood supports
     - Fastener head diameter
     - Fire-rated assemblies

3. Apply alternative installation methods

   CONTENT
   - Advantages and disadvantages
     - Perpendicular method
     - Parallel method
   - Installing gypsum board on ceilings
   - Installation sequence
     - Perpendicular installation
     - Parallel installation
   - Installing gypsum board on walls
LEARNING TASKS

CONTENT

- Vertically
- Horizontally
- Correct methods of installing gypsum board on walls and ceilings
  - Single layer
  - Double layer
  - Laminating (two or more layers)

4. Install gypsum wallboard

- Walls
- Ceilings
- Radius
- As per AWCC instructions
- Ensuring studs, doors and window frames are level and plumb during installation of sheets

Achievement Criteria

Performance  The learner will install drywall.

Conditions  The learner will be given:
- Materials.
- Equipment.
- Instructions.

Criteria  The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Screw patterns.
- Butt joints.
- Bevel joints.
- Screw depth.
- Proper usage of board.
- Minimal waste.
- Proper installation procedures around openings.
Line (GAC):  I  INSTALL GYPSUM WALLBOARD PRODUCTS
Competency:  I2  Install Materials for Lead Radiation Shielding

Objectives
To be competent in this area, the individual must be able to:
• Install materials for lead assemblies.

LEARNING TASKS
1. Describe lead shielding
   - Purposes of lead shielding
     - Sound proofing
     - Radiation protection
   - As per specifications
   - Types, weight and thicknesses of lead
   - Measure and cut lead
   - Lead installation techniques
   - Seal X-ray conductive perforations in lead panels
     - Fasteners
     - Joints
     - Corners, openings, cut-outs, and frames
   - Ceilings
   - Lead handling precautions

2. Use shielding techniques
   - Material selection
   - Apply at partition perimeter and all openings such as pipes, electrical outlets, ductwork etc.

3. Install lead radiation shielding
   - Cutting tools
     - Drywall knife
     - Aviation (steel) snips
     - Carbide tip carpet knife
     - Shears
   - Fitting methods
     - To manufacturer’s instructions
     - Gypsum wallboard
     - Ceilings
     - Walls
     - Ceiling blanket
     - Sheet lead
   - Fastening methods
     - Nails
     - Screws
LEARNING TASKS

CONTENT

- Mechanical fasteners
- Tie on methods
- Washers
- To manufacturer’s instructions

- Minimum 20 gauge steel stud framing
- Safety precautions
  - Long sleeves
  - Gloves
  - Disposable suits
  - Breathing apparatus
  - As per job requirements
Line (GAC): I INSTALL GYPSUM WALLBOARD PRODUCTS
Competency: I3 Install Security Mesh

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

- Install security mesh.

LEARNING TASKS

1. Describe security mesh

2. Install security mesh

CONTENT

- Mesh properties such as gauge, weights, material, composition and mesh size
- Application/intended uses
- Penetration barrier
- As per specifications
- Cutting mesh
- Staggered joints
- Butting of joints
- Fastening of mesh
Line (GAC): J INSTALL FIREPROOFING AND SOUNPROOFING
Competency: J2 Install Materials for Fireproofing and Smoke Seals

Objectives
To be competent in this area, the individual must be able to:
• Install materials for fireproofing assemblies.

LEARNING TASKS
1. Describe terms relating to fireproofing

CONTENT
• Fire stopping
• Fireproofing
• Fire rating
• Flame spread rate

2. Describe types of materials used for fireproofing

CONTENT
• Spray-applied fireproofing
  o Cementious products
  o Intumescent materials
  o Fibrous materials
  o Composites
• Other products used for fireproofing
  o Gypsum wallboard
  o Plaster
  o Cement board
  o Metal framing component parts
  o Fire caulking/spray

3. Describe types of fire protection

CONTENT
• Passive fire protection
• Active fire protection
• GWB fireproofing
• Spray on fireproofing

4. Describe fire rated caulking assemblies

CONTENT
• Stationary joints
• Deflection joints

5. Describe fire-resistance and acoustic ratings for cold-formed steel framed floor assemblies

CONTENT
• Refer to Fire Resistance Design Manual (excerpt of AWCC manual)
• When fire and acoustic ratings are required
• Fire ratings
  o Outline of tests
  o Description of steel joist assemblies
  o Results
• Acoustical properties/STC ratings
  o Outline of tests
  o Results
• Practical application of results
LEARNING TASKS

6. Apply fitting and fastening methods

- To manufacturer’s instructions
- Resilient channel
- Gypsum wallboard
- Ceilings
- Walls
- Ceiling blanket
- Sheet lead
- Cutting tools
  - Drywall knife
  - Aviation (steel) snips
  - Carbide tip arborite knife
- Taping compound
- Mechanical fasteners
- Tie on methods

7. Use caulking and sealing equipment

- Areas requiring fireproofing
- Codes and standards
- Specifications
- Installation of GWB assemblies
  - Fire ratings
- Spray on fireproofing

8. Install fireproofing materials

- Areas requiring fireproofing
- Codes and standards
- Specifications
- Installation of GWB assemblies
  - Fire ratings
- Spray on fireproofing
LEARNING TASKS

1. Describe shaft wall assemblies
   - Types of shafts
   - Fire protection
   - Non-load bearing
   - Typical construction
   - Tolerances
   - Limiting heights
   - Framing thickness and gauge
   - Anchoring and fastening
   - Joints
   - Codes and standards
   - Manufacturer technical literature
   - STC

2. Describe shaft wall system components
   - Applicable standards
     - CSA
     - ASTM
     - ULC
   - Shaft wall systems
     - Thickness and gauge
     - Fire rating
     - Thermal and sound insulation
     - Cut outs for service lines
     - Friction fit studs
     - Stud spacing
   - Shaftliners
     - Thickness
     - Moisture resistance
     - Size
     - Installation/fastening
   - Firestop gypsum board
     - Fire rating
     - Layers
     - Attachment procedures
   - Fire stopping materials
LEARNING TASKS

3. Build shaft wall assemblies
   - As per specifications
   - Check tolerances that must be adhered to
   - Layout as per construction drawings
   - Install J-track
   - Install as a progressive system
   - Erect, insert, and fasten shaftliner panels into I-studs and J-tracks
   - Refer to details regarding installation around door, ducts, other openings
   - Maximum horizontal spans
   - Firestop caulking/sealant
   - Add appropriate layers of GWB (gypsum wallboard) as per requirements

4. Install shaft wall firestop gypsum board facing
   - As per specifications
   - STC ratings
   - Firestop GWB facing layer(s)
     - 1 hour rating
     - 2 hour rating
     - 3 hour rating
   - Recommended procedure for location of gypsum board joints
   - Caulking properties and procedures

Achievement Criteria

Performance  The learner will install a mock-up of a shaft wall system with all components, to a maximum of 64 sq. ft.

Conditions  The learner will be given:
   - Materials.
   - Equipment.
   - Instructions.

Criteria  The learner will score 70% or better on a rating sheet that reflects the following criteria:
   - As per manufacturer’s specifications.
   - Tightness.
   - Plumb, level, square.
Program Content
Level 2

Line (GAC): K
Competency: K1 Build Basic Acoustical Ceilings

Objectives
To be competent in this area, the individual must be able to:
• Build acoustical ceilings.

LEARNING TASKS

1. Describe types of acoustical ceilings
   - Acoustical terms
   - Direct attachment system (adhesive, stapled)
   - T-bar systems
     - Exposed grid
     - Semi-exposed grid
     - Concealed grid
       - Glue on tile
       - Sound panel

2. Describe the component parts
   - Knowledge of seismic requirements
   - Inserts
   - Hanger wire
   - Perimeter wall moulding
   - Main tees
   - Cross tees
   - Ceiling panels
   - Adhesive (direct attachment system)
     - Pre-preparation of substrate

3. Use T-bar fitting and fastening tools
   - Aviation snips
   - Circle cutter
   - Keyhole saw
   - Utility knife
   - Whitney punch
   - Grid punch (knockout punch)
   - Pop riveter
   - Laser
   - Dry line
   - Wedge lock clip
   - Pop riveter
   - Q-Deck punch
   - Step punch
   - Pole applications
   - Hammer drill
LEARNING TASKS
4. Build acoustical ceilings

CONTENT
- Apply layout methods
- Determine ceiling height
- Determine grid layout
- Reflected ceiling plan
- Location of lights and other openings
- Positioning of panels
- Perimeter cuts
- Location of movable partition
- Perform grid layout math calculations
- Use laser level
- Install perimeter mould
- Use dry lines
- Hang main tees
- Install cross tees
- Acoustical ceiling panel products
  - Mineral fibre
  - Fibreglass Membrane
  - Gypsum core
  - Metal faced
  - Vinyl faced
  - Wood fibre
- Cut and measure
- Directional
- Non-directional
  - Handling and storage

5. Install ceiling panels

Achievement Criteria
Performance: The learner will build an acoustical ceiling (maximum 100 sq. ft.).
Conditions: The learner will be given:
- Tools.
- Equipment.
- Instructions.
- Ceiling plan.

Criteria: The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety.
- Adherence to ceiling plan.
- Level, square.
Line (GAC): M INSTALL DRYWALL TAPING AND FINISHING
Competency: M1 Describe Drywall Finishing Process

Objectives
To be competent in this area, the individual must be able to:
• Describe drywall finishing process.

LEARNING TASKS
1. Describe drywall finishing level definitions
   • Reference AWCC specifications for levels of finish
     o Level 0
     o Level 1
     o Level 2
     o Level 3
     o Level 4
     o Level 5

2. Describe drywall finishing tools
   • Tin snips
   • Mixing drill and paddle
   • Utility knife all-purpose
   • Hawk and trowel
   • Mud pan
   • Taping knives
   • Sandpaper
   • Sanding tools
   • Eye and respiratory protection

3. Identify drywall finishing materials
   • Gypsum board joint compound properties
     o Taping
     o Topping/finishing
     o All purpose
     o Quick setting materials
   • Joint tape
   • Corner beads and trims
   • Perforated paper
   • Reinforcing tape

4. Describe drywall finishing process
   • Prepare/mix compounds
     o Ready-mix
     o Fast set powders
   • Select tapes, beads and trims
   • Finish drywall joints
     o Prefill joints
     o Spot fastener heads
LEARNING TASKS

5. Identify problems and corrective measures related to GWB installation and finishing

CONTENT

- Embedding/taping coat
- Second coat
- Topping/Finishing coat

- Drying and curing conditions
- Sanding drywall
  - Dry sanding
  - Wet sanding
- Abrasive selection
- Identification and repair of deficiencies
- Improper framing
- Subtrade related issues
  - Improper installation of wood backing
  - Plumbing and electrical
  - HVAC
- Poor gypsum board installation methods
- Improper fastening
- Waves in gypsum wallboard
- Cracking at joints/mouldings/beads
- Mold/mildew
- Face paper defects
- Warping
- Fractures
- Breakage
- Moisture content
- Minor variations in dimensional accuracy of gypsum wallboard
- Gypsum wallboard receiving an excess amount of natural or unnatural light
- Poor taping, filling and sanding methods
- Defects apparent due to higher gloss of paint finish
Line (GAC): M INSTALL DRYWALL TAPING AND FINISHING
Competency: M2 Install Drywall Compounds, Tape, Beads, Trims and Expansion Joints

Objectives
To be competent in this area, the individual must be able to:
• Install tapes, beads and trims.
• Install reveals and expansion joints.

LEARNING TASKS
1. Describe corner beads
   • Function
   • Types of corner beads
     o Metal
     o Plastic
     o Paper
   • Advantages and disadvantages
     o Metal
     o Paper
     o Plastic

2. Describe mouldings and trims
   • Function
   • Types of moulding
     o J-bead
     o L-trim
     o F mould
     o J-round
     o Plaster
     o Cove
     o Step
     o Ornamental
     o Shadow mould
     o Paper face EPS

3. Apply fitting and fastening methods
   • Tools
     o Aviation snips
     o Hacksaw
     o Mitre saw
     o Bead clincher
     o Mallet
     o Stapler
     o Putty knife
   • Fitting methods
     o Curved openings
     o Straight runs
     o Offset angles (inside and
LEARNING TASKS

4. Install drywall beads, trims and moulding

5. Describe types of expansion joints and reveals

CONTENT

<table>
<thead>
<tr>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>outside)</td>
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<td>o 90° angles (inside and outside)</td>
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<td>o Three way angles</td>
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<td>• Fastening methods</td>
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<tr>
<td>o Nailing</td>
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<td>o Using screws</td>
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<td>o Clinch</td>
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<td>o Gluing</td>
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<td>o Using joint filler</td>
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<td>o Staples</td>
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<td>o Composite</td>
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<tr>
<td>• Control joints</td>
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<tr>
<td>• Hideaway expansion joint</td>
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<tr>
<td>o One-piece</td>
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<td>o V shaped</td>
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<td>o Vinyl centre</td>
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<tr>
<td>• Two-piece expansion joint</td>
</tr>
<tr>
<td>o Angle “L” trim</td>
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<tr>
<td>o Paper, metal or plastic</td>
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<tr>
<td>o Adjustable dimensions</td>
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<tr>
<td>o Difficult to install</td>
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<tr>
<td>• Shadowline tape-on reveal trim</td>
</tr>
<tr>
<td>• Reveal abutting ceilings or wood finishes</td>
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</tbody>
</table>
LEARNING TASKS

6. Install plastic and metal drywall reveals and expansion joints

CONTENT

- One-piece types
- Two-piece types
- Reveal trim pieces
- Refer to AWCC specifications

Achievement Criteria 1

Performance  The individual will install a horizontal bead, a vertical bead and a 3-way corner and replace/repair a damaged bead.

Conditions  The individual will be given:
- Tools.
- Equipment.
- Instructions.

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Accuracy.
- Proper mud distribution.
- Straight, square, level, plumb.

Achievement Criteria 2

Performance  The individual will install, fit and finish reveals and/or expansion joints.

Conditions  The individual will be given:
- Tools.
- Equipment.
- Instructions.

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
- Accuracy.
- Proper mud distribution.
- Straight, square, level, plumb.
Line (GAC): N Apply Exterior Building Envelope Technologies
Competency: N1 Install Air and Vapour Barriers

Objectives
To be competent in this area, the individual must be able to:
- Install vapour and air barriers.
- Apply caulking and sealants.

LEARNING TASKS
1. Describe the principles of vapour barriers and air barriers

2. Describe types of vapour barriers and air barrier systems

CONTENT
- Vapour barrier
  - To separate warm and cold environments
  - Usually placed on warm side of insulation
  - Keeps water vapour from cooling and condensing
  - Air movement may transport and deposit moisture laden air through small openings
- Air barrier
  - Used to prevent infiltration and exfiltration of air
  - Excessive air leakage causes building failures
- Mechanism of air leakage
  - Stack effect
  - Wind
  - Fan pressurization
- Air barrier requirements
  - Continuity
  - Structural integrity
  - Air impermeability
  - Durability
- Sealant selection
- Foil back gypsum board
- Polyethylene plastic
- Aluminum foil
- Asphalt laminated paper
- Caulks and sealants
- Spray foam
- Gypsum board
  - Accessible gypsum board approach
  - Non-accessible gypsum board
### LEARNING TASKS

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>LEARNING TASKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>approach</td>
<td></td>
</tr>
<tr>
<td>• Metal air barrier systems</td>
<td>3. Apply caulking and sealants</td>
</tr>
<tr>
<td>o Exterior cladding</td>
<td></td>
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<tr>
<td>• Curtain wall systems</td>
<td></td>
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<tr>
<td>• Sheet metal wall systems</td>
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<td>• Masonry wall systems</td>
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<td>o Thermo fusible membranes</td>
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<td>o Peel and stick membranes</td>
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<td>4. Install vapour and air barriers</td>
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<tr>
<td>• Added protection against air infiltration</td>
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<tr>
<td>• Importance of surface preparation</td>
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<tr>
<td>• Proper selection of appropriate compound</td>
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<td>• Sealant type</td>
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<td>o Interior</td>
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<td>o Exterior</td>
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<td>o Typical use</td>
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<td>o Joint application</td>
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<td>• To building code and local municipal standards</td>
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<td>• Mechanical fasteners and adhesives</td>
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<td>(Refer to Tools and Equipment)</td>
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</table>
Level 3
Wall and Ceiling Installer
Program Content
Level 3

Line (GAC): C USE TRADE RELATED SKILLS
Competency: C1 Use Blueprints and Specifications

Objectives
To be competent in this area, the individual must be able to:
• Interpret engineered shop drawings.

<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interpret engineered shop drawings</td>
<td>• Engineered drawings</td>
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<tr>
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<td>o Structural</td>
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<td>o Seismic</td>
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<td>o Specifications</td>
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</table>
Objectives
To be competent in this area, the individual must be able to:
• Use trigonometry.
• Perform geometric line construction.

LEARNING TASKS
1. Perform geometric line construction
   • Bisecting
   • Calculating radius point
   • Cords and segments
   • Obtuse and acute line
   • Compass trammel points

2. Use trigonometry
   • Pythagorean theory
     • Formulas
     • Applications
       o Roof pitches
       o Floors
       o Soffit overhangs
Program Content
Level 3

Line (GAC): C USE TRADE RELATED SKILLS
Competency: C3 Plan a Project

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

• Plan a project.

LEARNING TASKS

1. Identify job requirements

   • Site conditions and restrictions
   • Knowledge of available materials
   • List materials and quantities
   • Measurement discrepancies (site vs. plan)
   • Utility requirements
   • Safety requirements

2. Estimate material quantities

   • Typical building construction calculations
   • Walls – interior and exterior
   • Ceilings
   • Roofs
   • Floors
   • Columns and beams
   • Ratio and proportion

3. Plan a project

   • Schedules
   • Estimation of daily tasks
   • Sequence of operations
   • Coordination of work with other trades
     - Use time management skills
     - Plan ahead
     - Organize labour, materials and equipment
     - Use time productively
   • Estimate time to complete specific tasks
   • Estimate labour quantity and costs
   • Estimate tools and equipment
   • Estimate material quantities
   • Project scheduling
Achievement Criteria

Performance  The individual will plan a project.

Conditions  The individual will be given:
  - Material take-off (Based on information from H2 practical exercise).

Criteria  The individual will score 70% or better on a rating sheet that reflects the following criteria:
  - Accuracy of estimates within 10 percent.
  - Understanding of labour and material requirements.
  - Identification of equipment for the tasks.
  - Written plan.
  - Safety requirements.
  - Quantities.
  - Schedule.
  - Tools required.
Program Content
Level 3

Line (GAC): H INSTALL LOAD BEARING METAL FRAMING
Competency: H1 Build Wind Load and Axial Load Bearing Walls

Objectives
To be competent in this area, the individual must be able to:
• Build wind load and axial load bearing walls.
• Coordinate installation of utilities post construction.

LEARNING TASKS

1. Describe load bearing metal framing construction
   • Benefits derived from using light-gauge steel framed buildings
   • Interior/exterior
   • Prefabricated and stick-built
   • Key definitions and terms
   • Common framing members
   • Gauge, thickness and flange sizes
   • Deflection material
   • Connections/fasteners
   • Bridging and bracing
   • Parapet walls

2. Describe types of load bearing walls
   • Interior walls
   • Exterior walls
   • Curtain walls
   • Axial load bearing

3. Describe steel stud floor, roof and ceiling assemblies
   • Roof framing
   • Ceiling joists
   • Floor joists
   • Manufactured trusses

4. Apply layout procedures for load bearing metal framing
   • Floor joists
   • Interior walls
   • Exterior walls
   • Window openings
   • Door openings
   • Wall partitions
   • Ceiling joists
   • Roof framing
   • Axial and lateral load
     o Deflection principles
   • Fasteners
     o Size
     o Length
LEARNING TASKS

6. Use shop drawings

7. Build wind load bearing walls and bulkheads

8. Build axial load bearing walls and bulkheads

CONTENT

- Head type
- Welding
  - Anchoring
    - Wedge anchors
    - Kwik bolts
    - Masonry
    - Drilling

- Manufacturers’ details
- Engineered shop drawings
  - Spacing
  - Height
  - Fasteners

- Types of bulkheads
  - Store fronts
  - Light coves
  - Canopies

- Fasteners and connections
- Wall erection and installation
  - Stick built or panelized
  - Erect true and plumb within
  - Specified tolerances
  - Temporary bracing
  - Cutting of wall members
  - Damaged members
  - Anchoring of top/bottom track
  - Pre-insulation practices
  - Boxed beams and jamb studs
  - Handling of prefabricated panels

- Adherence to engineering specifications

- Layout
- Wall framing techniques
  - Tilt-up
  - In-place

- Header framing and assembly
  - Lintel
  - Box header
  - Beams

- Corner framing
- Temporary bracing
- Bridging
LEARNING TASKS

9. Attach cladding and sheathing

10. Coordinate installation of utilities

CONTENT

- Shear bracing
- Anchorage
- Secure exterior trim
  - Adhesive
  - Self-drilling screws
  - Wood nailer/blocks
- Plumbing
- Electrical
- Fire suppression
- Backing
- Protection of plumbing pipes
- Insulation
- Batt insulation
- Exterior foam

Achievement Criteria

Performance
The learner will build a mock up including:
- Wall section.
- Window section.
- Door.
- Bulkhead.

Conditions
The learner will be given:
- Engineered drawing.
- Tools and materials.
- Instructions.

Criteria
The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety.
- Adherence to engineered drawing.
- Plumb, level, square.
Program Content
Level 3

Line (GAC): H INSTALL LOAD BEARING METAL FRAMING
Competency: H2 Install Exterior Walls and Panelized Systems

Objectives
To be competent in this area, the individual must be able to:
• Install exterior walls and panelized systems.

LEARNING TASKS

1. Describe types of exterior assemblies and systems
   - Wall assemblies
     - Prefabricated
     - Curtain walls (non-load bearing)
     - Rainscreen walls
     - Stick built walls
     - Shear walls
   - Roof rafters/trusses
   - Floor assemblies
   - Panelized systems
   - Types of membranes
     - Polyethylene films
     - Rubberized non-permeable membrane
     - Aluminum foil
     - Building wrap

2. Describe methods of prefabricating walls and panels
   - Built on the job site or employer shop
     - To specifications
     - Built in jigs
     - High production
     - Accurate and cost effective
   - Factory manufactured sections
   - Proprietary systems
   - Transported to site

3. Prefabricate exterior walls and panels
   - Engineered shop drawings
   - Exterior and in-fill panels
   - Use shop drawings
   - Finishes
   - Building substrate
LEARNING TASKS
4. Install exterior walls and panels

CONTENT
- To specifications
- Installation procedures
- Modify panels as per site conditions
- Plan sequence and placement of panels
- Install temporary braces
- Using man power
- Using material hoist machines
- Bolting
- Welding
- Using screws
- Hoisting and rigging regulations

Achievement Criteria
Performance
The learner will build a mockup of a prefabricated panel (maximum 64 sq. ft.).

Conditions
The learner will be given:
- Engineered drawing.
- Tools.
- Equipment.
- Instructions.

Criteria
The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety.
- Adherence to engineered drawing.
- Plumb, level, square.
Objects

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

- Install floor joists.

**LEARNING TASKS**

1. **Describe components of steel floor joist assemblies**
   - Header
   - Joist
   - Web openings
   - Fasteners/anchors
   - Rim track
   - Web stiffeners
   - Track splice
   - Flat strap
   - Blocking
   - Cantilever
   - Joist span
   - X-bracing
   - Girder
   - Foundations
   - Wall framing
   - Sheathing
   - Electrical/mechanical installations
   - Insulation

2. **Describe floor framing methods**
   - Platform construction
   - Balloon construction

3. **Frame and install floor joists**
   - Blueprints
   - Foundation size and squareness
     - Adjustments for proper size and squareness
   - Layout of joist locations
     - Perpendicular to floor joists
     - On centre beam
   - Header joists installation
     - Perpendicular
     - Parallel
   - Floor joist installation
   - Jig layout
Achievement Criteria

Performance  The learner will build a mockup of a floor section. This may be combined with H1 achievement criteria.

Conditions  The learner will be given:
- Engineered drawing.
- Tools and materials.
- Instructions.

Criteria  The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety.
- Adherence to engineered drawing.
- Plumb, level, square.
Line (GAC): H
Competency: H4 Describe Roof Rafters

Objectives
To be competent in this area, the individual must be able to:
• Describe the installation of roof rafters.

LEARNING TASKS
1. Describe roof styles
   • Gabled
   • Shed
   • Hip
   • Gambrel
   • Mansard

2. Describe methods of framing roofs
   • Engineered systems
   • Steel framing of roof rafters and trusses
   • Stick built
   • Bearing support
   • Refer to shop drawings for layout and specified fasteners/anchors
   • Complete unit – normally preassembled on/off site
   • Erected with hoists/cranes
   • Terminology
     o Common definitions
       - Span
       - Run
       - Rise
       - Slope
       - Pitch
     o Rafter deductions
       - Theory lines
       - Rafter plumb cut
       - Rafter line length
       - Rafter overhang
       - Horizontal projection
       - Ridge beam
       - Fascia
       - Soffit
     o Gable end framing
LEARNING TASKS

3. Describe installation of roof rafters/truss and ceiling joists

CONTENT

- Rafter and ceiling joist installation
  - Layout of roof framing
  - Installing ridge beam and common rafters
- Installing common rafters and roof trusses
  - Installing rough fascia
  - Installing soffits
  - Collar beams (ties)
  - Installing rafter bridging
**Program Content**  
**Level 3**

**Line (GAC):** J  
**INSTALL FIREPROOFING AND SOUNDPROOFING**

**Competency:** J1  
Install Soundproofing Materials

## Objectives
To be competent in this area, the individual must be able to:
- Install materials for soundproofing assemblies.

## Learning Tasks

<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
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</thead>
</table>
| 1. Describe sound control principals | • Measurement of sound  
• Terminology for sound control  
• Typical sound control problems  
• Sound control systems  
• Building considerations  
• Sound absorption  
• Sound isolation  
• Acoustical material |
| 2. Describe sound control factors in the construction of buildings | • Mass  
• Isolation  
• Damping  
• Leaks  
• Flanking paths  
• STC ratings  
• Measurement of sound |
| 3. Describe types of materials used for soundproofing | • Acoustical tile and panels  
• Baffles  
• Gypsum board  
• Resilient (floating) channel (sound bar)  
• Sheet lead  
• Acoustical sealant  
• Sound attenuation blankets  
• Sound deadening board |
| 4. Describe processes for soundproofing walls and partitions | • Wall panel mounting methods  
• Controlling air leakage  
• Controlling wall vibration  
• Reducing structure borne sound through wall  
• Wall assemblies |
| 5. Describe acoustical ceiling products, panels and systems | • Acoustical ceiling products  
• Ceiling suspension systems  
• Other specialty systems  
• Standards and approvals |
LEARNING TASKS

6. Select materials used for soundproofing walls and ceilings
   • Proprietary ceiling panel systems
   • Finishes
   • Resilient channel
   • Gypsum wallboard
   • Ceiling tiles
   • Acoustical wall assemblies
   • Panels
   • Baffles
   • Acoustical sealant/caulking
   • Suspension isolators
   • Sound deadening board
   • Sound insulation blankets
   • Double leaf wall
   • Lead sheathing

7. Apply fitting and fastening methods
   • To manufacturer’s instructions
   • Resilient channel
   • Gypsum wallboard
   • Ceilings
   • Walls
   • Ceiling blanket
   • Sheet lead
   • Cutting tools
   • Drywall knife
   • Aviation (steel) snips
   • Carbide tip arborite knife
   • Taping
   • Glue
   • Double-sided/gasket tape
   • Mechanical fasteners
   • Tie on methods

8. Use caulking equipment
   • Material selection
   • Caulking gun
   • Apply at partition perimeter
   • Airtight seals
<table>
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<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
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</thead>
</table>
| 9. Install materials for soundproofing assemblies | - As per specifications  
- Resilient channel  
- Gypsum wallboard  
- Ceiling tiles  
- Acoustical wall assemblies  
  - Panels  
  - Baffles  
- Acoustical sealant/caulking  
- Suspension isolators  
- Sound deadening board  
- Sound insulation blankets  
- Double leaf wall  
- Lead sheathing |
Line (GAC): K INSTALL ACOUSTICAL CEILINGS
Competency: K2 Build Specialty Acoustical Ceilings

Objectives
To be competent in this area, the individual must be able to:
- Build specialty acoustical ceilings.

LEARNING TASKS

1. Describe advantages and disadvantages of various acoustical products
   - Acoustical value
   - Appearance
   - Strength
   - Weight
   - Fire rating
   - Accessibility
   - Repair
   - Sound reduction coefficient (NRC)
   - Sound transmission coefficient (STC)

2. Describe the specialty component parts
   - Knowledge of types of grid systems
     - Concealed
     - Fine grid
     - Basket weave
     - Proprietary systems

3. Build specialty acoustical ceilings
   - Layout methods
   - Ability to locate expansion and control joints
   - Specialty panels
   - Wood
   - Metal
   - Composite/FRP
   - Fabric

4. Install ceiling panels
   - Acoustical ceiling panel products
     - Mineral fibre
       - Fibreglass
       - Membrane
       - Gypsum core
       - Metal faced
       - Vinyl faced
       - Wood fibre
   - Cut and measure
   - Directional
   - Non-directional
<table>
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<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
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<tbody>
<tr>
<td></td>
<td>• Edge designs</td>
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<td>• Handling and storage</td>
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**Achievement Criteria**

Performance: The learner will layout and install a T-bar ceiling complete with all components.

Conditions: The learner will be given:
- Tools.
- Equipment.
- Instructions.
- Ceiling plan.
- Engineered drawings.

Criteria: The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety.
- Adherence to ceiling plan.
- Level, square.
- Fit and finish.
## Objectives

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

- Install metal lath on walls and ceilings.
- Install specialty trims and mouldings
- Install plaster beads, stops and expansion joints to lath and wire systems.

## Learning Tasks

<table>
<thead>
<tr>
<th>Learning Task</th>
<th>Content</th>
</tr>
</thead>
</table>
| 1. Describe types and functions of metal lath |  - Galvanized metal lath  
  - Painted metal lath  
  - Stucco wire  
| 2. Describe other materials used with lath and wire systems |  - Sheathing paper  
  - Reinforced Portland stucco cement  
  - Carrying channel (11/2-in.)  
  - Furring channel (3/4-in.)  
  - Expansion/control joints  
  - Stucco/plaster stop  
  - Perforated stucco/plaster stop  
  - Bug screen  
  - Flashings  
  - Tie wire  
    - 18-gauge galvanized wire  
    - Pre-cut and packaged  
    - 42-in. lengths  
    - Terminology: "hanks"  
| 3. Use cutting and specialty tools |  - Aviation snips  
  - Metal shears  
  - Nippers  
  - Channel locks  
  - Hack saw  
  - Magnetic punch  
  - Sheet metal snips  
  - Hammer stapler  
  - Hanger benders  
    - Carrying channel bender  
    - Hanger wire  
| 4. Use fitting methods of lath and wire |  - End lap on supports  
  - End lap between supports  
  - Side lap  

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**Lather (Wall and Ceiling Installer)**

**Industry Training Authority**

**03/19**

**Line (GAC):** L   **INSTALL SPECIALTY SYSTEMS**

**Competency:** L1 Install Traditional Lath and Trims on Walls and Ceilings
LEARNING TASKS

5. Use fastening methods

6. Install metal lath

7. Install stucco wire and paper backed welded wire lath

8. Describe specialty trims and mouldings

9. Apply fitting and fastening methods for specialty trim and mouldings

10. Install specialty trims and mouldings

11. Describe the requirements for plaster beads, expansion joints and plaster stops

CONTENT

- Direction of lath
- Around openings
- On curved surfaces
- Measure, cut and shape lath and stops
- Ties and anchors
- Tie wire
- Mechanical fasteners
- Pins
- Dab of plaster
- Ties and anchors
- Tie wire
- Mechanical fasteners
- Pins
- Dab of plaster

- On walls
- On ceilings
- Bulkheads
- Soffits
- Curves/domes

- Used on walls only
- "Keying" of stucco

- J-bead, L-trim, F mould
  - Plastic
  - Metal
  - Composite
  - Wire

- Shadow mould
- Step mould
- Bull-nosed
- Reveal moulds
- Control/expansion joints

- Fasteners
  - Mechanical
  - Pneumatic
  - Adhesives

- On walls
- On ceilings
- Bulkheads
- Soffits
- Curves/domes
- Doors and windows

- Cracks and failures due to:
  - Structural stresses
  - Temperature extremes
### LEARNING TASKS

12. Install plaster beads, stops and expansion joints

### CONTENT
- Types of beads
- Types of expansion joints
- AWCC Specifications for interior or exterior
- Decorative feature
- Exterior surfaces
- One-piece types
- Two-piece types
- Cutting of wire at control joints
- Spacing of control joints
Line (GAC): L INSTLAL SPECIALTY SYSTEMS
Competency: L2 Build Access Floor Systems

Objectives
To be competent in this area, the individual must be able to:
• Build access floors

LEARNING TASKS
1. Describe the types of access floor system applications
   • General office
   • Computer rooms
     o Snap lock
     o Rigid grid
     o Free standing
   • Clean room
   • Proprietary systems
     o Steel
     o Wood composite
     o Modular floor panels
   • Components
     o Pedestals
     o Grid and gridless
     o Stringers
     o Anchors
     o Supporting hardware
     o Firestop requirements

2. Describe the main components of access floor systems
   • Levelling bar
   • Suction cups
   • Grid system layout
     o Squaring
     o Dividing
   • Establish elevations
     o Pedestal shot points
     o Finished floor height
   • Check room dimensions
     o To ensure room is square
     o Use of control lines

3. Use specialty layout tools

4. Use layout methods

5. Use fitting and fastening methods
   • Pedestals
     o Adhesives
     o Mechanical fasteners (seismic)
   • Panels
     o Mechanical fasteners
LEARNING TASKS

CONTENT

- Perimeter cuts
- Rectangular inside cut-outs
- Round cuts

- Stringers
- Cutting tools
  - Band saw
  - Hole saw
  - Jig saw
  - Reciprocating saw
  - Bi-metal saw blades

6. Build access floors

- To manufacturer’s instructions
- Coordinate work with related sub-trades
- Perform layout
- Install pedestals
- Bolt stringers
- Cut floor panels
- Lay floor panels
- Secure panels
- Install supporting hardware
- Install fire stopping (as per specifications)

Achievement Criteria

Performance The learner will build an access floor (maximum 100 sq. ft.).

Conditions The learner will be given:

- Tools.
- Equipment.
- Instructions.
- Floor plan.

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

- Safety.
- Adherence to floor plan.
- Level, square.
Line (GAC): L INSTALL SPECIALTY SYSTEMS
Competency: L3 Build Demountable Partitions

Objectives
To be competent in this area, the individual must be able to:
• Build demountable partitions.

LEARNING TASKS
1. Describe demountable partition types
   • Non-progressive
     o Independent panel sections
   • Progressive
     o Must be installed in sequence
   • Sound ratings
   • Battens
   • Batten-less
   • Gravity lock

2. Describe the main components of demountable partitions
   • Framing Components
     o Ceiling runner
     o Base track
     o Tree studs
     o V-locks
     o Brackets
     o Clips
   • Trims
     o Ceiling trim
     o Base
     o End caps
     o Battens and covers
     o Corner pieces
     o J hook, J trim
   • Wall panels
     o Vinyl covered
     o Cloth covered
     o Veneer covered
   • Door and window components

3. Use specialty tools
   • Board lifter
   • Metal file
   • Rubber mallet
   • Magnetic clip holder
   • Suction cups
   • Crimper
   • Edge lock block
LEARNING TASKS

4. Apply layout methods
   - Mitre saw/carbide tipped
   - Establish elevations
   - Establish openings
   - Partition layout
     - Ceiling grid layout
     - Door and window layout
     - Stud layout
     - Base track
     - Ceiling runner
     - Wall panels

5. Use fastening methods
   - Framing screws
   - Drywall screws
   - Clips
   - Velcro hook tape
   - Double-sided tape
   - Brackets

6. Build demountable partitions
   - To manufacturer’s instructions
   - Perform layout
   - Inspect and quantify components
   - Install
     - Ceiling runner
     - Base track
     - Tree studs
       - V-locks
       - Tree stud brackets
     - Predecorated panels
       - Edge lock clips
       - Gravity lock clips
     - Corner pieces
     - Door and window framing
     - Glazing
     - Battens and covers
     - Ceiling trim
     - Base trim
Achievement Criteria

Performance The learner will build a wall, door and window assembly complete with all accessories and components.

Conditions The learner will be given:
- Tools and materials.
- Instructions/plan/drawing.

Criteria The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety.
- Accuracy of finished product.
- Plumb, level, square.
- Fit and finish.
Line (GAC): L INSTALL SPECIALTY SYSTEMS
Competency: L4 Install Specialty Ceilings

Objectives
To be competent in this area, the individual must be able to:
• Install specialty systems.

LEARNING TASKS
1. Describe types of specialty ceilings
   • T-bar
   • Metal linear ceilings
   • Wood
   • Composite
   • Ornamental plaster
   • Luminous
   • Clouds

2. Describe the components of specialty ceilings
   • Component materials
   • Suspended
   • Wires and grids
   • Inserts, clips, anchors
   • Specialized layout
   • Engineered shop drawings
     o Seismic requirements
   • To manufacturer’s instructions
   • Finished product

3. Install specialty ceiling
Line (GAC): N  APPLY EXTERIOR BUILDING ENVELOPE TECHNOLOGIES

Competency: N2  Install Exterior Finishes

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

• Install exterior finishes.

LEARNING TASKS

1. Describe siding types
   • Cementitious
   • Siding
     o Metal
     o Vinyl
     o Composite
     o Wood
   • Exterior insulation finishing system (EIFS)
   • Specialty products (e.g. composite material)

2. Describe exterior siding/cladding installation practices
   • Cutting and fastening
   • Corner installation
   • Sealants
   • Flashing use
   • Other trim installation

3. Install flashing and wall sheathing membrane
   • Installation procedures
   • Flashing types
   • End dams

4. Install exterior siding
   • Handling and storage
   • Cutting procedures
     o Exterior
     o Interior
   • Framing requirements
   • Clearance
     o Roof
     o Grade
   • Concrete/concrete block construction
   • Nailing and fasteners
   • Corner posts
     o Inside
     o Outside
   • Expansion allowance
   • Starter strip
   • Bug screen
LEARNING TASKS

CONTENT

5. Describe EIFS components and installation procedure

• Soffit vents
• Window and door trims
• Gable end trim
• Cementitious siding installation
• Vinyl and metal siding installation
  o Nailing flange at top
  o Five installation rules
• Review EIFS system components
• Acrylic finishes
• Inspect building substrate
• Attach sheathing
• Cut expanded polystyrene sheets (EPS) board
  o Rainscreen
  o Ornamental
• Attach EPS board
  o Adhesive method
• Proprietary mechanical fastener
Line (GAC): N APPLY EXTERIOR BUILDING ENVELOPE TECHNOLOGIES
Competency: N3 Install Rainscreen Systems

Objectives
To be competent in this area, the individual must be able to:
• Install rainscreen systems

LEARNING TASKS

1. Describe rainwater exposure to walls
   - Direct impact
   - Run-off
   - Backsplash

2. Describe rainscreen technology
   • Four conditions necessary for water to penetrate wall
     o Water on surface
     o Opening/cracks in wall
     o Driving force/pressure
     o Porous materials
   • Difficulties in achieving watertight seal
     o Temperature changes
     o Cladding movement
     o Ultraviolet ray degradation
     o Chemical decomposition
     o Building settling/shifting
     o Pressure differential
   • Effects of high wind driven rain/snow
   • Controlling water penetration
     o Control capillary action
     o Control water momentum
     o Control effects of gravity
     o Control effects of wind
   • Drying
   • Durable materials
   • The four principles of rainscreen walls – the 4 D’s
     o Deflection
     o Drainage
     o Drying
     o Durability

3. Describe components of a rainscreen wall
   • Cladding
   • Clear air space
   • Sheathing membrane
   • Flashing
## LEARNING TASKS

<table>
<thead>
<tr>
<th>LEARNING TASKS</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Describe the interfacing with other materials</td>
<td>• Furring</td>
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<tr>
<td></td>
<td>• Membrane material</td>
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<td></td>
<td>• Rainscreen system installation</td>
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<td>• Engineered pressure moderated rainscreen walls</td>
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<tr>
<td>5. Identify various wood components</td>
<td>• Railings</td>
</tr>
<tr>
<td></td>
<td>• Brick</td>
</tr>
<tr>
<td></td>
<td>• Other flashings</td>
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<tr>
<td></td>
<td>• Window design, performance and installation</td>
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<tr>
<td></td>
<td>• Other</td>
</tr>
<tr>
<td>6. Install rainscreen systems</td>
<td>• Plywood</td>
</tr>
<tr>
<td></td>
<td>• ACQ – pressure treated</td>
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<tr>
<td></td>
<td>• OSB – plywood</td>
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<td>• Borate – insecticide treated</td>
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<td>• Install strapping</td>
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<td>• Install drainage mat</td>
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<td>• Install flashings</td>
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<tr>
<td></td>
<td>• Plastic</td>
</tr>
<tr>
<td></td>
<td>• Bug screen</td>
</tr>
<tr>
<td></td>
<td>• Finished substrate</td>
</tr>
</tbody>
</table>
Section 4

ASSESSEMENT GUIDELINES
## Assessment Guidelines – Level 1

### Level 1 Grading Sheet: Subject Competency and Weightings

<table>
<thead>
<tr>
<th>LINE</th>
<th>SUBJECT COMPETENCIES</th>
<th>THEORY WEIGHTING</th>
<th>PRACTICAL WEIGHTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Apply Safe Work Practices</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>C</td>
<td>Use Trade Related Skills</td>
<td>22%</td>
<td>15%</td>
</tr>
<tr>
<td>D</td>
<td>Use Ladders, Scaffolds and Lift Equipment</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>E</td>
<td>Use Tools and Equipment</td>
<td>12%</td>
<td>10%</td>
</tr>
<tr>
<td>F</td>
<td>Install Insulation</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>G</td>
<td>Install Non Load Bearing Metal Framing</td>
<td>28%</td>
<td>35%</td>
</tr>
<tr>
<td>I</td>
<td>Install Gypsum Wallboard Products</td>
<td>20%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Total 100% 100%

**In-school theory / practical subject competency weighting**

<table>
<thead>
<tr>
<th>In-school %</th>
<th>Combined theory and practical subject competency multiplied by 80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final in-school mark</td>
<td>Apprentices must achieve a minimum 70% for the final in-school mark to be eligible to write the Lather (Interior Systems Mechanic) (Wall and Ceiling Installer) Standardized Level exam.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Final Level Mark</th>
<th>FINAL%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In-school Mark</strong></td>
<td>Combined theory and practical subject competency multiplied by 80%</td>
</tr>
<tr>
<td><strong>Standardized Level Exam Mark</strong></td>
<td>The exam score is multiplied by 20%</td>
</tr>
</tbody>
</table>
## Assessment Guidelines – Level 2

### Level 2 Grading Sheet: Subject Competency and Weightings

<table>
<thead>
<tr>
<th>PROGRAM: IN-SCHOOL TRAINING:</th>
<th>WALL AND CEILING INSTALLER LEVEL 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LINE</strong></td>
<td><strong>SUBJECT COMPETENCIES</strong></td>
</tr>
<tr>
<td>B</td>
<td>Apply Codes, Standards and Documentation</td>
</tr>
<tr>
<td>C</td>
<td>Use Trade Related Skills</td>
</tr>
<tr>
<td>F</td>
<td>Install Insulation</td>
</tr>
<tr>
<td>G</td>
<td>Install Non Load Bearing Metal Framing</td>
</tr>
<tr>
<td>I</td>
<td>Install Gypsum Wallboard Products</td>
</tr>
<tr>
<td>J</td>
<td>Install Fireproofing and Soundproofing</td>
</tr>
<tr>
<td>K</td>
<td>Install Basic Acoustical Ceilings</td>
</tr>
<tr>
<td>M</td>
<td>Install Drywall Taping and Finishing</td>
</tr>
<tr>
<td>N</td>
<td>Apply Exterior Building Envelope Technologies</td>
</tr>
</tbody>
</table>

| In-school theory / practical subject competency weighting | 60% | 40% |

**Final in-school percentage score**
Apprentices must achieve a minimum 70% for the final in-school mark to be eligible to write the Lather (Interior Systems Mechanic) (Wall and Ceiling Installer) Standardized Level exam.

**In-school Mark**
Combined theory and practical subject competency multiplied by 80%

**Standardized Level Exam Mark**
The exam score is multiplied by 20%

**Final Level Mark**
FINAL%
### Assessment Guidelines – Level 3

**Level 3 Grading Sheet: Subject Competency and Weightings**

<table>
<thead>
<tr>
<th>PROGRAM: IN-SCHOOL TRAINING:</th>
<th>WALL AND CEILING INSTALLER LEVEL 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LINE</strong></td>
<td><strong>SUBJECT COMPETENCIES</strong></td>
</tr>
<tr>
<td>C</td>
<td>Use Trade Related Skills</td>
</tr>
<tr>
<td>H</td>
<td>Install Load Bearing Metal Framing</td>
</tr>
<tr>
<td>J</td>
<td>Install Fireproofing and Soundproofing</td>
</tr>
<tr>
<td>K</td>
<td>Install Basic Acoustical Ceilings</td>
</tr>
<tr>
<td>L</td>
<td>Install Specialty</td>
</tr>
<tr>
<td>N</td>
<td>Apply Exterior Building Envelope Technologies</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

**In-school theory / practical subject competency weighting**

<table>
<thead>
<tr>
<th></th>
<th><strong>60%</strong></th>
<th><strong>40%</strong></th>
</tr>
</thead>
</table>

**Final in-school percentage score**

<table>
<thead>
<tr>
<th></th>
<th>IN-SCHOOL %</th>
</tr>
</thead>
</table>

**In-school Mark**

Combined theory and practical subject competency multiplied by 80%

**Standardized Level Exam Mark**

The exam score is multiplied by 20%

**Final Level Mark**

FINAL%

All apprentices who complete Level 3 of the Wall and Ceiling Installer program with a FINAL level percentage score of 70% or greater will write the Interprovincial Red Seal examination as their final assessment.

ITA will enter the apprentices’ Lather (Interior Systems Mechanic) (Wall and Ceiling Installer) Interprovincial Red Seal examination percentage score into ITA Direct Access.

A minimum percentage score of 70% on the examination is required for a pass.
Section 5

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 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
- Library reference material for student and instructor use

Shop Area

- Workshop with sufficient square footage to complete projects and with enough ceiling height to allow safe movement of materials
- Tool crib
- Lockers
- Adequate lighting and lighting control
- Ventilation as per WorkSafeBC standards
- Refuse and recycling bins for used shop materials
- First-aid facilities
- Fire alarm
- Fire extinguisher
- Eye wash facilities
- Signage
- Masks (dust or particle)

Lab Requirements

- Not Applicable

Student Facilities

- Adequate lunch room as per WorkSafeBC requirements
- Adequate washroom facilities as per WorkSafeBC requirements
- Personal storage lockers

Instructor’s Office Space

- Desk and filing space
- Computer
# Tools and Equipment

## Shop Equipment

### Required Power Tools

<table>
<thead>
<tr>
<th>Tools and Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive chop saw</td>
</tr>
<tr>
<td>Angle grinder</td>
</tr>
<tr>
<td>Band saw</td>
</tr>
<tr>
<td>Circular saw</td>
</tr>
<tr>
<td>Compound mitre saw</td>
</tr>
<tr>
<td>Compressor, c/w hose</td>
</tr>
<tr>
<td>Cordless drill</td>
</tr>
<tr>
<td>Drywall router</td>
</tr>
<tr>
<td>Drywall screw gun</td>
</tr>
<tr>
<td>Electric drill</td>
</tr>
<tr>
<td>Electric shears</td>
</tr>
<tr>
<td>Gas-actuated tools</td>
</tr>
<tr>
<td>Hammer drill</td>
</tr>
<tr>
<td>Impact drill</td>
</tr>
<tr>
<td>Jig saw</td>
</tr>
<tr>
<td>Powder-actuated tools</td>
</tr>
<tr>
<td>Power shears (snips)</td>
</tr>
<tr>
<td>Power stapler</td>
</tr>
<tr>
<td>Reciprocating saw</td>
</tr>
<tr>
<td>Router</td>
</tr>
<tr>
<td>Table saw</td>
</tr>
</tbody>
</table>

### Required Scaffolding and Access Equipment

<table>
<thead>
<tr>
<th>Tools and Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum bench</td>
</tr>
<tr>
<td>Boom lifts</td>
</tr>
<tr>
<td>Portable scaffolds</td>
</tr>
<tr>
<td>Ladders</td>
</tr>
<tr>
<td>Rolling scaffolds</td>
</tr>
<tr>
<td>Scissor-lift</td>
</tr>
<tr>
<td>Stationary scaffolds</td>
</tr>
<tr>
<td>Stilts</td>
</tr>
</tbody>
</table>

### Required Material Handling and Site Maintenance Equipment

<table>
<thead>
<tr>
<th>Tools and Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable fans</td>
</tr>
<tr>
<td>Broom</td>
</tr>
<tr>
<td>Drywall cart</td>
</tr>
<tr>
<td>Extension cord</td>
</tr>
<tr>
<td>Floor scraper</td>
</tr>
<tr>
<td>Lockup box</td>
</tr>
<tr>
<td>Pails</td>
</tr>
<tr>
<td>Portable lights</td>
</tr>
<tr>
<td>Shop vacuum</td>
</tr>
<tr>
<td>Shovel</td>
</tr>
<tr>
<td>Squeegee</td>
</tr>
<tr>
<td>Suction cups</td>
</tr>
<tr>
<td>Temporary heaters</td>
</tr>
<tr>
<td>Wheelbarrow</td>
</tr>
<tr>
<td>Wheeled dolly</td>
</tr>
<tr>
<td>Wheeled garbage box</td>
</tr>
</tbody>
</table>

### Required Material Handling and Site Maintenance Equipment

<table>
<thead>
<tr>
<th>Tools and Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architect’s scale</td>
</tr>
<tr>
<td>Calculator</td>
</tr>
<tr>
<td>Centre punch</td>
</tr>
<tr>
<td>Chalk line</td>
</tr>
<tr>
<td>Compass</td>
</tr>
<tr>
<td>Dry line</td>
</tr>
<tr>
<td>Framing square</td>
</tr>
<tr>
<td>Laser level</td>
</tr>
<tr>
<td>Magnetic hand level</td>
</tr>
<tr>
<td>Pencils and markers</td>
</tr>
<tr>
<td>Plumb bob</td>
</tr>
<tr>
<td>Spirit Level</td>
</tr>
<tr>
<td>Tape measure (imperial and metric)</td>
</tr>
<tr>
<td>T-bevel</td>
</tr>
</tbody>
</table>
Training Provider Standards
Section 5

- Water level

**Required Personal Protective Equipment**

- Appropriate clothing
- Ear plugs and muffls
- Evacuation horn
- Face sheilds
- Gloves
- Goggles/safety glasses
- Hard hat
- Knee pags
- Safety vest
- CSA approved safety boots

**Shop (Facility) Tools**

**Standard Hand Tools**

- Adjustable wrenches
- Aviation snips
- Bead clincher
- Bolt cutter
- Burke bar
- Caulking gun
- Channel locks
- Circle cutters
- Cold chisel
- Crimpers
- Dry line/t-bar clips
- Drywall Board lifter
- Drywall saw
- Eye screw pole
- Files
- Flat bar
- Hack saw
- Hammers
- Hand sander
- Hole Whitney punch
- Keyhole saw
- Lather’s hatchet
- Locking c-clamp
- Magnetic punch
- Multi-tip screwdriver
- Nail bar
- Nippers
- Pliers
- Pop rivet gun
- Putty knife
- Rasps
- Rubber mallet Square (t, combination, tri (speed
- Wedge lock clamp
Reference Materials

Required Reference Materials

- Association of Wall and Ceiling Contractors (AWCC) of BC specifications/standards manual
- Gypsum Construction Handbook
- Fire and Design manual
- BC Building Code
- Steel Framing guide

Recommended Resources

- FTIBC
- BCWCA
- AWCC
Instructor Requirements

Occupation Qualification
The instructor must possess:

• Lather – Interior Systems Mechanic (Wall and Ceiling Installer) – BC Certificate of Qualification, preferably with an Interprovincial Red Seal endorsement, or
• Lather – Interior Systems Mechanic – Certificate of Qualification from another province in Canada 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 possesses one of the following:

• 5 years experience as a supervisor
• Possess or is working toward an Instructor's Diploma or equivalent
Appendices

Appendix A
Acronyms

ACQ          Alkaline Copper Quaternary
ASTM         American Society of Testing and Materials
AWCC         Association of Wall and Ceiling Contractors
BCWCA        BC Wall and Ceiling Association
CSA          Canadian Standards Association
EIFS         Exterior insulation finishing system
EPS          Expanded polystyrene
FRP          Fiberglass-Reinforced Plastic
FTIBC        Finishing Trades Institute of BC
GWB          Gypsum Wallboard
HVAC         Heating, ventilation and air conditioning
NRC          Noise reduction coefficient
OHS          Occupational Health and Safety
OSB          Oriented strand board
PPE          Personal protective equipment
SDS          Safety data sheet
STC          Sound Transmission Class
ULC          Underwriters Laboratories Canada
WHMIS        Workplace Hazardous Materials Information System
Appendix B
Previous Contributors

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

- Stewart Baird
- Orval Bernardin
- Murray Corey
- Bert Gerwin
- Dino Gusola
- David Holmes
- Steve Moore

*Industry Subject Matter Experts retained to assist in the development of the Program Outline (2012):*

- Stewart Baird
- Noah Eliasen
- Dino Gusola
- Larry Robinson
- Kevin Weston