

# Lather (Interior Systems Mechanic) Level 2

## Lather (Interior Systems Mechanic)

**Unit:** B1 Blueprints and Specifications II

**Level:** Two

**Duration:** 35 hours

Theory: 14 hours

Practical: 21 hours

### Overview:

This unit, which builds on **A4 – Blueprints and Specifications I**, is designed to provide the apprentice with additional knowledge and skills about blueprints and specifications. The unit begins with coverage of commercial plans. Part of the unit covers amplifying drawings with notes and isolating trade-related work from blueprints. Finally, the unit covers drawing freehand pictorial sketches and blueprints..

<b>Objectives and Content:</b>	<b><u>Percent of Unit Mark (%)</u></b>
<b>1. Review unit A4 – Blueprints and Specifications I.</b>	<b>10%</b>
a. Terms used in drawings	
b. Blueprint sections and types	
c. Basic orthographic and isometric projections	
<b>2. Read and interpret commercial plans.</b>	<b>25%</b>
a. Site plans	
b. Structural plans	
c. Mechanical plans	
d. Architectural plans	
e. Foundation plans	
f. Electrical plans	
<b>3. Amplify drawings with notes.</b>	<b>20%</b>
<b>4. Isolate trade-related work from blueprints.</b>	<b>20%</b>
a. Specifications	
b. Plan views and notes	
c. Room finish and schedules	
d. Section and detail views	
e. Elevations	
f. Reflected ceiling plans	
<b>5. Draw freehand pictorial sketches for clarifications of details, notes, etc.</b>	<b>20%</b>
a. Ventilation	
b. Chase	
c. Curtain walls	
d. Anchors	

- e. Baffles
- f. Lintels

**6. Draw blueprints for shop projects.**

**5%**

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## Lather (Interior Systems Mechanic)

**Unit:** B2 Trade Related Mathematics II

**Level:** Two

**Duration:** 35 hours

Theory: 21 hours

Practical: 14 hours

### Overview:

This unit, which builds on **A5 – Trade Related Mathematics I**, is designed to provide the apprentice with additional knowledge and skills about trade related math. The unit begins with coverage of trade related problems. Part of the unit covers calculation of layout patterns, materials, types and quantities. Finally, the unit covers calculation of layout and material quantities for circular and elliptical projects.

<b>Objectives and Content:</b>	<b><u>Percent of Unit Mark (%)</u></b>
<b>1. Describe and calculate trade related problems.</b>	<b>30%</b>
a. Layouts	
b. Material sizes	
c. Quantities for false beams	
d. Soffits	
e. Others	
<b>2. Describe and calculate layout patterns, materials, types and quantities.</b>	<b>30%</b>
a. Control joints	
b. Expansion joints	
c. Patented ceilings	
d. Stepped ceilings	
e. Fire-rated walls	
f. Sound-rated walls	
<b>3. Describe and calculate layout and material quantities for circular and elliptical projects.</b>	<b>40%</b>
a. Domed ceilings	
b. Groined ceilings	
c. Arches	

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## Lather (Interior Systems Mechanic)

**Unit:** B3 Non Load-Bearing Steel Assemblies II

**Level:** Two

**Duration:** 49 hours

Theory: 21 hours

Practical: 28 hours

### Overview:

This unit, which builds on **A7 – Non Load-Bearing Steel Assemblies I**, is designed to provide the apprentice with additional knowledge and skills about non load-bearing steel assemblies. The unit covers non load-bearing walls, spanned ceilings, suspended drywall ceilings, non load-bearing bulkheads, metal door frames, window frames and backing.

<b>Objectives and Content:</b>	<b><u>Percent of Unit Mark (%)</u></b>
<b>1. Review unit A7 – Non Load-Bearing Steel Assemblies I.</b>	<b>35%</b>
a. Framing non load-bearing walls	
b. Framing spanned ceilings	
c. Framing suspended drywall ceilings	
d. Framing non load-bearing bulkheads	
e. Installing metal door and window frames	
<b>2. Perform framing of non load-bearing steel assemblies.</b>	<b>60%</b>
a. Non load-bearing walls	
b. Suspended drywall ceilings	
c. Non load-bearing bulkheads	
<b>3. Describe backing.</b>	<b>5%</b>
a. Types of backing, their characteristics and applications	
• Plywood	
• Wide metal strapping	
b. Tools and equipment	
c. Installation procedures	
d. Types of fasteners	
e. Backing requirements and placement	
f. Metal strapping thickness	

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## Lather (Interior Systems Mechanic)

**Unit:** B4 Load-Bearing Steel Assemblies I

**Level:** Two

**Duration:** 21 hours

Theory: 21 hours

Practical: 0 hours

### Overview:

This unit is designed to provide the apprentice with introductory knowledge about load-bearing steel assemblies. The unit begins with coverage of load-bearing walls, exterior ceilings, and soffits. Part of the unit covers load-bearing bulkheads. Finally, the unit covers load-bearing floors and roofs.

### Objectives and Content:

**Percent of  
Unit Mark (%)**

**1. Describe framing of load-bearing walls.**

**20%**

- a. Types of load-bearing walls, their characteristics and applications
  - Parapet walls
  - Exterior walls
  - Interior walls
- b. Types of load-bearing wall components, their characteristics and applications
  - Cross bracing
  - Strapping
  - Bridging
  - Studs
  - Tracks
  - Channels
  - Clips
- c. Interpreting information from drawings and specifications
  - Engineered shop drawings
  - Architectural drawings
  - Structural drawings
- d. Tools and equipment
- e. Framing procedures
- f. Types of fasteners
- g. Types of substrates and their properties
- h. Basic welding and plasma cutting procedures

**2. Describe framing of exterior ceilings and soffits.**

**20%**

- a. Types of exterior ceilings and soffits, their characteristics and applications
- b. Types of exterior ceiling and soffit components, their characteristics and applications
  - Furring channel
  - Studs
  - Flat metal

- Angles
- Tracks
- c. Interpreting information from drawings and specifications
  - Engineered shop drawings
  - Architectural drawings
  - Structural drawings
- d. Tools and equipment
- e. Framing procedures
- f. Types of fasteners
- g. Types of substrates and their properties

**3. Describe framing of load-bearing bulkheads. 20%**

- a. Types of load-bearing bulkheads, their characteristics and applications
  - Store fronts
  - Light coves
  - Canopies
- b. Types of load-bearing bulkhead components, their characteristics and applications
  - Studs
  - Backing
  - Hangers
  - Tracks
- c. Functions
  - Cosmetics
  - Concealing electrical and mechanical devices
  - Protection from weather
  - Defining room transitions
- d. Interpreting information from drawings and specifications
  - Engineered shop drawings
  - Architectural drawings
  - Structural drawings
- e. Tools and equipment
- f. Framing procedures
- g. Types of fasteners
- h. Types of substrates and their properties
- i. Structural requirements
- j. Bulkhead component spacing requirements
- k. Basic welding and plasma cutting procedures

**4. Describe framing of load-bearing floors. 20%**

- a. Types of load-bearing floors, their characteristics and applications
- b. Types of load-bearing floor components, their characteristics and applications
  - Steel joists
  - Channels
  - Flat metal
  - Bridging
  - Bracing
  - Stiffeners
  - Decking
- c. Interpreting information from drawings and specifications
  - Engineered shop drawings
  - Architectural drawings
  - Structural drawings
- d. Tools and equipment

- e. Framing procedures
- f. Types of fasteners
- g. Types of substrates and their properties
- h. Basic welding and plasma cutting procedures

**5. Describe framing of load-bearing roofs.**

**20%**

- a. Types of load-bearing roofs, their characteristics, applications and functions
  - Gable
  - Hip
  - Sloping
  - Flat
  - Mansard
- b. Types of load-bearing roof components, their characteristics, applications and functions
  - Studs
  - Flat metal for cross bracing
  - Tracks
  - Bridging
  - Pre-manufactured trusses
- c. Interpreting information from drawings and specifications
  - Engineered shop drawings
  - Architectural drawings
  - Structural drawings
- d. Tools and equipment
- e. Framing procedures
- f. Types of fasteners
- g. Types of substrates and their properties
- h. Basic welding and plasma cutting procedures

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## Lather (Interior Systems Mechanic)

**Unit:** B5 Wall Systems and Components II

**Level:** Two

**Duration:** 70 hours

Theory: 35 hours

Practical: 35 hours

### Overview:

This unit, which builds on **A8 – Wall Systems and Components I**, is designed to provide the apprentice with additional knowledge and skills about wall systems, their components, and sound barriers. The unit begins with coverage of drywall installation and finishing, drywall trim and moulding installation. Part of the unit covers security mesh and access panel installation. Finally, the unit covers sound barrier installation.

<b>Objectives and Content:</b>	<b><u>Percent of Unit Mark (%)</u></b>
<p><b>1. Review unit A8 – Wall Systems and Components I.</b></p> <ul style="list-style-type: none"> <li>a. Installation of drywall</li> <li>b. Installation of access panels</li> </ul>	<b>5%</b>
<p><b>2. Perform installation of drywall.</b></p>	<b>25%</b>
<p><b>3. Describe finishing of drywall.</b></p> <ul style="list-style-type: none"> <li>a. Types of drywall, their characteristics and applications               <ul style="list-style-type: none"> <li>• Fire-rated</li> <li>• Regular</li> <li>• Moisture-resistant</li> <li>• Cement board</li> </ul> </li> <li>b. Common thicknesses, widths and lengths of drywall</li> <li>c. Tools and equipment</li> <li>d. Finishing procedures</li> <li>e. Drywall finishing level</li> <li>f. Drywall finishing materials               <ul style="list-style-type: none"> <li>• Joint compound</li> <li>• Joint tape</li> <li>• Corner beads and trims</li> <li>• Perforated paper</li> <li>• Reinforcing tape</li> <li>• Mesh tape</li> <li>• Compounds (quick setting, all purpose, finish)</li> </ul> </li> <li>g. Problems and corrective measures</li> </ul>	<b>15%</b>
<p><b>4. Describe installation of drywall trims and mouldings.</b></p> <ul style="list-style-type: none"> <li>a. Types of trims, their characteristics, applications and functions</li> </ul>	<b>5%</b>

- Corner beads (plastic, metal, bullnose)
- L-beads
- J-beads
- Expansion and control joints
- b. Types of mouldings, their characteristics, applications and functions
  - Plaster
  - Cove
  - Step
  - Ornamental
- c. Trim and moulding locations
  - Corners
  - Closet edges
  - Transitions
  - Door frames
- d. Tools and equipment
- e. Installation procedures
- f. Fastening methods

**5. Perform finishing of drywall and installation of drywall trims and mouldings. 25%**

**6. Describe installation of security mesh. 5%**

- a. Types of security mesh and their characteristics
- b. Properties
  - Gauge
  - Weights
  - Material
  - Composition
  - Mesh size
- c. Applications
  - Banks
  - Secure storage rooms
  - Prisons
- d. Tools and equipment
- e. Installation procedures
- f. Procedures to butt and stagger joints
- g. Fastening methods

**7. Describe installation of sound barriers. 20%**

- a. Types of sound barriers, their characteristics, properties and applications
  - Acoustical batt insulation
  - Plenum baffles
  - Lead sheeting
  - Steel stud and drywall
  - Resilient channels
  - Pre-finished sound panels
- b. Tools and equipment
- c. Installation procedures
- d. Types of caulking and their applications

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## Lather (Interior Systems Mechanic)

**Unit:** B6 Ceiling Systems I

**Level:** Two

**Duration:** 35 hours

Theory: 21 hours

Practical: 14 hours

### Overview:

This unit is designed to provide the apprentice with introductory knowledge and skills about ceiling systems. The unit covers installation of suspended and non-suspended ceilings.

### Objectives and Content:

### Percent of Unit Mark (%)

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|--|------------|
| <b>1. Describe installation of suspended ceilings.</b>                           | <b>40%</b> |
| a. Types of suspended ceilings, their characteristics and applications           |            |
| • Acoustical   |            |
| • Metal  |            |
| • Wood   |            |
| b. Types of suspended ceiling components, their characteristics and applications |            |
| • Inserts  |            |
| • Hanger wire  |            |
| • Main and cross T's   |            |
| • Perimeter mouldings  |            |
| • Panels   |            |
| c. Types of grid systems, their characteristics and applications                 |            |
| • Concealed  |            |
| • Fine grid  |            |
| • Standard grid  |            |
| • Specialty ceilings   |            |
| d. Types of T-bar systems, their characteristics and applications                |            |
| • Fire-rated   |            |
| • Non fire-rated   |            |
| e. Tools and equipment   |            |
| f. Installation procedures   |            |
| g. Methods of installing hangers   |            |
| • Tying wires to structure   |            |
| • Using various anchors  |            |
| h. Requirements for utility fixtures   |            |
| i. Codes, standards and regulations  |            |
| <b>2. Perform installation of suspended ceilings.</b>                            | <b>40%</b> |

**3. Describe installation of non-suspended ceilings.**

**20%**

- a. Types of non-suspended ceilings, their characteristics and applications
  - Glue-on
  - Stapled tiles
- b. Tools and equipment
- c. Installation procedures
- d. Types of adhesives and fasteners

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## Lather (Interior Systems Mechanic)

**Unit:** B7 Smoke and Fire Barriers I

**Level:** Two

**Duration:** 35 hours

Theory: 21 hours

Practical: 14 hours

### Overview:

This unit is designed to provide the apprentice with introductory knowledge and skills about smoke and fire barriers. The unit begins with coverage of shaft wall systems. Part of the unit covers sealing penetrations. Finally, the unit covers beam, column and staircase enclosures.

<b>Objectives and Content:</b>	<b><u>Percent of Unit Mark (%)</u></b>
<b>1. Describe installation of shaft wall systems.</b>	<b>30%</b>
a. Types of shaft wall systems, their characteristics and applications	
b. Types of shaft wall system components, their characteristics and applications	
• J-track	
• I-studs	
• CH studs	
• Core board	
• Fire caulking	
c. Tools and equipment	
d. Installation procedures	
e. Sequence of shaft wall construction	
f. Types of fasteners	
g. Codes, standards and regulations	
<b>2. Perform installation of shaft wall systems.</b>	<b>40%</b>
<b>3. Describe sealing of penetrations.</b>	<b>10%</b>
a. Types of penetrations, their characteristics and applications	
• Pipes	
• Ducts	
• Electrical wiring	
b. Tools and equipment	
c. Procedures to seal penetrations	
d. Materials to seal penetrations	
• Fire stop caulking/sealant (liquid, workable)	
• Mineral wool	
e. Clearances required for expansion	
f. Codes, standards and regulations	

**4. Describe beam, column and staircase enclosures.**

**20%**

- a. Tools and equipment
- b. Procedures to enclose
- c. Materials used to enclose
  - Fire-rated drywall
  - Framing
- d. Components
  - Tracks
  - Studs
  - Caulking
  - Furring channels
- e. Types of fasteners used to install framing and drywall
- f. Sequence of assembly
- g. Codes, standards and regulations

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