Framer

On-the-Job Training Guide

2024

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TRAINING REQUIREMENTS FOR THE FRAMER TRADE

2700 hours (1.5 years) working in the framing trade to be eligible to apply for tradesperson status.

Journeyperson to apprentice ratio for this trade is: 1:2

The information contained in this document serves as a guide for employers and apprentices. Apprenticeship training is mutually beneficial to both employer and apprentice. The employer's investment in training apprentices results in skilled and certified workers. The document summarizes the tasks to be covered by the apprentice during their on-the-job portion of apprenticeship training. An apprentice spends approximately 85% of their apprenticeship term training on-the-job.

It is the employer's or journeyperson's responsibility to supervise an apprentice's practical skills development until a satisfactory level of proficiency has been reached.

EMPLOYER TRAINING RESPONSIBILITY

- promote a safety-conscious workplace
- provide mentored, hands-on practice in the use of tools and equipment
- demonstrate procedures relevant to layout, framing, and exterior door and window installation further the apprentice's ability to interpret technical drawings
- allow the apprentice to apply procedures used for estimating materials and costing projects
- ensure that the apprentice can evaluate the end product
- where possible, expose the apprentice to new framing technology

Employers should make every effort to expose their apprentices to work experience in as many areas of the trade as possible.

In the On-the-Job Training Guide, in-school instruction is listed first; on-the-job suggestions to help employers assist the apprentice to prepare for in-school training are listed next.

The content of the training components is subject to change without notice.

ON-THE JOB TRAINING CONTENT FOR THE FRAMER TRADE

This chart outlines on-the-job examples for apprentices to achieve relevant work experience.

Part One - Occupational Skills

Construction Safety

- Safety regulations (OH&S)
- Personal protective equipment
- Fall protection equipment
- Recognizing unsafe working environments
- Fire safety
- Recognizing industrial health hazards
- Basic WHMIS
- Construction and safe heating of construction hoarding

The mentor can assist the apprentice to prepare for this section by:

- ensuring familiarization with the scope and content of the OH&S Regulations
- ensuring proper understanding of the WHMIS system and symbols
- identifying hazardous materials in the workplace and instructing in the interpretation of the Material Safety Data Sheets
- providing all necessary personal protective equipment and making its use mandatory
- demonstrating the proper use, inspection and maintenance of fall protection equipment
- pointing out unsafe working conditions and industrial health hazards and monitoring for action appropriate to specific situations
- ensuring the use of site fire equipment is described and demonstrated
- describe the meaning and reason for a muster point and implementing this procedure
- detailing reasoning and procedures for the proper set up and ventilation of heating equipment
- demonstrating and explaining hoarding techniques to ensure safe and secure installations

Scaffolds

- Safe use of ladders and ramps
- Erection, maintenance and dismantling of wood and metal independent scaffolds
- Rigging accessories and operations
- Basic crane signalling

The mentor can assist the apprentice to prepare for this section by:

- explaining the relationship between access structures and OH&S Regulations
- monitoring the use of ladders and ramps and ensuring their proper installation
- exposing the apprentice to the installation, maintenance and dismantling procedures for numerous types of scaffolds and other access equipment
- familiarizing the apprentice with the application, uses and limitations of various types of rigging equipment and accessories
- demonstrating various knots and hitches and describing their correct applications
- demonstrating the use of and allowing the chance to use International hand signals during lifting operations

Building Materials

- Wood, lumber and manufactured lumber
- Panel products Metals, plastics and composites
- Mechanical fasteners
- Adhesives and sealants
- Proper storage of building materials

The mentor can assist the apprentice to prepare for this section by:

- explaining the identification and use of various types of wood, engineered wood and panel products and the proper storage techniques for each
- describing the terminology used to identify the various types of nails, screws and fasteners and giving examples of their applications
- having the apprentice select materials for projects

Tools

- Hand tools
- Portable power tools
- Stationary power tools and equipment
- Powder actuated tools
- Oxy-acetylene cutting equipment

The mentor can assist the apprentice to prepare for this section by:

- demonstrating the use and care of common hand, portable and stationary tools and equipment
- monitoring the use and care of these tools to ensure competency in their use
- having the apprentice complete repetitive projects using these tools and equipment
- having the apprentice maintain and sharpen tools
- explaining OH&S requirements for powder actuated tools
- describing and demonstrating the safe use of the equipment and products associated with oxyacetylene cutting equipment

Building Envelope

- Fundamentals of heat and heat flow
- Building code
- Wall and ceiling insulation; air and moisture barriers

The mentor can assist the apprentice to prepare for this section by:

- using proper terminology when describing these materials
- explaining and demonstrating the effects of a good building envelope regarding moisture, heat and sound transfer
- describing the ramifications of a poor building envelope
- explaining the different types of materials used in building insulation and air barriers, their applications and their limitations
- having the apprentice find the building code requirements for building envelope product installation and ensure comprehension of these procedures
- describing the special moisture and insulation installation requirements in order to ensure continuity following framing
- describing how to visualize the finished product to ensure that all possible leak locations have been properly sealed
- explaining the installation procedures and allowing the apprentice to install various types of these materials

Construction Documents

- Symbols and definitions
- Interpreting residential blueprints
- Building codes and permits
- Quantity surveys - framing materials

The mentor can assist the apprentice to prepare for this section by:

- assisting to interpret blueprint document lines, symbols and abbreviations
- explaining the various pages of blueprint documents, their functions and having the apprentice interpret various aspects of the job using these documents
- explaining the content and use of the National Building Code and explaining the requirements and reasons for building permits
- providing instruction and opportunity for the sketching of miscellaneous simple building components
- providing the opportunity to perform quantity calculations for various building materials from both blueprints and sketches

Site Layout

- Building layout with hand tools
- Calculate, establish and transfer elevations with a builder's level
- Setup and use of a laser level

The mentor can assist the apprentice to prepare for this section by:

- explaining and demonstrating how building foundations can be located with hand tools only using tape measures, string lines, plumb bobs, levels and the 3-4-5 method
- demonstrating the set-up and use of a builder's level to determine elevations
- explaining how different styles of grade rods are marked and how they are read
- providing instruction and opportunities to set-up laser levels
- ensuring that specific safety aspects of laser equipment is explained and followed

Trade Math

- Mathematical operations and calculations used in the building process

The mentor can assist the apprentice to prepare for this section by:

- ensuring that the metric and imperial graduations on measuring tools and instruments are fully understood
- requiring the repetitive use of the math required to interpret blueprints, calculate quantities and perform lay out using fractions, decimals, percentages, ratios, perimeters, volumes and areas by hand and using calculators
- using the 3-4-5 method of squaring to explain the Pythagorean theorem
- demonstrate the use of the Pythagorean theorem to determine lengths of rafters and other angled framing members
- providing opportunities to work with angles and perform the bisecting of these angles

Part Two - Framing

Blueprints and Quantity Surveys

- Interpreting light commercial blueprints
- Quantity surveys - framing materials

The mentor can assist the apprentice to prepare for this section by:

- allowing the apprentice to interpret the various pages of a set of light commercial blueprints and specifications
- having the apprentice determine procedures for various aspects of the job using these documents
- explaining and demonstrating the use of various types of scales and the use of scale rulers
- providing the opportunity to perform quantity surveys on various shapes and sizes of floor, wall and roof framing systems

Floor Framing

- Building code
- Beams, supports and sills
- Conventional floor systems
- Engineered floor systems
- Sheathing Floor openings
- Sunken and cantilevered floors
- Bow and bay window framing Decks

The mentor can assist the apprentice to prepare for this section by:

- using proper terminology when describing floor framing components
- ensuring familiarity with the contents of the National Building Code and how these contents relate to floor and deck framing requirements
- demonstrating how to use the contents and tables in the National Building Code to determine the stock size for dimensional lumber floor joists
- allowing the apprentice to interpret the various lumber and engineered floor framing blueprints and details
- demonstrating the process to calculate dimensional lumber beam sizes and component joint locations by using the statements and the tables in the National Building Code
- demonstrating installation techniques for various types of floor beams and columns
- allowing participation in or exposure through information to all aspects of layout, assembly and sheathing of various types of framed floors
- exposing the apprentice to the various types of trusses and engineered products used in floor framing and explaining their special requirements
- demonstrating the process to calculate a stairwell opening
- having the apprentice calculate cutting lengths and angles for various floor framing components
- explaining the special framing requirements for the installation of bow and bay windows

Wall and Ceiling Framing

- Building code
- Rough openings
- Layout and assembly
- Sheathing and bracing
- Interior walls and partitions
- Blocking, backing, strapping, furring and firestops
- Ceiling joists
- Steel stud framing Steel door frames in steel stud walls
- Permanent wood foundations
- Structural Insulated Panel System (SIPS)
- Structural timber construction

The mentor can assist the apprentice to prepare for this section by:

- using proper terminology when describing wall framing components
- ensuring familiarity with the contents of the National Building Code and how these contents relate to wall and ceiling framing requirements

- allowing the apprentice to interpret wall framing blueprints and details
- working with the apprentice to lay out plates including locating centre-lines for rough openings
- allowing participation in or exposure through information to all aspects of layout, assembly and sheathing of various types of framed walls including standard wood, preserved wood, steel stud and heavy timber types of construction ensuring types and terminologies are understood
- exposing the apprentice to the various types of engineered products used in wall framing and explaining their special requirements
- demonstrating the process to calculate lintel sizes by using the statements and tables in the National Building Code
- describing how the apprentice should visualize the reasons for the locations of blocking, backing, strapping and furring
- having the apprentice calculate cutting lengths and angles for various wall framing components
- explaining the framing requirements and installation procedures for steel door frames

Roof Framing

- Building code
- Roof geometry
- Conventional gable and shed roofs
- Conventional hip roofs
- Roof ladders, collar ties and ridge boards
- Roof trusses - gable and hip
- Girder and cantilevered trusses
- Roof openings
- Sheathing and bracing

The mentor can assist the apprentice to prepare for this section by:

- using proper terminology when describing roof framing components
- ensuring familiarity with the contents of the National Building Code and how these contents relate to roof framing requirements
- explaining the terminology used to describe different roof styles and shapes
- allowing the apprentice to interpret roof framing blueprints and details
- allowing participation in or exposure through information to all aspects of layout, assembly and sheathing of various types of framed roofs including standard wood rafter and wood truss systems
- demonstrating the process to calculate line lengths of common and hip rafters using the Pythagorean's Theorem
- demonstrating how to determine the stock size for common and hip rafters using the statements and tables in the National Building Code
- explaining the framing requirements for the installation of skylights and other roof openings such as chimney chases
- having the apprentice calculate cutting lengths and angles for various roof framing components

Intersecting Roofs

- Intersecting roof - imperial
- Intersecting roof - metric
- Unequal sloped intersecting roofs Dormers and crickets

The mentor can assist the apprentice to prepare for this section by:

- using proper terminology when describing intersecting roof framing components
- explaining the terminology used for various components used in the construction of these types of roofs showing the apprentice examples of styles and shapes particular to these types of roofs
- having the apprentice interpret blueprints and truss shop drawings particular to this type of roof construction

- having the apprentice calculate cutting lengths and angles for the various intersecting roof components

Wood Stairs

- Code requirements, terminology, stair types and design of stairwells
- Layout and construction of basic straight run wood stairs
- Hand and guard rails

The mentor can assist the apprentice to prepare for this section by:

- using proper terminology when describing stair components
- ensuring familiarity with the contents of the National Building Code and how these contents relate to floor opening requirements and stair construction
- providing opportunities to calculate the size of stairwell openings using rise and run of stairs
- having the apprentice assist in the layout and construction of various types of stairs and railings
- having the apprentice calculate cutting lengths and angles for various stair and railing components
- giving exposure and examples using the various formulas used to calculate geometric stairs on paper

Windows and Exterior Doors

- Residential prefabricated exterior window and door installation
- Measuring and retrofitting of windows and doors
- Sealing of windows, doors and build-outs
- Caulking and sealants

The mentor can assist the apprentice to prepare for this section by:

- explaining the rough opening requirements for various door and frame styles
- ensuring familiarity with the contents of the National Building code and how these contents relate to the specific framing requirements and installation techniques for door and hardware in both commercial and residential applications
- explaining the importance of completely reading and comprehending installation instructions
- demonstrating the correct way to provide for an exterior and interior air and vapour barrier seal during installation of door and window frames

Consider apprenticeship training as an investment in the future of your company and in the future of your workforce. Ultimately, skilled and certified workers increase your bottom line.

Get involved in the apprenticeship training system. Your commitment to training helps to maintain the integrity of the trade.

Do you have employees who have been working in the trade for a number of years but don't have trade certification?

Contact your local apprenticeship office for details on how they might obtain the certification they need.

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