

Scaffolder

On the Job Training Guide

2022

Scaffolders lay out, assemble, erect, use, maintain and dismantle scaffolding including access scaffold, shoring, falsework, bleachers and stages.

Training Requirements: 6000 hours (4 years) including four 3 week or equivalent training sessions delivered by the Prairie Arctic Trades Training Centre at various locations using a variety of delivery methods. An apprentice must successfully complete the required technical training and compile enough on-the-job experience to total at least 1500 hours each year.

Scaffolder Proficiency Certificate holder (or Journeyman Carpenter) to apprentice ratio for this trade is: 1:2

The information contained in this pamphlet 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 pamphlet summarizes the tasks to be covered by the apprentice during the on-the-job portion of apprenticeship training. An apprentice spends approximately 85% of the apprenticeship term training on-the-job.

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

EMPLOYER TRAINING RESPONSIBILITY:

- demand a safety-conscious workplace
- provide mentored, hands-on practice in the use of tools and equipment
- demonstrate procedures relevant to the layout, set-up, maintenance and dismantling of access and support structures
- further the apprentice's ability to interpret technical drawings, codes and regulations
- allow the apprentice to apply procedures used for estimating materials and supervising personnel
- ensure that the apprentice can evaluate the end product
- where possible, expose the apprentice to new technology in the Scaffolder trade

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

Below, in-school instruction is listed first; 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.

Level One

Personal Protective Equipment

Occupational Health & Safety (OH&S) regulations Personal protective equipment

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to PPE*
- *making the use of personal protective equipment mandatory*
- *describing unsafe working conditions and industrial health hazards and monitoring for action appropriate to situations*

Fall Protection

OH&S regulations
Harnesses
Lifelines
Fall protection (certificate issued)

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to fall protection*
- *demonstrating the proper use and maintenance of fall protection equipment*

Nets and Fans

OH&S regulations
Component descriptions
Techniques and uses

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to nets and fans*
- *using proper terminology when describing net and fan components*
- *exposing the apprentice to the various installation techniques for nets and fans*

Material Handling

Manual lifting and hoisting techniques Basic knots and hitches
Scaffolding component hand signals
Handling, organizing and storage of scaffolding materials

The employer can assist the apprentice to prepare for this section of technical training by:

- *describing proper manual lifting and hoisting techniques and monitor for consistent application*
- *demonstrating various knots and hitches and describing their correct applications (reef knot, clove hitch, bowline and timber hitch)*
- *demonstrating the various hand signals for scaffold components*

- *describing the sequence of installation for scaffolding components*
- *describing and demanding good housekeeping, material organization and proper stacking techniques*

Tools

Hand tools

Portable saws and drills

Stationary power equipment - table saw, mitre saw, drill press

The employer can assist the apprentice to prepare for this section of technical training by:

- *testing to ensure apprentice can read both Metric and Imperial tape measures*
- *demonstrating the use and care of applicable 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*

Ladders

OH&S Regulations

Temporary construction ladders Metal

ladders

Rope ladders

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to ladders*
- *describing and demonstrate proper set-up of metal step and extension ladders*
- *monitoring the use of ladders and ensuring their proper installation*
- *exposing the apprentice to rope ladders and instructing on proper climbing techniques*

Scaffolding Basics

OH&S Regulations

Canadian Standards Association (CSA) applicable scaffolding requirements Comparison of CSA to OH&S regulations

Terminology

Scaffold tags

Scaffold types

Frame scaffolds

Rolling frame scaffolds

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to frame scaffolds and rolling frame scaffolds*
- *using proper terminology when describing frame scaffold components*
- *describing the meaning of the different scaffold tags and their meaning regarding access restrictions*
- *exposing apprentice to installation, maintenance and dismantling procedures for frame scaffolding structures*
- *exposing the apprentice to installation, maintenance and dismantling procedures for rolling frame scaffolding structures*
- *having the apprentice describe (through a sketch) a frame scaffold setup and to estimate the materials required*

Wooden Scaffolds

OH&S requirements

Canadian Standards Association (CSA) applicable scaffolding requirements Comparison of CSA to OH&S regulations

Double pole scaffolds

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to wooden scaffolds*
- *describing which applications are covered by the CSA, and will not be found in OH&S (deviation from plumb)*
- *ensuring awareness of CSA approval ratings and where to find this information for scaffold components*
- *exposing apprentice to installation, maintenance and dismantling procedures for wooden double pole scaffold structures*
- *having the apprentice describe (through a sketch) a wooden double pole scaffold setup and to estimate the materials required*

Trade Math

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring that the metric and imperial graduations on measuring tools and instruments are fully understood*
- *requiring the repetitive use of math using fractions, decimals, percentages, ratios, perimeters, volumes and areas by hand and using calculators*
- *teaching the 3-4-5 method of squaring explaining the Pythagorean theorem*
- *ensuring the apprentice can convert between commonly used Metric and Imperial measurements*

Level Two

Rigging and Hoisting

Hoisting methods

Fibre and wire ropes

Advanced knots and hitches

Knowledge of weights and loads

Rigging accessories

International hand signals

Powered industrial truck operator certificate program (forklift operator and telehandler operator) Mechanized lifting and hoisting

Transportation and loading of material

The employer can assist the apprentice to prepare for this section of technical training by:

- *familiarization with the application and uses of various types of rigging equipment and accessories*
- *demonstrating various knots and hitches and describing their correct applications (running bowline, triple-sliding hitch)*
- *describing the information found on sling and cable load-rating tags*
- *demonstrating and allowing the apprentice to employ International crane hand signals*

Tools

Explosive actuated fastening tools
Stationary power tools - bench grinder

The employer can assist the apprentice to prepare for this section of technical training by:

- *demonstrating the safe use of the equipment and products associated with powder actuated tools*
- *demonstrating the safe use and care of portable and stationary grinding 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*
- *explaining the dangers associated when working in the area of oxy-acetylene processes (bright light, hot slag)*
- *explaining the dangers associated when working in the area of welding processes (arc flash, hot slag, dangerous fumes)*

Tube and Clamp Scaffolds

OH&S regulations
CSA applicable scaffolding requirements
Comparison of CSA to OH&S regulations
Component descriptions
Manufacturer's specifications
Platform load ratings
Building techniques
Rolling tube and clamp scaffolds

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to tube and clamp scaffolds*
- *describing which applications are covered by the CSA, and will not be found in OH&S (deviation from plumb)*
- *ensuring awareness of CSA approval ratings and where to find this information for scaffold components*
- *using proper terminology when describing tube and clamp scaffold components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all scaffold types may differ*
- *demonstrating how to calculate platform load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for tube and clamp scaffolding structures*
- *exposing apprentice to installation, maintenance and dismantling procedures for rolling tube and clamp scaffolding structures*

Commercial Engineered Drawings Interpretation

Engineered scaffolding drawings
Freehand sketching
Estimating tube and clamp scaffolds

The employer can assist the apprentice to prepare for this section of technical training by:

- *assisting in the interpretation of various pages of a set of blueprints*
- *having the apprentice interpret 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 for the apprentice to perform quantity surveys for tube and clamp scaffold setups*
- *having the apprentice to sketch scaffolding setups*

Trade Math

The employer can assist the apprentice to prepare for this section of technical training by:

- *continuing to require the repetitive use of the math required to interpret blueprints and calculate quantities using fractions, decimals, percentages, ratios, perimeters, volumes and areas by hand and using calculators*
- *continuing to graduate the apprentice to more difficult applications of mathematics use as appropriate to the job*
- *allowing the apprentice time to practice calculating squares and cubes for scaffold systems and applying these calculations to the estimating of the various components*

Level Three

Respiratory Equipment

OH&S regulations Masks

Respirators

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to respiratory equipment and situations where this equipment is required*
- *explaining circumstances where an air-purifying mask would be used as opposed to a dust mask*
- *demonstrate the proper use of respiratory equipment (fit testing)*

Survey Equipment

Building level use Laser

level use

Shooting elevations - metric, imperial and engineering rods

The employer can assist the apprentice to prepare for this section of technical training by:

- *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*
- *ensuring that specific safety aspects of laser equipment is explained and followed*
- *demonstrating the set-up and use of a laser level to determine elevations, lines and centre lines*

Site Preparation

OH&S requirements

Recognizing site obstructions and dangers Site

facilities

Base preparation

The employer can assist the apprentice to prepare for this section of technical training by:

- *describing and providing all facilities that are required by OH&S Regulations (washroom, first aid station, eyewash station, etc.)*
- *always pointing out obstructions and dangers such as overhead power lines*
- *explaining the requirements and reasons for compaction testing prior to scaffold setup*
- *explaining the dangers of frozen ground*

Hoarding and Shelters

OH&S regulations
CSA applicable scaffolding requirements
Comparison of CSA to OH&S regulations
Uses
Wind loads
Erection and ventilation

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to hoarding and shelters*
- *ensuring the use of site fire equipment is described and demonstrated*
- *describing how wind loads will affect the design of a scaffold system*
- *showing the apprentice how and where to inspect to ensure hoarding is sound and secure*
- *describing why ventilation is required, especially if the space is heated using propane or other gas*

Modular and System Scaffolds

OH&S regulations
CSA applicable scaffolding requirements
Comparison of CSA to OH&S regulations
Component descriptions
Manufacturer's specifications
Building techniques

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to modular and system scaffolds*
- *describing which applications are covered by the CSA, and will not be found in OH&S (deviation from plumb)*
- *ensuring awareness of CSA approval ratings and where to find this information for scaffold components*
- *using proper terminology when describing modular and system scaffold components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all scaffold types may differ*
- *demonstrating how to calculate platform load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for modular and system scaffolding structures*

Suspended Scaffolds

OH&S regulations
CSA applicable scaffolding requirements
Comparison of CSA to OH&S regulations
Component descriptions
Manufacturer's specifications
Applications
Building techniques

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to suspended scaffolds*
- *describing which applications are covered by the CSA, and will not be found in OH&S (deviation from plumb)*
- *ensuring awareness of CSA approval ratings and where to find this information for scaffold components*
- *demonstrating proper rigging procedures for this type of scaffold*
- *demonstrating proper use of turfer and other manual or motorized climbers*
- *describing how to interpret and follow engineered drawings for the construction of this type of scaffold*
- *using proper terminology when describing suspended scaffold components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all scaffold types may differ*
- *demonstrating how to calculate platform load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for suspended scaffolding structures*

Performance Stages

Applicable National Building Code requirements Specialized drawings
Special requirements

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the National Building Code of Canada (NBC) applicable to performance stages*
- *describing how to interpret and follow engineered drawings for the construction of performance stages*
- *using proper terminology when describing performance stage components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all performance stage types may differ*
- *demonstrating how to calculate platform load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for performance stage structures*

Swing Stages

OH&S regulations Component descriptions Manufacturer's specifications
Calculating for suspension bearers and counter weights
Tie-back points
Building techniques

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to swing stage*
- *using proper terminology when describing swing stage components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all swing stage types may differ*
- *demonstrating how to calculate platform load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for swing stage structures*

- *demonstrating proper rigging procedures for this type of scaffold*
- *demonstrating and allowing the apprentice to perform the calculations for suspension bearers and counterweights*

Industrial Engineered Drawings Interpretation

Industrial engineered drawings Freehand sketching
Shoring drawings
Estimating modular and system scaffolds

The employer can assist the apprentice to prepare for this section of technical training by:

- *allowing the apprentice to interpret industrial engineered drawings and determine requirements*
- *having the apprentice to sketch scaffolding setups*
- *providing the opportunity for the apprentice to perform quantity surveys for modular and system scaffolds*

Trade Math

The employer can assist the apprentice to prepare for this section of technical training by:

- *continuing to require the repetitive use of the math required to interpret blueprints and calculate quantities using fractions, decimals, percentages, ratios, perimeters, volumes and areas by hand and using calculators*
- *continuing to graduate the apprentice to more difficult applications of mathematics use as appropriate to the job*
- *allowing the apprentice time to practice calculating squares and cubes for scaffold systems and applying these calculations to the estimating of the various components*
- *having the apprentice apply the conversion of fractions to decimals and decimals to feet & inches during various calculations*

Level Four

Safety

OH&S regulations and requirements
Confined space awareness (certificate issued) Asbestos abatement awareness
Lock-out and tag-out procedures

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations regarding confined spaces, asbestos abatement, and lock-out and tag-out procedures*
- *describe the reasons for and demonstrate air monitoring*
- *exposing the apprentice to confined space procedures*
- *demonstrating lock-out and tag-out procedures*

Survey Equipment

Transit use
Turning angles

The employer can assist the apprentice to prepare for this section of technical training by:

- *demonstrate the set-up and use of a transit*
- *exposing the apprentice to simple layout using a transit*
- *monitoring the apprentice's ability to perform the math functions required to use these systems*
- *demonstrating how to read a vernier scale*

Shoring

OH&S regulations
Specialized component descriptions
Manufacturer's specifications
Load capacities
Specialized drawings and estimating
Building techniques

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the OH&S Regulations applicable to shoring*
- *using proper terminology when describing shoring components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all shoring types may differ*
- *demonstrating how to calculate load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for shoring structures*
- *having the apprentice interpret engineered shoring drawings*
- *stressing the importance of proper ground compaction and appropriate sill components*

Temporary Bleachers

Applicable National Building Code requirements
Manufacturer's specifications
Special requirements
Specialized drawings
Building techniques

The employer can assist the apprentice to prepare for this section of technical training by:

- *ensuring familiarization with the scope and content of the National Building Code of Canada (NBC) applicable to temporary bleachers*
- *describing how to interpret and follow engineered drawings for the construction of temporary bleachers*
- *using proper terminology when describing temporary bleacher components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all temporary bleacher types may differ*
- *demonstrating how to calculate platform load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for temporary bleacher structures*

Machine Scaffolds

OH&S regulations
CSA applicable scaffolding requirements Comparison of
CSA to OH&S regulations
Types such as scissor lifts and telescoping boom
Applications
Aerial Lift (certificate issued)

The employer can assist the apprentice to prepare for this section of technical training by:

- *making the apprentice aware of machine-specific OH&S Requirements regarding mandatory training*
- *describing which applications are covered by the CSA, and will not be found in OH&S (deviation from plumb)*
- *ensuring awareness of CSA approval ratings and where to find this information for scaffold components*
- *demonstrating the set-up and operation of this type of equipment and monitoring for consistency*

Boiler Scaffolds

Specialized component descriptions

Specialized drawings and estimating

Building techniques

The employer can assist the apprentice to prepare for this section of technical training by:

- *describing how to interpret and follow engineered drawings for the construction of boiler scaffolds*
- *using proper terminology when describing boiler scaffold components*
- *exposing to manufacturer's specifications and assisting to interpret and apply these specifications*
- *ensuring the apprentice is aware that specifications for all boiler scaffold types may differ*
- *demonstrating how to calculate platform load ratings*
- *exposing apprentice to installation, maintenance and dismantling procedures for boiler scaffold structures*
- *having the apprentice estimate component requirements for boiler scaffolds*

Trade Math

The employer can assist the apprentice to prepare for this section of technical training by:

- *continuing to require the repetitive use of the math required to interpret blueprints and calculate quantities using fractions, decimals, percentages, ratios, perimeters, volumes and areas by hand and using calculators*
- *continuing to allow the apprentice to use simple and more difficult applications of mathematics use as appropriate to the job*
- *continuing to allow the apprentice time to practice calculating squares and cubes for scaffold systems*
- *and applying these calculations to the estimating of the various components*

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 do not have trade certification? Contact your local apprenticeship office for details on how they might obtain the certification they need.

Saskatchewan Apprenticeship & Trade Certification Commission

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