

## Scaffolder *On-the-Job Training Guide*

*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 requirements

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 don't have trade certification? Contact your local apprenticeship office for details on how they might obtain the certification they need.**

### **Saskatchewan Apprenticeship & Trade Certification Commission**

2140 Hamilton St Regina SK S4P 2E3

Tel: (306) 787-2444

Fax: (306) 787-5105

Toll Free: 1-877-363-0536

Website: [www.saskapprenticeship.ca](http://www.saskapprenticeship.ca)

### **District Offices**

Estevan (306) 637-4930

La Ronge (306) 425-4385

Moose Jaw (306) 694-3735

North Battleford (306) 446-7409

Prince Albert (306) 953-2632

Saskatoon (306) 933-8476

Swift Current (306) 778-8945

Yorkton (306) 786-1394