# Construction Craft Labourer
# On-the-Job Training Guide

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*Recognition:*
*To promote transparency and consistency, portions of this document has been adapted from the 2015 Construction Craft Labourer National Occupational Analysis (Employment and Social Development Canada).*

*A complete version of the Occupational Standard can be found* at www.red-seal.ca

# STRUCTURE OF THE ON-THE-JOB TRAINING GUIDE

To facilitate understanding of the occupation, this on-the-job training guide contains the following sections:

**Description of the Construction Craft Labourer trade**: an overview of the trade's duties and training requirements.

**Essential Skills Summary**: an overview of how each of the nine essential skills is applied in this trade.

**Task Matrix**: a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard detailing the essential skills and the level of training where the content is covered.

**Block (NOA):** the largest division within the standard that is comprised of a distinct set of trade activities.

**Task**: distinct actions that describe the activities within a major work activity.

**Sub-task**: distinct actions that describe the activities within a task.

**On-the-Job and In-school Training Content for the Construction Craft Labourer Trade**: a chart which outlines on-the-job examples for apprentices to achieve relevant work experience to prepare for topics of technical training.

# DESCRIPTION OF THE CONSTRUCTION CRAFT LABOURER TRADE

Construction craft workers work mostly on construction sites; their tasks include site preparation and cleanup, setting up and removing access equipment, and working on concrete, masonry, steel, wood and pre-cast erecting projects. They handle materials and equipment and perform demolition, excavation and compaction activities. They may also perform site safety and security checks.

Construction craft workers work on a wide variety of structures such as residential, and industrial, commercial and institutional (ICI) sites, as well as hydroelectric dams, roadways, bridges, tunnels, mines and railways. In some jurisdictions, they may also work on utility, landscape and pipeline projects. Construction craft workers may work for private companies as well as municipal, provincial and federal governments.

With experience, construction craft workers who complete additional training may specialize in different areas of construction. This can include operating off-road vehicles, drilling, blasting, scaling, sandblasting, high-pressure washing, diving, tunnelling and performing emergency rescue. Another common responsibility is the management of pedestrian and vehicular traffic in situations involving potential hazards and public trust.

Construction craft workers work primarily outdoors, in all weather conditions. They are often required to work at heights, over water and in confined spaces and excavations. Their job settings may be in densely-populated urban settings or at remote locations. They often work overtime during peak construction periods.

Key attributes for workers in this trade are mechanical aptitude, manual dexterity and an ability to do hard physical work. They must also be able to work both as team members, and sometimes, to interact directly with the public where considerations such as safety and legal liability are at issue. Organizational, leadership, problem solving and document interpretation skills are assets for anyone wanting to progress in this trade.

This analysis acknowledges similarities with many construction trades. With experience construction craft workers may have opportunities to advance.

**Training Requirements**: To graduate from each level of the apprenticeship program, an apprentice must successfully complete the required technical training and compile enough on-the-job experience to total at least 1200 hours each year. Total trade time required is 2400 hours and at least 2 years in the trade.

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 apprentice's 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 the installation of drainage, waste and vent systems; potable water distribution; fixtures and appliances; hydronic heating and cooling systems; specialty piping; pumps and private sewage disposal systems
- provide the opportunity for apprentices to service the above systems and products
- further the apprentice's ability to interpret technical drawings
- ensure that the apprentice can evaluate the end product.

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.

**Entrance Requirements for Apprenticeship Training**

Your grade twelve transcript (with no modified classes) or GED 12 is your guarantee that you meet the educational entrance requirements for apprenticeship in Saskatchewan. In fact, employers prefer and recommend apprentices who have completed high school. This ensures the individual has all of the necessary skills required to successfully complete the apprenticeship program, and receive journeyperson certification.

Individuals with "modified" or "general" classes in math or science do not meet our entry requirements. These individuals are required to take an entrance assessment prescribed by the SATCC.

English is the language of instruction in all apprenticeship programs and is the common language for business in Saskatchewan. Before admission, all apprentices and/or "upgraders" must be able to understand and communicate in the English language. Applicants whose first language is not English must have a minimum Canadian Language Benchmark Assessment of six (CLB6).
Note: A CLB assessment is valid for a one-year period from date of issue.

| Designated Trade Name | **Math Credit** at the Indicated Grade Level❶ | **Science Credit** at Grade Level |
|---|---|---|
| Construction Craft Labourer | Grade 10 | Grade 10 |

❶ - (One of the following) WA – Workplace and Apprenticeship; or F – Foundations; or P – Pre-calculus, or a Math at the indicated grade level (Modified and General Math credits are not acceptable.).

*Applicants who have graduated in advance of 2015-2016, or who do not have access to the revised Science curricula will require a Science at the minimum grade level indicated by trade.

For information about high school curriculum, including Math and Science course names, please see: http://www.curriculum.gov.sk.ca/#

**Individuals not meeting the entrance requirements will be subject to an assessment and any required training**

# ESSENTIAL SKILLS SUMMARY

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.

Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways.

A series of Canadian Council of Directors of Apprenticeship (CCDA) endorsed tools have been developed to support apprentices in their training and to be better prepared for a career in the trades. The tools can be used independently or with the assistance of a tradesperson, trainer, employer, teacher or mentor to:

- understand how essential skills are used in the trades;
- learn about individual essential skills strengths and areas for improvement; and
- improve essential skills and increase success in an apprenticeship program.

Tools are available online or for order at: https://www.canada.ca/en/employment-social-development/programs/essential-skills/tools.html.

The application of these skills may be described throughout this document within the competency statements which support each subtask of the trade. The following are summaries of the requirements in each of the essential skills, taken from the essential skills profile. A link to the complete essential skills profile can be found at: www.red-seal.ca.

## READING

Construction craft workers read a variety of material such as safety data sheets (SDS) and pre- job safety instructions (PSI). They also may refer to instructions and procedures for guidelines on mixing mortars and cleaning parts, and manuals for guidelines on inspecting and operating mobile and stationary equipment including load charts. Construction craft workers may read trade journals, brochures and website articles to learn about new products and construction technologies.

## DOCUMENT USE

Construction craft workers interpret labels on product packaging and equipment to locate specifications, times, safety information and identification numbers. They also interpret technical drawings such as floor plans, schematics and assembly drawings. They complete documents including orientation and equipment inspection forms.

## WRITING

Construction craft workers use writing skills to complete logbooks to record the outcome of safety inspections and write notes to co-workers concerning items such as defective equipment. They may be required to prepare short reports, such as describing events leading up to a workplace accident.

## ORAL COMMUNICATION

Construction craft workers exchange information with co-workers and other tradespeople. They talk to supervisors to learn about job assignments and to coordinate activities and schedules.

Construction craft workers participate in staff meetings to discuss safety, goals, procedures, job time-frames and projects. They speak to suppliers to determine policies, prices and delivery schedules.

## NUMERACY

Construction craft workers take measurements using a range of tools and compare measurements to specifications. They estimate quantities and weights. Construction craft workers perform calculations including calculating material requirements.

## THINKING

Construction craft workers use thinking skills to organize their work. They decide on the order of tasks and how to work around issues that can arise such as material shortages and equipment breakdowns. They evaluate the safety of worksites by identifying hazards. They evaluate the quality of work by taking measurements and checking alignment. Construction craft workers may attempt to troubleshoot equipment problems. They may also recommend whether parts are reusable or can be rebuilt.

## DIGITAL TECHNOLOGY

Construction craft workers use digital tools such as multimeters and scan tools to measure current, voltage and resistance. They use calculators to complete numeracy related tasks. Construction craft workers use communication software/devices to exchange information. They may access online information such as bulletins and training courses. They may also use computers to complete topographical surveys and generate diagrams as well as to view blueprints.

## WORKING WITH OTHERS

Construction craft workers may work independently or with a journeyperson or apprentice to accomplish their assigned tasks. On large jobs, they may work as a member of a team.

## CONTINUOUS LEARNING

Construction craft workers have a recurring requirement to learn. This includes learning about new work materials and construction procedures. They may take part in company or jobsite safety training and training to remain up to date in first aid practice.

# CONSTRUCTION CRAFT LABOURER
# TASK MATRIX

This chart outlines the major work activities, tasks and sub-tasks from the 2015 Construction Craft Labourer National Occupational Standard. Each sub-task details the corresponding essential skill and level of training where the content is covered. *

* Sub Tasks with numbers in the boxes is where the content will be delivered in training.

## A – Common occupational skills — 23%

| | | | | | |
|---|---|---|---|---|---|
| **Task A-1 Performs safety-related functions** | **1.01 Maintains safe work environment** 1, 2 | **1.02 Uses personal protective equipment (PPE) and safety equipment** 1, 2 | | | |
| **Task A-2 Uses and maintains tools and equipment** | **2.01 Maintains hand, power and powder-actuated tools** 1 | **2.02 Uses rigging and hoisting equipment** 1 | **2.03 Uses stationary equipment** 1 | **2.04 Uses sandblaster** 1 | **2.05 Uses mobile equipment** 1 |
| **Task A-3 Organizes work** | **3.01 Uses documentation** 1, 2 | **3.02 Communicates with others** 1, 2 | | | |
| **Task A-4 Performs routine trade activities** | **4.01 Handles construction materials** 1 | **4.02 Performs site housekeeping and maintenance** 1 | **4.03 Erects hoarding and enclosures** 1 | **4.04 Installs membranes** 1 | **4.05 Installs insulating materials** 1 |
| | **4.06 Establishes grades and elevations** 1, 2 | **4.07 Performs traffic control** 1 | **4.08 Installs permanent and temporary fencing** 1 | | |

## B – Site work

**19%**

| | | | | | |
|---|---|---|---|---|---|
| **Task B-5 Prepares site** | **5.01 Clears site**<br>1, 2 | **5.02 Sets up site facilities**<br>1, 2 | **5.03 Assists in installation of pilings**<br>1 | **5.04 Builds access and egress roads**<br>1 | |
| **Task B-6 Performs ground work** | **6.01 Locates underground utilities**<br>1, 2 | **6.02 Performs excavation**<br>1, 2 | **6.03 Installs excavation shoring**<br>1, 2 | **6.04 Performs backfill and compaction**<br>1, 2 | |
| **Task B-7 Services site** | **7.01 Addresses suspected hazardous materials**<br>1 | **7.02 Controls water runoff**<br>1 | **7.03 Sets up temporary lighting**<br>1 | **7.04 Sets up generators and compressors**<br>1 | **7.05 Performs site restoration**<br>1 |
| | **7.06 Manages tool crib**<br>1 | **7.07 Recycles materials**<br>1 | | | |
| **Task B-8 Performs basic demolition** | **8.01 Cuts material**<br>1, 2 | **8.02 Dismantles existing structures and components**<br>1, 2 | | | |
| **Task B-9 Performs safety watches** | **9.01 Monitors hazardous gases**<br>1 | **9.02 Performs watch**<br>1 | **9.03 Performs bottle watch**<br>1 | **9.04 Performs confined space watch**<br>1 | **9.05 Monitors heaters**<br>1 |

## C – Scaffolding and access equipment

**9%**

| | | | | | |
|---|---|---|---|---|---|
| **Task C-10 Uses scaffolding** | **10.01 Erects scaffolding**<br>1, 2 | **10.02 Inspects scaffolding**<br>1, 2 | **10.03 Maintains scaffolding**<br>1, 2 | **10.04 Tends to scaffold erectors**<br>1,2 | **10.05 Dismantles scaffolding**<br>1, 2 |
| **Task C-11 Uses access equipment** | **11.01 Uses access ladders**<br>1 | **11.02 Uses power elevated work platforms**<br>1 | **11.03 Inspects access equipment**<br>1 | **11.04 Maintains access equipment**<br>1 | |

## D – Concrete work

**18%**

| | | | | | |
|---|---|---|---|---|---|
| **Task D-12 Forms concrete** | **12.01 Installs formwork and shoring**<br>1, 2 | **12.02 Inspects assembled formwork**<br>1, 2 | **12.03 Dismantles formwork**<br>1, 2 | **12.04 Maintains formwork**<br>1, 2 | |
| **Task D-13 Places and finishes concrete** | **13.01 Mixes concrete**<br>1, 2 | **13.02 Transports concrete on site**<br>1, 2 | **13.03 Places concrete**<br>1, 2 | **13.04 Installs components in concrete**<br>1, 2 | **13.05 Assist with finishing concrete**<br>1, 2 |
| | **13.06 Controls concrete curing process**<br>1, 2 | | | | |
| **Task D-14 Modifies concrete** | **14.01 Drills/cores concrete**<br>2 | **14.02 Prepares concrete for resurfacing**<br>2 | **14.03 Performs concrete repair and refinishing**<br>2 | **14.04 Creates expansion, control and isolation joints**<br>2 | |

| | | | |
|---|---|---|---|
| D-15 Places/applies grout, epoxies and caulking | 15.01 Places/applies grout<br>2 | 15.02 places/applies epoxies<br>2 | 15.03 Applies caulking<br>2 |

## E – Masonry work — 10%

| | | | | | |
|---|---|---|---|---|---|
| Task E-16 Prepares for masonry work | 16.01Sets up masonry materials<br>2 | 16.02 Mixes mortars and grouts<br>2 | | | |
| Task E-17 Tends to bricklayers | 17.01 Cuts masonry units<br>2 | 17.02 Installs lintels and rough bucks<br>2 | 17.03 Washes masonry units<br>2 | 17.04 Installs refractory materials<br>2 | 17.05 Uses fireproof materials<br>2 |

## F – Utilities and pipeline — 11%

| | | | | | |
|---|---|---|---|---|---|
| Task F-18 Installs utility piping for water and sewer installations | 18.01Installs pipe for water systems<br>1, 2 | 18.02 Installs pipe for sewer systems<br>1, 2 | 18.03 Installs catch basins and manholes<br>1, 2 | 18.04 Modifies existing pipe<br>1, 2 | 18.05 Assists with testing water and sewer lines<br>1, 2 |
| Task F-19 Performs pipelines activities | 19.01 Constructs right of ways<br>2 | 19.02 Performs pipeline installations<br>2 | 19.03 Performs pipeline maintenance<br>2 | | |

# G – Roadwork

**10%**

| | | | |
|---|---|---|---|
| **Task G-20 Install road surface materials** | **20.01 Place road surface materials**<br>1 | **20.02 Repairs road surfaces**<br>1 | |
| **Task G-21 Installs roadwork components** | **21.01 Installs barriers**<br>1 | **21.02 Installs road markings and signs**<br>1 | **21.03 Installs culverts**<br>1 |

# TRAINING PROFILE CHART

This Training Profile Chart represents Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training at the topic level.

| Level One | Transcript Code | Hours |
|---|---|---|
| Safe Work Practices | CCL-100 | 12 |
| Occupational Skills | CCL-110 | 10 |
| Tools and Equipment | CCL-120 | 12 |
| Routine Trade Activities | CCL-130 | 12 |
| Site Work | CCL-140 | 22 |
| Scaffolding and Access Equipment | CCL-150 | 12 |
| Concrete Work | CCL-160 | 22 |
| Utilities and Pipeline Tasks | CCL-170 | 12 |
| Roadwork | CCL-180 | 6 |
| | | 120 |

| Level Two | Transcript Code | Hours |
|---|---|---|
| Safe Work Practices | CCL-200 | 6 |
| Occupational Skills | CCL-210 | 14 |
| Grades and Elevations | CCL-220 | 12 |
| Site Work | CCL-230 | 22 |
| Scaffolding | CCL-240 | 16 |
| Concrete Work | CCL-250 | 24 |
| Masonry Work | CCL-260 | 12 |
| Utilities and Pipeline Tasks | CCL-270 | 14 |
| | | 120 |

# ON-THE-JOB AND IN-SCHOOL TRAINING CONTENT FOR THE CONSTRUCTION CRAFT LABOURER TRADE

This chart outlines on-the-job examples for apprentices to achieve relevant work experience to prepare for the topics of technical training. Topics of technical training are provided with the associated learning outcomes.

## Level One — 4 weeks — 120 hours

### Safe Work Practices — 12 hours

- Describe workplace hazards
- Identify OHS regulations
- Describe fall protection systems and equipment
- Describe personal protective equipment
- Describe fire safety procedures
- Describes procedures for performing a safety watch

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

- *Exposing apprentices to OH&S, WHMIS (GHS), and SDS documents.*
- *Providing hands-on experience with safety manuals, policies, and procedures.*
- *Providing opportunities for training and certification requirements such as fall protection, working at heights, and confined space.*
- *Exposing apprentices to emergency procedures and muster area procedures.*
- *Providing opportunities to dispose and recycle materials.*
- *Explaining the types and characteristics of gases, their detection, and permissible exposure levels.*
- *Describing the types of compressed gases that need to be monitored and their gauge readings.*
- *Providing opportunities for training and certification required to perform confined space watch and bottle watch.*
- *Explaining and demonstrating to apprentices what defines a confined space, emergency rescue and evacuation plans, equipment, and procedures.*
- *Allowing apprentices to communicate with hand signals, rope signals, and radios.*
- *Explaining the types of heaters and fire watch procedures.*

### Occupational Skills — 10 hours

- Identify construction documents and specifications
- Describe various methods of communication
- Use basic trade math

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

- *Exposing apprentices to types of documentation such as work records, job hazard analysis (JHA), codes, and regulations*
- *Encouraging apprentices to work with safety documentation such as monitoring sheets for safety watches, safe work permits, and job procedure manuals.*
- *Working with apprentices to understand the sequence of construction tasks.*
- *Explaining the various jobsite roles and responsibilities.*
- *Providing the opportunity to work with different formats of documents such as paper and digital.*
- *Allowing apprentices to communicate orally, in writing, digitally, electronically, and with international hand signals.*
- *Providing opportunities to use trade math such as calculating area and volume.*

## Tools and Equipment — 12 hours

- Use hand tools
- Use power tools
- Use powder-actuated tools
- Describe the use of rigging and hoisting equipment
- Describe the use of portable equipment
- Describe the use of mobile equipment
- Describe the use of sand blasters
- Describe the use of packers

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

- *Supervising the use and care for tools and equipment.*
- *Explaining and demonstrating the use and care of common hand tools such as pry bars, chisels, rakes, and pliers.*
- *Describing and demonstrating the use and care of common power tools such as drills and saws.*
- *Reviewing and demonstrating the safe use and care of powder-actuated tools.*
- *Explaining and demonstrating the safe use and care of rigging and hoisting equipment.*
- *Describing and demonstrating the safe use and care of portable equipment such as heaters.*
- *Reviewing and demonstrating the safe use and care of mobile equipment such as sandblasters and packers.*
- *Exposing the apprentice to the storage and inventory of tools, equipment, supplies, and consumables.*
- *Describing to the apprentice the security requirements for a tool crib.*

## Routine Trade Activities — 12 hours

- Describe procedures for installing fencing
- Describe procedures to erect and dismantle hoarding
- Describe procedures to control traffic
- Describe procedures to establish grades and elevations
- Describe methods to safely handle various materials
- Describe procedures for installing membranes
- Describe procedures for installing insulating materials

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

- *Ensuring that apprentices understand cleaning procedures and the hazards associated with cleaning products.*
- *Explaining company, site, and jurisdictional policies regarding hazardous materials such as oil, asbestos, lead, silica, and bio-hazards.*
- *Demonstrating to apprentices the procedures for disposing and recycling materials.*
- *Describing the uses of settling ponds.*
- *Supervising the installation and maintenance of temporary lighting.*
- *Supervising apprentices during the safe use of GFCI's.*
- *Explaining the types of fuel used in generators and compressors, and the sizes and uses of generators and compressors.*
- *Explaining and demonstrating ventilation requirements and start-up and shut-down procedures for generators and compressors.*
- *Ensuring that apprentices can identify site conditions and areas to be protected prior to work being performed.*
- *Allowing apprentices to protect areas using fencing.*
- *Describing the activities that require additional protection such as controlled zones and shielding.*
- *Allowing apprentices to protect additional areas with fencing and shielding.*
- *Exposing apprentices to types of restoration activities such as replacing landscaping and removed material.*
- *Allowing apprentices to assist in establishing grades and elevations.*
- *Demonstrating the movement, storage, handling, maintenance, and cleaning of materials.*
- *Describing the various types of membranes.*
- *Providing the opportunity to install various types of membranes.*
- *Describing the various types of insulating materials.*
- *Providing the opportunity to install various types of insulating materials.*
- *Providing opportunities for training and certification requirements for traffic control.*

**Site Work** **22 hours**

- Describe procedures for preparing a jobsite
- Describe procedures for performing ground work
- Describe demolition procedures
- Describe excavation and shoring practices
- Describe procedures for servicing a jobsite

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

- *Reviewing with apprentices the safe work permits and environmental requirements for a jobsite.*
- *Determining work site and set-up requirements such as locations of temporary buildings and fencing.*
- *Identifying with apprentice's areas to protect prior to work being performed.*
- *Locating and identifying with apprentices pre-existing site conditions and existing utilities.*
- *Explaining the colour codes of flags or stakes for various hazards and utilities.*
- *Reviewing the types of material to be cut and cutting tools and techniques.*
- *Exposing apprentices to dismantling techniques, hazards, tools, and equipment.*

- *Explaining and demonstrating the operating methods of oxy-acetylene and propane torches such as selecting tip types, setting regulators and igniting material.*
- *Supervising good housekeeping practices.*
- *Describing the safety requirements for trenches, including depth and angle of repose.*
- *Demonstrating the proper use of tools and equipment for excavation, backfilling, and compaction.*
- *Reviewing the safety requirements for shoring and shielding requirements.*
- *Explaining how to locate and install pilings.*
- *Identifying with apprentice various soil types and their characteristics.*
- *Demonstrating types of machinery such as pile drivers, pile drillers and cranes.*
- *Describing the types of pilings such as concrete, H-beam, sheet, and steel.*
- *Explaining the rigging and hoisting procedures for lifting shoring.*

**Scaffolding and Access Equipment** **12 hours**

- Use scaffolding
- Describe the use of access equipment

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

- *Introducing apprentices to types of scaffolding such as systems, baker's, frame and brace, mast climber system, tube and clamp, mobile, and stationary.*
- *Exposing apprentices brace and platform sizes and types, and scaffolding components such as clamps (swivel and right-angle), hardware, outriggers, and fasteners.*
- *Describing overhang limitations when working with planking.*
- *Ensuring that apprentices understand tagging requirements for scaffolding and access equipment.*
- *Explaining the safety inspection requirements for scaffolding and access equipment.*
- *Supervising knot tying techniques and allowing them opportunities to practise.*
- *Exposing the apprentice to maintenance of scaffolding and access equipment.*
- *Providing opportunities to work with types of ladders such as extension, platform and stepladder.*
- *Demonstrating safe ladder techniques such as placement, 3-point contact, overhang, tie-off, and kick plates.*
- *Describing the limitations and hazards of using ladders.*
- *Explaining the types of power-elevated work platforms such as mast climber systems, scissor lifts, boom lifts and swing stages.*
- *Providing opportunities regarding training and certification requirements for scaffolding and access equipment.*

**Concrete Work** **22 hours**

- Install concrete formwork
- Perform the placement and finishing of concrete

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

- *Exposing apprentices to types of shoring, such as fixed, telescoping and scaffold.*
- *Demonstrating the use of shoring hardware such as anchor pins, spring clips, and base plates.*
- *Describing the shoring spacing, ratings, and regulations.*
- *Allowing the apprentice to work with types of forms such as steel, handset (loose), fly table, fly form and void (for openings).*
- *Exposing apprentices to types of formwork components such as bracing, shoring, falsework, strongbacks, turnbuckles, walers, clamps, wedges, ties, and clips.*
- *Explaining the ratings and applications of types of formwork.*
- *Ensuring that apprentices know the locations requiring inspection such as steps, bulkheads, and corners.*
- *Identifying the dismantling procedures and sequences of formwork.*
- *Describing the types of concrete and their uses.*
- *Explaining the strengths of concrete, slump, and pour rates.*
- *Explaining concrete aggregates.*
- *Describing to apprentices concrete additives such as plasticizers, accelerators, and retarders.*
- *Allowing apprentices to work with components such as dowels, safety lines, keyways, anchor bolts, and steel plates.*
- *Demonstrating component installation methods for freshly placed concrete such as wet dowelling and installing anchor bolts.*
- *Providing the opportunity for installing components in cured concrete, using methods such as drilling, chipping, and sawing.*
- *Supervising transporting and placing concrete.*
- *Providing the opportunity to work with equipment such as line pumps and boom pumps.*
- *Describing surface preparation requirements.*
- *Explaining the types of finishes such as hard float, broomed, polished, exposed aggregate, and burn finish.*
- *Demonstrating finishing processes such as floating, trowelling and edging.*
- *Explaining the timing for finishing processes.*
- *Describing how weather and environmental conditions such as heat, cold, exhaust fumes, and dust may affect the curing process.*
- *Explaining the rate of curing and which factors can affect the rate.*

**Utilities and Pipeline** **12 hours**

- Describe procedures for installing utility piping

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

- *Providing opportunities to apprentices to transport, rig, hoist, and store various types of pipe and associated components.*
- *Exposing apprentices to safe work practices and excavation permit requirements.*
- *Explaining soil conditions, types of soils, and types of sub-grades.*
- *Describing the various types of pipe and their uses.*
- *Describing the various associated components such as manholes, thrust blocks, catch basins, valves, and tees, their characteristics and their uses.*
- *Explaining the process of grading and connecting the various types of pipe.*

- *Working with apprentices to install various types of pipe and associated components.*
- *Identifying the types of material used for backfill such as gravel, sand and fill-crete.*
- *Reviewing the effect of moisture content on compaction and compaction rates.*
- *Supervising the use water during compaction.*
- *Explaining the types and thicknesses of finished road surfaces.*
- *Describing the process for reclaiming contaminated soils.*

**Road Work** **6 hours**

- Describe procedures for installing paving materials
- Describe procedures for installing roadwork components

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

- *Describing the related hazards such as traffic and material temperatures*
- *Exposing apprentices to the various types of chemical additives used in roadwork.*
- *Explaining how the locations of manholes and catch basins are determined.*
- *Describing how to determine the amount of paving materials to remove when repairing.*
- *Allowing apprentices to work with the various types of road surface materials such as concrete, asphalt, interlocking brick, and chip seal.*
- *Explaining the various types of sub-bases.*
- *Allowing apprentices to participate in sidewalk and pedestrian walkway construction.*

## Level Two — 4 weeks — 120 hours

### Safe Work Practices — 6 hours

- Describe workplace hazards
- Describe the purpose of safety committees

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

- *Explaining the transportation of dangerous goods (TDG) procedures.*
- *Providing opportunities for training and certification requirements such as TDG.*
- *Exposing apprentices to OH&S, WHMIS (GHS), and SDS documents.*
- *Supervising the use of safety manuals, policies, and procedures.*
- *Providing opportunities to the apprentice for training and certification requirements such as fall protection, working at heights, and confined space.*
- *Exposing apprentices to emergency procedures and muster area procedures.*
- *Explaining the types and characteristics of gases, their detection, and permissible exposure levels.*
- *Supervising the communication with hand signals, rope signals, and radios.*

### Occupational Skills — 14 hours

- Interpret construction documents and specifications
- Use basic trade math

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

- *Exposing apprentices to types of documentation such as blueprints and specifications.*
- *Working with apprentices to predict and prepare for the sequence of construction tasks.*
- *Providing the opportunity to work with different formats of documents such as paper and digital.*
- *Supervising oral, written, digital, electronic, and international hand signal communication.*
- *Providing opportunities to use trade math such as ratios, percent, and estimating materials.*

### Grades and Elevations — 12 hours

- Establish grades and elevations

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

- *Allowing apprentices to assist in establishing grades and elevations.*
- *Supervising the use and care of instruments, tools, and equipment needed for establishing grades and elevations.*

### Site Work — 22 hours

- Describe procedures for preparing a jobsite
- Describe procedures for performing ground work
- Describe demolition procedures

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

- *Reviewing the safe work permits and environmental requirements for a jobsite.*
- *Determining work site and set-up requirements such as locations of temporary buildings and fencing.*
- *Identifying with apprentice's areas to protect prior to work being performed.*
- *Locating and identifying pre-existing site conditions and existing utilities.*
- *Explaining the colour codes of flags or stakes for various hazards and utilities.*
- *Reviewing the types of material to be cut and cutting tools and techniques.*
- *Exposing apprentices to dismantling techniques, hazards, tools, and equipment.*
- *Supervising the operation of oxy-acetylene and propane torches such as selecting tip types, setting regulators and igniting material.*
- *Identifying the various soil types and their characteristics.*

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**Scaffolding** **16 hours**

- Use Scaffolding

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

- *Introducing the types of scaffolding such as baker's, frame and brace, mast climber system, tube and clamp, mobile, and stationary.*
- *Exposing apprentices to brace and platform sizes and types, and scaffolding components such as clamps (swivel and right-angle), hardware, outriggers, and fasteners.*
- *Describing overhang limitations when working with planking.*
- *Ensuring that apprentices understand tagging requirements for scaffolding and access equipment.*
- *Supervising the safety inspection requirements for scaffolding and access equipment.*
- *Demonstrating knot tying techniques and allowing them opportunities to practise.*
- *Exposing apprentices to maintenance of scaffolding and access equipment.*
- *Providing opportunities to train and certify.*

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**Concrete Work** **24 hours**

- Install concrete formwork
- Perform the placement and finishing of concrete
- Describe concrete maintenance and repair
- Install grout, epoxies and caulking

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

- *Allowing apprentices to work with types of forms and their components.*
- *Explaining the ratings and applications of types of formwork.*
- *Allowing apprentices to inspect steps, bulkheads, and corners.*
- *Allowing apprentices to work with concrete additives.*
- *Supervising the work with components such as dowels, safety lines, keyways, anchor bolts, and steel plates.*
- *Providing opportunities to install components in wet and cured concrete.*
- *Supervising the work with equipment such as line pumps and boom pumps.*
- *Providing opportunities to apprentices to finish concrete.*
- *Describing wet and dry drilling/coring procedures.*
- *Explaining products and chemical agents used for repair and refinishing such as bonding agents, epoxies, grout, patching materials and acids.*

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- *Identifying deficiencies in concrete that can be repaired.*
- *Explaining the reasons for installing concrete joints.*
- *Describing types of joints such as expansion, control and isolation.*
- *Demonstrating the depth and spacing of joints to be made.*
- *Explaining the types of cuts such as green, wet, and dry.*
- *Explaining finishing methods such as painting, epoxy coating, parging, acid staining, and acid etching.*
- *Describing the types of grouts and their applications and hazards.*
- *Explaining the types of epoxies and their applications and hazards.*
- *Describing the types of caulking and their applications and hazards.*
- *Explain concrete repair, saw cut detail for correct repair, and CSP profile for repair materials being used.*

**Masonry Work** **12 hours**

- Describe procedures for masonry work preparations
- Describe procedures for assisting bricklayers

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

- *Explaining the health and environmental concerns of using masonry units, grouts, epoxies, cleaning agents, and other associated products.*
- *Introducing apprentices to various materials and products required for masonry tasks.*
- *Supervising the storage, transport, and placement of masonry materials.*
- *Introducing apprentices to the various types of mortars and grouts*
- *Explaining the types of masonry units such as bricks, refractory materials, tiles and blocks.*
- *Introducing the types of brick such as keyed, insulating, and fire.*
- *Introducing the types of block such as acoustical, veneer, bullnose, and rough-faced.*
- *Explaining the cutting procedures for masonry units and related safety requirements.*
- *Describing to apprentices the various types of lintels such as channel iron, wood, pre-cast, and poured concrete.*
- *Supervising the install of rough bucks such as openings for windows and door frames.*
- *Explaining to apprentices the various cleaning agents used such as muriatic acid and water.*
- *Exposing apprentices to the various cleaning methods such as removing mortar, excess efflorescence, epoxy, and grouts.*
- *Introducing the types of refractory material such as bricks, gunnite, and ram.*
- *Explain the locations requiring refractory materials such as boilers, furnaces, and kilns.*
- *Introducing apprentices to mortars used in refractory applications.*
- *Describing the hazards and precautions related to refractory materials and associated materials.*
- *Introducing the types of fireproofing materials such as mineral wool, caulking, and cement-like materials.*
- *Explain the applications for fireproofing materials such as surface penetrations, and protecting beams, columns, and walls*

**Utilities and Pipeline** **14 hours**

- Describe procedures for installing utility piping
- Describe pipeline right of ways and installation
- Describe pipeline maintenance

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

- *Providing opportunities to transport, rig, hoist, and store various types of pipe and associated components.*
- *Exposing apprentices to safe work practices and excavation permit requirements.*
- *Supervising the installation of various types of pipe and associated components.*
- *Allowing the backfill and compaction of piping installations.*
- *Explaining the calculations involved in determining finished grade and depth of excavations.*
- *Allowing apprentices to participate in reclaiming contaminated soils.*

**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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