



Roofer

On-the-Job Training Guide

2024

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Recognition:

To promote transparency and consistency, this document has been adapted from the 2020 Roofer Red Seal Occupational Analysis (Employment and Social Development Canada).

A complete version of the Occupational Analysis 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:

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.

Major Work Activity (MWA): 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 Training Content for the Roofer Trade: a chart which outlines the topics of technical training with on-the-job examples for apprentice to achieve relevant experience at work.

TRAINING REQUIREMENTS FOR THE ROOFER TRADE

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 1500 hours each year. The total trade time required is 4500 hours with a minimum of 3 years experience in the trade.

There are three levels of technical training delivered online by Lotus Learning Solutions, Saskatoon, Saskatchewan

Journeyman to apprentice ratio for this trade is: 1:3

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

It is the employer's or journeyman'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 inspecting, diagnosing, servicing, repairing, replacing and overhauling of all components of an automobile, light truck or light bus
- provide the opportunity for apprentices to service the above systems and vehicles
- further the apprentice's ability to interpret technical drawings and schematics
- ensure that the apprentice can troubleshoot, diagnose, and repair the vehicle and its systems

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.

ROOFER TASK MATRIX CHART

This chart outlines the major work activities, tasks and sub-tasks from the 2020 Roofer Red Seal Occupational Standard (RSOS). Each sub-task details the corresponding essential skill and level of training (apprenticeship year) where the content is delivered in training.

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

A - Performs Common Occupational Skills

18%

Task A-1 Performs safety related functions	A-1.01 Maintains safe work environment 1 (2,3 in context)	A-1.02 Uses personal protective equipment (PPE) and safety equipment 1 (2,3 in context)			
Task A-2 Uses tools and equipment	A-2.01 Uses hand tools 1, 2, 3	A-2.02 Uses power tools, pneumatic tools, and hot-air welding, induction and fueled equipment 1, 2, 3	A-2.03 Uses hoisting, lifting and rigging equipment 1, 2, 3	A-2.04 Uses access equipment 1, 2, 3	A-2.05 Uses hot process equipment 1, 2, 3
	A-2.06 Uses motorized equipment 1, 2, 3				
Task A-3 Organizes Work	A-3.01 Uses documentation and reference materials 1,2	A-3.02 Interprets blueprints and drawings 1, 2, 3	A-3.03 Estimates material 3	A-3.04 Assesses worksite conditions 1,2	A-3.05 Positions equipment and material on the ground and on the roof 1, 2

Task A-4 Uses communication and mentoring techniques	A-3.06 Prepares material disposal systems 1, 2	A-3.07 Evaluates roof conditions near rooftop equipment installations 3
	A-4.01 Uses communication techniques 1, 3	A-4.02 Uses mentoring techniques 3

B – Prepares Roof and Deck

14%

Task B-5 Prepares roof for replacement	B-5.01 Protects surrounding area 1	B-5.02 Removes loose debris 1	B-5.03 Removes roofing and flashing 1	B-5.04 Prepares roof substrate 2	B-5.05 Performs minor adjustments to penetrations, curbs and parapets 2
	Task B-6 Prepares deck for roof installation	B-6.01 Inspects deck 2, 3	B-6.02 Cleans surface of deck 1, 3	B-6.03 Verifies placement of roof penetrations, curbs and parapets 2, 3	B-6.04 Dries deck 1

C – Installs Low Slope Roofing

31%

Task C-7 Applies low slope roofing components	C-7.01 Installs support panels 1, 2, 3	C-7.02 Primes substrate 1, 2, 3	C-7.03 Applies vapour retarder, vapour barrier and air barrier 1, 2, 3	C-7.04 Installs insulation 1, 2, 3	C-7.05 Installs cover board 1, 2, 3

Task C-8 Applies low slope roofing membranes	C-7.06 Installs drains, vents, curbs and penetrations 1, 2, 3	C-7.07 Applies ballast, walkways and protective surfaces 1, 2, 3	C-7.08 Installs metal flashings 1, 2, 3		
	C-8.01 Relaxes membranes 1, 2, 3	C-8.02 Sets membranes 1, 2, 3	C-8.03 Applies membranes using hot liquid process 1, 2, 3	C-8.04 Applies membranes using torched-on method 2	C-8.05 Applies membranes using hot-air welding 2, 3
	C-8.06 Applies membranes using cold applied methods 1, 2, 3	C-8.07 Applies membranes using mechanical fasteners 1, 2, 3	C-8.08 Applies loose-laid membranes 3	C-8.09 Applies liquid-applied membranes 3	C-8.10 Installs membrane flashings 1,2,3
	C-8.11 Installs temporary seals and temporary drains 1, 2, 3				

D – Installs Steep Slope Roofing

13%

Task D-9 Performs common steep slope practices	D-9.01 Installs steep slope underlayment 1	D-9.02 Installs steep slope venting 1	D-9.03 Installs steep slope valley applications 1	D-9.04 Installs steep slope saddles/crickets 1	D-9.05 Installs steep slope penetration flashings 1
	Task D-10 Applies shingles	D-10.01 Determines layout of shingles 1, 2, 3	D-10.02 Installs starter strip and starter course 1, 2, 3	D-10.03 Fastens shingles 1, 2, 3	D-10.04 Cuts shingles 1, 2, 3

D-10.06 Installs metal flashings for shingled roofs

1,2,3

Task D-11 Applies roof tiles

D-11.01 Installs battens/strapping for roof tiles

3

D-11.02 Fastens roof tiles

3

D-11.03 Cuts roof tiles

3

D-11.04 Installs closure strips for roof tiles

3

D-11.05 Installs ridge and hip caps

3

D-11.06 Installs metal flashings for tiled roofs

3

Task D-12 Applies pre-formed metal roofing

D-12.01 Installs battens/strapping for pre-formed metal roofing

3

D-12.02 Fastens pre-formed metal roofing

3

D-12.03 Cuts sheet metal

3

D-12.04 Installs closure strips for pre-formed metal roofing

3

D-12.05 Installs snow guards

3

D-12.06 Installs metal flashings for pre-formed metal roofs

3

E – Waterproofs and Damp-proofs Surfaces

10%

Task E-13 Waterproofs surfaces

E-13.01 Prepares waterproofing substrates

2

E-13.02 Applies waterproofing membrane

2

E-13.03 Installs green, sustainable, vegetative and protected membrane components

3

Task E-14 Damp-proofs surfaces

E-14.01 Applies damp-proofing materials

2

E-14.02 Applies protection layer

2

F – Assesses, Maintains and Repairs Roof

14%

Task F-15 Assesses roof condition

F-15.01 Performs roof inspections

3

F-15.02 Performs cut test

3

F-15.03 Determines maintenance or repair required

3

Task F-16 Maintains and repairs low slope roofing

F-16.01 Maintains low slope roofing

2, 3

F-16.02 Repairs low slope roofing

2, 3

Task F-17 Maintains and repairs steep slope roofing

F-17.01 Maintains steep slope roofing

2, 3

F-17.02 Repairs steep slope roofing

2, 3

TRAINING PROFILE CHART

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

Level One	Transcript Code
Safety, Worksite, ergonomics and general	RFH 100
Tools and Scaffold Safety	RFH 105
Roofer Workplace Skills	RFH 110
Built Up Roofing	RFH 115
Steep Roofing- Asphalt Shingles	RFH 120

Level Two	Transcript Code
Decks, Insulation, Vapour Barriers	RFH 200
Print Reading and Math	RFH 205
Air Tool Safety, Hydraulics and Small Motors	RFH 210
Power Roof Tools	RFH 215
Cedar Shakes and Shingles	RFH 220
SBS Modified Bitumen	RFH 225
Waterproofing	RFH 230

Level Three	Transcript Code
Estimating, Planning and WHMIS	RFH 300
Metal Flashing and Flat Roof	RFH 305
Metal Roofs	RFH 310
Concrete, Tile and Slate Roofs	RFH 315
Single Ply Membrane	RFH 320
EPDM	RFH 325
Waterproofing and Vegetative Roofing	RFH 330

ON-THE JOB AND IN-SCHOOL TRAINING

CONTENT FOR THE ROOFER 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

Safety, Worksite, Ergonomics and General

- uses PPE and safety equipment
- demonstrate good housekeeping
- describe roof safety
- describe fire safety

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

- *having the apprentice participate in training for workplace safety and health regulations such as Material Safety Data Sheets (MSDS), Workplace Hazardous Material Information Systems (WHMIS) and Occupational Health and Safety (OH&S)*
- *demonstrating good housekeeping practices and the proper storage and care of PPE*
- *providing the apprentice with safe roof and fire safety practices*
- *allowing the apprentice to display safe worksite practices*

Tools and Scaffold Safety

- use basic hand tools
- use on-deck equipment
- use kettles, burners and propane
- use ladders, scaffolds, roof jacks and fall arrest equipment
- perform vehicle maintenance

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

- *describing the care and maintenance of hand tools*
- *providing the apprentice proper guidance to the use of on-deck equipment*
- *displaying safe work practices when using kettles, burners and propane*
- *raising awareness to the dangers of improper use of kettles, burners and propane*
- *providing instruction on the proper uses of ladders, scaffolds, roof jacks and fall arrest equipment*
- *performing dual inspections with the apprentice when performing vehicle safety checks*

Roofer Workplace Skills

- demonstrate knowledge of trade terminology
- identify types of roof structures
- identify roofing materials
- perform moving and storage of equipment and supplies
- interpret prints and working drawings
- uses communication techniques

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

- *communicating with the apprentice about the proper use of trade terminology and how it applies to the workplace*

- *describing the different types of roof structures and their purposes*
 - *identifying roofing materials and their proper uses*
 - *displaying the proper techniques of moving equipment and the proper storage of the equipment*
 - *providing instruction and exposing the apprentice to blueprint use and working documents*
 - *displaying how blueprints and work drawings relate to worksite layout*
-

Built up Roofing

- preparation of deck surfaces for covering
- describe sloped insulation principles
- identify types of built-up roofing (bur) and styrene butadiene styrene (sbs) roofing
- identify types of bur and sbs materials
- install bur and sbs roofing

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

- *assisting the apprentice with the proper preparation techniques of different deck surfaces*
 - *describing sloped insulation principles to the apprentice*
 - *describing the types of bur and sbs roofing and materials*
 - *displaying the proper installation of bur and sbs roofing*
-

Steep Roofing - Asphalt Shingles

- install 3-tab and architectural asphalt shingles
- install mechanical fasteners
- apply sealants

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

- *describing the difference between 3-tab and architectural asphalt shingles*
 - *exposing the apprentice to the selection and application of mechanical fasteners*
 - *exposing the apprentice to the selection and application of sealants*
-

Fall Protection Certification

- pass/fail

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

- *displaying the proper use of fall protection*
 - *have the apprentice participate and display in workplace safety procedures as it applies to fall protection usage*
-

Fire Extinguisher

- pass/fail

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

- *displaying the proper use of fire extinguishers*
- *exposing the apprentice to the different types of fire extinguishers and their uses*
- *have the apprentice participate and display in workplace safety procedures as it applies to fire protection usage*

Level Two

Deck, Insulation, Vapour Barriers

- prepare deck
- identify roof deck types
- describe deck conditions
- identify insulation
- identify, interpret and install cover boards
- identify and install vapour barrier

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

- *allowing the apprentice to prepare the deck under proper supervision*
 - *having the apprentice identify the different deck types*
 - *describing the deck conditions and the adjustments necessary for the job*
 - *performing insulation, cover board, vapour barrier installation*
-

Print Reading and Math

- interpret specifications
- interpret sketches
- prepare trade math calculations
- interpret prints and working drawings
- determine material quantities

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

- *assessing and assisting with the apprentice's trade math abilities*
 - *assisting with jobsite layout as it pertains to blueprints and working drawings*
 - *allowing the apprentice to perform a material takeoff estimation*
-

Air Tools Safety, Hydraulics and Small Motors

- identify power tools and equipment
- tool safety practices
- hydraulic maintenance
- small engine troubleshooting

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

- *monitoring the apprentice's abilities in choosing and using the right power tools and equipment for the job*
 - *teaching tool safety practices on the jobsite*
 - *performing hydraulic maintenance with the apprentice*
 - *allowing the apprentice to take part in small engine troubleshooting*
-

Power Roof Tools

- operate powered deck equipment
- operate hoists
- perform rigging operations

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

- *having the apprentice operate powered deck equipment under the proper supervision*
- *displaying proper hoisting and rigging techniques as well as safe work practices as it applies to the work performed*
- *identifying proper locations to set up hoisting and rigging equipment as it pertains to the jobsite*

-
- *describing load capacities as well as hoisting and rigging tolerances*
-

Cedar Shakes and Shingles

- identify cedars shake and shingles
- identify steep roofing material
- cold roof system details
- prepare steep roof
- install cedar shakes and shingles

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

- *describing cedar shakes and shingles*
 - *allowing the apprentice to choose the proper material for the job*
 - *allowing the apprentice to select the proper steep roofing material*
 - *having the apprentice prepare a steep roof*
 - *assisting and monitoring the proper installation of cedar shakes and shingles*
-

SBS Modified Bitumen

- installs support panels, drains, vents, curbs and penetrations
- applies vapour barrier
- installs insulation
- installs substrate
- installs membrane and membrane flashings
- install protective coverings

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

- *describing procedures and allowing the apprentice to install support panels, drains, vents, curbs and penetrations*
 - *describing vapour barrier applications and performing various installations*
 - *having the apprentice install insulations, substrate, membrane, membrane flashing and protective coverings while under proper supervision*
 - *inspecting the work with the apprentice to assure proper installation and to correct possible errors in their work*
-

Waterproofing

- identify rubberized roofing and application procedures
- prepares waterproofing substrates
- applies waterproofing membrane
- maintains low slope roofing

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

- *describing rubberized roofing and application procedures*
- *allowing the apprentice to prepare the waterproofing substrates*
- *having the apprentice assist in waterproofing membrane application practices*
- *exposing the apprentice to proper maintenance and inspection of low slope roofing*
- *allowing the apprentice to perform necessary repairs*

Level Three

Estimating, Planning and WHIMIS

- determine equipment requirements
- calculate and order material calculation
- schedule a work crew
- perform troubleshooting

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

- *allowing the apprentice to make the right equipment choices for the job*
- *allowing the apprentice to properly estimate materials and perform quantity takeoff*
- *assist the apprentice in scheduling duties*
- *observe the apprentice's troubleshooting abilities*

Metal Flashing and Flat Roof

- perform estimation of flashing requirements
- perform fabrication of roof flashing
- install roof flashing
- perform fabrication of a gum box
- maintains and repairs low slope roofing

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

- *allowing the apprentice to estimate flashing material*
- *observing the apprentice's ability to fabricate and install roof flashing*
- *expose the apprentice to gum box fabrication procedures*
- *allow the apprentice to perform detailed inspections*
- *observe the apprentice's ability to decisions regarding the proper repairs and maintenance needed for the job*

Metal Roofs

- identifies metal roofing components
- prepares for metal roofing
- installs metal roofing

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

- *exposing the apprentice to different types of metal roofing components*
- *allowing the apprentice to properly prepare the roof for metal roofing applications*
- *assisting the apprentice in metal roof installation*

Concrete, Tile and Slate Roofs

- identifies roof components
- prepares roof and deck
- install concrete tiles

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

- *exposing the apprentice to different types of concrete, tile and slate roofing projects*
- *allowing the apprentice to prepare roof and deck work areas*
- *observing the apprentice install concrete, tile and slate roof material*

Single Ply Membrane

- identify types of single-ply roofs
- identify single-ply materials
- apply polyvinyl chloride (PVC) and thermoplastic (TPO) membranes

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

- *working on various types of single-ply roofs*
 - *allowing the apprentice to identify the correct single-ply materials for the job*
 - *observing the apprentice's ability to install pvs and tpo membranes*
-

EPDM

- prepare deck
- install ethylene propylene diene monomer (EPDM) roofing system
- determine material quantities

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

- *allowing the apprentice to prepare the jobsite before work commences*
 - *assisting in the installation of EPDM roofing systems*
 - *allowing the apprentice to complete material takeoffs*
-

Waterproofing and Vegetative Roofing

- installs green, sustainable, vegetative and protected membrane components
- prepares waterproofing substrates
- identify procedures for applying hot rubberized material
- apply self-adhering modified bitumen membrane
- apply damp-proofing

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

- *exposing the apprentice to various types of vegetative roofing*
- *assisting the apprentice with the installation of vegetative roofing component*
- *allowing the apprentice to prepare waterproofing substrates*
- *observing the apprentice's ability to perform procedures for applying hot rubberized material*
- *observing the apprentice apply self-adhering modified bitumen membrane*
- *assisting in the application of damp-proofing*

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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