



Roofer

Guide to Course Content



Online: www.saskapprenticeship.ca

Recognition:

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

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



STRUCTURE OF THE GUIDE TO COURSE CONTENT

To facilitate understanding of the occupation, this guide to course content 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.

Training Profile Chart: a chart which outlines the model for Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training.

Technical Training Course Content for the Automotive Service Technician trade: a chart which outlines the model for SATCC technical training sequencing. For the harmonized level of training, a cross reference to the Harmonized apprenticeship technical training sequencing, at the learning outcome level, is provided.

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. Total trade time required is 4500 hours and at least 3 years in the trade.

Level One, Two and Three are completed through online distance learning combined with worksite competency completions and a worksite visit.

The information contained in this guide to course content details the technical training delivered for each level of apprenticeship. An apprentice spends approximately 15% of their apprenticeship term in a technical training institute learning the technical and theoretical aspects of the trade. The hours and percentages of technical and practical training may vary according to class needs and progress.

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

Entrance Requirements for Apprenticeship Training

Your grade twelve transcripts (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.

Designated Trade Name	Math Credit at the Indicated Grade Level ❶	Science Credit at Grade Level (preferred class in brackets)
Roofer	Grade 10	Grade 10
<p>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.).</p> <p>*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.</p> <p>Individuals not meeting the entrance requirements will be subject to an assessment and any required training</p>		

ROOFER TASK MATRIX

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 covered. *

* Sub Tasks with numbers in the boxes is where the content will be 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
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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
Rofer Workplace Skills	RFH 110
Built Up Roofing	RFH 115
Steep Roofing- Asphalt Shingles	RFH 120
Final Exam	RFH 125

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
Final Exam	RFH 235

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
Final Exam	RFH 335

TECHNICAL TRAINING COURSE CONTENT

This chart outlines the model for Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training sequencing. For the harmonized level of training, a cross reference to the Red Seal Occupational Standard (RSOS) apprenticeship technical training sequencing, at the learning outcome level, is provided.

Sub-tasks listed are the minimum to be covered in a topic. Related sub-tasks not listed may be used as a reference and taught “in context” in other topics.

Level One

Safety, Worksite, Ergonomics and General

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

RSOS topics covered in this section of training:

A-1 Performs safety related function

A-1.01 maintains safe work environment

A-1.02 uses personal protective equipment (PPE) and safety equipment

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

RSOS topics covered in this section of training:

A-2 Uses tools and equipment

A-2.01 uses hand tools

A-2.02 uses power tools, pneumatic tools and hot air welding, induction and fuelled equipment

A-2.03 uses hoisting, lifting and rigging equipment

A-2.04 Uses access equipment

A-2.05 Uses hot process equipment

A-2.06 Uses motorized equipment

Rofer 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

RSOS topics covered in this section of training:

A-3 Organizes work

A-3.01 Uses documentation and reference materials

A-3.02 Interprets blueprints and drawings

A-3.04 Assesses worksite conditions

A-3.05 Positions equipment and material on the ground and on the roof

A-4 Uses communication and mentoring techniques

A-4.01 Uses communication techniques

B-5 Prepares roof for replacement

B-5.03 Removes roofing and flashing

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

RSOS topics covered in this section of training:

B-6 Prepares deck for roof installation

B-6.01 Inspects deck

B-6.02 Cleans surface of deck

B-6.04 Dries deck

C-7 Applies low sloping roofing components

C-7.01 Installs support panels

C-7.02 Primes substrate

C-7.03 Applies vapour retarder, vapour barrier and air barrier

C-7.04 Installs insulation

C-7.05 Installs cover board

C-7.06 Installs drains, vents, curbs and penetrations

C-7.07 Applies ballast, walkways and protective surfaces

C-7.08 Installs metal flashings

C-8 Applies low slope roofing membranes

C-8.01 Relaxes membrane

C-8.02 Sets membrane

C-8.03 Applies membranes using hot-liquid process

C-8.04 Applies membranes using torched-on method

C-8.05 Applies membranes using hot air welding

C-8.06 Applies membranes using cold applied methods

C-8.07 Applies membranes using mechanical fasteners

C-8.10 Installs membrane flashings

C-8.11 Installs temporary seals and temporary drains

Steep Roofing - Asphalt Shingles

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

RSOS topics covered in this section of training:

D-9 Performs common steep slope practices

- 9.01 Installs steep slope underlayment
- 9.02 Installs steep slope venting
- 9.03 Install Installs steep slope valley applications
- 9.04 Installs steep slope saddles/ crickets
- 9.05 Installs steep slope penetration flashings

D-10 Applies Shingles

- 10.01 Determines layout of shingles
- 10.02 Installs starter strip and starter course
- 10.03 Fastens shingles
- 10.04 Cuts shingles
- 10.05 Tab shingles
- 10.06 Install metal flashings for shingled roofs

Fall Protection Certification

- pass/fail

Fire Extinguisher

- pass/fail

There are no Level One topics from the RSOS that are taught in context.

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

RSOS topics covered in this section of training:

B-6 Prepares deck for roof installation

B-6.01 Inspects deck

B-6.03 Verifies placement of roof penetrations, curbs and parapets

C-7 Low slope roofing components

C-7.03 Applies vapour retarder, vapour barrier and air barrier

C-7.04 Installs insulation

C-7.05 Installs cover board

Print Reading and Math

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

RSOS topics covered in this section of training:

A-3 Organizes work

A-3.01 Uses documentation and reference materials

A-3.02 Interprets blueprints and drawings

A-3.03 Estimates material

Air Tools Safety, Hydraulics and Small Motors

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

RSOS topics covered in this section of training:

A-2 Uses tools and equipment

A-2.02 Uses power tools, pneumatic tools and hot air welding, induction and fueled equipment

A-2.03 Uses hoisting, lifting and rigging equipment

A-2.04 Uses access equipment

A-2.05 Uses hot process equipment

A-2.06 Uses motorized equipment

A-3 Organizes work

A-3.04 Assesses worksite conditions

A-3.05 Positions equipment and material on the ground and on the roof

Power Roof Tools

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

RSOS topics covered in this section of training:

A-2 Uses tools and equipment

A-2.03 Uses hoisting, lifting and rigging equipment

A-2.04 Uses access equipment

A-2.05 Uses hot process equipment

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

RSOS topics covered in this section of training:

D-10 Applies shingles

D-10.01 Determines layout of shingles

D-10.02 Installs starter strip and starter course

D-10.03 Fastens shingles

D-10.04 Cuts shingles

D-10.06 Installs metal flashings for shingled roofs

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

RSOS topics covered in this section of training:

A-2 Uses tools and equipment

A-2.05 Uses hot process equipment

A-3 Organizes work

A-3.04 Assesses worksite conditions

C-5 Prepares roof for replacement

C-5.04 Prepares roof substrate

C-5.05 Performs minor adjustments to penetrations, curbs and parapets

C-7 Applies low slope roofing

- C-7.01 Installs support panels
- C-7.02 Primes substrate
- C-7.03 Applies vapour retarder, vapour barrier and air barrier
- C-7.04 Installs insulation
- C-7.06 Installs drains, vent curbs and penetrations
- C-7.07 Applies ballast, walkways and protective surfaces
- C-7.08 Installs metal flashings

C-8 Applies low slope roofing membranes

- C-8.01 Relaxes membrane
- C-8.02 Sets membrane
- C-8.03 Applies membranes using hot liquid process
- C-8.04 Applies membrane using torched on method
- C-8.05 Applies membranes using hot air welding
- C-8.06 Applies membranes using cold applied methods
- C-8.07 Applies membranes using mechanical fasteners
- C-8.10 Installs membrane flashings
- C-8.11 Installs temporary seals and temporary drains

F-16 Maintains and repairs low slope roofing

- F-16.01 Maintains low slope roofing
- F-16.02 Repairs low slope roofing

Waterproofing

- Identify rubberized roofing and application procedures
- Prepares waterproofing substrates
- Applies waterproofing membrane
- Maintains low slope roofing

RSOS topics covered in this section of training:

E-13 Waterproofs surfaces

- E-13.01 Prepares waterproofing substrates
- E-13.02 Applies waterproofing membrane

E-14 Damp-proof surfaces

- E-14.01 Applies damp-proofing materials
- E-14.02 Applies protection layer

Level Two topics from the RSOS that are taught in context:

A-Performs safety-related functions

D-Performs Common Steep Slope Practices

For details regarding the In Context Topic, see pages 24

Level Three

Estimating, Planning and WHIMIS

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

RSOS topics covered in this section of training:

A-2 Uses tools and equipment

A-2.01 uses hand tools

A-2.02 uses power tools, pneumatic tools and hot air welding, induction and fuelled equipment

A-2.03 uses hoisting, lifting and rigging equipment

A-2.04 Uses access equipment

A-2.05 Uses hot process equipment

A-2.06 Uses motorized equipment

A-3 Organizes work

A-3.02 Interprets blueprints and drawings

A-3.03 Estimates materials

A-3.07 Evaluates roof conditions near roof-top equipment installations

A-4 Uses communication and mentoring techniques

A-4.02 Uses mentoring techniques

Metal Flashing and Flat Roof Flashing

- 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

RSOS topics covered in this section of training:

A-3 Organizes work

A-3.03 Estimates material

C-7 Applies low slope roofing components

C-7.08 Installs metal flashings

C-8 Applies low slope roofing membranes

C-8.10 Installs membrane flashings

D-10 Applies shingles

D-10.06 Installs metal flashings for shingled roofs

D-11 Applies roof tiles

D-11.06 Installs metal flashings for tiled roof

Metal Roofs

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

RSOS topics covered in this section of training:

D-12 Applies performed metal roofing

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

D-12.02 Fastens pre-formed metal roofing

D-12.03 Cuts sheet metal

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

D-12.05 Installs snow guards

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

Concrete, Tile and Slate Roofs

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

RSOS topics covered in this section of training:

D-11 Applies roof tiles

D-11.01 Installs battens/strapping for roof tiles

D-11.02 Fastens roof tiles

D-11.03 Cuts roof tiles

D-11.04 Installs closure strips for roof tiles

D-11.05 Installs ridge and hip caps

D-11.06 Installs metal flashings for tiled roofs

Single Ply Membrane

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

RSOS topics covered in this section of training:

Task C-8 Applies low slope roofing membranes

C-8.01 Relaxes membrane

C-8.02 Sets membrane

C-8.03 Applies membranes using hot liquid process

C-8.04 Applies membrane using torched on method

C-8.05 Applies membranes using hot air welding

C-8.06 Applies membranes using cold applied methods

C-8.07 Applies membranes using mechanical fasteners

C-8.10 Installs membrane flashings

C-8.11 Installs temporary seals and temporary drains

EPDM

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

RSOS topics covered in this section of training:

Task C-8 Applies low slope roofing membranes

- C-8.01 Relaxes membrane
- C-8.02 Sets membrane
- C-8.03 Applies membranes using hot liquid process
- C-8.04 Applies membrane using torched on method
- C-8.05 Applies membranes using hot air welding
- C-8.06 Applies membranes using cold applied methods
- C-8.07 Applies membranes using mechanical fasteners
- C-8.10 Installs membrane flashings
- C-8.11 Installs temporary seals and temporary drains

Waterproofing and Vegetative Roofing

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

RSOS topics covered in this section of training:

E-13 Waterproofs surfaces

- E-13.01 Prepares waterproofing substrates
- E-13.02 Applies waterproofing membrane
- E-13.03 Installs green, sustainable, vegetative and protected membrane components

Level Three topics from the RSOS that are taught in context:

A-Performs safety-related functions

D-Performs Common Steep Slope Practices

For details regarding the In Context Topic, see pages 24

In Context Topics

In context means learning that has already taken place and is being applied to the applicable task. Learning outcomes for in context topics are accomplished in other topics in that level.

A-1 Performs safety related function

A-1.01 maintains safe work environment

A-1.02 uses personal protective equipment (PPE) and safety equipment

D-9 Performs common steep slope practices

D-9.01 Installs steep slope underlayment

D-9.02 Installs steep slope venting

D-9.03 Install Installs steep slope valley applications

D-9.04 Installs steep slope saddles/ crickets

D-9.05 Installs steep slope penetration flashings