



# **Glazier**

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

**2024**

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

*Recognition:*

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

*A complete version of the Occupational Standard can be found at [www.red-seal.ca](http://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 Glazier 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.

**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 Auto Body and Collision Technician Trade:** a chart which outlines the topics of technical training with on-the-job examples for apprentice to achieve relevant experience at work.

# DESCRIPTION OF THE GLAZIER TRADE

Glaziers cut, prepare, fabricate and install glass in residential, commercial and industrial structures, and in furniture and motor vehicles.

Glazier's measure, handle, cut, prepare, fit, install, replace and repair all types of glass and glass substitutes, typically in industrial, commercial, institutional and residential applications. In these applications, they fabricate, lay out and install curtain wall framing, windows, doors, structural silicone glazing (SSG), skylights, sloped glazing and storefront frames. In residential applications, they install doors, windows, skylights, mirrors, shower doors, specialty glass and backsplash.

Glaziers also install specialty glass products such as glass railings/guardrails, smoke baffles, shower enclosures, and glass and mirror walls. Other duties include layout, preparation, fabrication and replacement of architectural metal systems and components in applications such as partition glass, entranceways, windows, sunshades, insulated glass, points-supported glazing and fittings, panels and pre-glazed curtain walls, including the respective seals, sealants, anchors and fasteners.

Most glaziers work on construction, service or renovation (retrofitting) projects. Specialty areas of this trade include installing skylights and other special glassworks like electrochromic glass, photovoltaic panels, fire-rated glass and compatible systems, obscured glass, patterned glass, ballistic/bomb-resistant glass in security areas, leaded x-ray glass in hospitals, low-iron glass for showcases in museums and acid-etched glass for bird-friendly glazing applications. Glaziers are employed by construction glass installation contractors, fabrication shops, retail service and repair shops. They may also be self-employed.

Besides working with glass, glaziers also work with plastics, granite, and other similar materials used as glass substitutes, as well as films or laminates that improve the durability or safety of the glass. Glaziers are also involved in manufacturing display cabinets and decorative windows. They may also be requested to create custom-designed glass installations for residential and commercial use.

Glaziers require good reading, writing and communication skills, as well as mathematical ability to accomplish tasks within their trade. Physical strength and stamina are necessary to work with heavy glass materials, and good eyesight is needed to measure, cut and detect flaws in glass and other materials. Manual dexterity and the ability to work alone and in teams are important qualities for those working in this trade. As well, analytical ability and troubleshooting skills are important assets in this trade, especially in the context of renovation and repair projects involving older structures and products.

Glaziers work in a variety of environments; some work outdoors on construction sites while others work indoors, in shops. When working on commercial applications, glaziers are expected to work from power-elevated work platforms, scaffolds and suspended work platform systems, sometimes at great heights, to manoeuvre glass panels that are lifted by cranes and other lifting equipment. Glaziers do a considerable amount of bending, kneeling, lifting, and standing during the installation process. There are some risks of injuries from falls from heights, lifting heavy materials, repetitive actions, sharp edges and broken glass. This standard recognizes similarities or overlaps with the work of carpenters, sheet metal workers, concrete finishers, operating engineers, electricians, roofers, bricklayers, tilers and ironworkers.

With experience, glaziers may act as mentors and trainers to apprentices in the trade. Glaziers may advance to supervisory positions such as foreperson, contract managers, project managers, consultants, inspectors, instructors, or set up their own shops.

**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 1800 hours each year. Total trade time required is 7200 hours and at least 4 years in the trade.

There are four levels of technical training which are delivered outside of the province of Saskatchewan:

- Level One: 6 weeks
- Level Two: 6 weeks
- Level Three: 6 weeks
- Level Four: 6 weeks

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 journey person 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 Level <sup>❶</sup> | Science Credit at Grade Level |
|---|---|-------------------------------|
| Glazier   | WA 10 or F 10 or P 10 or Math 10                      | Grade 10                      |
| <p><sup>❶</sup> - (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 are recommended to take Chemistry 20 or Physics 30 or English and Math at Level 30 prior to course.</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>For information about high school curriculum, including Math and Science course names, please see:</p> |   |                               |

<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 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.

The tools are available online or for order at: [www.esdc.gc.ca/eng/jobs/les/profiles/index.shtml](http://www.esdc.gc.ca/eng/jobs/les/profiles/index.shtml)

The application of these skills may be described throughout this document within the skills and knowledge which support each sub-task of the trade. The most important essential skills for each sub-task have also been identified. 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](http://www.red-seal.ca).

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## READING

Glaziers require reading skills to gather information from forms and labels. They also need to read to understand more complex texts such as equipment and policy and procedure manuals, specifications, codes, standards, and safety regulations. They read bulletins and brochures from suppliers describing new products, parts and prices. They also refer to project specifications and work orders when planning a job.

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## DOCUMENT USE

Glaziers need to be able to locate and interpret information in several types of documents such as labels/stickers, posted signs, forms, lists, tables, and installation and delivery schedules. They also refer to a wide array of complex assembly drawings integrating text, drawings and actual components. This also includes creating sketches and drawings.

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## WRITING

Writing skills are used by glaziers to write notes to themselves regarding work orders and customer requests. They may also write notes to request supplies and materials or write memos and letters to suppliers and manufacturers to request information on prices, equipment, parts or procedures. They may also write a quote or estimate that includes costs of labour to remove existing materials and install the new product, as well as costs of all materials. They also need to complete documents such as time sheets, shipping documents, purchase orders, invoices, job sheets and city permits.

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## ORAL COMMUNICATION

Some tasks performed by glaziers require oral communication skills, including discussing safety issues, work schedules, materials and equipment with supervisors, contractors, building managers, customers, suppliers and other tradespeople. Glaziers may explain the fabrication, construction, installation and repair procedures to customers as well. They may also instruct others, such as an apprentice or a work crew, explaining and demonstrating procedures.

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## NUMERACY

Numeracy skills are extremely important in the everyday work of glaziers. Substantial mathematical skills are used in taking measurements, doing material layout, using formulas and performing trade calculations such as geometry and trigonometry to calculate distances and angles. Glaziers may create project timelines, calculating time requirements for tasks in the project. They may also calculate amounts for supplies, estimates and overall costs.

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## THINKING

Glaziers solve problems in situations where work may be delayed due to equipment breakdowns, shortages of materials and work of other trades. They may perform modifications to project designs to correct flaws. They need the ability to think spatially and visualize in three dimensions. Problem solving and thinking sequentially are important skills in service, fabrication and installation activities. Glaziers need to be able to plan their work and organize tasks and materials.

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## WORKING WITH OTHERS

Glaziers may work independently or with partners or apprentices depending on the type of work they are performing. For example, frame fabricators often work alone while constructing frames, while installers will usually work with a partner or apprentice while installing windows. Glaziers must coordinate their work with many other co-workers, trades and suppliers. They see themselves as members of a team who work together to provide a quality service and product. Some glaziers supervise the work of apprentices and other journeypersons on larger jobs.

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## DIGITAL TECHNOLOGY

Glaziers use digital devices such as laptops, tablets, smartphones and two-way radios to communicate with others, record job changes and daily activities, track job progress, order materials, perform Internet research and perform word processing. They also use design software in their work. Highly technical layout devices such as laser 3D scanners and total stations require advanced digital skills.

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## CONTINUOUS LEARNING

Glaziers are required to stay current with new products and materials. They refer to brochures or manuals from suppliers and apply the information on the job. They attend training by the manufacturer on how to use or install a new product. Glaziers also attend courses and orientations on safety procedures and the operation of equipment such as aerial work platforms and swing stages. They must also attend upgrading on topics such as layout, safety and rigging. On-the-job learning takes place continuously using methods such as safety meetings, toolbox talks and mentoring.



# GLAZIER TASK MATRIX

This chart outlines the major work activities, tasks and sub-tasks from the 2020 Glazier Red Seal Occupational Standard.

## A - Performs common occupational skills

17%

|   |  |  |  |                                       |  |
|---|--|--|--|---------------------------------------|--|
| Task A-1 Performs safety-related functions            | 1.01 Maintains safe work environment           | 1.02 Uses personal protective equipment (PPE) and safety equipment |  |                                       |  |
| Task A-2 Uses tools and equipment                     | 2.01 Uses hand tools                           | 2.02 Uses portable and stationary power tools                      | 2.03 Uses layout and measuring equipment     | 2.04 Uses access equipment            |  |
| Task A-3 Uses rigging, hoisting and lifting equipment | 3.01 Uses rigging equipment                    | 3.02 Uses hoisting and lifting equipment                           |  |                                       |  |
| Task A-4 Organizes work                               | 4.01 Uses documentation and reference material | 4.02 Interprets plans, drawings and specifications                 | 4.03 Prepares list of materials and supplies | 4.04 Plans project tasks              |  |
| Task A-5 Performs routine trade activities            | 5.01 Prepares worksite                         | 5.02 Handles glass and other materials                             | 5.03 Prepares materials for installation     | 5.04 Stores glass and other materials | 5.05 Performs glass cutting and edge treatment |

|  |                       |                       |
|--|-----------------------|-----------------------|
| 5.06 Installs building envelope membrane | 5.07 Install flashing | 5.08 Applies sealants |
|--|-----------------------|-----------------------|

## B – Fabricates and installs commercial window and door systems

**34%**

|  |  |                                    |                                  |  |  |
|--|--|------------------------------------|----------------------------------|--|--|
| Task B-7 Fabricates commercial window and door systems | 7.01 Fabricates curtain walls                    | 7.02 Fabricates storefronts        | 7.03 Fabricates window systems   | 7.04 Fabricates skylights and sloped glazing systems | 7.05 Fabricates entrance systems                   |
| Task B-8 Installs commercial window and door systems   | 8.01 Lays out commercial window and door systems | 8.02 Installs curtain wall systems | 8.03 Installs storefront systems | 8.04 Installs window systems                         | 8.05 Installs skylights and sloped glazing systems |
|  | 8.06 Installs entrance systems                   |                                    |                                  |  |  |

## C – Installs residential window and door systems

**14%**

|  |  |                               |                     |
|--|--|-------------------------------|---------------------|
| Task C-9 Installs residential window systems | 9.01 Lays out residential window systems | 9.02 Sets windows in openings | 9.03 Glazes windows |
|--|--|-------------------------------|---------------------|

|  |  |  |  |   |                                       |
|--|--|--|--|---|---------------------------------------|
| <b>Task C-10 Installs residential door systems</b> | <b>10.01 Lays out residential door systems</b> | <b>10.02 Assembles residential door frames</b> | <b>10.03 Sets residential doors and frames</b> | <b>10.04 Installs residential door hardware</b> | <b>10.05 Glazes residential doors</b> |
|--|--|--|--|---|---------------------------------------|

## D – Fabricates and installs specialty glass, products and glass systems

**16%**

|   |  |   |  |
|---|--|---|--|
| <b>Task D-11 Fabricates and installs commercial specialty glass and products</b>  | <b>11.01 Lays out commercial specialty glass and products</b>  | <b>11.02 Assembles commercial specialty glass, products and hardware</b>  | <b>11.03 Installs commercial specialty glass, products and hardware</b>  |
| <b>Task D-12 Fabricates and installs residential specialty glass and products</b> | <b>12.01 Lays out residential specialty glass and products</b> | <b>12.02 Assembles residential specialty glass, products and hardware</b> | <b>12.03 Installs residential specialty glass, products and hardware</b> |

## E – Performs servicing

**19%**

|   |  |  |
|---|--|--|
| <b>Task E-13 Services commercial window and door systems</b>  | <b>13.01 Assesses service requirements for commercial window and door systems</b>  | <b>13.02 Repairs commercial window and door systems</b>  |
| <b>Task E-14 Services residential window and door systems</b> | <b>14.01 Assesses service requirements for residential window and door systems</b> | <b>14.02 Repairs residential window and door systems</b> |

**Task E-15 Services specialty glass and products**

**15.01 Assesses services requirements for specialty glass and products**

**15.02 Repairs specialty glass and products**



# TRAINING PROFILE CHART

This Training Profile Chart represents Alberta's NAIT/SAIT technical training at the topic level.

| Level One                         |
|-----------------------------------|
| Standard Workplace Safety         |
| Tools and Construction Products   |
| Glass and Glass Fabrication 1     |
| Glazing and Service 1             |
| Window Systems                    |
| Math and Drawing Interpretation 1 |

| Level Two                         |
|-----------------------------------|
| Glass and Glass Fabrication 2     |
| Glazing and Service 2             |
| Construction Product Application  |
| Frames and Door Systems           |
| Math and Drawing Interpretation 2 |

| Level Three                       |
|-----------------------------------|
| Frame Systems 1                   |
| Door Systems 1                    |
| Glazing and Service 3             |
| Sloped Glazing Systems            |
| Math and Drawing Interpretation 3 |

| Level Four                               |
|--|
| Red Seal Programs and Specialty Products |
| Frame Systems 2                          |
| Door Systems 2                           |
| Glazing and Service 4                    |
| Math and Drawing Interpretation 4        |

# ON-THE JOB AND IN-SCHOOL TRAINING

## CONTENT FOR THE GLAZIER 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  | 6 weeks | 180 hours |
|--|---------|-----------|
| <b>Standard Workplace Safety</b> <ul style="list-style-type: none"><li>• apply legislation, regulations and practices</li><li>• use industry standard practices for climbing, lifting, rigging and hoisting</li><li>• apply industry standard practices for hazardous materials and fire protection</li><li>• describe the safety procedures of scaffolding and access equipment</li><li>• operate swing stage scaffold system</li></ul> <p><b>Mentors can assist the apprentice to prepare for this section of technical training by:</b></p> <ul style="list-style-type: none"><li>• <i>providing WHMIS and OH&amp;S training</i></li><li>• <i>interpreting building codes and hazardous products</i></li><li>• <i>providing company-specific safety training</i></li><li>• <i>ensuring access to printed informational material</i></li><li>• <i>identifying scaffold systems and structures, base conditions and tagging</i></li><li>• <i>introducing the apprentice to swing stage safety, inspection and operation wherever possible</i></li></ul> |         |           |
| <b>Tools and Construction Products</b> <ul style="list-style-type: none"><li>• use and maintain hand tools</li><li>• operate and maintain portable saws and their applications</li><li>• operate and maintain stationary power tools</li><li>• use fasteners, adhesives and sealants</li></ul> <p><b>Mentors can assist the apprentice to prepare for this section of technical training by:</b></p> <ul style="list-style-type: none"><li>• <i>providing introductory hand and power tool training in the shop</i></li><li>• <i>training in the identification and application of fasteners, adhesives and sealants</i></li></ul>   |         |           |
| <b>Glass and Glass Fabrication 1</b> <ul style="list-style-type: none"><li>• recognize common types of glass</li><li>• perform methods of glass storage and handling</li><li>• describe the glass manufacturing process</li><li>• perform cutting and edging of glass</li></ul> <p><b>Mentors can assist the apprentice to prepare for this section of technical training by:</b></p> <ul style="list-style-type: none"><li>• <i>providing hands-on training in safe glass handling, i.e. suction cups, straps, tie downs, etc.</i></li><li>• <i>allowing the apprentice to assist journey person</i></li><li>• <i>training in the duties involved with glass cutting and handling in the shop</i></li></ul>   |         |           |
| <b>Glazing and Service 1</b> <ul style="list-style-type: none"><li>• operate and maintain glazing tools used in the trade</li><li>• fabricate window screening products</li></ul>  |         |           |

- 
- use codes and standards pertaining to the glazing industry
  - describe automotive glass removal and installation procedures
  - service flat glass products

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

- *describing tools used to glaze wood, aluminum and steel sash*
  - *explaining window screen components*
  - *providing hands-on experience in auto glass installation with supervision*
  - *introducing National Auto Glass Specifications (NAGS)*
- 

## **Window Systems**

- install residential window systems
- fabricate and install a light commercial ribbon window system

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

- *training the apprentice in residential window types*
  - *identifying the materials used in residential windows*
  - *describing to and training the apprentice in the methods of installation and repair for residential windows*
  - *identifying types and materials for commercial windows*
  - *describing methods of window installation and repair in different commercial substrate construction*
  - *training the apprentice in fabrication and installation of a light commercial ribbon window system*
- 

## **Math and Drawing Interpretation 1**

- solve basic math problems
- solve ratio, proportion and percentage problems
- calculate quantities of glazing materials
- interpret residential and light commercial drawings
- produce orthographic and isometric drawings

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

- *training the apprentice in the basic on-the-job calculations*
- *giving the apprentice an opportunity to use mathematical calculations to complete a task*
- *providing shop drawings and assisting with their interpretation*

**Glass and Glass Fabrication 2**

- perform the layout, fabrication and installation of mirrors
- recognize types of specialty glass and their applications
- cut glass to various shapes
- apply techniques for glass fabrication
- recognize the procedures for sandblasting, etching and film application on glass

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

- *identifying types of mirrors and procedures for fabricating mirrors and installing them*
- *identifying tools and methods used to cut glass*
- *explaining the proper use of specific types of glass, i.e. tempered, laminate, semi-tempered, wired glass, coated glass*
- *describing the various procedures for the installation of specialty glass*
- *describing uses of various abrasives, coolants and lubricants used to cut and drill glass*
- *illustrating the removal of scratches from glass using a scratch polishing machine*
- *identifying methods for sand blasting glass*

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**Glazing and Service 2**

- install and service residential glazing products
- describe service fundamentals for commercial glazing products
- troubleshoot and repair store front entrance systems
- remove and install auxiliary auto glass

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

- *identifying sash types, sash preparation and glazing*
- *describing the theory of energy-efficient glazing*
- *describing the methods used and the necessary precautions when replacing store front glass*
- *identifying fastening devices used for glass*
- *illustrating the removal and installation of auxiliary auto glass, including code interpretation*

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**Construction Product Application**

- install glazing compounds and sealants
- describe the concept of building envelope science

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

- *introducing the proper use of glazing compounds and sealants*
- *demonstrating installation of glazing compounds to wood and metal*

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**Frames and Door Systems**

- fabricate and install a commercial frame and door system
- identify flashing and panels

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

- *providing metal installation manuals*
- *allowing hands-on opportunities to assist in fabrication and installation of frames and glass*
- *describing and practising the applications of flashing and panels*

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**Math and Drawing Interpretation 2**

- perform perimeter and area calculations related to trade based problems



- 
- produce basic shop drawings
  - perform drawing interpretation tasks relating to basic architectural drawings and specifications
  - determine basic material requirements to complete a job

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

- *demonstrating the use of mathematical equations specific to job requirements*
- *assisting the apprentice in the production of basic shop drawings*
- *using shop drawings to interpret window and door locations, door hardware schedules, etc.*

**Frame Systems 1**

- identify aluminum framing components including finishes, properties and extrusions
- fabricate and install a single level curtain wall
- fabricate and install a basic frame system
- design and install flashings and panels

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

- *explaining the uses of different extrusions and hardware on job sites*
  - *describing types of curtain walls, anchors, structural requirement, expansion and sealing*
  - *fabricating a curtain wall*
  - *fabricating frames including transoms and side lights, using flush line material*
  - *assisting the apprentices to interpret, design, fabricate and install flashings and panels*
- 

**Door Systems 1**

- describe commercial door systems
- describe associated door hardware
- install an aluminum swing door
- install an all glass entrance system

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

- *identifying types and components of commercial door systems*
  - *supervising the apprentice in installing glass and glazing and performing service work*
  - *describing frameless door installation*
- 

**Glazing and Service 3**

- assess and repair a structural glazing system
- install a structural glazing system
- install common types of building envelope components

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

- *supervising the apprentice in performing structural glazing installation*
  - *troubleshooting structural glazing system malfunctions, and developing a repair plan*
- 

**Sloped Glazing Systems**

- install and repair sloped glazing systems
- describe the installation and repair of skylights
- install skylight system

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

- *identifying special considerations concerning slope glazing*
  - *describing project specifications from installation manuals*
  - *identifying anchoring requirements, procedures, drainage requirements and repair for sloped glazing systems*
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### **Math and Drawing Interpretation 3**

- use design factors when designing glazing systems
- interpret architectural and structural drawings
- interpret project specifications
- produce a shop drawing
- generate material takeoffs

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

- *calculating design loads*
- *continuing exposure to shop drawing calculations*
- *assisting in training with blueprints on the job*
- *training the apprentice in determining quantities of material types and applying material costs*

**Red Seal Programs and Specialty Products**

- use Red Seal products used to challenge an Interprovincial examination
- use coaching skills when training an apprentice
- assess barrier free entrance system operation
- assess automatic door operations
- identify specialty products and emerging technologies in the glazing industry

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

- *identifying and encouraging the apprentice in the use of Red Seal products to prepare for the Interprovincial examination*
  - *describing and training in barrier-free entrance systems*
  - *assisting the apprentice in assessing automatic door operations*
  - *training the apprentice in the specialty products and emerging technologies in the glazing industry*
- 

**Frame Systems 2**

- install curtain wall systems
- fabricate and install a multi-level curtain wall

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

- *identifying and describing curtain wall layouts and installation*
  - *identifying and describing types of building envelope membranes*
  - *assisting apprentice to fabricate and install curtain walls*
- 

**Door Systems 2**

- install specialty commercial doors
- install and service specialty door hardware
- fabricate and install a storefront frame system

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

- *providing access to job specifications, installation manuals, specification books and wind load charts, and the use of all of the above*
  - *laying out the components of a swing door and frame*
  - *fabricating and installing a door frame*
  - *installing a door and hardware in the frame*
- 

**Glazing and Service 4**

- describe specialty glazing systems and their applications
- install specialty glazing systems
- install a building envelope system

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

- *training in glazing balustrades, floors and ceilings and smoke baffles*
  - *installing hinges, latch locks and panic exit devices*
  - *training in sequential building envelope installation procedures*
  - *interpreting drawings for a building envelope project*
  - *installing perimeter seals and flashings*
- 

**Math and Drawing Interpretation 4**

- 
- generate a curtain wall shop drawing
  - interpret a commercial drawing
  - interpret project specifications
  - estimate labour and material quantities for a given project
  - manage an on-site commercial project

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

- *training in the design and procedures for creating a curtain wall frame*
- *assisting the apprentice in the interpretation of a commercial architectural drawing*
- *training the apprentice in estimating labour and material quantities for a project*
- *training of the apprentice in the management of an on-site project*

**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

web site: [www.saskapprenticeship.ca](http://www.saskapprenticeship.ca)

### **District Offices**

Estevan (306) 637-4930

La Ronge (306) 425-4385

Moose Jaw (306) 694-3735

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