



PROGRAM OUTLINE

Automotive Refinishing Prep
Technician
and

Automotive Painter
(Automotive Refinishing Technician)



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**AUTOMOTIVE PAINTER
(AUTOMOTIVE REFINISHING TECHNICIAN)
AND
AUTOMOTIVE REFINISHING PREP TECHNICIAN
PROGRAM OUTLINE**

**APPROVED BY INDUSTRY
JUNE 2016**

**BASED ON AUTOMOTIVE PAINTER
NOA 2014**

**Developed by
Industry Training Authority
Province of British Columbia**

Industry Training Authority



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Section 1

INTRODUCTION

Automotive Painter
(Automotive Refinishing Technician)
and
Automotive Refinishing Prep Technician



Foreword

This revised Automotive Painter (Automotive Refinishing Technician) and Automotive Refinishing Prep Technician Program Outline is intended as a guide for instructors, apprentices, employers of apprentices as well as for the use of industry organizations, regulatory bodies, provincial and federal governments. It reflects updated standards based on the new Automotive Painter Occupational Analysis (2014) and British Columbia industry and instructor subject matter experts.

Practical instruction by demonstration and student participation should be integrated with classroom sessions. Safe working practices, even though not always specified in each operation or topic, are an implied part of the program and should be stressed throughout the apprenticeship.

This Program Outline includes a list of recommended reference textbooks that are available to support the learning objectives and the minimum shop requirements needed to support instruction.

Each competency is to be evaluated through the use of written and/or practical assessment in which the learner must achieve a minimum of 70% in order to receive a passing grade. The types of questions used on these exams must reflect the cognitive level indicated by the learning objectives and the learning tasks listed in the related competencies.

Achievement Criteria are included for those competencies that require a practical component. The intent of including Achievement Criteria in the Program Outline is to ensure consistency in training across the many training institutions in British Columbia. Their purpose is to reinforce the theory and to provide a mechanism for evaluation of the learner's ability to apply the theory to practice. It is important that these performances be observable and measureable and that they reflect the skills spelled out in the competency as those required of a competent journeyman. The conditions under which these performances will be observed and measured must be clear to the learner as well as the criteria by which the learner will be evaluated. The learner must also be given the evaluation criteria.

The performance spelled out in the Achievement Criteria is a suggested performance and is not meant to stifle flexibility of delivery. Training providers are welcome to substitute other practical performances that measure similar skills and attainment of the competency. Multiple performances may also be used to replace individual performances where appropriate.

SAFETY ADVISORY

Be advised that references to the WorkSafeBC safety regulations contained within these materials do not/may not reflect the most recent Occupational Health and Safety Regulation (the current Standards and Regulation in BC can be obtained on the following website: <http://www.worksafebc.com>). Please note that it is always the responsibility of any person using these materials to inform him/herself about the Occupational Health and Safety Regulation pertaining to his/her work.



Acknowledgements

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- Kyle Kushnir White & Peters
- Todd Regier Prestige Collision
- Cory Swanson Prestige Collision

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- David Cross Vancouver Community College
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The Industry Training Authority would like to acknowledge the dedication and hard work of all the industry representatives appointed to identify the training requirements of the Automotive Painter (Automotive Refinishing Technician) and Automotive Refinishing Prep Technician occupations.



How to Use this Document

This Program Outline has been developed for the use of individuals from several different audiences. The table below describes how each section can be used by each intended audience.

Section	Training Providers	Employers/ Sponsors	Apprentices	Challengers
Program Credentialing Model	Communicate program length and structure, and all pathways to completion	Understand the length and structure of the program	Understand the length and structure of the program, and pathway to completion	Understand challenger pathway to Certificate of Qualification
OAC	Communicate the competencies that industry has defined as representing the scope of the occupation	Understand the competencies that an apprentice is expected to demonstrate in order to achieve certification	View the competencies they will achieve as a result of program completion	Understand the competencies they must demonstrate in order to challenge the program
Training Topics and Suggested Time Allocation	Shows proportionate representation of general areas of competency (GACs) at each program level, the suggested proportion of time spent on each GAC, and percentage of time spent on theory versus practical application	Understand the scope of competencies covered in the technical training, the suggested proportion of time spent on each GAC, and the percentage of that time spent on theory versus practical application	Understand the scope of competencies covered in the technical training, the suggested proportion of time spent on each GAC, and the percentage of that time spent on theory versus practical application	Understand the relative weightings of various competencies of the occupation on which assessment is based
Program Content	Defines the objectives, learning tasks, high level content that must be covered for each competency, as well as defining observable, measureable achievement criteria for objectives with a practical component	Identifies detailed program content and performance expectations for competencies with a practical component; may be used as a checklist prior to signing a recommendation for certification (RFC) for an apprentice	Provides detailed information on program content and performance expectations for demonstrating competency	Allows individual to check program content areas against their own knowledge and performance expectations against their own skill levels



Section	Training Providers	Employers/ Sponsors	Apprentices	Challengers
Training Provider Standards	Defines the facility requirements, tools and equipment, reference materials (if any) and instructor requirements for the program	Identifies the tools and equipment an apprentice is expected to have access to; which are supplied by the training provider and which the student is expected to own	Provides information on the training facility, tools and equipment provided by the school and the student, reference materials they may be expected to acquire, and minimum qualification levels of program instructors	Identifies the tools and equipment a tradesperson is expected to be competent in using or operating; which may be used or provided in a practical assessment
Appendix – Glossary of Acronyms	Defines program specific acronyms	Defines program specific acronyms	Defines program specific acronyms	Defines program specific acronyms



Section 2

PROGRAM OVERVIEW

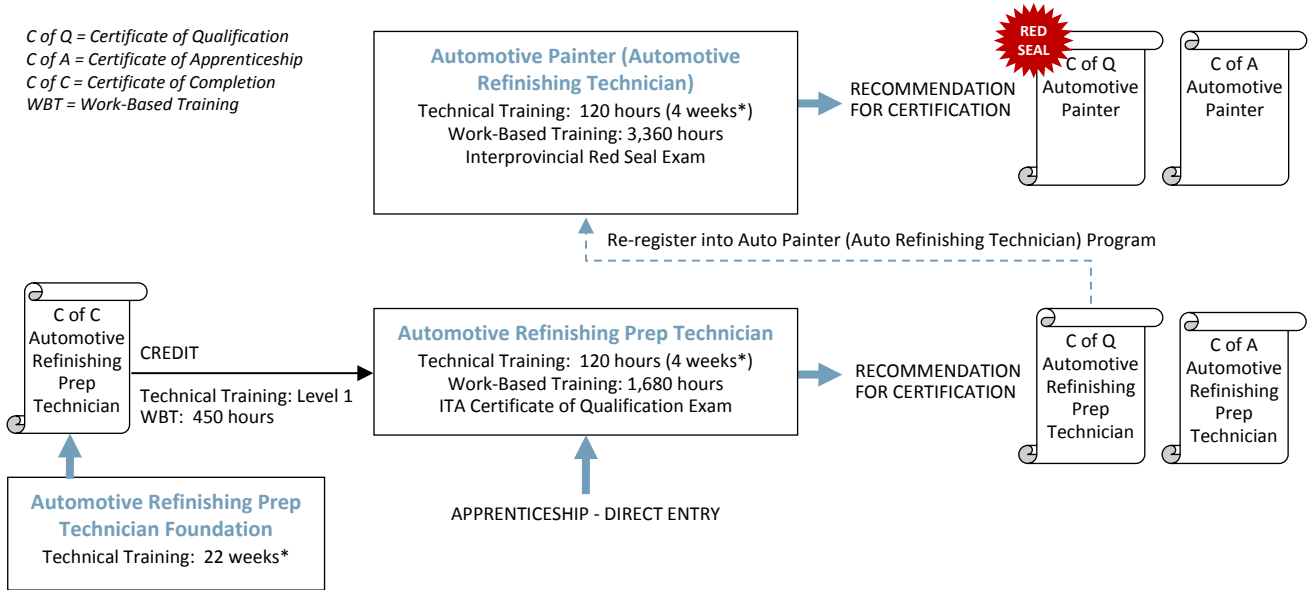
Automotive Painter
(Automotive Refinishing Technician)
and
Automotive Refinishing Prep Technician



Program Credentialing Model

Apprenticeship Pathway

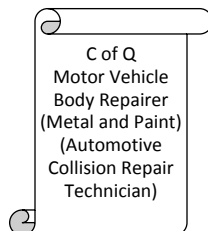
This graphic provides an overview of the Automotive Painter (Automotive Refinishing Technician) and Automotive Refinishing Prep Technician apprenticeship pathway.



*Suggested duration based on 30-hour week

CROSS-PROGRAM CREDITS

Individuals who hold the credentials listed below are entitled to receive partial credit toward the completion requirements of this program



Technical Training: None
Automotive Refinishing Prep Technician - Work-Based Training: 1,680 hours



Occupational Analysis Chart

AUTOMOTIVE PAINTER (AUTOMOTIVE REFINISHING TECHNICIAN) AND AUTOMOTIVE REFINISHING PREP TECHNICIAN

Occupation Description: Automotive Painters (Automotive Refinishing Technicians) work on the surfaces of motor vehicles, primarily in restoring vehicle finishes once body work has been completed. Some of the duties that an Automotive Painter completes include: removing layers of sub-coating; matching colours and mixing paints; preparing metal surfaces for painting by spot filling, sanding, and masking; applying primers, primer surfacers, colour coats, and clearcoats; and cleaning and polishing painted surfaces including removing and replacing decals.

Occupation Description: Automotive Refinishing Prep Technicians work on the surfaces of motor vehicles, primarily in the preparation for restoring vehicle finishes once body work has been completed and prior to painting. Some of the duties that an Automotive Refinishing Prep Technician completes include: removing layers of sub-coating; mixing undercoats; preparing metal surfaces for painting by spot filling, sanding, and masking; applying primers, and primer surfacers; and cleaning and polishing painted surfaces.

Note: Automotive Refinishing Prep Technician program competencies are indicated by (1) and Automotive Painter (Automotive Refinishing Technician) program competencies are indicated by (2)

PERFORM SAFETY-RELATED FUNCTIONS A	Use PPE and safety equipment A1	Maintain safe work environment A2		
	1	1		
MAINTAIN TOOLS AND EQUIPMENT B	Maintain hand and power tools B1	Maintain spray booth B2	Maintain spray equipment B3	
	1	1	1	
USE DOCUMENTATION C	Interpret vehicle information C1	Use technical manuals and bulletins C2	Comply with safety and environmental regulations C3	Interpret work orders C4
	1	1	1	1

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PLAN WORK D	Perform inspection D1	Contribute to development of repair estimate D2	Organize production schedule D3	
	1 2	2	1 2	
PREPARE SURFACE E	Prepare vehicle for refinishing E1	Mask vehicle E2	Strip surface E3	Sand surface E4
	1 2	1	1	1
USE REPAIR MATERIALS F	Mix repair materials F1	Apply repair materials F2	Apply corrosion protection F3	
	1	1	1	
USE EQUIPMENT G	Use spray guns G1	Operate spray booth G2	Operate drying and curing equipment G3	Use paint manufacturers' software and equipment G4
	1	1	1	1
USE REFINISHING MATERIAL H	Mix paint H1	Perform colour matching H2	Apply refinishing materials H3	Troubleshoot paint problems H4
	2	2	2	2
PERFORM PRE-DELIVERY TASKS I	Remove surface imperfections I1	Install trim and accessories I2	Apply decals and striping I3	Perform final check I4
	1 2	1	2	2

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Training Topics and Suggested Time Allocation

Automotive Refinishing Prep Technician

		% of Time Allocated to:			
		% of Time	Theory	Practical	Total
Line A	PERFORM SAFETY-RELATED FUNCTIONS	10%	70%	30%	100%
A1	Use PPE and safety equipment		✓	✓	
A2	Maintain safe work environment		✓	✓	
Line B	MAINTAIN TOOLS AND EQUIPMENT	10%	40%	60%	100%
B1	Maintain hand and power tools		✓		
B2	Maintain spray booth		✓	✓	
B3	Maintain spray equipment		✓	✓	
Line C	USE DOCUMENTATION	5%	100%	0%	100%
C1	Interpret vehicle information		✓		
C2	Use technical manuals and bulletins		✓		
C3	Comply with safety and environmental regulations		✓		
C4	Interpret work orders		✓		
Line D	PLAN WORK	5%	50%	50%	100%
D1	Perform inspection		✓	✓	
D3	Organize production schedule		✓	✓	
Line E	PREPARE SURFACE	35%	20%	80%	100%
E1	Prepare vehicle for refinishing		✓	✓	
E2	Mask vehicle		✓	✓	
E3	Strip surface		✓		
E4	Sand surface		✓	✓	
Line F	USE REPAIR MATERIALS	15%	40%	60%	100%
F1	Mix repair materials		✓	✓	
F2	Apply repair materials		✓	✓	
F3	Apply corrosion protection		✓	✓	
Line G	USE EQUIPMENT	10%	20%	80%	100%
G1	Use spray guns		✓	✓	
G2	Operate spray booth		✓	✓	
G3	Operate drying and curing equipment		✓	✓	
G4	Use paint manufacturers' software and equipment		✓	✓	



Line I	PERFORM PRE-DELIVERY TASKS	10%	40%	60%	100%
I1	Remove surface imperfections		✓	✓	
I2	Install trim and accessories		✓	✓	
Total Percentage for Automotive Refinishing Prep Technician		100%			



Training Topics and Suggested Time Allocation

Automotive Painter (Automotive Refinishing Technician)

		% of Time Allocated to:			
		% of Time	Theory	Practical	Total
Line D	PLAN WORK	10%	30%	70%	100%
D1	Perform inspection		✓	✓	
D2	Contribute to development of repair estimate		✓	✓	
D3	Organize production schedule		✓	✓	
Line E	PREPARE SURFACE	5%	20%	80%	100%
E1	Prepare vehicle for refinishing		✓	✓	
Line H	USE REFINISHING MATERIAL	75%	25%	75%	100%
H1	Mix paint		✓	✓	
H2	Perform colour matching		✓		
H3	Apply refinishing materials		✓	✓	
H4	Troubleshoot paint problems		✓		
Line I	PERFORM PRE-DELIVERY TASKS	10%	20%	80%	100%
I1	Remove surface imperfections		✓	✓	
I3	Apply decals and striping		✓	✓	
I4	Perform final check		✓	✓	
Total Percentage for Automotive Painter (Automotive Refinishing Technician)		100%			



Section 3

PROGRAM CONTENT

Automotive Painter
(Automotive Refinishing Technician)

and

Automotive Refinishing Prep Technician



Automotive Refinishing Prep Technician



Line (GAC): **A** **PERFORM SAFETY-RELATED FUNCTIONS**
Competency: **A1** **Use PPE and safety equipment**

Objectives

To be competent in this area, the individual must be able to:

- Use PPE.
- Use safety equipment.

LEARNING TASKS

1. Identify PPE

CONTENT

- CSA-approved
- Eye protection
 - Goggles
 - Glasses
 - Face shields
- Respiratory protection
 - Dust mask
 - Air-supplied
 - Cartridge
- Skin protection
 - Gloves
 - Coveralls
 - Barrier creams
- Foot protection
- Hearing protection

- Fire suppression systems
 - Extinguishers
 - Sprinklers
- Ventilation systems
- Eye wash stations
- Spill kits
- First aid kits

- Selection
- Storage
- Maintenance
- Testing
 - Fit
 - Operation
 - Condition

2. Identify safety equipment

3. Use PPE and safety equipment



Achievement Criteria

Performance	The learner will apply proper personal safety practices during all shop activities.
Conditions	<p>The learner will be given:</p> <ul style="list-style-type: none"> • Workplace orientation • Access to all personal safety equipment • Clear guidelines • Access to OHS regulation and WorkSafeBC standards
Criteria	The learner will start with 100% and a demerit system will deduct a given percentage for safety infractions. A weighting system will be applied to individual safety infractions.



Line (GAC): **A** **PERFORM SAFETY-RELATED FUNCTIONS**
Competency: **A2** **Maintain safe work environment**

Objectives

To be competent in this area, the individual must be able to:

- Identify hazards.
- Maintain a safe work environment.

LEARNING TASKS

1. Identify hazards

CONTENT

- Job Hazard Analysis (JHA)
- Chemical exposure
 - Particulates
 - Vapours
 - Fumes
 - Mists
 - Liquids
 - Isocyanates
 - Acute exposure
 - Chronic exposure
- Combustibles
 - Types
 - Ignition sources
- Noise
- Vehicle hazards
 - Alternative fuels
 - Electrical components
 - Supplemental Restraint Systems (SRS)
 - Heating, Ventilation and Air Conditioning (HVAC)
- Shop equipment
 - Lifts
 - Stands
 - Enclosures
- Classification
 - Types of fire
 - Types of extinguishers
- Prevention
- Procedures
 - Pull, Aim, Squeeze, Sweep (PASS)
 - Fire drills

2. Describe fire safety

**LEARNING TASKS**

3. Maintain a safe work environment

4. Use vehicle handling procedures

CONTENT

- Workplace Hazardous Material Information System (WHMIS) implementation
- Shop layout
 - Location of safety equipment
 - Emergency exits
 - Materials storage
- Ventilation systems
- Housekeeping

- Jump start a vehicle
- Lifting and jacking
- Wheel Re & I
- Vehicle operation

Achievement Criteria

Performance	The learner will maintain a safe work environment during all shop activities.
Conditions	The learner will be given: <ul style="list-style-type: none"> • Workplace orientation • Access to all safety equipment • Clear guidelines • Access to OHS regulation and WorkSafeBC standards
Criteria	The learner will be evaluated on safe work practices and procedures.



LEARNING TASKS

4. Describe the maintenance of tools and equipment

CONTENT

- Lubrication
- Cleaning
- Consumables replacement
- Unsafe tools
- Storage



Line (GAC): B **MAINTAIN TOOLS AND EQUIPMENT**

Competency: B2 **Maintain spray booth**

Objectives

To be competent in this area, the individual must be able to:

- Describe spray booths and their components.
- Maintain spray booths and their components.

LEARNING TASKS

1. Describe spray booths

2. Describe spray booth components

3. Maintain spray booths, mixing room and components

CONTENT

- Downdrafts
- Crossdrafts (crossflows)
- Semi-downdrafts
- Prep stations

- Intake
 - Air makeup
- Exhaust
- Manometers and magnehelics
- Filtration
 - Pre-intake
 - Intake
 - Exhaust
 - Air transformers
- Air blowers
- Lighting
- Seals and gaskets
- Belts
- Hoses and fittings
- Glass

- Schedules
- Inspection
- Cleaning
- Replacement
 - Filters
 - Lights
 - Seals
 - Booth coating



Achievement Criteria

Performance The learner will perform spray booth maintenance according to schedule.

Conditions The learner will be given:

- Maintenance schedule and/or checklist
- Necessary materials

Criteria The learner will be evaluated on:

- Safety
- Tool use
- Environmental practices
- Maintenance of spray booth and its components



Line (GAC): **B** **MAINTAIN TOOLS AND EQUIPMENT**
Competency: **B3** **Maintain spray equipment**

Objectives

To be competent in this area, the individual must be able to:

- Describe spray gun components.
- Maintain spray equipment.

LEARNING TASKS

1. Describe spray equipment

CONTENT

- Spray gun types
 - Gravity feed
 - Pressure feed
 - Siphon feed
 - Electrostatic
- Spray gun components
 - Body
 - Trigger
 - Regulators
 - Air cap
 - Seals and packings
 - Spreader adjustment
 - Fluid adjustment
 - Fluid nozzle
 - Fluid needle
 - Cup
- Nitrogen generators

- Inspection
- Cleaning
- Lubrication
- Disassembly and reassembly
- Storage

2. Maintain spray equipment



Achievement Criteria

Performance The learner will perform spray equipment maintenance and test spray.

Conditions The learner will be given:

- Spray equipment
- Task guideline
- Necessary materials

Criteria The learner will be evaluated on:

- Safety
- Tool use
- Environmental practices
- Assembly and disassembly
- Spray equipment cleanliness and performance



Line (GAC): C **USE DOCUMENTATION**
Competency: C1 **Interpret vehicle information**

Objectives

To be competent in this area, the individual must be able to locate and interpret vehicle information.

LEARNING TASKS

1. Locate and interpret vehicle information

CONTENT

- Paint code
- Manufacturer
- Model
- Year
- VIN



Line (GAC): **C USE DOCUMENTATION**
Competency: **C2 Use technical manuals and bulletins**

Objectives

To be competent in this area, the individual must be able to access and interpret technical manuals and bulletins.

LEARNING TASKS

1. Access technical manuals and bulletins

2. Interpret information in manuals and bulletins

CONTENT

- Printed
- Electronic
- Paint formulas
- Product information
- Procedure



Line (GAC): C USE DOCUMENTATION

Competency: C3 Comply with safety and environmental regulations

Objectives

To be competent in this area, the individual must be able to:

- Access and comply with environmental and safety regulations.
- Complete required safety and environmental documentation.

LEARNING TASKS

1. Identify environmental regulations

2. Interpret safety regulations as they apply to refinishing procedures

3. Complete documentation for safety and environmental compliance

CONTENT

- Jurisdictional Regulations
 - National
 - Provincial
 - Municipal
- Hazardous waste disposal
- Volatile Organic Compounds (VOC)
- Spills

- WorkSafeBC regulations
- Workplace Hazardous Material Information System (WHMIS)
- Safety Data Sheets (SDS)
- Manufacturers' recommendations
- Company regulations
- Injury report
- Fit test

- Spill kit usage
- VOC daily coatings log
- Booth filter replacement log



Line (GAC): C USE DOCUMENTATION

Competency: C4 Interpret work orders

Objectives

To be competent in this area, the individual must be able to interpret different types of repair documentation.

LEARNING TASKS

1. Describe repair documentation

2. Describe the insurance claim process in BC

3. Interpret trade terminology found on work orders and estimates

CONTENT

- Damage report
- Work order
- Estimate

- Accreditation
- Public insurance
- Private insurance

- Re & Re
- Re & I
- Refinish
- Blend
- Overlap
- Edge
- Multi-stage
- Over ride
- Judgement Time (JT)



Line (GAC): D **PLAN WORK**
Competency: D1 **Perform inspection**

Objectives

To be competent in this area, the individual must be able to:

- Determine the type of substrate.
- Evaluate the condition of substrate.

LEARNING TASKS

1. Describe metals

2. Describe plastics

3. Describe topcoats

CONTENT

- Types
 - Steel – galvanized
 - Steel – non-galvanized
 - Aluminum
 - Stainless
- Characteristics
- Location on vehicle

- Thermoset
- Composites
- Urethane
- Thermoplastic
- SMC
- Olefin
- Non-Olefin
- Rigid
- Flexible
- Location on vehicle

- Thermoset
- Thermoplastic
- Alkyd enamel
- Acrylic enamel
- Two-part urethane enamel
- Polyurethane enamel
- Acrylic lacquer
- Waterborne



- 4. Perform inspection of substrate
 - Visual
 - By touch
 - Tape test
 - Mil thickness gauge
 - Solvent test
 - Sanding test

- 5. Evaluate the substrate condition to determine next steps
 - Quality of repair
 - Pinholes
 - Sand scratches
 - Straightness
 - Previous damage or repair
 - Featheredging
 - Mil thickness
 - Adhesion
 - Environmental damage
 - Acid rain
 - Tree sap
 - Industrial fall out
 - UV damage
 - Corrosion
 - Brake dust

Achievement Criteria

- Performance The learner will perform a substrate evaluation.
- Conditions The learner will be given a substrate to assess.
- Criteria The learner will be evaluated on:
- Safety
 - Accuracy of identification
 - Accuracy of evaluation



Line (GAC): D **PLAN WORK**
Competency: D3 **Organize production schedule**

Objectives

To be competent in this area, the individual must be able to:

- Describe the repair and refinish process.
- Develop a refinish plan.

LEARNING TASKS

1. Describe repair process

CONTENT

- Shop layout
- Job duties
- Workflow
 - Inspection
 - Estimate
 - Order parts
 - Body repair
 - Prep
 - Refinish
 - Reassembly
 - Detail
 - Final inspection

2. Describe process timelines

- Cycle time
- Dry time
- Flash time
- Impact on production schedule

3. Develop a refinish plan

- Consult production schedule
- Interpret work order
- Verify parts to be refinished
- Evaluate substrate
- Communicate with painter
 - Blend areas
 - Cut-off point
 - Colour match
- Select materials
- Select tools



Achievement Criteria

Performance The learner will develop a refinish plan.

Conditions The learner will be given:

- Work order or estimate
- Vehicle to refinish

Criteria The learner will be evaluated on:

- Safety
- Accuracy of the refinish plan
- Efficiency of the refinish plan



Line (GAC): **E PREPARE SURFACE**
Competency: **E1 Prepare vehicle for refinishing**

Objectives

To be competent in this area, the individual must be able to prepare a panel for prep.

LEARNING TASKS

1. Remove necessary trim

2. Describe contaminants

3. Describe cleaning products

CONTENT

- Tools
- Fasteners
- Decals and stripes
- Mouldings
- Belt
- Side
- After-market
- Adhesives
- Handles
- Mirrors
- Lights

- Solvent-borne
- Water-borne

- Safe use
 - Product selection
 - PPE
 - Ventilation
- Soap and water
- Degreasers
- Air gun
- Tack cloth
- Final wipe



Achievement Criteria

Performance The learner will prepare a vehicle for prep.

Conditions The learner will be given:

- A vehicle or component
- A work order
- Cleaning materials
- Required tools

Criteria The learner will be evaluated on:

- Safety
- Material selection
- Trim removal technique
- Cleaning technique



Line (GAC): E PREPARE SURFACE

Competency: E2 Mask Vehicle

Objectives

To be competent in this area, the individual must be able to:

- Describe masking materials.
- Use masking techniques.
- Describe masking removal.

LEARNING TASKS

1. Describe masking materials

CONTENT

- Tapes
 - Vinyl
 - Crepe paper
 - Duct
 - Aluminum
 - Foam
 - Hard edge
 - Size
- Paper
 - Coated
 - Non-coated
 - Size
- Plastics
 - Corona
 - Non-corona
- Rope
- Spray masks
- Equipment

2. Describe masking techniques

- Edge
- Reverse mask
- Inners
- Back mask
- Tunnel
- Aperture
- Flush mount
- Perimeter masking
- Fine line
- Two-tone
- Blend



LEARNING TASKS

3. Describe removal of masking materials

4. Use masking techniques

CONTENT

- When to remove
- Techniques
- Disposal

- For protection
- For primer
- For paint

Achievement Criteria 1

Performance The learner will mask a vehicle for protection and primer.

- Conditions** The learner will be given:
- A vehicle or component
 - A work order
 - Masking materials
 - Required tools

- Criteria** The learner will be evaluated on:
- Safety
 - Material selection
 - Masking technique

Achievement Criteria 2

Performance The learner will mask a vehicle for paint.

- Conditions** The learner will be given:
- A vehicle or component
 - A work order
 - Masking materials
 - Required tools

- Criteria** The learner will be evaluated on:
- Safety
 - Material selection
 - Masking technique



Line (GAC): **E PREPARE SURFACE**

Competency: **E3 Strip surface**

Objectives

To be competent in this area, the individual must be able to describe stripping techniques.

LEARNING TASKS

1. Describe stripping techniques

CONTENT

- Benefits and drawbacks
- Chemical
 - Application
 - Neutralizing residue
- Mechanical
 - Sanding
 - Grinding
 - Media blasting
- Laser



Line (GAC): **E** **PREPARE SURFACE**

Competency: **E4** **Sand surface**

Objectives

To be competent in this area, the individual must be able to:

- Describe sanding materials and equipment.
- Use sanding techniques.

LEARNING TASKS

1. Describe sanding materials and equipment

2. Use sanding techniques

CONTENT

- Sandpaper types
- Abrasive types
- Attachment methods
- Sanders
- Blocks
- Scuff pads
- Scuff paste
- Vacuum assist
- Ventilation
- Guide coat

- Wet or dry
- Block sanding
- Back sanding
- Hand sanding
- Scuff sanding
- Machine sanding
- Featheredging
- Use of guide coat

Achievement Criteria

Performance The learner will sand a vehicle for refinishing.

- Conditions** The learner will be given:
- A vehicle or component
 - A work order
 - Sanding materials
 - Required tools

- Criteria** The learner will be evaluated on:
- Safety
 - Material selection
 - Sanding procedures
 - Quality of sanded surface



Line (GAC): F USE REPAIR MATERIALS

Competency: F1 Mix repair materials

Objectives

To be competent in this area, the individual must be able to:

- Describe undercoats and repair materials.
- Select repair materials.
- Mix repair materials.

LEARNING TASKS

1. Describe undercoats

2. Describe repair materials

3. Describe solvents and additives

CONTENT

- Primer
 - Etch
 - Epoxy
 - Plastic adhesion promoter
- Primer surfacer
 - High build
 - Direct-to-metal (DTM)
 - Polyester
 - UV
 - Water-borne
- Primer sealer
- Metal conditioner/conversion coating
- Chip guards

- Finishing putty
 - One-part
 - Two-part
- Seam sealers
 - One-part
 - Two-part

- Types of solvents
 - Reducer
 - Lacquer
 - Wax and grease remover
 - Acetone
- Types of additives
 - Flex agents
 - Hardeners



LEARNING TASKS

4. Select repair materials

5. Mix repair materials

CONTENT

- Functions
 - Cleaning
 - Adhesion
 - Flexibility
 - Curing
 - Viscosity
 - VOC
 - Productivity
- Problems

- Type of substrate
 - Bare metal
 - E-coat
 - Plastic
 - Body filler
- Type of repair
 - Pinhole
 - Deep scratch
 - Dent
 - Seam
- Production schedule
- Spray conditions
 - Size of repair
 - Temperature
 - Humidity

- Manufacturers' specifications
- Environmental factors
 - Temperature
 - Humidity
 - Pot life
- Mix ratios
 - Basic calculations
 - Scale
 - Graduated cylinder
 - Mixing stick
 - Viscosity cup
- Induction time
- Mixing techniques

**Achievement Criteria**

Performance	The learner will mix repair materials.
Conditions	The learner will be given: <ul style="list-style-type: none">• Imperfection to repair• Various repair materials• Access to manufacturers' specifications
Criteria	The learner will be evaluated on: <ul style="list-style-type: none">• Safety• Selection of repair material• Mixing ratio calculations• Mixing technique



Line (GAC): F USE REPAIR MATERIALS

Competency: F2 Apply repair materials

Objectives

To be competent in this area, the individual must be able to apply repair materials.

LEARNING TASKS

1. Describe application techniques

CONTENT

- Spreading
- Spraying
 - Distance
 - Overlap
 - Gun speed
 - Air pressure
 - Pattern
- Roll-on
- Brushing
- Tooling

2. Select tools and equipment

- Spreaders
- Spray guns
- Rollers
- Brushes
- Seam sealer guns
 - Manual
 - Pneumatic
 - Sprayable
 - Cordless

3. Apply repair material

- Primer
- Surfacer
- Sealer
- Seam sealer
- Chip guard
- Putty



Achievement Criteria

- Performance The learner will apply repair materials.
- Conditions The learner will be given:
- Imperfection to repair
 - Various repair materials
 - Access to manufacturers' specifications
- Criteria The learner will be evaluated on:
- Safety
 - Housekeeping
 - Selection of tool
 - Technique
 - Quality of repair



Line (GAC): F USE REPAIR MATERIALS

Competency: F3 Apply corrosion protection

Objectives

To be competent in this area, the individual must be able to:

- Describe corrosion.
- Apply corrosion protection.

LEARNING TASKS

1. Describe corrosion

2. Describe galvanic corrosion

3. Describe sacrificial corrosion

4. Describe corrosion protection products

CONTENT

- Oxidation
- Moisture
- Electrolyte
- Effects on structural integrity
- Exposed metal
 - Hot spots
- Dissimilar metal contact
- Chemical reactivity
- Relationship to sacrificial corrosion

- Galvanized metals
- Zinc enriched materials
- Relationship to galvanic corrosion
- Sacrificial metals chart

- Primers
 - Epoxy
 - Weld-through primer
 - Etch primer
 - Direct-to-metal (DTM)
- Seam sealers
- Metal conditioners
- Conversion coatings
- Wax based
- Urethane based
- Petroleum based undercoating
 - Rubberized
- Chip guards
- Washers
- Insulators
- Dissimilar metal compound



LEARNING TASKS

5. Describe corrosion protection requirements

6. Apply corrosion protection

CONTENT

- SDS
- OEM
- Warranty
- Liability

- Vehicle components or areas requiring corrosion protection
 - Enclosed interior surfaces
 - Exposed interior surfaces
 - Exposed exterior surfaces
 - Exposed joints
- Procedures
 - Safe handling
 - Application methods
- Product selection
- Tools
 - Spray gun
 - Sealing gun
 - Aerosol
 - Undercoat gun
 - Spray wand
 - Brush
- Timelines
- Shop policy

Achievement Criteria

Performance The learner will apply corrosion protection.

Conditions The learner will be given:

- Vehicle or panel requiring corrosion protection
- Corrosion protection materials
- Application tools
- Access to SDS

Criteria The learner will be evaluated on:

- Safety
- Material selection
- Application of corrosion protection



Line (GAC): **G USE EQUIPMENT**
Competency: **G1 Use spray guns**

Objectives

To be competent in this area, the individual must be able to use spray guns to apply primer/undercoats.

LEARNING TASKS

1. Select spray guns

2. Set up spray guns

3. Use spray guns

CONTENT

- Types of materials
- Types of guns

- Fluid tips
- Needle
- Air caps
- Air pressure
- Fan adjustment
- Fluid adjustment

- Test patterns
- Troubleshooting gun operation
- Techniques
 - Overlap
 - Pressure
 - Gun distance
 - Travel speed
 - Gun position
 - Trigger control
- Atomization
- Transfer efficiency
- Cleaning (see B3)

Achievement Criteria

Performance The learner will use spray guns to apply primer/undercoats.

- Conditions** The learner will be given:
- A surface to prime
 - Various spray equipment
 - Access to paint and gun manufacturers' specifications
 - Primer/undercoat

- Criteria** The learner will be evaluated on:
- Safety
 - Technique
 - Quality of finished product
 - Cleaning of equipment



Line (GAC): **G** **USE EQUIPMENT**
Competency: **G2** **Operate spray booth**

Objectives

To be competent in this area, the individual must be able to operate a spray booth.

LEARNING TASKS

1. Describe spray booth operation

CONTENT

- Overall function of spray booth
 - Environmental considerations
 - Cost-effectiveness
 - Job quality
- Climate control
- Cycles
 - Spray
 - Purge
 - Bake
 - Cool down
- Pressure adjustment
 - Negative
 - Positive
- Temperature adjustment
- Air flow
- Interlock switch

2. Operate a spray booth

- Utilize spray booth space
 - Vehicle positioning
 - Parts placement
- Inspect operating parameters
- Manage operation
 - Temperature
 - Pressure
 - Troubleshoot problems
- Monitor humidity
- Maintain spray booth (see B2)



Achievement Criteria

- Performance The learner will operate a spray booth.
- Conditions The learner will be given:
- A part or vehicle
 - Access to a booth
 - Manometer or magnehelic
 - Access to booth manufacturers' recommendations
- Criteria The learner will be evaluated on:
- Safety
 - Placement of part or vehicle in the booth
 - Achieving the correct settings
 - Housekeeping



Line (GAC): **G USE EQUIPMENT**
Competency: **G3 Operate drying and curing equipment**

Objectives

To be competent in this area, the individual must be able to:

- Describe the drying and curing process.
- Operate drying and curing equipment.

LEARNING TASKS

1. Describe the drying and curing process

2. Describe drying and curing equipment

3. Operate drying and curing equipment

CONTENT

- Drying vs. curing
- Evaporation
- Oxidation
- Cross-link
- Thermoset
- Thermoplastic
- Flash time
- Productivity

- Types
 - Infra-red
 - UV
 - Forced air
- Thermometers

- Paint manufacturers' recommendations
- Vehicle protection
- Distance
- Time
- Temperature
 - Surface
 - Metal
 - Cool down

Achievement Criteria

Performance The learner will select and operate drying and curing equipment.
Conditions The learner will be given:

- Vehicle or component in need of drying or curing
- Access to drying and curing equipment
- Access to paint and equipment manufacturers' recommendations

Criteria The learner will be evaluated on:

- Safety
- Selection of drying and curing equipment
- Operation as per paint and equipment manufacturers' recommendations



Line (GAC): **G USE EQUIPMENT**
Competency: **G4 Use paint manufacturers' software and equipment**

Objectives

To be competent in this area, the individual must be able to use paint manufacturers' software and equipment.

LEARNING TASKS

1. Describe paint manufacturers' software and equipment

2. Use paint manufacturers' software and equipment

CONTENT

- Software
 - Applications (Apps)
 - Technical data sheets (TDS)
 - SDS
 - Mixing ratios
 - Tracking
 - Product inventory
 - Product usage
 - VOC
 - Cost
- Equipment
 - Computers
 - Scales
 - Agitating machines
 - Mixing sticks
- Navigating software
- Updating software
- Mixing product
- Equipment maintenance (See B3)

Achievement Criteria

Performance The learner will use paint manufacturers' software and equipment.
Conditions The learner will be given access to paint manufacturers' software and equipment.
Criteria The learner will be evaluated on:

- Safety
- Housekeeping
- Use of software
- Use of equipment



Line (GAC): I **PERFORM PRE-DELIVERY TASKS**
Competency: I1 **Remove surface imperfections**

Objectives

To be competent in this area, the individual must be able to:

- Recognize post-paint defects.
- Perform basic paint polish.

LEARNING TASKS

1. Describe paint polish tools and equipment

2. Recognize post-paint defects

3. Perform paint polish

CONTENT

- Pads
- Compounds
- Machines

- Dust nibs
- Runs
- Orange peel
- Fish eyes
- Solvent pop
- Dye-back
- Scratches
- Contour mapping
- Bleed-through
- Masking problems
 - Over-spray/under-mask
 - Over-mask
- Colour mis-match
- Mottling
- Transparency

- Purpose
 - Blend
 - Colour match
 - Surface rejuvenation
- Equipment operation
 - Speed
 - Pressure
 - Angle
 - RPM
 - Heat



Achievement Criteria

- | | |
|-------------|---|
| Performance | The learner will perform a basic polish. |
| Conditions | <p>The learner will be given:</p> <ul style="list-style-type: none"> • Vehicle or component to polish • Polishing tools and equipment |
| Criteria | <p>The learner will be evaluated on:</p> <ul style="list-style-type: none"> • Safety • Product selection • Quality of polishing • Equipment use |



Line (GAC): I **PERFORM PRE-DELIVERY TASKS**
Competency: I2 **Install trim and accessories**

Objectives

To be competent in this area, the individual must be able to install trim and accessories.

LEARNING TASKS

1. Install trim and accessories

CONTENT

- Prep (See E1)
- Tools
- Fasteners
- Adhesives
- Sequence to install
- Prepare trim and accessories for installation
- Fresh paint considerations
- Protect surfaces

Achievement Criteria

Performance The learner will install trim and accessories.

Conditions The learner will be given:

- Vehicle
- Trim and accessories
- Tools

Criteria The learner will be evaluated on:

- Safety
- Method of installation
- Fit and finish



Automotive Painter (Automotive Refinishing Technician)



Line (GAC): **D PLAN WORK**
Competency: **D1 Perform inspection**

Objectives

To be competent in this area, the individual must be able to evaluate the refinish area to determine next steps.

LEARNING TASKS

1. Evaluate the refinish area to determine next steps

CONTENT

- Review work order
 - Work complete
 - Parts are present
 - Parts have been prepped
- Blend panel
- Shop standards
- Defects
 - Sand scratches
 - Colour mismatch
 - Sand through
 - Under-sanding
 - Chips
 - Pinholes
 - Under-mask
 - Over-mask

Achievement Criteria

Performance The learner will perform refinish area evaluations on various surfaces.
 Conditions The learner will be given refinish areas to assess.
 Criteria The learner will be evaluated on accuracy of evaluations.



Line (GAC): **D PLAN WORK**
Competency: **D2 Contribute to development of repair estimate**

Objectives

To be competent in this area, the individual must be able to contribute to the development of repair estimate.

LEARNING TASKS

1. Describe repair estimate

2. Identify type of finish

3. Identify blend requirements

4. Contribute to the development of the repair estimate

CONTENT

- Outlines all work to be performed
- Developed by estimator in consultation with refinishing staff

- Single stage
- Two-stage
- Multi-stage
- Two-tone
- Texture
- Gloss level
- Previous repairs

- Size of repair
- Locations
- Adjacent panels
- Previous colour match
- Condition of blend panels
- Panel to panel
- Cut-off points

- Painter advises on:
 - Finish
 - Blend requirements

Achievement Criteria

Performance The learner will create a repair estimate.
Conditions The learner will be given:

- Damaged vehicle
- Repair estimate software

Criteria The learner will be evaluated on accuracy of the repair estimate.



Line (GAC): **D PLAN WORK**
Competency: **D3 Organize production schedule**

Objectives

To be competent in this area, the individual must be able to describe the development of a production schedule.

LEARNING TASKS

CONTENT

- | | |
|---|--|
| <p>1. Describe production schedules</p> | <ul style="list-style-type: none"> • Description of work in progress (WIP) • Sequence of WIP • Target timelines |
| <p>2. Describe development of a production schedule</p> | <ul style="list-style-type: none"> • Shop management system • Cycle times • Customer expectations • Insurance expectations • Parts availability • Booth management • Communicate with: <ul style="list-style-type: none"> ○ Partsperson ○ Prep technician ○ Repair technician ○ Production manager ○ Detailer ○ Customer |
| <p>3. Describe the maintenance of a production schedule</p> | <ul style="list-style-type: none"> • Update • Department communication • Re-work |

Achievement Criteria

Performance The learner will prepare a production schedule.

Conditions The learner will be given:

- Multiple vehicles or components
- Multiple work orders
- Delivery dates

Criteria The learner will be evaluated on completeness and effectiveness of the production schedule.



Line (GAC): **E PREPARE SURFACE**
Competency: **E1 Prepare vehicle for refinishing**

Objectives

To be competent in this area, the individual must be able to prepare a panel for paint.

LEARNING TASKS

1. Prepare a vehicle for refinishing

CONTENT

- Blow off
 - Interior
 - Exterior
- Solvent clean
- Mask
- Final wipe
- Anti-static
- Tack
- Final visual inspection

Achievement Criteria

Performance The learner will prepare a vehicle for paint.

Conditions The learner will be given:

- A vehicle or component
- A work order
- Cleaning materials
- Required tools

Criteria The learner will be evaluated on:

- Safety
- Material selection
- Cleaning technique



Line (GAC): H USE REFINISHING MATERIAL

Competency: H1 Mix paint

Objectives

To be competent in this area, the individual must be able to:

- Describe paint and additives.
- Mix paint.

LEARNING TASKS

1. Describe paint

CONTENT

- Types
 - Water-borne
 - Solvent-based
- Components
 - Toners
 - Binders
 - Resins
 - UV screeners
- Clear coats
 - Nano-technology
 - Scratch-resistant
 - Ceramic
- Sealers
 - Tintable
 - Non-tintable
 - Plastic
 - Transparent
- Powder coating
- Pigments
 - Metallics
 - Pearls
 - Micas
 - Xirallic
 - Talc
 - Flex (colour-shift)
 - Dyes
- Functions/characteristics
 - Durability
 - UV protection
 - Colour
 - Adhesion
 - Gloss



LEARNING TASKS

2. Describe additives

3. Perform mixing procedures

CONTENT

- Dry time
- Evaporation rate
- Reductions
- Curing
- Water-resistance
- Chemical resistance
- Handling
 - Disposal
 - Storage
- Flattening agents
- Blending agents
- Fish eye eliminators
- Accelerators
- Retarders
- Solvents
- Hardeners
 - Base coat catalyzers
 - Isocyanates/crosslinking
- Handling
 - Disposal
 - Storage
- Manufacturers' specifications
- Equipment selection
- Product selection
- Amounts
- Computerized tracking
 - Costs
 - Paint codes
 - Mix history
 - Custom formulas
 - Overpour compensation
 - VOC usage
 - Inventory
 - Mix ratios
 - Colour adjustment
 - Ground coat (value shade)
- Mixing cups
 - Straining
- Mixing sticks
- Agitation
- Housekeeping

**Achievement Criteria 1**

- Performance The learner will mix paint manually.
- Conditions The learner will be given:
- Hard copy of formula and quantity
 - Manufacturers' specifications (TDS)
 - Materials and equipment
- Criteria The learner will be evaluated on:
- Safety
 - Accuracy
 - Efficiency
 - Housekeeping

Achievement Criteria 2

- Performance The learner will mix paint using manufacturers' software.
- Conditions The learner will be given:
- Vehicle
 - Paint code and quantity
 - Materials and equipment
- Criteria The learner will be evaluated on:
- Safety
 - Accuracy
 - Efficiency
 - Housekeeping



Line (GAC): H USE REFINISHING MATERIAL

Competency: H2 Perform colour matching

Objectives

To be competent in this area, the individual must be able to:

- Describe colour theory.
- Describe colour matching.

LEARNING TASKS

1. Describe colour theory

2. Describe colour matching

CONTENT

- Value
- Hue
- Chroma
- Colour spectrum (ROYGBIV)
- Primary and secondary colours
- Low and high strength colours
- Face, pitch, and flop of colour
- Variance
 - OEM level
 - Industry level
- Light source
- Metamerism
- Colour-perception testing
- Equipment
 - Spectrophotometer
 - Sun gun
- Sun gun
- Spray out card
- Let down panel
- Draw down
- Colour chips
- Variance deck
- Colour formula adjustments
- Formula parameters
- Tint characteristics
- Comparison of colour to vehicle
- Adequate hiding



Line (GAC): **H USE REFINISHING MATERIAL**
Competency: **H3 Apply refinishing materials**

Objectives

To be competent in this area, the individual must be able to:

- Describe topcoat application techniques.
- Apply topcoats.

LEARNING TASKS

1. Describe topcoat application techniques

CONTENT

- Spray techniques
 - Distance
 - Overlap
 - Gun speed
 - Trigger control
 - Air pressure
 - Fanning/arcing
 - Heeling
- Job size
 - Spot repair
 - Partials
 - Complete
- Spray sequence
 - Routing
 - Wet edge
- Tricoat
 - Let down panel
 - Specialty/candy
- Tacking between coats
- Blending
 - Orientation coat
 - Wet bed
 - Open blend (solvent blend)
- Matte finishes
- Textured finishes
- Manufacturers' specifications
 - Single stage
 - Two stage
 - Multi stage
 - Suggested techniques
 - Flash time
- Material selection
 - Solvent

2. Apply topcoats



LEARNING TASKS

CONTENT

- Hardeners
- Additives
- Value shade
- Gun selection
- Booth set up
 - Settings
 - Vehicle/parts positioning
- Spray out card
- Spray topcoats

Achievement Criteria 1

Performance The learner will perform refinishing procedures, such as:

- Spot
- Partial
- Complete

Conditions The learner will be given:

- Vehicle or component
- Material and equipment
- Access to manufacturers' specifications

Criteria The learner will be evaluated on:

- Safety
- Quality
- Coverage
- Mil thickness
- Application technique
- Housekeeping

Achievement Criteria 2

Performance The learner will apply refinishing materials, such as:

- Sealer
- Single stage
- Base coat/clear coat
- Multi-stage

Conditions The learner will be given:

- Vehicle or component
- Material and equipment
- Access to manufacturers' specifications

Criteria The learner will be evaluated on:

- Safety
- Quality
- Coverage
- Mil thickness
- Application technique
- Housekeeping



Line (GAC): H USE REFINISHING MATERIAL

Competency: H4 Troubleshoot paint problems

Objectives

To be competent in this area, the individual must be able to:

- Describe paint problems and their causes.
- Describe methods for correcting paint problems.

LEARNING TASKS

1. Describe paint problems

CONTENT

- Orange peel
- Sags and runs
- Dry spray
- Sand piling
- Mismatch
- Fish eyes
- Dirt nibs
- Delamination
- Soft paint
- Die back
- Solvent trapping
- Halo
- Mottling
- Wrinkling
- Sand scratches
- Checking
- Staining
- Blushing
- Contour mapping
- Topcoat absorption (hold out)
- Overspray
- Customer satisfaction

2. Describe causes of paint problems

- Contamination
 - Dirty equipment
 - Environment
 - Painter
 - Improper cleaning
- Poor spray technique
- Improper mixing procedures
- Inter-mixing of products
- Expired product



LEARNING TASKS

3. Describe methods of correcting paint problems

CONTENT

- Poor equipment
- Poor booth conditions
- Taking short cuts
- Miscommunications

- Prevention
 - Good work habits
 - Product knowledge
 - Preparation technique
 - Equipment knowledge
 - Corrosion protection
 - Application technique
 - Substrate knowledge
 - Mil thickness
 - Standard Operating Procedures (SOPs)
 - Training
 - Housekeeping
- During spraying
 - Fish eye eliminator
 - Sanding
 - Tacking
 - Taping
 - Re-coat
 - Adjust
 - Application technique
 - Environmental conditions
 - Equipment
 - Material



Line (GAC): **I** **PERFORM PRE-DELIVERY TASKS**
Competency: **I1** **Remove surface imperfections**

Objectives

To be competent in this area, the individual must be able to:

- Evaluate surface imperfections.
- Remove surface imperfections.

LEARNING TASKS

1. Evaluate surface imperfections

2. Remove surface imperfections

CONTENT

- Repairable
- Non-repairable

- Wet sanding
 - De-nib
 - Block
 - Hand
 - Machine
- Solvents
- Steel wool
- Compounding
- Polishing
- Tools
 - Razor blades
 - Nib files
 - Clay product
 - Polishers

Achievement Criteria

Performance The learner will remove surface imperfections, such as nibs, runs and orange peel.

- Conditions** The learner will be given:
- Vehicle or component with surface imperfection
 - Materials and equipment
 - Access to manufacturers' specifications

- Criteria** The learner will be evaluated on:
- Safety
 - Product and tool selection
 - Efficiency
 - Quality of repair
 - Housekeeping



LEARNING TASKS

- 4. Describe wrapping

CONTENT

- Application techniques
 - Sequence
 - Hinge method
- Full body graphic
- Paint protection film

Achievement Criteria

Performance The learner will remove and install decals and stripes.

- Conditions** The learner will be given:
- Access to a vehicle
 - Decals
 - Decal removal materials and equipment
 - Decal installation materials and equipment
 - Access to manufacturers' specifications

- Criteria** The learner will be evaluated on:
- Safety
 - Quality of decal and stripe removal
 - Quality of decal and stripe application
 - Housekeeping



Line (GAC): I **PERFORM PRE-DELIVERY TASKS**
Competency: I4 **Perform final check**

Objectives

To be competent in this area, the individual must be able to perform a final check.

LEARNING TASKS

1. Perform a final check

CONTENT

- Completion of work order
- Completion of job pre-delivery checklist
 - Contents
 - Importance
 - Quality standard
 - Customer relations
- Colour match
- Overspray
- Blend areas
- Polish residue

Achievement Criteria

- | | |
|-------------|--|
| Performance | The learner will perform a final check. |
| Conditions | The learner will be given: <ul style="list-style-type: none"> • Refinished vehicle or component • Work order • Pre-delivery checklist |
| Criteria | The learner will be evaluated on: <ul style="list-style-type: none"> • Efficiency • Accuracy • Thoroughness of final check |



Section 4

TRAINING PROVIDER STANDARDS



Facility Requirements

Classroom Area

- Comfortable seating and tables suitable for training, teaching, and lecturing
- Compliance with all local and national fire codes and occupational safety requirements
- Windows must have shades or blinds to adjust sunlight
- Heating/Air Conditioning for comfort all year round
- The minimum requirements are a well heated and ventilated classroom 900 square feet (e.g. 30' x 30') with tables and chairs suitable for adults
- The classroom should be equipped with a large whiteboard (4' x 8'), a flip chart, a white matte screen (6 or 7 ft.), an overhead projector, and a TV/VCR
- Note: A multi-media projector with laptop computer is advisable but optional

Shop Area

- 3,000 square feet for 12 students
- 4,000 square feet for 14 students
- 5,000 square feet for 16 students
- Ceiling must be a minimum height of 16' or height approved through the building engineer
- Appropriate lifting devices (hoists) used in industry
- Suitable demonstration area
- Lighting appropriate for good vision in ambient light
- Compliance with all local and national fire codes and occupational safety requirements
- Must meet municipal and provincial bylaws in regards to waste water management and environmental laws
- Adequate hoist to student ratio



Tools and Equipment

Standard Tool Kit

- Air powered tool
- Air pressure gauge
- Blow gun
- Clip removal tool
- Decal removal tool
- Drill
- Dual action sander
- File
- Grinder
- Hand cutting tool
- Hand tool
- Heat gun
- Plastic spreader
- Putty board
- Putty knife
- Ratchet socket
- Rubber squeegee
- Sanding block
- Sanding board
- Screwdriver
- Socket wrench
- Socket
- Sponge block
- Spray bottle
- Stop watch
- Tape measure
- Tire chuck
- Trim removing tool
- Trouble light
- Tweezers
- Upholstery tool

Safety and First Aid Equipment

- Disposal containers
- Dust extraction equipment
- Dust mask
- Ear protectors
- Explosion proof room
- Explosion proof wiring
- Eye wash station
- Fire extinguishers
- First aid kit
- Gloves (work & rubber)
- Goggles
- Invisible glove
- Paint suit
- Protective clothing
- Respirator (air purifying)
- Respirator (air supplied)
- Safety eyewear
- Safety footwear
- Spill kits



Refinishing Equipment

- Air brush
- Anti-static devices
- Automatic gun washing system
- Blow gun
- Colour chips
- Colour corrective bulbs
- Computer and software
- Curing lamps
- Film thickness gauge (wet and dry)
- Gravel guard gun
- Ground cable
- Gun washer
- Heat lamps
- Liquid mask
- Measuring sticks
- Microfiche reader
- Mixing cups
- Mixing machine
- Mixing scales
- Mixing sticks
- Oilless compressor
- Paint shaker
- Paint strainers
- Pressure washers
- Schutz gun
- Solvent recycler
- Spectrophotometer
- Spray booth
- Spray gun (electrostatic)
- Spray gun (gravity feed)
- Spray gun (HVLP)
- Spray gun (LVLP)
- Spray gun (pressure pot system)
- Spray gun (suction feed)
- Spray out cards
- Thermometer
- UV lamps
- Variant cards
- Viscosity cups

Detailing and Cleaning Equipment

- Abrasive pad
- Anti-corrosive applicator
- Buffer pad
- Buffer/polisher
- Cleaning brush
- Cleaning clothes
- Cleaning equipment
- Cleaning solutions
- Interior cleaner
- Magnifying glass
- Moulding cutter
- Polisher
- Razor blade
- Razor blade holder
- Run-nib file
- Spray bottle
- Stripe cutter
- Tack cloths
- Vacuum cleaner



Shop Equipment

- Air compressor
- Air dryer
- Air hoses
- Air makeup system
- Air transformer
- Axle stand
- Brooms
- Caulking gun (manual/air)
- Floor jack
- Floor squeegees
- Hangers
- Hoist
- Manometer
- Masking cart
- Media blasting equipment
- Moisture trap
- Moulding remover
- Parts and bumper stands
- Plastic rivet gun
- Pneumatic sanders
- Pressure washer
- Regulators
- Solvent recycler
- Spreaders
- Stands
- Step ladders
- Windshield removing tools
- Wire brush

Student Tools (supplied by student)

Required

- CSA approved safety glasses
- CSA approved footwear
- Coveralls

Recommended

- Gun (Automotive Painter (Automotive Refinishing Technician))



Reference Materials

Required Reference Materials

N/A

Recommended Resources

N/A

Suggested Texts

- Auto Body Repair Technology (6th Edition), James E. Duffy
- Collision Repair and Refinishing (2nd Edition), Thomas and Jund
- I-Car, <https://www.i-car.ca/>

NOTE:

This list of Reference Materials is for training providers. Apprentices should contact their preferred training provider for a list of recommended or required texts for this program.



Instructor Requirements

Occupation Qualification

The instructor must possess:

- Automotive Painter (*Automotive Refinishing Technician*) – Certificate of Qualification with Interprovincial Red Seal endorsement
or
Motor Vehicle Body Repairer (Metal & Paint)(Automotive Collision Repair Technician) – Certificate of Qualification with Interprovincial Red Seal endorsement

Work Experience

- A minimum of 5 years experience working in the industry as an Automotive Painter (*Automotive Refinishing Technician*) journey person
- Must have diverse Automotive Painter (*Automotive Refinishing Technician*) industry experience including experience in all competencies in this program
- Must have recent Automotive Painter (*Automotive Refinishing Technician*) trade experience

Instructional Experience and Education

It is preferred that the instructor also possesses one of the following:

- Provincial Instructor's Diploma, or be registered in the program to be completed within a five year period
- Instructors Certificate (minimum 30 hour course)
- Bachelors or Masters degree in Education



Appendices



Appendix A

Assessment Guidelines



Program: Automotive Refinishing Prep Technician

Training Provider Component: In-School Technical Training

Training providers delivering Automotive Refinishing Prep Technician apprenticeship in-school technical training are required to enter the following information in ITA Direct Access for each apprentice:

- An in-school mark in the form of a percentage

Calculation tables showing the subject competencies, level percentage weightings and level examination weightings are shown in the Grading Sheet: “Subject Competencies and Weightings” section of this document.

Automotive Refinishing Prep Technician in-school marks are calculated by:

- Totalling the level *theory* competency results as noted in the competencies and weightings tables and multiplying the total by 60% to produce a weighted *theory* result;
- Totalling the level *practical* competency results as noted in the competencies and weightings tables and multiplying the total by 40% to produce a weighted *practical* result;
- Adding the weighted theory and practical competency results together to determine the final in-school result. A mark of 70% or greater is required to pass the level and write the Certificate of Qualification exam.

ITA Certificate of Qualification Exam

In order to achieve certification, Automotive Refinishing Prep Technician apprentices are required to write the Automotive Refinishing Prep Technician ITA Certificate of Qualification exam after completing in-school technical training. Apprentices must have passed in-school technical training or be approved challengers to sit the exam. A score of 70% or greater is required for a pass.

ITA Certificate of Qualification exams should be requested by training providers via the usual ITA procedure.

The ITA will administer and invigilate ITA Certificate of Qualification exams and score and record exam results in ITA Direct Access.



Grading Sheet: Subject Competency and Weightings

PROGRAM:		Automotive Refinishing Prep Technician (C of Q)	
IN-SCHOOL TRAINING:			
ITA DIRECT ACCESS CODE:		0224RP01	
LINE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
A	PERFORM SAFETY-RELATED FUNCTIONS	15%	10%
B	MAINTAIN TOOLS AND EQUIPMENT	15%	15%
C	USE DOCUMENTATION	5%	0%
D	PLAN WORK	10%	5%
E	PREPARE SURFACE	20%	25%
F	USE REPAIR MATERIALS	15%	20%
G	USE EQUIPMENT	15%	20%
I	PERFORM PRE-DELIVERY TASKS	5%	5%
	Total	100%	100%
Calculated by the Training Provider Automotive Refinishing Prep Technician in-school theory & practical subject competency weighting		60%	40%
Training Provider enters final in-school mark into ITA Direct Access Apprentices must achieve a minimum 70% for the final in-school mark to be eligible to write the Automotive Refinishing Prep Technician Certificate of Qualification exam.		IN-SCHOOL FINAL %	

All apprentices who complete the Automotive Refinishing Prep Technician program with a FINAL level mark of 70% or greater will write the Automotive Refinishing Prep Technician Certificate of Qualification examination as their final assessment.

ITA will enter the apprentices' Automotive Refinishing Prep Technician Certificate of Qualification examination mark in ITADA. A minimum mark of 70% on the examination is required for a pass.



Program: Automotive Painter (Automotive Refinishing Technician)

Training Provider Component: In-School Technical Training

Training providers delivering Automotive Painter (Automotive Refinishing Technician) apprenticeship in-school technical training are required to enter the following information in ITA Direct Access for each apprentice:

- An in-school mark in the form of a percentage

Calculation tables showing the subject competencies, level percentage weightings and level examination weightings are shown in the Grading Sheet: “Subject Competencies and Weightings” section of this document.

Automotive Painter (Automotive Refinishing Technician) in-school marks are calculated by:

- Totaling the level *theory* competency results as noted in the competencies and weightings tables and multiplying the total by 35% to produce a weighted theory result;
- Totaling the level *practical* competency results as noted in the competencies and weightings tables and multiplying the total by 65% to produce a weighted practical result;
- Adding the weighted theory and practical competency results together to determine the final in-school result. A mark of 70% or greater is required to pass the level and write the Automotive Painter Red Seal exam.

Interprovincial Red Seal Exam

In order to achieve certification with the Red Seal Endorsement, Automotive Painter (Automotive Refinishing Technician) apprentices are required to write the Automotive Painter Interprovincial Red Seal exam after completing all levels of in-school technical training. Apprentices must have passed all levels of in-school technical training or be approved challengers to sit the exam. A score of 70% or greater is required for a pass.

Interprovincial Red Seal exams should be requested by training providers via the usual ITA procedure.

The ITA will administer and invigilate Interprovincial Red Seal exams and score and record exam results in ITA Direct Access.



Grading Sheet: Subject Competency and Weightings

PROGRAM: IN-SCHOOL TRAINING: ITA DIRECT ACCESS CODE:		Automotive Painter (Automotive Refinishing Technician) (RS) 0124PR01	
LINE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
D	PLAN WORK	20%	15%
E	PREPARE SURFACE	5%	5%
H	USE REFINISHING MATERIAL	65%	60%
I	PERFORM PRE-DELIVERY TASKS	10%	20%
	Total	100%	100%
Calculated by the Training Provider Automotive Painter (Automotive Refinishing Technician) in-school theory & practical subject competency weighting		35%	65%
Training Provider enters final in-school mark into ITA Direct Access Apprentices must achieve a minimum 70% for the final in-school mark to be eligible to write the Automotive Painter Interprovincial Red Seal exam.		IN-SCHOOL FINAL %	

All apprentices who complete the Automotive Painter (Automotive Refinishing Technician) program with a FINAL level mark of 70% or greater will write the Automotive Painter Interprovincial Red Seal examination as their final assessment.

ITA will enter the apprentices' Automotive Painter Red Seal Interprovincial examination mark in ITADA. A minimum mark of 70% on the examination is required for a pass.



Appendix B

Glossary of Acronyms



Glossary of Acronyms used in this document

CSA	Canadian Standards Association
DTM	Direct To Metal
HVAC	Heating, Ventilation and Air Conditioning
JHA	Job Hazard Analysis
JT	Judgement Time
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
PASS	Pull, Aim, Squeeze, Sweep
PPE	Personal Protective Equipment
ROYGBIV	Red, Orange, Yellow, Green, Blue, Indigo, Violet
RPM	Revolutions Per Minute
SDS	Safety Data Sheet
SMC	Sheet Molding Compound
SOP	Standard Operating Procedure
SRS	Supplemental Restraint System
TDS	Technical Data Sheet
UV	Ultra Violet
VIN	Vehicle Identification Number
VOC	Volatile Organic Compound
WHMIS	Workplace Hazardous Materials Information System
WIP	Work In Progress