Automotive Refinishing Technician On-the-Job Training Guide

2024



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Recognition:

To promote transparency and consistency, this document has been adapted from the 2019 Automotive Refinishing Technician Red Seal Occupational Standard (Employment and Social Development Canada).

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

Note: Automotive Refinisher Technician Technical Training is now Fully Harmonized



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 Automotive Refinishing Technician subtrade: an overview of the subtrade's duties and training requirements.

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

Harmonization: a brief description on the Pan-Canadian Harmonization Initiative for the Automotive Refinishing Technician subtrade.

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 Automotive Refinishing Technician Subtrade: 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 AUTOMOTIVE REFINISHING TECHNICIAN SUBTRADE

Automotive Refinishing Technicians appraise and refinish motor vehicle bodies. This is a subtrade of the Auto Body and Collision Technician trade.

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 refinishing technician completes include: removing layers of old coatings; matching colours and mixing paints; preparing surfaces for painting by spot filling, sanding, and masking; applying primers, primer surfacers, sealers, base coats, single-stage and clear coats; cleaning and polishing painted surfaces; and applying protective coatings.

Automotive refinishing technicians use hand and power tools and automotive refinishing equipment in their work. Computers and related software are used for computerized paint colour reading, generating paint formulas and tinting recommendations, and documentation.

Journeypersons in this subtrade usually work indoors and can expect a work environment that includes paint fumes, dust and noise. Health and safety are important issues for automotive refinishing technicians, as they are exposed to chemical hazards such as paints and solvents, and physical hazards such as shop equipment, power tools and lifting equipment. Automotive refinishing technicians are exposed to repetitive movements, bending, lifting and reaching on a daily basis. Ongoing safety training and a good knowledge of government safety standards and regulations are important in providing a safer working environment as well as addressing environmental concerns.

Many automotive refinishing technicians work in close contact with automotive refinishing technicians who tend to work in multi-shop companies, independent or dealership auto body and collision shops. Automotive painting duties may overlap with automotive refinishing technicians' duties, particularly in small shops. In larger places of employment, automotive refinishing technicians likely work as specialists, after body repairs have been completed. They may also work with estimators, parts technicians, detailers, preppers, glass installers and production managers. While they may work as part of the repair team, automotive refinishing technicians tend to work independently. They may work in the automotive, truck and transport, commercial transport, heavy equipment, motorcycle, specialty vehicle, aviation and aerospace sectors.

Key attributes for people entering this subtrade include: mechanical aptitude; manual dexterity; good colour vision; the ability to do precise work that requires attention to detail; and, problem solving and multitasking skills. Good physical condition and agility are important because the work often requires considerable standing, bending, crouching, kneeling and reaching.

Being an automotive refinishing technician is very rewarding. With experience, journeypersons have a number of career options, including supervisory or teaching/training in the field, insurance appraiser, estimator and manufacturers' representative.



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 3600 and at least 2 years in the subtrade.

<u>NOTE</u>: Due to Harmonization, Level One Auto Body and Collision Technician technical training is common with Automotive Refinishing Technician at the Saskatoon and Regina campuses of Saskatchewan Polytechnic. Automotive Body and Collision Technician apprentices that chose to switch to the Automotive Refinishing Technician subtrade receive Level One technical training credit and move into Level Two when sufficient trade time in Automotive Refinishing Technician is acquired and submitted.

There are two levels of technical training delivered by the Northern Alberta Institute of Technology (NAIT) Polytechnic in Edmonton Alberta and the Southern Alberta Institute of Technology (SAIT) Polytechnic in Calgary Alberta.

Journeyperson to apprentice ratio for this trade is: 1:2

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

It is the employer's or journeyperson's responsibility to supervise an apprentice's practical skills development until a satisfactory level of proficiency has been reached.

EMPLOYER TRAINING RESPONSIBILITY

- promote a safety-conscious workplace
- provide mentored, hands-on practice in the use of tools and equipment
- demonstrate procedures to appraise automobiles and light trucks
- provide guided, hands-on practice refinishing automobiles and light trucks
- ensure that the apprentice can evaluate the end product

Employers should make every effort to expose their apprentices to work experience in as many areas of the trade as possible.

In the On-the-Job Training Guide, in-school instruction is listed first; on-the-job suggestions to help employers assist the apprentice to prepare for in-school training are listed next.

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

Entrance Requirements for Apprenticeship Training

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

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

English is the language of instruction in all apprenticeship programs and is the common language for business in Saskatchewan. Before admission, all apprentices and/or "upgraders" must be able to understand and communicate in the English language. Applicants whose first language is not English must have a minimum Canadian Language Benchmark Assessment of six (CLB6).

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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	Science Credit at Grade Level		
Automotive Refinishing Technician	Grade 10	Grade 10		
 One of the following) WA – Workplace and Apprenticeship; or F – Foundations; or P – Pre- calculus, or a Math at the indicated grade level (Modified and General Math credits are not acceptable.). 				
*Applicants who have graduated in advance of 2015-2016, or who do not have access to the revised Science curricula will require a Science at the minimum grade level indicated by trade.				
For information about high school curriculum, including Math and Science course names, please see: <u>http://www.curriculum.gov.sk.ca/#</u>				
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.

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

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

READING

Automotive refinishing technicians read repair orders (work orders and estimates), labels, application or installation instructions, technical data sheets (TDS), manufacturers' service bulletins and manuals for safe use and storage of paints, solvents and equipment. They also read trade publications to learn about new technologies, products and materials.

DOCUMENT USE

Automotive refinishing technicians reference safety or hazard icons to obtain information on a product's toxicity. They read forms and tables to determine product specifications such as temperatures, humidity, drying times and ratios. Automotive refinishing technicians also use colour chips, vehicle information, tinting charts and technology to determine colour variant to achieve a blend-able match. They use safety and environmental documentation such as safety data sheets (SDS), VOC and isocyanates logs, maintenance logs, and TDS. They track and log colour libraries. They use business-related documentation such as: time sheets, repair orders (work orders), production schedules and pre-delivery checklists.

WRITING

Automotive refinishing technicians write notes on repair orders (work orders) and forms to describe previous damage, work that was carried out and any irregularities. Automotive refinishing technicians may write reports describing workplace accidents and note information for the colour library, chemical tracking and equipment logs. They may prepare lists for ordering inventory.

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ORAL COMMUNICATION

Automotive refinishing technicians communicate with colleagues and customers about the scope of work and work completed. They explain procedures to apprentices and estimators. Automotive refinishing technicians need to communicate with suppliers and manufacturer representatives.

NUMERACY

Automotive refinishing technicians monitor temperatures, humidity and pressure levels. They calculate quantities of materials needed and mix refinishing materials based on weight, volume, ratios and formulas. Automotive refinishing technicians may also estimate time required to complete painting tasks including force-drying calculations.

THINKING

Automotive refinishing technicians use analytical and problem solving skills to determine appropriate solutions to refinishing issues such as surface imperfections, contamination, production problems and equipment problems. Automotive refinishing technicians make decisions about which products to use to create the desired finish. They use organizational skills to enhance production schedule and maintain work flow.

WORKING WITH OTHERS

Automotive refinishing technicians spend most of their time working independently but they are required to coordinate activities with colleagues from body repair, detailing, vehicle preparation and office staff to maintain production schedule. They may also work directly with colleagues to help them with vehicle preparation duties.

DIGITAL TECHNOLOGY

Automotive refinishing technicians may use digital tools and equipment to measure temperature, humidity, air pressure and paint thickness. They may also use digital devices to determine paint colours and codes. Automotive refinishing technicians may use computer software to retrieve paint formulas and access instructions for selecting and mixing appropriate refinishing materials. Workplace records and technical and safety information may be recorded and accessed using computers.

CONTINUOUS LEARNING

Automotive refinishing technicians are continuously learning to keep up with the changes in the industry in relation to products, vehicles and equipment. They may attend manufacturers' or suppliers' seminars to become a certified user of their products. Some jurisdictions require automotive refinishing technicians to participate in continuous learning.



ELEMENTS OF HARMONIZATION FOR APPRENTICESHIP TRAINING

At the request of industry, the Harmonization Initiative was launched in 2013 to *substantively align* apprenticeship systems across Canada by making training requirements more consistent in the Red Seal trades. Harmonization aims to improve the mobility of apprentices, support an increase in their completion rates and enable employers to access a larger pool of apprentices.

As part of this work, the Canadian Council of the Directors of Apprenticeship (CCDA) identified four main harmonization priorities in consultation with industry and training stakeholders:

1. Trade name

The official Red Seal name for this trade is Automotive Refinishing Technician.

2. Number of Levels of Apprenticeship

The number of levels of technical training recommended for the Automotive Refinishing Technician trade is two.

3. Total Training Hours during Apprenticeship Training

The total hours of training, including both on-the-job and in-school training for the Automotive Refinishing Technician subtrade is 3600.

4. Consistent sequencing of training content (at each level) using the most recent Occupational Standard

Implementation for harmonization was implemented take place progressively. Level one was implemented in 2020/2021 and level two in 2021/2022.

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AUTOMOTIVE REFINISHING TECHNICIAN TASK MATRIX

This chart outlines the major work activities, tasks and sub-tasks from the 2019 Automotive Refinishing Technician Red Seal Occupational Standard. Each sub-task details the corresponding essential skill and level of training where the content is covered. *

* Sub-tasks with numbers in the boxes is where the content will be delivered in training. The Task Matrix Chart will be updated every year until Harmonization implementation is complete. Implementation for harmonization took place progressively. Level one was implemented in 2020/2021 and level two in 2021/2022.

A – Performs common occupational skills

Task A-1 Performs safety-1.01 Maintains safe 1.02 Uses personal related functions workplace protective equipment (PPE) and safety equipment 1 1 Task A-2 Maintains tools and 2.01 Maintains 2.02 Maintains 2.03 Maintains 2.04 Maintains 2.05 Maintains equipment hand and power spray booth spray equipment mixing equipment shop equipment tools 1 1 1, 2 1, 2 1 Task A-3 Organizes work 3.01 Uses 3.02 Performs 3.03 Contributes to 3.04 Organizes documentation inspections development of a refinish production repair plan schedule 1,2 1,2 1, 2 1, 2 Task A-4 Uses communication 4.01 Uses 4.02 Uses and mentoring techniques communication mentoring techniques techniques 1,2 1,2

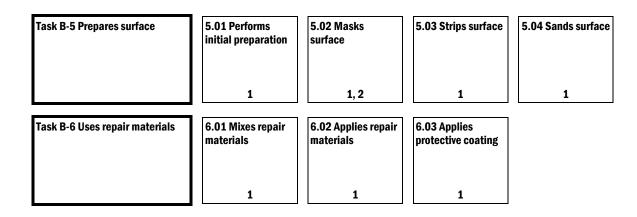
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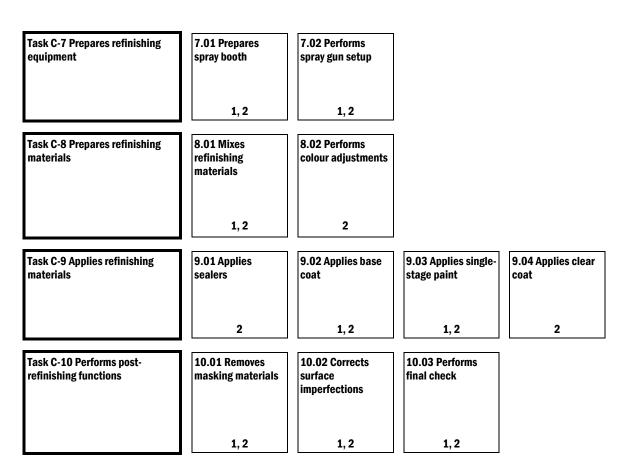
9

16%

B – Performs Preparation



C– Performs refinishing procedures



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42%

42%

TRAINING PROFILE CHART SASKATCHEWAN

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

Note: Level One Auto Body and Collison Technician and Automotive Refinishing Technician attend common Level One technical training. Either apprentice may switch to the other trade upon completion of level one technical training and work experience. Graduates of Saskatchewan Polytechnic's applied certificate ABCT program with sufficient work experience hours may enter Automotive Refinishing Technician apprenticeship at level two.

At this time, <u>all</u> Saskatchewan's Automotive Refinishing Technician apprentices attend technical training in Alberta at NAIT or SAIT for Level 2.

Level two Automotive Refinishing Technician apprenticeship technical training has yet to be developed. Once industry indentures sufficient, sustainable numbers of Automotive Refinishing Technician apprentices, level two will begin development.

Sask. Polytechnic Level One (Harmonized)	Transcript Code	Hours
Trade Mathematics	MATH 131 – Theory	12
Matal Danair	METL 122 – Theory	20
Metal Repair	METL 123 – Shop	36
Refiniching	PNTG 122 – Theory	24
Refinishing	PNTG 123 – Shop	32
Vehiele Redu Trim Densir	VEHC 122 – Theory	24
Vehicle Body Trim Repair	VEHC 123 – Shop	32
		180

TRAINING PROFILE CHART ALBERTA

This Training Profile Chart represents Alberta Apprenticeship and Industry Training (AIT) technical training at the topic Level 2.

Northern and Southern Alberta Institute of Technology (NAIT, SAIT) Polytechnic Level Two (Harmonized)	
Shop Practices and Procedures	24
Product Preparation	49
Topcoat Application	107
	180



ON-THE JOB AND IN-SCHOOL TRAINING CONTENT FOR THE AUTOMOTIVE REFINISHING TECHNICIAN SUBTRADE

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

Trade Mathematics

- use basic mathematics
- use basic algebra
- use metric system and formulas
- Mentors can assist the apprentice to prepare for this section of technical training by:
- having the apprentice perform calculations using basic math, algebra and formulas for trade related activities.

Metal Repair – Theory

- discuss auto body hand and power tools
- identify metal shaping procedures
- discuss metal preparation procedures
- describe minor dent repair procedures
- describe application and finishing procedures of fillers
- describe oxy-acetylene cutting and heating procedures
- describe plasma cutting procedures
- describe trade-related documents

Metal Repair – Shop

- demonstrate knowledge of trade terminology
- use auto body hand tools
- use auto body power tools
- demonstrate metal working procedures
- perform the application and finish filler process
- use oxy-acetylene equipment
- use plasma arc

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

- having the apprentice participate in training for workplace safety and health regulations such as Material Safety Data Sheets (MSDS), Workplace Hazardous Material Information Systems (WHMIS) and Occupational Health and Safety (OH&S)
- demonstrating the use of supplied breathing systems
- describing the care, use, and maintenance of body hand tools
- describing the procedures and techniques for shrinking metal so that it conforms to its original contour
- allowing the apprentice to perform rough out procedures for buckles and creases

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20 hours

180 hours

12 hours

36 hours

- having the apprentice apply and finish body filler to the original contour of the panel
- allowing the apprentice to operate oxy-acetylene cutting equipment
- allowing the apprentice to operate plasma arc cutting equipment

Refinishing – Theory

- describe preparation of panel to be painted
- identify methods of stripping paint
- describe undercoat application procedures
- identify primer sealers
- describe spray equipment
- describe paint mixing procedures
- explain paint application procedures
- describe procedures for paint defect correction
- describe air supply systems
- describe vehicle detailing procedures

Refinishing – Shop

- prepare panel to be painted
- strip painted panel
- apply undercoats
- apply primer sealers
- clean and maintain spray equipment
- mix paint
- apply paint to a panel
- correct paint defects
- service air supply systems
- perform an interior and exterior vehicle clean up

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

- describing the procedures for service, maintenance, and cleaning of spray equipment
- describing the procedures for service, maintenance, and cleaning of air supply systems
- describing the appropriate selection and maintenance of respirators
- describing the procedures for paint booth maintenance
- having the apprentice identify substrate and panel preparation to ensure compatibility with paint manufacturer's specifications
- allowing the apprentice to mask and tape a panel for refinishing
- exposing the apprentice to the selection and application of primers for various substrate
- exposing the apprentice to the selection and application of sealers designed to perform various functions
- allowing the apprentice to select and mix paints according to colour code and compatibility with existing vehicle finish
- allowing the apprentice to paint various substrate in accordance to paint manufacturer's specifications
- describing the procedures for the disposal of paint, solvent, and shop wastes
- having the apprentice polish a refinished panel or vehicle
- describing the procedure for the selection and use of cleaners for removing various types of stains and dirt from upholstery materials and interior components
- having the apprentices to perform vehicle interior and exterior cleanup
- allowing the apprentice to complete a final checklist



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32 hours

24 hours

Vehicle Body Trim Repair – Theory

- discuss personal and shop safety
- discuss electrical systemsidentify fastening devices
- describe body trim and mouldings
- identify passenger restraint systems
- describe plastic repair
- describe body panel replacement and alignment

Vehicle Body Trim Repair – Shop

- repair electrical systems
- replace vehicle trim components
- repair plastic components
- replace body panels and associated trim

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

- allowing the apprentice to remove, install and align of bumpers, header panels, hoods, fenders and skirts, bolt-on radiator supports and deck lids
- showing the apprentice procedures on diagnosing and repairing air, dust, and water leaks
- allowing the apprentice to remove, install and align headlights
- allowing the apprentice remove, install, and align of doors and door hardware
- explaining the creation and accuracy in work estimates
- having the apprentice use a multimeter to diagnose electrical circuits and components
- describing the operation, basic diagnosis, and repair of electrical wiring and lighting systems
- discussing the protection of electronic components from static discharge and damage from welding processes, impact, or heat
- having the apprentice use the tools and shop equipment common for an Automotive Refinishing Technician



24 hours

32 hours

Section One – Shop Practices and Procedures

Shop Maintenance

Level Two

- describe spray environment set-up
- describe air supply systems
- describe record keeping procedures
- describe the management of materials inventory
- · describe the management of waste materials
- identify mixing room requirements
- maintain mixing room
- maintain spray environment
- maintain refinishing equipment.

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

- explaining the spray environment set-up and air supply systems
- demonstrating record keeping procedures and the management of materials inventory
- explaining the management of waste materials
- *identifying mixing room requirements*
- the maintaining of the mixing room.
- the maintaining spray environment and the refinishing equipment.

Shop Procedures

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- explain a refinish supplement
- explain a refinish estimate
- identify refinish work required
- develop refinish schedule

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

- explaining a refinish supplement
- explaining a refinish estimate
- Identifying refinish work that is required
- develop a refinish schedule

Section Two – Product Preparation

Topcoat Identification

- identify existing substrates
- describe topcoat considerations for complete panel refinish
- describe topcoat considerations for spot repair
- select a formula that corresponds to a paint code. Maintain spray environment

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

- identifying existing substrates
- describing topcoat considerations for complete panel refinish
- describing topcoat considerations for spot repair
- selecting a formula that corresponds to a paint code
- describing additive considerations

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6 weeks

eeks

A

Saskatchewan Apprenticeship and Trade Certification Commission 15

18 hours

49 hours total

18 hours

6 hours

24 hours total

180 hours

Mixing Identification

- describe additive considerations
- mix paint according to specifications
- correct an over-pour situation when mixing paint

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

- explaining colour theory
- identifying a colour mismatch •
- correcting an over-pour situation when mixing paint
- adjusting colour using gun technique
- adjusting colour by tinting

Colour Matching

- explain colour theory
- identify a colour mismatch
- adjust colour using gun technique
- adjust colour by tinting

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

- explaining colour theory •
- identifying a colour mismatch •
- adiusting colour using gun technique
- adjusting colour by tinting •

Section Three – Topcoat Application

Apply Topcoat

- describe topcoat application
- describe blending techniques and applications
- prepare the refinisher for topcoat application •
- prepare the work piece for topcoat application •
- prepare spray equipment for topcoat application
- perform topcoat application
- perform multi-stage blend repair

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

- describing topcoat application •
- describing blending techniques and applications
- preparing the refinisher for topcoat application •
- preparing the workpiece for topcoat application
- preparing the spray equipment for topcoat application •
- supervising the apprentice during the performing a topcoat application
- supervising the apprentice during the performing multi-stage blend repair

Paint Faults

- identify paint faults
- repair paint faults

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

- supervising the apprentice during the identifying paint faults
- supervising the apprentice during the repairing paint faults

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4 hours

27 hours

95 hours

12 hours



107 hours total

Consider apprenticeship training as an investment in the future of your company and in the future of your workforce. Ultimately, skilled and certified workers increase your bottom line.

Get involved in the apprenticeship training system. Your commitment to training helps to maintain the integrity of the trade.

Do you have employees who have been working in the trade for a number of years but don't have trade certification?

Contact your local apprenticeship office for details on how they might obtain the certification they need.

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