

Introduction to Automotive Collision Repair Technology

Introduction to Construction Materials

Standard 01

Steel (Introduction to Construction Materials)

Objective 01 I can explain steel strengths and the characteristics of steel.

Objective 02 I can identify various types of steel used in vehicle construction.

Objective 03 I can explain some of the forming processes used for steel used in vehicle construction.

Objective04 I can identify considerations when working with steel parts.

Standard 02

Aluminum and Magnesium (Introduction to Construction Materials)

Objective 01 I can identify properties and characteristics of aluminum.

Objective02 I can identify where aluminum parts are used in vehicle construction.

Objective03 I can explain considerations when working on aluminum parts.

Objective04 I can identify properties and characteristics of magnesium.

Objective05 I can identify where magnesium parts are used in vehicle construction.

Objective06 I can explain considerations when working on magnesium parts.

Standard 03

Plastics and Carbon Fiber (Introduction to Construction Materials)

Objective 01 I can identify where plastic parts are used in vehicle construction.

Objective 02 I can identify properties and characteristics of plastic.

Objective 03 I can identify where carbon fiber parts are used in vehicle construction.

Objective04 I can identify properties and characteristics of carbon fiber.

Objective05 I can explain plastic type identification.

Objective06 I can explain considerations when working on plastic and carbon fiber parts.

Standard 04

Collision Energy Management (Introduction to Construction Materials)

Objective 01 I can identify different build designs of vehicles.

Objective02 I can explain parts that absorb collision energy.

Objective03 I can explain parts and areas of a vehicle that transfer collision energy.

Objective04 I can explain how collision energy travels through a vehicle during different types of collisions.

Objective05 I can explain why different steel is used in vehicle construction.

Objective06 I can explain the difference between a tailor-welded part and a tailor rolled part.

Objective07 I can describes the function of a vehicle collapse zone.

Objective08 I can explain how there constraint system works with the structure to protect occupants.

Introduction to Mechanical Systems Technology 1

Standard 05

Steering (Introduction to Mechanical Systems Technology 1)

Objective01 I can identify parts of a steering column.

Objective02 I can identify parts of a parallelogram steering system.

Objective03 I can explain how a parallelogram steering system operates.

Objective04 I can identify parts of a rack and pinion steering system.

Objective 05 I can explain how a rack and pinion steering system operates.

Objective 06 I can identify various types of power steering systems.

Objective07 I can identify power steering system parts.

Standard 06

Wheels and Tires (Introduction to Mechanical Systems Technology 1)

Objective01 I can identify parts of a wheel.

Objective02 I can identify parts of a tire.

Standard 07

Brakes (Introduction to Mechanical Systems Technology 1)

Objectives01 I can identify parts of a disc brake assembly.

Objective02 I can explain the operation of disc brakes.

Objective03 I can identify parts of a drum brake assembly.

Objective04 I can explain the operation of drum brakes.

Standard 08

Stability Control (Introduction to Mechanical Systems Technology 1)

Objective01 I can identify parts of an anti-lock brake system.

Objective02 I can explain the operation of an anti-lock brake system.

Objective03 I can identify parts of a traction control system.

Objective04 I can explain the operation of a traction control system.

Objective05 I can identify parts of an electronic stability control system.

Objective06 I can explain the operation of an electronic stability control system.

Introduction to Mechanical Systems Technology part 2

Standard 09

Suspension (Introduction to Mechanical Systems Technology 2)

Objective01 I can identify parts of a MacPherson strut suspension.

Objective02 I can identify parts of a short arm long arm (SLA) suspension.

Objective03 I can identify parts of a double wishbone suspension.

Objective04 I can identify types and parts of solid axle suspensions.

Objective05 I can identify parts of advanced suspension systems.

Standard 10

Drivetrain (Introduction to Mechanical Systems Technology 2)

Objective01 I can identifying the drivetrain.

Objective02 I can explaining the engine.

Objective03 I can identify the starting and charging system.

Standard 11

Heating and Cooling (Introduction to Mechanical Systems Technology 2)

Objective01 I can explain how the heating and cooling system works.

Objective02 I can identify parts of the heating and cooling system.

Objective03 I can identify the other systems that are used in conjunction with the heating and cooling system.

Standard 12

Air Conditioning (Introduction to Mechanical Systems Technology 2)

Objective01 I can explain how refrigerant flows through the air conditioning system.

Objective02 I can identify parts of an air conditioning system.

Objective03 I can explain the operation of air conditioning system parts.

Introduction to Mechanical Repair Terms and Vehicle Protection

Standard 13

Electrical (Introduction to Mechanical Repair Terms and Vehicle Protection)

Objective01 I can identify parts of a circuit.

Objective02 I can identify circuit protection.

Objective03 I can identify voltage, current, and resistance.

Objective04 I can identify electrical diagnostic terms.

Objective05 I can identify electrical diagrams.

Objective06 I can identify a scan tool.

Standard 14

Mechanical (Introduction to Mechanical Repair Terms and Vehicle Protection)

Objective01 I can identify cooling system repair terms.

Objective02 I can identify brake system repair terms.

Objective03 I can identify other mechanical repair terms.

Standard 15

Steering and Suspension Systems (Introduction to Mechanical Repair Terms and Vehicle Protection)

Objective01 I can identify wheel and tire repair terms.

Objective02 I can identify terms used for steering system diagnostics.

Objective03 I can identify quick checks used for diagnosing a suspension system.

Standard 16

Protecting Electronic Systems (Introduction to Mechanical Repair Terms and Vehicle Protection)

Objective01 I can identify electrical and electronic parts that are vulnerable to damage during the repair process.

Objective02 I can identify various repair operations that may damage electrical and electronic parts.

Objective03 I can explain how electrical and electronic parts removed from the vehicle are handled and stored properly.

Standard 17

Preventing Vehicle Damage during Repair (Introduction to Mechanical Repair Terms and Vehicle Protection)

Objective01 I can identify various repair processes that can cause unwanted damage to the vehicle.

Objective02 I can explain best practices for reducing the chance of damage during repairs.

Objective03 I can identify various products used to protect the vehicle during repairs.

Introduction to Personal Safety

Standard 18

General Protection (Introduction to Personal Safety)

Objective01 I can identify eye, body, respiratory, and hearing protection requirements.

Objective02 I can identify work safety regulations and hazardous material identification systems.

Standard 19

Structural Repairs (Introduction to Personal Safety)

Objective01 I can list safety requirements for lifts and jacks.

Objective02 I can identify safety equipment and safety procedures for anchoring and straightening a structure.

Objective03 I can list safety procedures for part removal and installation.

Objective04 I can identify personal safety protection when around gas metal arc and squeeze-type resistance spot welding.

Standard 20

Non-Structural Repairs (Introduction to Personal Safety)

Objective01 I can identify safety requirements with metal straightening.

Objective02 I can identify safety requirements with body filler application.

Objective03 I can identify safety requirements with weld-on dent removal.

Objective04 I can identify safety requirements with plastic repairs.

Standard 21

Hybrids (Introduction to Personal Safety)

Objective01 I can identify safety precautions with high voltage.

Objective02 I can identify hybrid electric vehicles.

Objective03 I can clean up spilled electrolyte.

Objective04 I can disable hybrid electric vehicles.

Introduction to Refinishing and Corrosion Protection

Standard 22

Vehicle Maker Processes (Introduction to Refinishing and Corrosion Protection)

Objective01 I can identify zinc coatings.

Objective02 I can identify metal treatment.

Objective03 I can identify coatings applied by the vehicle maker.

Objective 04 I can identify vehicle maker corrosion protection warranties.

Standard 23

Refinish Terms (Introduction to Refinishing and Corrosion Protection)

Objective01 I can identify masking, sanding, and scuffing procedures.

Objective02 I can identify a spot repair.

Objective03 I can discuss flash times.

Objective04 I can identify the paint code on a vehicle.

Objective05 I can discuss the mixing process, tinting, making spray-out panels, and the application of topcoats.

Objective06 I can identify jaming and blending.

Objective07 I can identify panel refinishing.

Objective08 I can identify the baking process, drying, and curing.

Standard 24

Refinish Materials (Introduction to Refinishing and Corrosion Protection)

Objective01 I can identify basecoat, clear coat and midcoat paint systems.

Objective02 I can identify reducers.

Objective03 I can identify waterborne materials.

Objective04 I can discuss paint maker warranties.

Standard 25

Personal Safety (Introduction to Refinishing and Corrosion Protection)

Objective01 I can identify safety issues with isocyanate exposure.

Objective02 I can identify clothing that is worn in there refinishing area.

Objective03 I can identify eye protection in the refinishing area.

Objective04 I can identify safety issues in the mixing room and prep deck.

Objective05 I can identify safety requirements when detailing.

Introduction to Refinish Material and Corrosion Materials part 2

Standard 26

Refinishing Tools (Introduction to Refinish Material and Corrosion Materials part 2)

Objective01 I can identify some types of equipment found in a mixing room.

Objective02 I can explain how mixing cups and sticks function.

Objective03 I can explain the parts of a spray booth.

Objective04 I can explain how color matching tools are used.

Objective05 I can describe the functions of detailing tools.

Standard 27

Refinishing Preparation (Introduction to Refinish Material and Corrosion Materials part 2)

Objective01 I can identify a solvent test.

Objective02 I can identify masking materials.

Objective03 I can identify primer-surfacer sand primer-sealers.

Objective04 identify preparation abrasives.

Objective05 I can identify adhesion promoter.

Standard 28

Refinishing Defects (Introduction to Refinish Material and Corrosion Materials part 2)

Objective01 I can identify nib sanding and buffing for removing some refinishing defects.

Objective02 I can identify different types of refinishing defect sand common causes of these defects.

Standard 29

Corrosion Protection (Introduction to Refinish Material and Corrosion Materials part 2)

Objective01 I can identify weld-through primer.

Objective02 I can identify corrosion-inhibiting adhesive.

Objective03I can identify primers.

Objective04 I can identifying chip-resistant coating.

Objective05 I can identify seam sealers, anti-corrosion compound ,and undercoating.

Introduction to Collision repair Overview

Standard 30

The Collision Repair Process (Introduction to Collision repair Overview)

Objective01 I can identify the different types of collision damage.

Objective02 I can explain the creation and function of a damage report.

Objective03 I can define repair blue printing and supplements.

Objective04 I can explain insurance policy basics.

Objective05 I can describe vehicle tear down and parts ordering.

Objective06 I can explain exterior lighting, and heating and cooling systems.

Standard 31

Structural and Non-Structural Repair (Introduction to Collision repair Overview)

Objective01 I can explain why vehicles are measured and considerations for straightening.

Objective02 I can explain structural part repairs and replacement.

Objective03 I can explain exterior panel and nonstructural repairs.

Objective04 I can discuss the role of stationary glass and replacement considerations.

Standard 32

Electrical and Mechanical Repair (Introduction to Collision repair Overview)

Objective01 I can identify types of restraints and restraint systems.

Objective02 I can explain the importance of wheel alignments.

Objective03 I can list types of vehicle electronics and electrical damage.

Objective04 I can identify hybrid-electric vehicles and listing high voltage considerations.

Standard 33

Refinishing and Delivery (Introduction to Collision repair Overview)

Objective01 I can explain the refinishing process.

Objective02 I can list corrosion protection considerations.

Objective03 I can describe the detailing process.

Objective04 I can explain the pre-delivery inspection and customer delivery process.

Introduction to Industry Repair Terms

Standard 34

Non-Structural: (Introduction to Industry Repair Terms)

Objective01 I can identify the two sides of a vehicle.

Objective02 I can identify sheet metal straightening terms.

Objective03 I can identify panel alignment terms.

Objective04 I can identify plastic repair terms

Standard 35

Structural (Introduction to Industry Repair Terms)

Objective01 I can identify three-dimensional measuring terms.

Objective02 I can identify structural straightening terms.

Objective03 I can identify other structural damage terms.

Standard 36

Structural Part Replacement (Introduction to Industry Repair Terms)

Objective01 I can identify complete and partial part replacement.

Objective02 I can identify sectioning and types of sectioning joints.

Standard 37

Glass (Introduction to Industry Repair Terms)

Objective01 I can identify stationary glass cut out and installation terms.

Objective02 I can identify glass repair terms.

Objective03 I can identify movable glass repair terms

Standard 38

Damage Report Writing (Introduction to Industry Repair Terms)

Objective01 I can define common industry terms used during the damage report writing process.

Objective02 I can identify common abbreviations used during the damage report writing process.

Introduction to Safety Systems

Standard 39

Airbags (Introduction to Safety Systems)

Objective01 I can explain how an airbag functions.

Objective02 I can identify the parts of the front airbag system.

Objective03 I can explain the operation of the front airbag system.

Objective04 I can identify the parts of the side airbag system.

Objective05 I can explain the operation of the side airbag system.

Standard 40

Seat Belts and Child Safety Seats (Introduction to Safety Systems)

Objective01 I can identify the parts of a seatbelt assembly.

Objective02 I can identify the requirement for a child safety seat.

Standard 41

Occupant Classification (Introduction to Safety Systems)

Objective01 I can identify the parts of the OCS.

Objective02 I can explain how the OCS works.

Standard 42

Additional Systems (Introduction to Safety Systems)

Objective01 I can identify the parts for collision avoidance and mitigation systems.

Objective02 I can explain the function of collision avoidance and mitigation systems.

Objective03 I can identify the parts for blind spot warning and lane departure warning systems.

Objective04 I can explain the function of blind spot warning and lane departure warning systems.

Objective05 I can identify the parts for backup safety and parking-assist systems.

Objective06 I can explain the function of backup safety and parking-assist systems

Introduction to Tools, Equipment, and Attachment Methods.

Standard 43

Basic Tools-Part1 (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can identifying the uses for a hammer and dolly.

Objective02 I can explain the purpose of paint less dent repair tools.

Objective03 I can explain the different types of dent pulling equipment and what files are used for.

Objective04 I can explain the differences between a grinding wheel and a cut-off wheel.

Objective05 I can describe the two common saws used in a collision repair facility.

Standard 44

Basic Tools-Part 2 (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can identify the uses of a mixing board and spreader.

Objective02 I can explain the different uses for sanding tools and scrapers.

Objective03 I can describe the different types of pliers and their uses.

Objective04 I can describe the use of different types of wrenches.

Objective05 I can explain the various types of sockets and screwdriver

Standard 45

Mechanical Fastening (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can identify some of the bolts, screws, rivets, clips, clinches, and hem flanges used for automotive attachment applications.

Objective02 I can explain characteristics of some of these mechanical fastener sand installation methods.

Objective03 I can explain one-time use considerations for some of these mechanical fasteners.

Standard 46

Glass and Trim (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can identify the different types of cutting knives.

Objective02 I can explain why suction cups are used for installing glass.

Objective03 I can explain the different types of adhesive applicator guns.

Standard 47

Estimating Tools and Processes (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can explain why damage reports are written.

Objective02 I can identify when, where, and by whom damage reports are written.

Objective03 I can explain some of the processes that are done when writing a damage report.

Objective04 I can identify information sources that may be required or helpful when writing a damage report.

Introduction to Tools, Equipment, and Attachment Methods.

Standard 48

Measuring and straightening (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can describe different types of three-dimensional measuring equipment.

Objective02 I can describe different types of frame straightening equipment.

Objective03 I can describe different types of pulling hardware.

Standard 49

Welding (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can identify parts that make up a welding machine.

Objective02 I can explain the difference between a MIG torch, and a spool gun.

Objective03 I can explaining the parts of a spot welding machine.

Objective04 I can explaining why dye penetrant is used.

Standard 50

Welding Methods (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can explain the spot welding process.

Objective02 I can identifying considerations when using a spot welder.

Objective03 I can explain the GMA (MIG) welding process.

Objective04 I can identify considerations when using GMA (MIG) welding.

Objective05 I can explaining the MIG brazing process.

Objective06 I can explaining the laser welding process used in vehicle construction.

Standard 51

Panel Bonding (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can explain the adhesive bonding process for attaching vehicle parts.

Objective02 I can identify considerations when adhesive bonding.

Objective03 I can explain the welding bonding process for attaching vehicle parts.

Objective04 I can explain the rivet bonding process for attaching vehicle parts.

Standard 52

Capital Equipment (Introduction to Tools, Equipment, and Attachment Methods)

Objective01 I can explaining what an air compressor is used for.

Objective02 I can explaining how mobility jacks are used.

Objective03 I can explaining different types of battery chargers.

Introduction to Vehicle Terminology Part 1

Standard 53

Bumpers, Front Body, and Roof Panels (Introduction to Vehicle Terminology Part 1)

Objective01 I can identify parts of bumper assemblies.

Objective02 I can identify parts of the hood.

Objective03 I can identify parts of a fender.

Objective04 I can identify parts the outer roof panel.

Standard 54

DOORS (Introduction to Vehicle Terminology Part 1)

Objective01 I can identify parts of the door structure.

Objective02 I can identify mechanical parts of a door assembly.

Objective03 I can identify door accessories.

Standard 55

Rear Closure Panels Box Assemblies and Exterior Trim (Introduction to Vehicle Terminology Part 1)

Objective01 I can identify various types of rear closure panels.

Objective02 I can identify parts of a pickup truck box assembly.

Objective03 I can identify various types of exterior trim and moldings.

Standard 56

Lighting (Introduction to Vehicle Terminology Part 1)

Objective01 I can identify the different lamps that are on the front section of the vehicle.

Objective02 I can identify the different lamps that are the rear section of the vehicle.

Objective03 I can identify the different lamps that are on the interior of the vehicle.

Introduction to Vehicle Terminology part 2

Standard 57

Front Uni-body Structures and Full Frames (Introduction to Vehicle Terminology part 2)

Objective01 I can identify various vehicle designs.

Objective02 I can identify front parts of a unibody structure.

Objective03 I can identify parts of a full-frame assembly

Standard 58

Side and Rear Unibody Structures (Introduction to Vehicle Terminology part 2)

Objective01 I can identify side parts of a unibody structure.

Objective02 I can identify center parts of a unibody structure.

Objective03 I can identify rear parts of a unibody structure.

Standard 59

Interior (Introduction to Vehicle Terminology part 2)

Objective01 I can identify an instrument panel.

Objective02 I can identify controls and switches on the interior.

Objective03 I can identify a rear view mirror. Identify a center console.

Objective04 I can explain manual and electronic seats.

Objective05 I can identify a headliner.

Objective06 I can identify other interior parts.

Standard 60

Glass (Introduction to Vehicle Terminology part 2)

Objective01 I can identify the difference between laminated and tempered glass.

Objective02 I can identify various accessories that maybe integrated with stationary glass.

Objective03 I can identify parts of movable glass assemblies.

Objective04 I can explain the operation for various types of glass lifting mechanisms.

