



## ***JOB READY ASSESSMENT BLUEPRINT***

### **COLLISION REPAIR AND REFINISHING TECHNOLOGY**

**Test Code: 3283**

**Version: 01**

**Preliminary Blueprint - final version is subject to slight changes.**

#### **Specific competencies and skills tested in this assessment:**

##### **Safety**

Demonstrate knowledge of workplace safety and environmental practices  
Demonstrate appropriate care and maintenance of shop tools and equipment  
Identify proper use of Personal Protective Equipment (PPE)

##### **Business Fundamentals**

Demonstrate knowledge of estimating terminology  
Identify employability skills within the collision repair industry  
Calculate estimates and costs related to repair procedures

##### **Metal Inert Gas (MIG)/Gas Metal Arc Welding (GMAW), and Squeeze-Type Resistance Spot Welding (STRSW)**

Demonstrate vehicle protection procedures  
Demonstrate understanding of welder set-up and maintenance  
Describe various welding and removal processes  
Describe and differentiate various types and uses of welding processes

##### **Structural Repairs**

Replace and/or repair structural components  
Select, set up, and utilize manual measuring systems  
Explain and identify computerized 3-D measuring systems  
Explain and identify the operation of various pulling systems  
Diagnose direct and indirect structural damage  
Demonstrate knowledge of working with various strengths of metals

## ***Collision Repair and Refinishing Technology (continued)***

### **Non-Structural Repairs**

Demonstrate understanding of metal straightening and finishing  
Identify automotive plastics and proper repair procedures  
Diagnose primary and secondary non-structural damage  
Demonstrate knowledge of movable and stationary glass  
Utilize basic corrosion protection procedures  
Use adhesive bonding procedures  
Remove and replace automotive trim  
Remove, install, replace, align, or repair non-structural panels  
Remove, install, and replace ancillary components (e.g., headlamps, under-hood fuse boxes)

### **Mechanical and Electrical Systems**

Identify basic steering and suspension components  
Verify functions of electrical systems and basic wiring repair  
Identify service and operation of air conditioning (AC) and cooling systems  
Identify a basic safety restraint system (SRS)  
Perform basic mechanical and electrical operations

### **Painting and Refinishing**

Identify and demonstrate surface preparation techniques  
Demonstrate masking and taping application techniques  
Identify and demonstrate paint material preparation techniques  
Identify causes and remedies for paint defects  
Identify and demonstrate paint materials, applications, and techniques

***Collision Repair and Refinishing Technology (continued)***

**Written Assessment:**

Administration Time: 3 hours

Number of Questions: 184

***Areas covered:***

11%	Safety
8%	Business Fundamentals
9%	Metal Inert Gas (MIG)/Gas Metal Arc Welding (GMAW), and Squeeze-Type Resistance Spot Welding (STRSW)
12%	Structural Repairs
23%	Non-Structural Repairs
16%	Mechanical and Electrical Systems
21%	Painting and Refinishing

***Sample Questions:***

Clogged spray booth filters will cause

- A. runs in the finish
- B. orange peel in the finish
- C. shorter flash times
- D. malfunction of the spray booth

What information does the eighth digit from the right of a VIN provide?

- A. assembly plant
- B. body type
- C. model year
- D. engine type

Bird-nesting occurs on a MIG/GMAW welder

- A. between the drive rollers and liner
- B. at the contact tip
- C. on the work being welded
- D. inside the liner

When making a vertical butt weld, start from the

- A. top
- B. bottom
- C. center
- D. left

***Collision Repair and Refinishing Technology (continued)***

When a door intrusion beam is severely damaged in an accident,

- A. replace the door shell
- B. straighten the beam
- C. repair the door skin
- D. heat the beam

On a typical unibody vehicle, the anchoring points are located

- A. under the front and rear frame rails
- B. on the front and rear suspension
- C. at the four corners of the center section
- D. on the front and rear bumpers

One of the functions of hydraulic shock absorbers is to help control

- A. jounce and rebound
- B. radius and camber
- C. radial runout
- D. axle runout

A properly operating air conditioning (AC) system's low side system pressure is

- A. 5 to 25 psi
- B. 25 to 55 psi
- C. 60 to 75 psi
- D. 75 to 110 psi

Etch primer is used to

- A. promote adhesion to bare metal
- B. remove oxidation and etch the metal
- C. remove wax and grease
- D. increase color retention

What is caused by solvent escaping through a partially cured paint film?

- A. orange peel
- B. lifting
- C. solvent pop
- D. zebra striping

***Collision Repair and Refinishing Technology (continued)***

**Performance Assessment:**

Administration Time: 2 hours and 30 minutes

Number of Jobs: 3

***Areas Covered:***

40%

**Welding**

*Participant will use 18 gauge coupons to practice and tune equipment. Participant will perform a horizontal lap weld, horizontal butt weld, and horizontal plug weld; presenting the best one for scoring to the evaluator, and clean work area and shut down equipment.*

34%

**Sheet Metal Repair**

*Participant will obtain required tools, equipment, and materials, repair dent in the panel, and clean work area.*

26%

**Refinishing**

*Participant will safely clean, tack and refinish panel, apply basecoat and clearcoat, and clean work area.*

***Sample Job:*** Sheet Metal Repair

***Maximum Job Time:*** 1 hour

***Participant Activity:*** Participant will obtain required tools, equipment, and materials, and clean panel, rough finish the damaged area, apply filler, finish contour, put away tools, and clean work area.