

BEST PRACTICES FOR HIGH-STRENGTH STEEL REPAIRS

SPS09

Many of today's vehicles are built with HSS and UHSS to reduce weight and improve fuel efficiency. An improper repair to HSS or UHSS can have serious consequences and can be fatal in some situations, making the need for consistent methodologies absolutely essential. Understanding how to properly work with these materials is critical to ensuring the five-star safety ratings are not compromised and the vehicles integrity remains unchanged.

Course Content

Module 1—Developing a Repair Plan

The first module opens with details on how I-CAR identified the “best practices” taught in this course. Students will gain insight into the I-CAR reparability summit where the inter-industry discussed topics including anchoring, straightening and replacing UHSS parts. Other topics discussed were attachment methods such as squeeze-type resistance spot welding GMA (MIG) welding, MIG Brazing, riveting. In addition, bonding UHSS parts and laser welded panel replacement were discussed. As the student moves through the first module, they will gain an understanding of how to develop a repair plan, identify load paths, best practices for testing HSS and UHSS parts and common locations for them.

Module 2— Straightening and Removal Methods

Information on the implications of improperly heating UHSS and best practices for locating anchor points, straightening, removing parts and identifying locations and removal methods for laser welded and laser brazed joints are provided

Module 3—Attachment Methods

This course concludes with detailed information on the steps needed to select the correct attachment method for a repair plan and the difference between attaching UHSS parts compared to mild steel parts. Attachment

methods for vehicles using GMA (MIG) welding, MIG brazing, STRSW, bonding, weld bonding and rivet bonding are also described in the final module.

Recommendations

This class covers several collision repair topics and processes when working with HSS and UHSS, as well as common attachment removal procedures. It is recommended that students have a basic understanding of the collision repair process and damage analysis topics. Course that are helpful include:

- Structural Steel Straightening (SSS01)
- Squeeze-Type Resistance Spot Welding (WCS04)
- Steel Unibody Front And Rear Rails, Floors and Front Structure (SPS01)
- Steel Unibody, A,B,C,D Pillars and Rocker Panels (SPS02)
- Steel Unitised Structures Technologies and Repairs (SPS07)

Registration

To register for Best Practices for High Strength Steel Repairs (SPS09) click [here](#).

Course Highlights

Points: 1

Estimated Duration: 4 Hours

Format: Classroom & Virtual Classroom

Meets the I-CAR training requirements for the following roles:



ESTIMATOR



STRUCTURAL TECHNICIAN



NON-STRUCTURAL TECHNICIAN



ASSESSOR

After completing this course, you will be able to:

- Identify the proper information needed to develop a repair plan
- Identify how to test for HSS and UHSS and their common locations
- Identify best practices for locating good anchoring points
- Understand the considerations and implications of heating HSS and UHSS
- Recognise best practices for straightening HSS and UHSS vehicles
- Understand best practices for removing and attaching parts on HSS and UHSS vehicles.
- Identify locations and removal methods of laser welded or laser brazed joints
- Understand the considerations and when to use different attachment methods for HSS and UHSS

