

# ADVANCED MATERIAL DAMAGE ANALYSIS

DAM08

Today's vehicles are using a growing number of different advanced materials that contribute to improved vehicle safety, reduce vehicle structure weight, and improve fuel efficiency. In some vehicles, over one half of the steel used is high-strength or advanced high-strength steel. Understanding how advanced materials affect collision energy management, as well as understanding considerations in repairing these materials, can help guide a repair vs. replace decision and ensure that a repair is completed safely.

## Course Content

### Module 1 – How are Advanced Materials Different?

This module provides an overview of the course objectives and identifies many of the types of advanced materials — including steels, aluminum, magnesium, and composites — that are used for vehicle construction and how they are affected during a collision. The student will also learn about damage analysis considerations.

### Module 2 – Materials, Application, and Repair Considerations

Students continue by learning characteristics of advanced materials along with specific applications, repair vs. replace decisions, and the effect of heat and straightening on different materials.

### Module 3 – General Considerations

The course concludes with an explanation of damage analysis considerations as well as considerations for recycled parts. Joining methods, corrosion protection, and refinishing for advanced materials are also discussed.

## Recommendations

This class covers a range of advanced materials that are found on many of today's vehicles. It is recommended that students have an understanding of high-strength steel and aluminum, as well as damage analysis processes. Courses that are helpful include:

- Advanced High-Strength Steel Overview (AHS01)
- Aluminum Panels and Structures Damage Analysis (DAM05)

## Registration

To register for Advanced Material Damage Analysis (DAM08), visit the I-CAR website at [www.i-car.com](http://www.i-car.com) or contact the I-CAR Customer Care team at 800-422-7872.

## Course Highlights

**Points:** 1

**Estimated Duration:** 4 hours

**Format Option:**

- Classroom instruction with test

**Meets I-CAR® ProLevel™ or annual training requirements for the following roles:**

-  ESTIMATOR
-  STEEL STRUCTURAL TECHNICIAN
-  AUTO PHYSICAL DAMAGE APPRAISER

**After completing this course, you will be able to:**

- Identify advanced materials used for vehicle construction and describe their characteristics and applications
- Explain how advanced vehicle construction materials affect collision energy management
- Understand damage analysis considerations for advanced materials
- Make repair vs. replace decisions for specific advanced materials and understand general damage analysis considerations
- Describe the effects of heat and straightening on different advanced materials
- Explain advanced materials recycled parts considerations, joining methods, corrosion protection, and refinishing considerations



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