ADVANCED MATERIAL DAMAGE ANALYSIS

DAM08e

Today's vehicles use an increasing amount of different advanced materials that each contribute to improved vehicle safety, reduced vehicle structure weight, and improved fuel efficiency. In some vehicles, over one half of the steel used is high-strength steel 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?
The first module provides an overview of the course objectives and identifies several different types of advanced materials used during vehicle construction, including steels, aluminum, magnesium, and carbon fiber. The student will learn how these materials are affected during a collision and important damage analysis considerations.

Module 2 – Materials, Application, and Repair Considerations
The course continues with information on the characteristics of advanced materials along with specific applications, repair versus replace decisions, and the effect heat and straightening has on different materials.

Module 3 – General Considerations
The third module concludes the course by providing an explanation of damage analysis considerations and recycled parts considerations. Detailed information on joining methods, corrosion protection, and refinishing for advanced materials are also given in the third module.

Recommendations

This course 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)
- Aluminum Panels and Structures Damage Analysis (DAM05e)

Registration

To register for Advanced Material Damage Analysis (DAM08e), visit the I-CAR website at www.i-car.com or contact the I-CAR Customer Care team at 800-422-7872.

Course Highlights

Credit Hours: 1

Estimated Duration: 3 hours

Format Option:
- Online 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 versus 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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