

Standardized Steel Identification

STANDARDIZED STEEL IDENTIFICATION

In an effort to reduce confusion over the large number of steel grades in use, and the repairability and weldability concerns involved with each, FCA US LLC has instituted new nomenclature which is applicable to material call-outs and Body In White (BIW) views released for use in the repair industry.

All materials listed in the key may not be used on a given model, nor may every panel be identified in the blow-up (ex: some groups do not show fascias).

WARNING

FCA US LLC engineering's position on the use of heat during collision repair is as follows:

- Any body panel or frame component damaged which is to be repaired and reused, must be repaired using the "cold straightening" method. No heat may be used during the straightening process.
- During rough straightening prior to panel replacement, damaged panels or frame components may be heated to assist in body/frame realignment. The application of heat must be constrained to the parts which will be replaced and not allowed to affect any other components.

This "no heat" recommendation is due to the extensive use of advanced high strength steels in FCA US LLC products. High-strength materials can be substantially and negatively affected from heat input which will not be obviously known to the repairer or consumer.

Ignoring these recommendations may lead to serious compromises in the ability to protect occupants in a future collision event, reduce the engineered qualities and attributes, or decrease the durability and reliability of the vehicle.

This statement supersedes any previously released information by the FCA US LLC.

Failure to follow these instructions may result in serious or fatal injury.

Information on sectioning of components will be identified in Non-Structural Sheet Metal Repair, Weld / Weld Bonding and Sectioning Procedures , (Refer to Collision Information - Standard Procedure).

NOTE

Corrosion protection must be restored after repair.

COLOR KEY	DESCRIPTION	COLOR
LS	Low-Strength Steel	Dark Grey
HS	High-Strength Steel	Green
VHS	Very High-Strength Steel	Red
LM	Laminated Steel	Light Grey
AL	Sheet Aluminum	Purple
MG	Magnesium	Brown
PL	Plastic	Light Blue
PL-R	Fiber Reinforced Plastic	Dark Blue
CO	Composite Material	Orange



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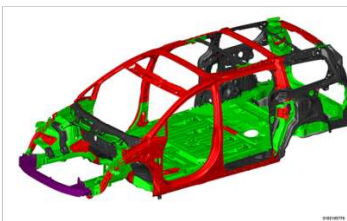
Listen

Dictionary

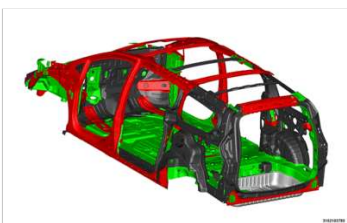
Translate

- **LS** - Good repairability and weldability (least sensitive to heat). May be attached using the preferred Squeeze Type Resistance Spot Welding process, weld bonding where appropriate, or MIG welding. Materials have a tensile strength of less than 270 MPa.
- **HS** - Some repairability and good weldability (the higher the strength of the steel, the greater the sensitivity to heat). May be attached using STRSW, weld bonding, and MIG welding. Material tensile strength range between 270 MPa and 600 MPa and includes DP590.
- **VHS** - Very limited repairability and weldability (very sensitive to heat). Attach only at OE defined locations using OE defined procedures. Material tensile strengths are greater than 600 MPa. This category includes hot-stamped boron materials which are also termed "press hardened." Specialized cutters are required with many materials in this group. May be attached using STRSW, weld bonding and Metal Active Gas (MAG) brazing to minimize heat affected zone.
- **LM** - Good repairability but no weldability. May be attached by rivet bonding or urethane. Only install a laminated steel component using urethane if the OE component was installed with urethane.
- **AL** - Stamped aluminum sheet metal panels may be repairable with specialized tools and techniques.
- **MG** - Magnesium - no repairability, replacement components only.
- **PL and PL-R** - Some repairability depending upon the type of plastic involved, the degree of damage, and the component function. Cosmetic components such as fascias (PL) have a higher degree of repair allowed than those components which can carry components and loads. Where PL-R components are bonded to steel structure, FCA US LLC will identify the proper adhesive to attach the replacement panel. Repair materials for PL are commonly available in the collision repair market.
- **CO** - Composite materials may be fiber reinforced (ex: Kevlar) panels or co-molded assemblies of steel and plastic. Any of these require specialized repair materials and processes.

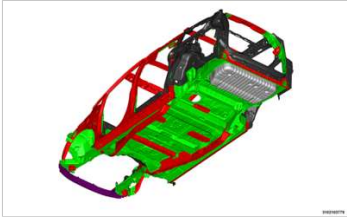
BODY IN WHITE COMPONENT IDENTIFICATION - TOP VIEW FRONT



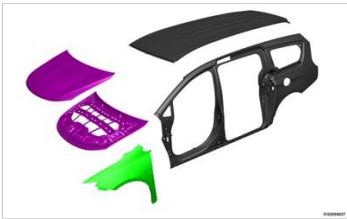
BODY IN WHITE COMPONENT IDENTIFICATION - TOP VIEW REAR



BODY IN WHITE COMPONENT IDENTIFICATION - BOTTOM VIEW FRONT



HOOD, FENDER, ROOF AND OUTER BODY SIDE APERTURE



FRONT DOOR, SLIDING DOOR AND LIFTGATE



WARNING

There are necessary safety factors to follow when working with components made of magnesium and components made of a combination of materials utilizing magnesium that must be followed.

- Do not grind on the component. The grinding residue is highly combustible.
- In the event of a fire, a D-class rated fire extinguisher is necessary to extinguish.
- Do not expose the component to open flame or temperature in excess of 260° C. (500° F).

Failure to follow these instructions may cause serious injury or death.

NOTE

Due to the usage of magnesium, do not attempt to repair the liftgate inner panel (1). For further information refer to Liftgate Inner Panel DO NOT REPAIR (Refer to 31 - Collision/Standard Procedure/Non-Structural Sheet Metal Repair/ Liftgate Inner Panel DO NOT REPAIR).

NOTE

The liftgate inner panel (1), shown as magnesium (brown), is a combination of magnesium and aluminum alloys.

The textured finish of the liftgate inner panel differs from a smooth finish typically found on closure panels.

- The texture is produced from the casting of the component as compared to smooth stamped sheet metal.
- This finish is completely normal and acceptable.
- Do not remove the textured finish to produce a smooth finished appearance.

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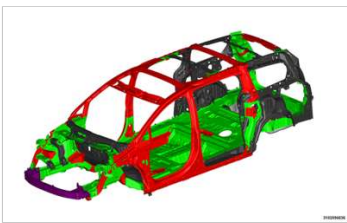
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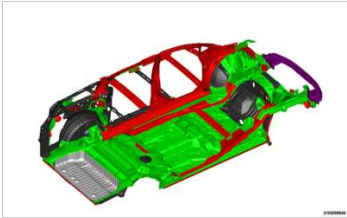
BODY IN WHITE COMPONENT IDENTIFICATION - TOP VIEW FRONT



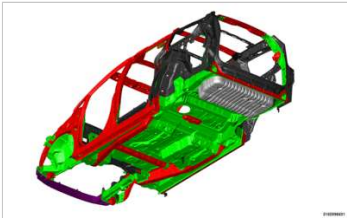
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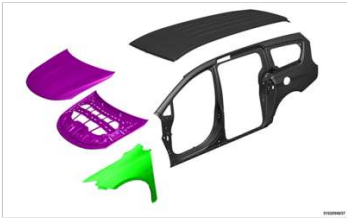
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