

ASSOCIATION STANDARD

T/CSAE 92-2018

**The guideline of structure design of sedan body in white for
anticorrosion**

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1 -.2009.

Some elements of this standard may involve patents, and the standard issuing authority does not assume responsibility for identifying these patents.

This standard was proposed by the Automotive Anticorrosion and Aging Branch of the China Automotive Engineering Society.

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1 Scope

This guidance specification sets out the basic guidelines for the design of body-in-white anti-corrosion structures.

This guiding code is applicable to the design of the white body anti-corrosion structure of ordinary passenger cars, and the white body anti-corrosion structure design of other models.

Refer to this specification for reference.

2 Normative references

The following standards are essential for the application of this document. All dated references, all subsequent modifications (not the inclusion of errata content or revisions does not apply to this specification, but parties to agreements based on this specification are encouraged to study the use of these documents.

The possibility of the latest version.

GB/T 3730.1-2001 Terms and definitions for types of vehicles and trailers GB/T 4780 -2000 Automotive Body Terminology

3.1 White body

An assembly consisting of a body body, an opening member and other detachable structural members.

3.2 Opening parts

Various door structures that can be opened and closed on the body, usually referred to as the welding assembly of the door, the hood, the trunk lid, the back door and the fuel tank door.

3.3 Waist line

Located in the lower part of the side window, through the front and rear modeling features.

3.4 Folding glue

Folding adhesive is an adhesive used for the folding of the body sheet metal parts. It is mainly used for the assembly of the engine cover, the door and the trunk lid.

Bonding instead of spot welding simplifies the production process and ensures the

appearance quality of the body sheet metal parts, which can effectively improve the anti-vibration and anti-corrosion of the folded parts.

Sealing performance.

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3.5 Spot welding sealant

A sealant applied to the lap joint of the sheet metal part before the welding process, filling the gap after spot welding to ensure sealing and preventing rust. point Solder sealant can be used in almost all body welds, especially for welding backup parts or other unsuitable weld seals the part of the glue.

3.6 Weld sealant

In the coating process, the sealant applied to the weld after the body is welded, the seal sealant has both sealing and leakproof, and enhances the car body corrosion resistance.

The force also has the effect of filling the weld and increasing the appearance of the car body.

3.7 Electrophoretic coating

Using an applied electric field, particles such as pigments and resins suspended in the electrophoresis liquid are directionally migrated and deposited on the surface of one of the electrodes.

Loading method.

3.8 Anti-rust wax

It consists of a solvent, a film-forming agent, an anti-rust additive and an auxiliary material. It is sprayed on the body at room temperature by the necessary waxing equipment.

Fine areas such as weld gaps, interlayers, and cavity fitting holes prevent moisture, oxygen, and other corrosive substances from entering.

4.1 Design content

The design of the white body anti-corrosion structure should meet the anti-corrosion requirements of different parts of the body-in-white, and the external corrosion infringement factors on the various parts of the body.

There is usually a difference, and the lower body (below the waistline of the body), the opening member, and the fender are relatively easy to compare with other parts of the vehicle body.

For corrosion, it is important to design anti-corrosion solutions for these areas.

The design work of the white body anti-corrosion structure mainly focuses on the internal cavity structure design of the body electrophoretic coating and the structural design of the body seal, and A structural design for applying a rust preventive wax to a local area. Electrophoretic coating on the body-in-white surface and cavity structure provides the most basic anti-corrosion measures.

For lap joints and edge structures, sealing protection measures such as spot welding sealant, weld sealant and anti-stone coating are widely used.

In order to strengthen the protection, it can also be coated with anti-rust wax.

The internal cavity structure design usually provides structures for electrophoresis, drainage, exhaust, etc. to ensure the coating of the electrophoretic coating in the interior of the vehicle body.

The design of the electrophoresis structure should consider the difference in the properties of the coating material and the difference in the coating process to design the size and quantity of the openings in the inner cavity sheet metal.

Position, and plate gap, to meet the electrophoretic coating requirements of sheet metal parts; drainage structure should meet the requirements of body-in-white pretreatment and electrophoresis Drainage demand; the exhaust structure should discharge the gas accumulated on the surface of the body-in-white to prevent the gas from adhering to the surface of the metal material and prevent the front Chemical and electrophoretic coating.

Sealing structure design is often used to reduce corrosion of body surface coatings, metal edges, and lap joints. In addition, according to the whole vehicle Seal design requirements, some open-hole structures should be closed to isolate the body from the corrosive environment; some can not avoid moisture contact the seam should be coated with anti-rust wax to delay the occurrence of corrosion.

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This guideline mainly recommends the basic guidelines for the design of body-in-white corrosion protection.

- 1) The structure of the inner cavity is used for the process of fluid-coated materials and gas entering and discharging in the process, and the coating film coating structure is realized; a structure that prevents or reduces moisture ingress, is used for moisture removal, and reduces environmental humidity and pollution;
- 2) Seal structure design, sealing structure of lap joint, gap, gap part and anti-rock striking design.