

Information Bulletin

25/07/19

IB no: 002

All approved Authorized Motor Vehicle Inspection Agencies (AMVIA's) must adhere to the following requirements for Structural Integrity and Corrosion in the execution of vehicle inspection for Private and Commercial vehicles under 3.5T unladen or net weight on behalf of the Land Transport Authority as per the LTA/AMVIA Contractual Agreement.

This Information Bulletin outlines the technical details relating to Structural Integrity and Corrosion relevant to this Information Bulletin.

1) Introduction

The effect of corrosion on the safety of a vehicle depends on its extent and the function of the section or component on which the corrosion has occurred.

A relatively small amount of corrosion in an important part of a vehicle structure, where it compromises its load bearing capacity, can make a vehicle unsafe. On the other hand, excessive corrosion on non-structural sections may have little or no effect on the vehicle's safety.

Corrosion of a particular part, such as a door sill, may be very important on one type of vehicle construction, but less important on another. This is highlighted in Diagrams 1 to 2 at the end of this Appendix, where the shaded portions indicate the important load bearing parts of various typical vehicle constructions.

2) Vehicle Inspection Equipment Pass/Fail Standards

Certain areas of the vehicle structure are particularly important for the safety of a vehicle and must pay particular attention to these areas during an inspection. These areas are:

- Load-bearing parts of the vehicle to which testable items are mounted – these items are brakes, steering, axles, wheels, tyres and suspension of this Information Bulletin.
- any load-bearing or supporting structure or supporting paneling within 30cm of the mounting location

For example, when examining a seat belt mounting on an inner sill, must give consideration to the outer sill or the sill reinforcement if the outer sill is a plastic cover, door pillar, floor panel or any other structural part within 30cm of the component's mounting point.

Do not have to check areas covered by body trim.

3) Corrosion Assessment

Identify the important load bearing members and 'prescribed areas' on a vehicle, then check if they are excessively corroded by:

- Visual inspection
- Use finger and thumb pressure to assess the extent of the corrosion
- If necessary, carefully scrape or lightly tap the affected areas with the corrosion assessment tool

Use of the corrosion assessment tool must be restricted to ascertaining that the failure criteria are met and not used for heavy scraping or poking of the affected areas.

4) Failure Criteria within 'Prescribed Area'

Should reject corrosion in prescribed areas if:

- the corrosion has caused a hole in the metal
- the area does not feel firm when you press it with your finger and thumb
- finger or thumb pressure test, or a corrosion assessment tool, creates a hole
- Reduces structural integrity

Any fracture or inadequate repair (see items 11 to 14) within a 'prescribed area' should also be rejected.

Modifications or severe distortion within a 'prescribed area' should only be rejected if the strength of a component mounting, load bearing member, supporting structure or supporting paneling is significantly reduced.

5) Failure Criteria not within 'Prescribed Area'

Structural fractures, deformation or corrosion not within a prescribed area is covered in body structure and attachments of this inspection manual.

Should only reject these defects if:

- braking or steering is adversely affected due to structural misalignment
- The strength or continuity of a main load-bearing structural member is seriously reduced

Refer Diagrams 1 to 2 to see the main load-bearing members for different vehicle types.

6) Highly Stressed Components

The severity of corrosion in highly stressed components, such as steering and suspension arms, rods and levers, can be assessed by lightly tapping or scraping with the corrosion assessment tool.

In places that cannot be reached by the corrosion assessment tool, an alternative blunt instrument may be used.

A highly stressed component should be rejected if corrosion has resulted in serious reduction in the overall thickness of the material or has caused a hole or split.

Welded repairs to highly stressed components are not normally acceptable, other than where the component is made up of sections that are welded together. To pass, the repair should appear to be as strong as the original design.

7) Thin Gauge Steel Pressings

It is common for vehicles to use thin gauge pressings for certain steering and suspension components, mountings, sub-frames and cross members. These are prone to serious and often very localized corrosion. Refer to Diagrams 1 to 2.

Corrosion in these components can be difficult to see and may require close inspection.

8) Vehicle with Separate Bodies

Some vehicle types have bodies and many mechanical components attached to a separate under-frame. The frame is the main load bearing structure with a passenger cell and possibly a separate load bed secured on top of the frame, which may also be load bearing or supportive.

You should only reject excessive corrosion in these structures if:

- It is likely to affect the brakes or steering
- it is within a prescribed area
- body or cab security is reduced
- Reduces structural integrity

9) General Guidance

Can refuse to test a vehicle if excessive deformation or corrosion could result in injury or cause further damage to the vehicle or your testing facility.

Steering Fiji Safely

10) Acceptable Methods of Repair

Repairs to structural components must be properly carried out and appear to be as strong as the original structure. This requires the use of suitable materials and any plating or welding extends to a sound part of a load-bearing member.

Can only pass spot welded repairs if the original panel was spot welded and the original panel or section has been removed. Stitch or plug welding can be used instead of spot welding.

In all other circumstances, patch repairs must be continuously seam welded.

Some vehicle manufacturers have recommended repair methods that use brazing, a combination of adhesive bonding and riveting, or amalgamations of these with other joining methods. Such repairs are therefore acceptable unless they are clearly inadequate.

These works must be carried out in according to the Vehicle Registration and Construction Regulation 36, 37 and 38.

11) Unacceptable methods of Repair

You cannot accept the following bonding processes for repairs to load-bearing members:

- gas brazing
- soldering
- adhesive bonding
- fiber reinforcement
- body filler

12) Testable items mounted to Plastic Structures

Check all testable items that are mounted directly onto plastic structures. This could include steering racks, sub frames and seat belts.

You must fail:

- any cracks, separation or delamination in a prescribed area
- any components where the mounting could become loose or break away

13) Repairs to non-metallic load-bearing structures

Repairs to non-metallic structures in prescribed areas are not acceptable.

Any other repairs to non-metallic structures must appear to be as strong as the original structure.

14) Record keeping

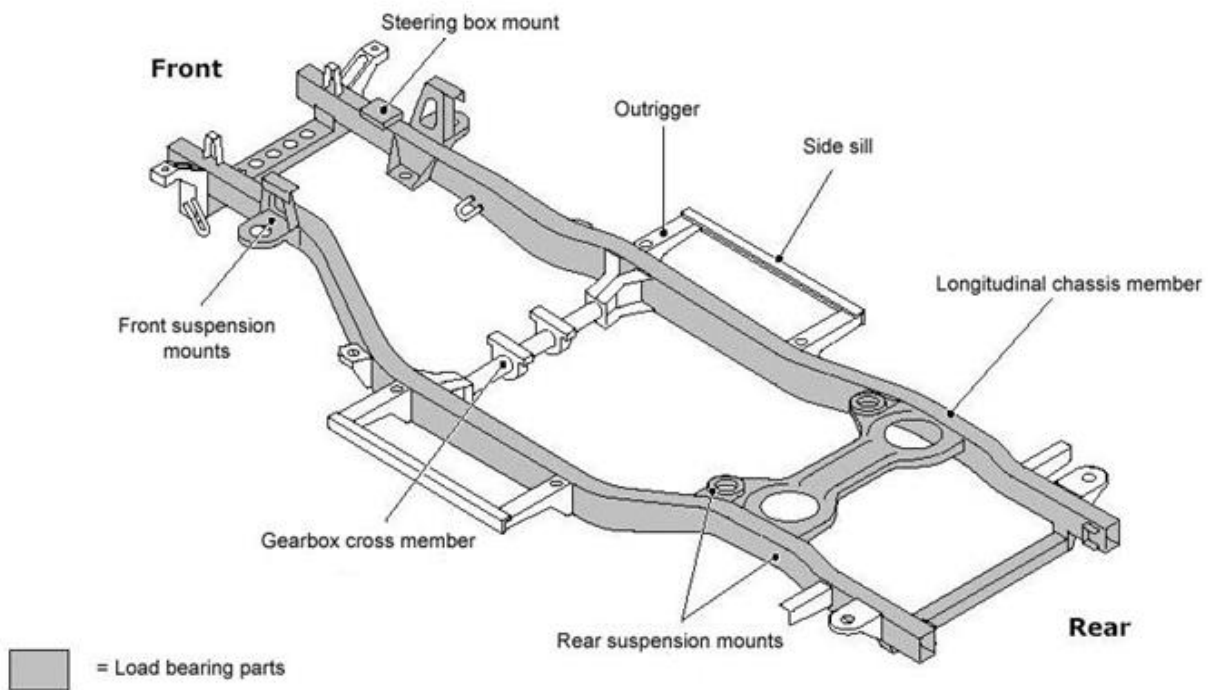
On a vehicle of integral construction, the strength and stiffness of the structure may be seriously affected by any panel being removed or replaced by a panel of different material.

You should reject any modification of panels if:

- it has significantly reduced the original strength and stiffness of a prescribed area
- Plastics have been used to replace metal in prescribed areas or load-bearing areas.

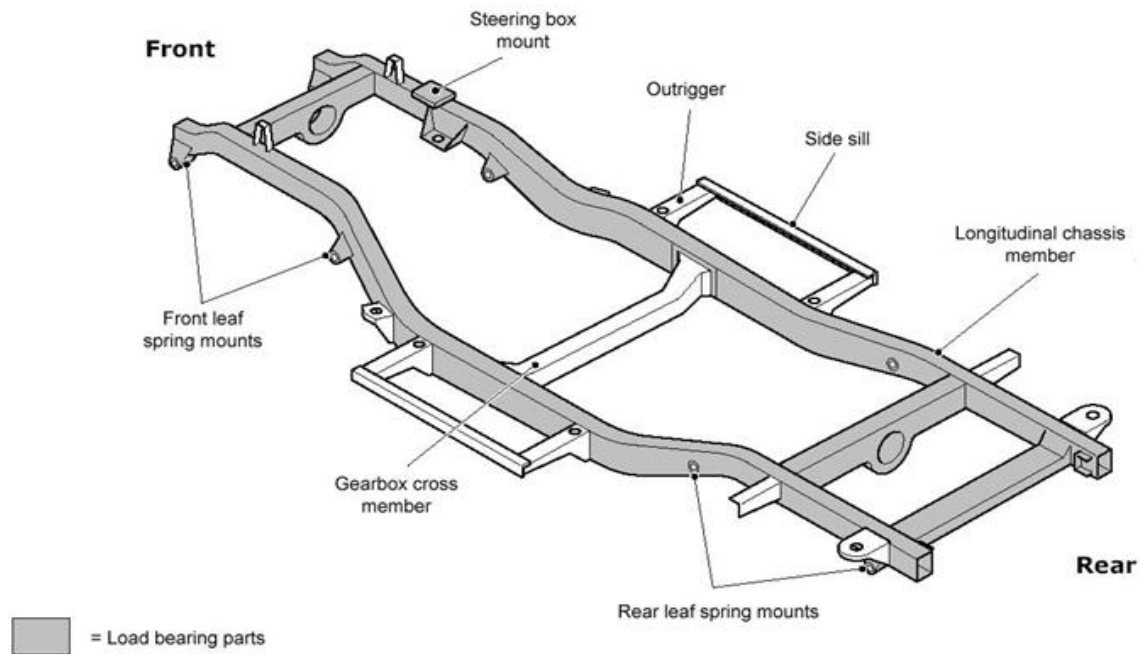
15) Display of information Bulletin

Diagram 1. Chassis with coil spring suspension



Steering Fiji Safely

Diagram 2. Chassis with leaf spring suspension



16) Display of Information Bulletin

This information bulletin must be displayed on the Notice Board for information for the Agency, Vehicles Inspectors and Customers.

17) Tools of Trade

The following assessment tool to be used to carry out Structural Integrity and Corrosion Inspections:

- a. Ball pen hammer-this is to test for penetration, crumbling or disintegration of the metal components upon light taping. This tool is only to be used for motor vehicles that show signs of corrosion in the undercarriage.

18) Penalties

Agencies or Authorized inspectors will be charged with penalties on relevant infringements committed in accordance of the Land Transport (Fees and Penalties) Regulations 2000 as follows;

- TIN Code 56 – Misuse of Vehicle Inspection Certificate/License – Fixed Penalty of \$200
- TIN Code 57 – Misuse of Vehicle Inspection Business – Fixed Penalty of \$500
- TIN Code 58 – Misuse of Vehicle Inspector’s Permit – Fixed Penalty of \$100

ANY VEHICLE WHICH FAILS TO MEET THE STANDARDS REQUIRED MUST BE FAILED AT ANNUAL ROADWORTHINESS TEST