

KINGDOM OF SAUDIA ARABIA

Saudi Standards, Metrology and Quality Org.(SASO)

Standard Specification

Standard No.	SASO-GSO-2501
Reference No.	GSO-2501
Issue Year	2015
Adoption Year	2017
Numeric Coding	950-2501

Motor Vehicles - Safety Requirements for School Buses

Saudi Standards

NATIONAL FOREWORD

The Saudi Standards, Metrology and Quality (SASO) has approved the GSO Standard:

GSO-2501

IssueYear 2015

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GCC STANDARDIZATION ORGANIZATION (GSO)

GSO 2501/2015

Motor Vehicles - Safety Requirements for School Buses

ICS : 43.040.80; 43.080.20

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Date of accreditation of the Technical Council (37): 10-11/3/1437 H (21-22/12/2015 G)

Issuance description: Standard Specification

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Foreword

GCC Standardization Organization (GSO) is a regional Organization which consists of the National Standards Bodies of GCC member States. One of GSO main functions is to issue Gulf Standards /Technical regulations through specialized technical committees.

GSO through the technical program of GSO Technical Committee No. (TC02/SC1) “GSO Technical Sub-Committee for Motor Vehicles and Tires Standards” has prepared this GSO standard by the United Arab Emirates. The project was prepared after reviewing the Arabic, foreign and international standards and the related reference literature.

This standard has been approved as a Gulf Technical Regulation by GSO Board of Directors in its Meeting No. 37, held on 10-11/3/1437 H. (21-22/12/2015 G.).

Vehicles - Safety Requirements for School Buses

1. Field and scope of application

This standard is concerned with the safety requirements in school buses allocated for the transportation of students.

2. Complementary References

2.1 GSO 42 "Vehicles – General Safety Requirements"

2.2 GSO 96 "Vehicles – Test Methods of Seat Belts"

2.3 GSO 97 "Vehicles – Safety Belts"

2.4 GSO 98 "Vehicles – Inflammability of the Internal Parts and Methods of Testing them"

2.5 GSO 99 "Road Vehicles – Sound Alarms – Technical Specifications"

2.6 GSO 159 "Vehicles – Dimensions and Weights"

3. Definitions

3.1 School bus: a motor vehicle designed and equipped with seats to transport 9 or more students with their luggage.

3.2 Emergency exit: an opening (an emergency slot) to increase the rate of exit of passengers in case the bus is exposed to any emergency requiring the speedy departure of the passengers, and exit should be closed either by a door or a glass sheet of a special type that can be easily broken without causing injuries to passengers.

4. General requirements

Any school bus must have the following:

4.1 There should be no sharp ends and not any part of the bus should stick out in all parts of the external structure of the bus, which may cause a safety hazard for the passengers, pedestrians or other vehicles.

4.2 The bus shall be provided with an electronic stop arm on the external side immediately after the driver's door. The arm shall carry out a plate on which the word (STOP) is written in both the Arabic and the English languages. Such arm should stick out electronically with the opening of the passenger's door. The characteristics of the arm are specified in figure no. 1.

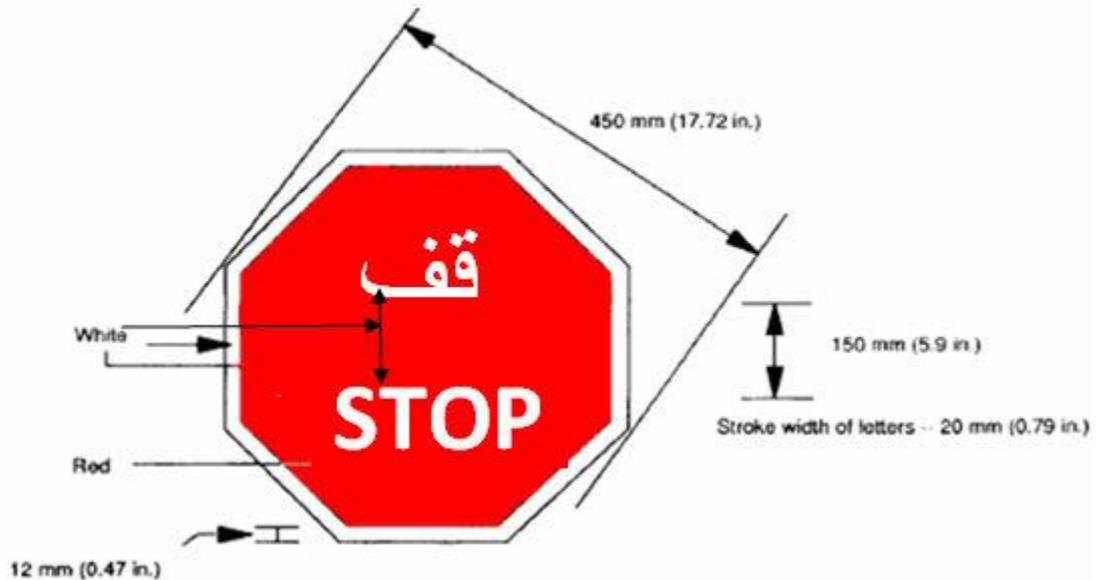


Figure 1: Stop arm

- 4.3 A sound alarm device should be installed to work automatically when the bus is reversed, it should make a sound audible enough to alert pedestrians and the other vehicles at the rear.
- 4.4 The color of the bus should be yellow with the shade RAL1018ZinkgelbGL841, without interference of any other color.
- 4.5 The unloaded bus should not Rollover when it inclines right or left at 35 degrees from the vertical position.
- 4.6 Each bus should be provided with a device to limit the maximum speed so that the maximum speed of the bus will not exceed 80 km/hour by fitting a maximum speed control device.
- 4.7 No standing places or additional seats for the students should be allocated in the buses.
- 4.8 Buses should be provided with an air conditioning system in accordance with the international classification ISO for climate zones (T3).
- 4.9 The propeller (Transmission) shaft shall be protected by a means (an instrument) to prevent its fall in case of its separation or breaking.
- 4.10 The fuel tank should be protected with a strong metal casing to protect it in case of an accident.
- 4.11 The exhaust system shall be properly isolated away from the fuel system.

- 4.12 The operational life of the school bus shall not exceed 15 years. The operational life of the school bus can be extended for additional 5 years' maximum if it was fully renovated.
- 4.13 Warning signs should be placed to prevent smoking inside buses.
- 4.14 Warning signs should be placed to prevent use of mobile telephones by drivers.

5. Seats

- 5.1 The grips made for the students to catch must be manufactured or coated with materials that protect students in case of hitting them at sudden stop.
- 5.2 All internal materials used in the manufacture of seats and floors must be made of fire-resistant material.
- 5.3 All seats must be directed forward and designed to provide maximum comfort for the students, and the seat back must be made of / or covered with a soft shock absorbent material and each seat must be fitted with a passenger headrest or the back of the seat extended to work as a head support of not less than 70 centimeters.
- 5.4 Measurement of the longitudinal distance between any two parallel points of any two successive seats shall not be less than 640 mm and the seat depth shall not be less than 380 mm for a seat.
- 5.5 The driver's seat and the seats that do not face other nearby seats shall be provided with safety belts with three fixing points.
- 5.6 Nursery buses shall be equipped with three-point safety belts for all seats and with the child seat installation system.

6. Dimensions

- 6.1 The width and height of the bus entrance should be commensurate with the size of the bus and must be comfortable for the students' going up to or going down from the bus.
- 6.2 The depth dimensions of the entrance stairs shall be at least 250 mm, and the edge of the stairs shall be fitted with a non-slip surface. The maximum allowed height from the ground to the first step of the stairs shall be 400 mm which will maintain the safety of the students going up to or down from the bus.
- 6.3 The width of the bus isle (lane) shall not be less than 350 mm and the isle (lane) floor shall be covered with a non-slip material or designed to prevent slipping.

7. Emergency exits:

7.1 Each bus shall contain emergency exits which will be commensurate with the number of passengers as specified in the below table and that clear signs shall be placed inside the bus indicating the places of such exits, and that no obstacles shall be placed before them, which may impede the exit of passengers in emergency cases.

Table specifying the number, places, and exit points in school buses

Type	Number of Passengers	Place and Number of Exits
Small Bus	From 9 to 14 passengers	1 exit in the roof or at the rear
	Less than 26 passengers	1 exit in the roof or at the rear In addition to a side exit
Large Bus	Less than 30 passengers	1 exit in the roof or at the rear in addition to a side exit
	From 30 to 40 passengers	An exit from each side and an exit in the roof or at the rear
	More than 40 passengers	2 exits at each side and 2 exits from the roof or at the rear

Note: Glass windows can be used as an emergency exits.

8. Doors

- 8.1 Bus doors must be designed sturdy and fast-fitting (must designed to be strong, tight installation) and easy for students to open. They shall be fitted with:
 - 8.1.1 Self-control lighting system to illuminate (brighten) the entrance when the doors are open.
 - 8.1.2 Grips to facilitate going up into or going down from the bus.
 - 8.1.3 Manual means (tool) to control the opening of doors from outside in emergency cases.
 - 8.1.4 Entrance doors shall be designed so that the driver can, while being on his seat, control the opening or closing of them with the existence of a means (tool) to facilitate opening them from inside in emergency cases, preferably electronically.

9. Basic accessories

- 9.1 The bus shall be provided with a spare tire fixed in a place where the driver can easily have access to, and to be fitted with the tools required for replacing tires.
- 9.2 The bus shall be provided with a tool kit necessary for emergency repairs on roads at emergency cases and shall be suitable for the bus type.
- 9.3 Each bus shall be provided with one or more fire extinguishers suitable for the size of the bus, to extinguish all types of fire, and shall be placed in a designated place near the driver's seat and the doors. There should be a sign indicating the accessible places where they are.
- 9.4 The bus shall be equipped with a cabinet containing emergency equipment, warning lights, three reflective triangles, the tool kit and battery charging equipment.
- 9.5 Each school bus must contain a first aid kit with a size suitable to the capacity of the bus, together with placing a sign indicating the place where the kit is kept.
- 9.6 The bus shall be fitted with a two-hook ring fixed with the chassis in the front side so that it can be towed in case any part of the bus breakdown.

10. Windows

- 10.1 The windows glass must be tinted by 30% or the windows must be fitted with curtains.
- 10.2 The width of the windows which can be opened horizontally or vertically must not exceed 20 cm.
- 10.3 Placing of bars on the windows from inside or outside is totally forbidden.

11. Mirrors:

- 11.1 The bus shall be equipped with a system of mirrors according to the GSO specifications (standards), which enable the driver, while on his seat, detect all sides of the bus from the outside and to monitor the conditions surrounding the entrance doors and what is inside the passengers' cabin.
- 11.2 The bus shall be provided with a rear camera to help the driver avoid the hazards of accidents while reversing the bus.

12. Warning Lights System

- 12.1 The bus shall be equipped with light signals which start flashing when the bus stops or when the bus is in reverse move.
- 12.2 There should be a double red light indicators at the top front and rear of the bus.
- 12.3 There should be a yellow double light indicator at the bottom of the bus in the front and at the rear side, and the operation switch of those lights must be controlled manually by the driver at a sufficient distance before the bus stops.

13. Stickers

- 13.1 The following words should be written in black "SCHOOL BUS" in Arabic and English, in letters not less than 8 inches high, i.e. (means) 20 centimeters, and to be written between the top warning lights or at the highest place possible in the front and at the rear of the bus and to be written also at the middle of the bus on both sides.
- 13.2 The sign of the school bus should be placed at the front right side of the bus and at the rear left side of the bus.
- 13.3 The writing size of the school's name, the operating company's name or any third party's name must not be more than 1,500 square centimeters.
- 13.4 The bus number must be written at the highest level at the front right side and at the rear left side of the bus.
- 13.5 A contact number must be written on the bus in case of an infringement or a violation by the driver.

References:

- GSO 42
- Directory of Dubai School Transport
- UNECE 17