



ELECTRIC VEHICLE TEST REPORT

Manufacturer	
Address	
Manufacturing address	
Request ID/ Application number	
Report Date	
Report Number	
Electric Vehicle Type (BEV/PHEV)	
Type	
Model Year	

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REPORT OF COMPLIANCE FOR TECHNICAL REQUIREMENTS FOR ELECTRIC VEHICLES

1. Objective: To check the compliance of Electrical vehicles Type
With the requirements of SASO Regulation.

2. Vehicle information:

Name of Manufacturer:

Category of Vehicle:

Type of Vehicle:

Date of Report:

3. Electric vehicle requirements

No.	Requirement	Status/Results
3.1	These requirements shall reduce deaths and injuries during a crash, during electric shock, which occur because of electrolyte spillage from propulsion batteries, intrusion of propulsion battery system components into the occupant compartment and electric shock.	
3.1.1	Protection against direct contact	
3.1.1.1	Protection of Live parts, such as solid insulator, barrier, enclosure, etc ...shall not be able to be opened, disassembled or removed without the use of tools, which can be done only by a competent person. Explain the protection provided.	
3.1.1.2	Connectors	
	(a) They comply with 5.1.1.1. and 5.1.1.2. When separated without the use of tools, or	
	(b) They are located underneath the floor and are provided with a locking mechanism, or	
	(c) They are provided with a locking mechanism and other components shall be removed with the use of tools in order to separate the connector, or	
	(d) The voltage of the live parts becomes equal or below DC 60V or equal or below AC 30V (rms) within one second after the connector is separated	

3.1.2	Protection against indirect contact	
3.1.2.1	The exposed conductive parts, such as the conductive barrier and enclosure, shall be galvanic ally connected securely to the electrical chassis, so that no dangerous potentials are produced. Explain the connections.	
3.1.2.2	The resistance between all exposed conductive parts and the electrical chassis shall be less than 0.1ohm when there is current flow of at least 0.2 A.	
3.1.3	Isolation resistance	
	Mechanically robust protections that have sufficient durability over vehicle service life such as motor housings, electronic converter cases or connectors shall be provided. Explain the protection provided.	
3.1.4	Rechargeable energy storage system (REESS) It shall have the following:	
	The REESS shall not overheat. Supply any tests carried out.	
	REESS shall be equipped with a protective device such as fuses, circuit breakers or main contactors. Explain what is provided.	
	liquid type of battery requiring refilling with water need a ventilation fan to and generating hydrogen gas released to the atmosphere or a ventilation duct to prevent the accumulation of hydrogen gas Explain what the ventilation is provided	
3.2	Impact Strength	
3.2.1	Frontal Impact This requirement specifies the limit of the rearward displacement of the steering to reduce the likelihood of chest, neck or head injuries. The body injuries are measured by using dummies with electrical impulse connections and measuring instruments. The electrical protection and electrolyte spillage are also measured. After carrying out the tests indicate the results.	
3.2.1.1	Mechanical protection After the frontal impact it shall consider the following:	

	<p>The part of the steering control surface directed towards the driver shall not present any rough edges likely to increase the danger or severity of injuries to the driver.</p> <p>The steering displacement shall be less than 127mm.</p> <p>Indicate the results.</p>	
	<p>At the of frontal impact, no rigid component in the passenger compartment shall constitute a risk of serious injury to the occupants.</p> <p>Yes/No</p>	
	<p>The side doors of the vehicle shall not open under the effect of the impact to prevent occupant thrown out during an impact.</p> <p>Yes/No</p>	
	<p>As a result of impact, the opening of doors to enable all the passengers to emerge shall be possible without the use of tools.</p> <p>Yes/No</p>	
	<p>The dummy performance criteria shall be complied to indicate that the occupants will not receive any serious injuries.</p> <p>Indicate all the results for the dummy criteria test.</p>	
3.2.1.2	<p>Electrical Protection</p> <p>The following conditions shall be complied to avoid any electric shock:</p>	
3.2.1.2.1	<p>Protection against Electrical Shock As a result of impact one of the four conditions indicated in items below shall be complied to avoid any electric shock:</p>	
	Absence of high voltage	
	<p>The voltages between high voltage buses shall be low as possible. The voltages Vb, V1 and V2 of the high voltage buses shall be equal or less than 30VAC or 60 VDC .The voltage measurement shall be made no earlier than 5 second, but, not later than 60 seconds after the impact. Indicate the results.</p>	
	Low electrical energy	
	<p>The total energy on the high voltage buses shall be low as possible. The total energy (TE) on the high voltage buses shall be less than 2.0 Joules. Indicate the results.</p>	
	Physical protection	
	<p>For protection against direct contact with high voltage live parts the protection IPXXB shall be provided Indicate what is the physical protection provided.</p>	

	The resistance between all exposed conductive parts and the electrical chassis shall be low as possible, lower than 0.1ohm when there is a current flow of at least 0.2 A.	
	Isolation resistance:	
	The isolation resistance between the high voltage bus and the electrical chassis shall have a minimum value of 100 Ω /volt of the working voltage for DC buses, and a minimum value of 500 Ω /volt of the working voltage for AC buses. Indicate the results	

	The total energy on the high voltage buses shall be low as possible. The total energy (TE) on the high voltage buses shall be less than 2.0 Joules. Indicate the results.	
3.2.1.2.2	Physical protection	
	The resistance between all exposed conductive parts and the electrical chassis shall be low as possible, lower than 0.1ohm when there is a current flow of at least 0.2 A.	
	For protection against direct contact with high voltage live parts the protection IPXXB shall be provided Indicate what is the physical protection provided.	
3.2.1.2.3	Isolation resistance: The isolation resistance between the high voltage bus and the electrical chassis shall have a minimum value of 100 Ω /volt of the working voltage for DC buses, and a minimum value of 500 Ω /volt of the working voltage for AC buses. Indicate the results.	
3.2.1.3	Electrolyte spillage: As a result of impact there shall no electrolyte leakage or should be a minimum amount specified (less than 7%) to avoid fire or electric shock and to reduce deaths and injuries. In the period from the impact until 30 minutes after no electrolyte from the REES shall spill into the passenger compartment and no more than 7% of electrolyte shall spill from the REESS except open type traction batteries outside the passenger compartment.	

	Indicate the amount of electrolyte leakage.	
3.2.1.4	<p>RESS retention</p> <p>As a result of impact, the REESS (Electrical Power Train) shall not enter the passenger compartment during or after the impact.</p> <p>Yes/No</p>	
3.2.2	<p>Rear Impact</p> <p>This requirement specifies the limit of the inward displacement of the passenger compartment to reduce the likelihood of death and injuries. Its purpose is to protect passengers from the risk of fire or toxic or any</p>	

	electrical shock as a result of electrolyte spillage inside the passenger compartment during and after motor vehicle crashes.	
3.2.2.1	<p>Mechanical effect</p> <p>After the rear impact on the vehicle the following shall be met:</p>	
	<p>The longitudinal displacement of the vertical projection of the floor shall not cause any injury to the passengers. The rear displacement should be less than 75mm</p> <p>Indicate the value.</p>	
	<p>The side doors of the vehicle shall not open under the effect of the impact to prevent occupant thrown out during any impact.</p> <p>Yes/No</p>	
	<p>The opening of doors to enable all the passengers to emerge shall be possible without the use of tools.</p> <p>Yes/No</p>	

3.2.3	<p>Side Impact</p> <p>This requirement is to protect the occupants in side impact crashes. The purpose of this regulation is to reduce the risk of serious and fatal injury to the passenger in case of accidents. It also covers the requirements to avoid electrical shock.</p>	
3.2.3.1	Static side Impact	
	<p>The side doors shall be reinforced to reduce the impact forces from the side and to reduce the injuries or deaths due to side impact.</p> <p>Yes/No</p>	
	<p>The strength of the body structure and doors shall be such when tested the vehicle in accordance with Saudi standard the vehicle shall meet the following requirement to indicate the structure is strong enough to absorb the forces applied on them:</p> <p>-The initial crush resistance be more than 1020 kg. -The intermediate crush resistance be more than 1590 kg</p>	
	<p>-The peak crush resistance be more than twice the curb weight of the vehicle or 3175 kg whichever is less.</p> <p>Indicate the test results.</p>	
3.2.3.2	Dynamic side Impact	
	<p>After the impact, the side doors should be strong enough that the passengers will not receive any serious injuries in a side impact with other vehicles or rollover accidents. The body injuries are measured by using dummies with electrical impulse connections and measuring instruments.</p> <p>Indicate the measuring instrument used.</p>	
	<p>At the end of specified impact, no rigid component in the passenger compartment shall constitute a risk of serious injury to the passengers.</p> <p>Yes/No</p>	

	<p>The side doors of the vehicle which are not impacted shall not open under the effect of the impact, and the latches shall not separate from the striker to prevent passenger thrown out during an accident.</p> <p>Yes/No</p>	
	<p>After the side impact the conditions indicated in item 3.2.1.2 shall be complied to avoid electric shock.</p> <p>Yes/No</p>	
3.2.4	<p>Roof Strength</p> <p>The maximum displacement of any vehicle less than 2722kg after the impact the roof of vehicle shall not exceed 127 mm when tested according to SASO Regulation.</p> <p>Indicate the results value.</p>	

4. Performance of the electrical vehicles

No.	Requirement	Status/Results
4.1	Electrical performance	
	<p>The Technical Service in charge of the tests conducts the measurement of the electric energy consumption according to the method and test cycle described in UNECER 101 - Annex 7 (for battery electric vehicles ((BEV) and Annex 8 (for hybrid electric vehicles (HEV)/ plug-in hybrid electric vehicles (PHEV)) or according to the Society of Automotive Engineers (SAE) Standard J1711 for plug-in hybrid electric vehicles (PHEV) and hybrid electric vehicles (HEV) or according to the Society of Automotive Engineers (SAE) Standard J1634 for Battery electric vehicles (BEV).</p>	
	<p>The Technical Service in charge of the tests conducts the measurement of the electric range of the vehicle according to this Regulation. The electric range measured by this regulation is the only one which may be included in sales promotional material. This value must also be used for the calculations</p> <p>The result of the electric energy consumption must be expressed in Watt hours per kilometer (Wh/km) and the range in km, both rounded to the nearest whole number.</p>	
	<p>If the measured value of electric energy exceeds the manufacturer's declared electric energy value by more than 4 %, then another test is run on the same vehicle. When the average of the two test results does not exceed the manufacturer's declared value by more than 4 %, then the value declared by the manufacturer is taken as the type approval value.</p> <p>What is the electrical energy consumption.</p>	

	<p>If the average still exceeds the declared value by more than 4 %, a final test is run on the same vehicle. The average of the three test results is taken as the type approval value.</p> <p>Indicate the results value.</p>	
	The electric range value adopted as the type approval value shall be the value declared by the manufacturer if	

	<p>this is no more than the value measured by the Technical Service. The declared value may be lower than the measured value without any limitations.</p>	
	<p>If the declared range value exceeds the value measured by the Technical Service, then another test is run on the same vehicle. When the manufacturer declared value does not exceed the average of the two test results, then the value declared by the manufacturer is taken as the type approval value.</p>	
	<p>If the declared value still exceeds the average measured value a final test is run on the same vehicle. The average of the three results is taken as the type approval value.</p>	
4.2	Test conditions	
4.2.1.	Condition of the vehicle	
	<p>The vehicle tyres shall be inflated to the pressure specified by the vehicle manufacturer when the tyres are at the ambient temperature. Indicate the inflation pressure value.</p>	
	<p>The lighting and light-signaling and auxiliary devices shall be off, except those required for testing and usual daytime operation of the vehicle.</p>	
	<p>All energy storage systems available for other than traction purposes (electric, hydraulic, pneumatic, etc.) shall be charged up to their maximum level specified by the manufacturer.</p>	

	If the batteries are operated above the ambient temperature, the operator shall follow the procedure recommended by the vehicle manufacturer in order to keep the temperature of the battery in the normal operating range.	
	The manufacturer's agent shall be in a position to attest that the thermal management system of the battery is neither disabled nor reduced.	
	The vehicle must have undergone at least 300 km during the seven days before the test with those batteries that are installed in the test vehicle. Indicate the result value.	
4.3	The electrical range should be tested according to UNECER 101 – Annex 9 ((for hybrid electric vehicles (HEV)/ plug-in hybrid electric vehicles (PHEV) and battery electric vehicles (BEV)) or according to the Society of Automotive Engineers (SAE) Standard J1711 for plug-in hybrid electric vehicles (PHEV) and hybrid electric vehicles (HEV) or according to the Society of Automotive Engineers (SAE) Standard J1634 for Battery electric vehicles (BEV).	
4.4	Electric energy consumption, C	
	All cars should be equipped with the electrical car performance label. The performance values must be specified at the standard conditions and at a temperature of 5 to 32C for outdoor test and 20 to 30c for indoor based on a declaration and on the responsibility of the manufacturer	
	The energy consumption C is the Energy required to travel D km in standardized conditions, shall be calculated using the formula: $C = E/D$ Expressed in watt-hours per kilometer (Wh/km), rounded to the nearest whole number. E: Energy in Wh D : test is the distance covered during the test (km). Electric energy consumption (Wh / Km) shall be not more than 300 Wh/ Km .	

4.5	<p>Total Range</p> <p>The maximum distance an electrified vehicle can travel using battery power over a designated test sequence on a fully charged traction battery, to the end of the test sequence expressed in kilometers (km). It should be at least 200 KM it should be specified and declared from manufactures</p> <p>Indicate the maximum distance an electrified vehicle can travel.</p>	
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5. Manufacture Responsibility

No.	Requirement	Status/Results
5.1	The manufacturers should carryout type test for all the requirements of this regulation.	
5.2	Each manufacturer shall prepare manual with risks and all the warnings for safe use for electrical cars.	
5.3	<p>Warning shall be written in case of any accident with following meaning:</p> <ul style="list-style-type: none"> - A damaged 400 V circuit components or cable may cause burns or electrocution so do not touch damaged orange 400 V cables or the 400 V components. - If the traction battery is damaged, there may be a delayed risk of fire. In this Case, it is necessary to place the vehicle or the damaged battery under surveillance in a dedicated and secure storage area so as to prevent the start of a fire - The manufacturers and dealers shall provide proper training to civil defense departments On response and proved them with : <ul style="list-style-type: none"> a- procedure for a vehicle involved in an impact whilst charging b- Procedure for a vehicle on fire and should include: <ul style="list-style-type: none"> - Hazards and protective equipment to be use. - Action procedure to extinguish the vehicle. c- Instructions for avoid high voltage area and Instructions for freeing vehicle occupants - Prohibited cutting areas - Recommended cutting areas d - Procedure in the event of an electrolyte leak from the traction battery. 	

5.4	The manufacturers or his dealer should have at least one workshop with all qualified and trainer persons for regular maintenance and repairing their vehicles.	
5.5	All cars should be equipped with the electrical car performance label, it must be non-removable and placed at area can be easily seen. Yes/No	
5.6	Before selling the EV to the consumers they should be invited to attend a safety training program to explain the proper manner in which they should use their vehicles, maintain the vehicle, charge their vehicles at home, work places, overnight, frequency of charging, etc.	

6. Electric Vehicle Charging and Supply Equipment Systems

No.	Requirement	Status/Results
6.1	Equipment Construction	
6.1.1	electric vehicle coupler : The electric vehicle coupler shall comply with:	
	- The electric vehicle coupler shall have a configuration that is non-interchangeable with wiring devices in other electrical systems. Nongrounding-type electric vehicle couplers shall not be interchangeable with grounding-type electric vehicle couplers.	
	- The electric vehicle coupler shall be constructed and installed so as to guard against inadvertent contact by persons with parts made live from the electric vehicle supply equipment or the electric vehicle battery.	
	- The electric vehicle coupler shall be provided with a positive means to prevent unintentional disconnection.	
	- If a grounding pole is provided, the electric vehicle coupler shall be so designed that the grounding pole connection is the first to make and the last to break contact.	
6.1.2	Power Rating: Electric vehicle supply equipment shall have sufficient rating to supply the load served. Electric vehicle charging loads shall be considered continuous loads for the purposes of this article. Where an automatic load management system is used, the maximum electric vehicle supply equipment load on a service or feeder shall be the maximum load permitted by the automatic load management system.	

6.1.3	<p>Markings:</p> <ul style="list-style-type: none"> - All electric vehicle supply equipment shall be marked by the manufacturer as follows: “FOR USE WITH ELECTRIC VEHICLES “ 	
	<ul style="list-style-type: none"> - The electric vehicle supply equipment shall be clearly marked if ventilation not required by the manufacturer as follows: 	

	“Ventilation not required “	
	<ul style="list-style-type: none"> - The electric vehicle supply equipment shall be clearly marked by the manufacturer, “Ventilation Required.” <p>The marking shall be located to be clearly visible after installation.</p>	
6.1.4	<p>6.1.4 Cords and Cables:</p> <p>The cable for cord-connected equipment shall comply with all of the following:</p>	
	<ul style="list-style-type: none"> - The overall useable length shall not exceed 7.5 m unless equipped with a cable management system that is part of a listed the electric vehicle supply equipment or electric vehicle charging system. 	
	<ul style="list-style-type: none"> - Where the electric vehicle supply equipment or charging system is not fixed in place, the cord exposed useable length shall be measured from the face of the attachment plug to the face of the electric vehicle connector. 	
	<ul style="list-style-type: none"> - Where the electric vehicle supply equipment or charging system is fixed in place, the useable length of the output cable shall be measured from the cable exit of the electric vehicle supply equipment or charging system to the face of the electric vehicle connector. 	
	<p>Other cable types and assemblies listed as being suitable for the purpose, including optional hybrid communications, signal, and composite optical fiber cables shall be permitted.</p>	

6.1.5	Interlock. Electric vehicle supply equipment shall be provided with an interlock that de-energizes the electric vehicle connector and its cable whenever the electrical connector is uncoupled from the electric vehicle.	
6.1.6	Automatic De-Energization of Cable. The electric vehicle supply equipment or the cable-connector combination of the equipment shall be provided with an automatic means to de-energize the cable conductors and electric vehicle connector upon exposure to strain that could result in either cable rupture or separation of the cable from the electric connector and exposure of live parts.	
6.1.7	Personnel Protection System (Emergency	

	disconnected devices) The electric vehicle supply equipment shall have a listed system of protection against electric shock of personnel.	
6.2	Installation	
6.2.1	Branch Circuit Markings. When a branch circuit is installed to supply electric vehicle supply equipment (or electric vehicle charging system), a label shall be permanently affixed adjacent to the outlet box and shall contain the following information: “For use with electric vehicle supply equipment (or) electric vehicle charging system)”, as appropriate, and the voltage and amperage it is permitted to serve.	

6.2.2	<p>Overcurrent Protection.</p> <p>Overcurrent protection for feeders and branch circuits supplying electric vehicle supply equipment shall be sized for continuous duty and shall have a rating of not less than 125 percent of the maximum load of the electric vehicle supply equipment. Where noncontinuous loads are supplied from the same feeder or branch circuit, the overcurrent device shall have a rating of not less than the sum of the non-continuous loads plus 125 percent of the continuous loads.</p> <p>Indicate the percentages.</p>	
6.2.3	<p>Electric Vehicle Supply Equipment Connection.</p> <p>Electric vehicle supply equipment shall be permitted to be cord and plug connected to the premises wiring system in accordance with one of the following:</p>	
	<ul style="list-style-type: none"> - Electric vehicle supply equipment that is rated 250 volts maximum and complies with all of the following: <ul style="list-style-type: none"> - It is intended for connection to receptacle outlets rated no more than 50 amperes. - It is installed to facilitate any of the following: <ul style="list-style-type: none"> o Ready removal for interchange o Facilitate maintenance and repair - Repositioning of Portable, movable, or EVSE fastened in place 	
	<ul style="list-style-type: none"> -Power supply cord length for electric vehicle supply equipment fastened in place is limited to (1.8 m). -Receptacles are located to avoid physical damage to the flexible cord. -All other electric vehicle supply equipment shall be permanently connected to the premises wiring system. The electric vehicle supply equipment shall have no exposed live parts. 	

7. Workstation for EV

No.	Requirement	Status/Results
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7.1	<p>Protection against electrical hazards in the working area.</p> <p>Before undertaking any operation on an electrical installation, an electrical risk assessment must be carried out to identify and prevent electrical hazards during an operation or when using an electrical vehicle in the workstation.</p> <p>This assessment must specify how the operation is to be carried out and what measures and precautions need to be taken to ensure safety.</p>	
7.2	Staff Training requirements	
	All staff involved in the operations on or near to an electrical installation must be trained in the safety requirements, safety rules and in-house instructions applicable to the operation.	
	<p>The goal of the training and education for the staff in the workshop is to:</p> <ul style="list-style-type: none"> - Learn about the dangers associated with electricity and be able to identify the hazards. - Learn about the preventive actions and know how to apply them. - Educate Customers on the use and ownership of an Electric Vehicle 	
	Staff must wear clothes appropriate to the workstation and conditions in which they are required to work. This may include the use of snugly fitted clothing or additional personal protective equipment (PPE)	
7.3	<p>Staff responsibility in the workshop.</p> <p>We can classify the staff in the workshop to</p>	
7.3.1	<p>Qualified person.</p> <p>Trained person with relevant knowledge and experience to analyze electrical risks and avoid the hazards electricity could bring about. He could be Battery Specialist or EV Technician. He can do all type of maintenance and repairing</p>	
7.3.2	Informed person.	

	Person sufficiently informed so as to avoid the dangers that electricity could bring about, could be body or Mechanical Technician, Service or body shop Manager. He can make all type of maintenance and repairing except electrical and battery repairing.	
7.3.3	Ordinary person. Untrained Person who is neither qualified, nor an informed person. He could be sales executive, or service advisor he cannot do any type of maintenance and repairing.	
	All the workshops for repairing or do a service for electrical vehicles should have at least one qualified person.	

8. Safety Equipment for EV Workstation

No.	Requirement	Status/Results
	Clear instructor to use the lock out system before working on the High Voltage System and moving Accident Damaged Vehicles.	
	Employer is responsible for Providing and maintaining PPE for all staff.	
	It is compulsory for the staff to wear individual protection equipment during any operation in the orange zone (Battery removal, Lockout)	
	- The workstation should have a collective protection equipment (CPE) for : <ul style="list-style-type: none"> • Battery Repair area • Vehicle Protected Area • Insulation 	
	The workstation should have a workspace for high voltage system repairs at it should have a warning Panel the meaning of: “Dangers area, high voltage working area”	

9. handling a vehicle involve in an accident

No.	Requirement	Status/Results
	<p>The staff need to Lockout Vehicle before any Repair. If the Vehicle after the accident have any damage in the structural, Battery or high voltage wiring damage, the qualified person should do a safety assessment for:</p> <ul style="list-style-type: none">• Exposed Components• Leaking Fluids• Damaged Battery / Wiring• Vehicle Locked Out <p>If any of above it should be putting in isolated area.</p>	

10. Requirement for vehicle storage location

No.	Requirement	Status/Results
	<p>A dedicated storage with the following specifications:</p> <ul style="list-style-type: none">▪ One dedicated, uncovered, outdoor parking space▪ 5 Meters Clear space around the vehicle▪ At least 12 meters away from the nearest building).▪ Leave vehicle a minimum of 48 Hours	

11. Name of Responsible Person

12. Date of the Report

13. Signature, Name and designation of the Responsible Person

ELECTRIC VEHICLES (EV)
REPORT OF COMPLIANCE FOR GENERAL REQUIREMENTS
(SASOGSO-42:2015)

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REPORT OF COMPLIANCE FOR GENERAL REQUIREMENTS
(SASO-GSO-42:2015)

1. Objective: To check the compliance of Motor vehicle Type
with the Requirements of SASO-GSO-42:2015.
2. Vehicle information:
Name of Manufacturer:

Category of Vehicle:

Type of Vehicle:
3. Date of Report

TEST REPORT:

4. DIMENSIONS

No.	Requirement	Status/Results
4.1	Vehicle length < 12.5 m (truck and bus)	
	Vehicle length < 18 m(tractor and semi trailer) , 20m for articulated vehicles.	
	Vehicle width < 2.6 m	
	Vehicle height < 4.5m based on SASO-469-2008	
4.2	Protrusion of sideward and upward < 300 mm	
4.3	Rear overhang < less length of 67% of wheelbase or 3.6 m	

5. MINIMUM ROAD CLEARANCE

No.	Requirement	Status/Results
5.1	Any part other than the earth touching parts of a vehicle shall have adequate clearance above the ground for safe driving. Indicate the amount of clearance.	
5.2	Any projecting parts should be provided with guards to avoid the rigid part being affected for safety reasons. Are there any guards provided?	

6. GROSS VEHICLE AND AXLE WEIGHT

No.	Requirement	Status/Results
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6.1	GVW of any vehicle < 45 t, indicate the GVW.	
6.2	GAW (Front +Rear). Indicate the GAW.	
6.2.1	For steerable single axle with single tyre, double tyre and un steerable single axle	
6.2.2	For two closely spaced Rear axles	
6.2.3	For three closely space Rear axles	
6.3	The maximum weight on any un steerable axle end < 6.5 t. Indicate the axle weight	
6.4	The maximum axle(s) capacity shall be less than or equal to the sum of the maximum capacities of the tyres. Indicate the maximum capacities of the tyres.	
6.5	In the case of tandem axles the total weight on the tandem axles shall be depend on the distance between the two rear axles or the distance between the first and the third rear axles. Indicate the distance between the tandem axles.	

7. STABILITY

No.	Requirement	Status/Results
7.1	Any motor vehicle in the unladen and laden state shall not overturn when tilted to the left or right side at an angle specified in the regulation (35°) Explain the test carried out or submit the test report.	
	The rollover stability of the vehicle shall be such the point at which overturning occurs should be limited to the lateral acceleration.	
7.2	The vehicle shall travel along a straight section of road without unusual steering correction by the driver and without unusual vibration in the steering system at the maximum design speed of the vehicle. Explain the test carried out indicating the speed.	
7.3	Minimum turning radius shall not exceed 12m. Explain the test carried out/submit test report	

11. ELECTRICAL SYSTEM

No.	Requirement	Status/Results
11.1	Are the cables suitable for the maximum current capacity and the fuses?	

11.2	The resistance between all exposed conductive parts and the electrical chassis shall be less than 0.1ohms when there is current flow of at least 0.2amp. Indicate the resistance between the parts.	
11.3	All conductive parts shall be provided with barriers or enclosures and shall be grounded to avoid electrical shock. Explain the protection provided.	
11.4	The electrical cables provided shall be suitable for the current carrying capacity and additionally protected to avoid any leak of current. Explain the protection provided to the cables to avoid leakage.	
11.5	The vehicles with batteries at the rear shall be provided with additional safety cut off devices near the battery to cutoff the supply in case of an impact and the current supply cable severed.	
11.6	The electrical equipments provided shall not radiate and conduct unwanted disturbances for the functions for the direct control of the vehicle or the vehicle data functionality. In addition, it should not create disturbances for the use of electrical or electronic equipment at own or adjacent vehicles. It shall not cause continuous and/or excessive radio interference. (EMC) Explain the system provided.	
11.7	The air-conditioning fitted shall have both cooling and heating functions.	

13. BRAKING SYSTEM

No.	Requirement	Status/Results
13.1	The braking system provided to vehicle shall be suitable to the vehicle concern and ensure safe braking performance under normal and emergency conditions. Explain the braking system provided.	

13.2	No use of materials affecting health as asbestos or cadmium, etc. in the brake parts. Indicate the material used for the brake parts.	
13.3	Every motor vehicle shall be equipped with service brake system adequate to control the movement of, and to halt it safely, speedily and effectively whatever its speed and load, on any up or down gradient. Explain the test carried out indicating the stopping distance and the speed of the test.	
13.4	The secondary braking system shall make it possible to halt the vehicle within a reasonable distance in the event of failure of the service braking system. Explain the function of the secondary system provided.	
13.5	Are the control of the service braking device and the parking-braking device through components of adequate strength and independent?	
13.6	Service brake construction for driver's right foot operation. Yes/No	
	Service brake for handicapped driver. Yes/No	
	Hand-operated service brake operation. Yes/No	
13.7	Brake pipes attachment not to subject damage by vibration.	
	Brake pipes made of material or treatment to resist to corrosion.	
13.8	Service braking device action on all the wheels	
	How the braking is distributed.	
13.9	Symmetrical action of service braking device	
13.10	Ability to halt the vehicle of emergency braking device. Explain the function of the braking device, indicating the sketch of the brake system.	

13.11	All vehicles brakes shall be provided with ABS system. Explain. Yes/No	
13.12	Optical and/or acoustic signaling at the occasion in a fall in the supply pressure and drop in the level of brake fluid	
13.13	Parking brake device arrangement	
	Parking brake capability of holding laden vehicle stationary on a gradient. Indicate the gradient?	
13.14	Brake system of articulated vehicle (tractor). Explain	
13.15	Braking device of trailers (trailers). Explain.	
13.16	All the light duty vehicles (<3500kg) shall be fitted with Electronic Stability Control Systems (ESC). Explain the function of the system provided and the compliance standard.	

14. SUSPENSION SYSTEM

No.	Requirement	Status/Results
14.1	Equipment with springs and shock absorbing system shall be provided with adequate capacity depending on the GVW of the vehicle against the impact from the ground and can ensure safe driving. Describe the suspension systems provided	
14.2	Depending on the category of vehicle the suspension provided shall be suitable to give a comfortable ride to the passengers, to reduce the shocks to the vehicle from the uneven level of the road, to reduce the load transmitted from the vehicle to road surface and damage the road surface and to drive the vehicle safely without strain to the driver. Explain the tests carried out to achieve this requirement: Submit test reports carried out such as durability test for the suspension	

15. STEERING SYSTEM

No.	Requirement	Status/Results
15.1	The system can be easily and securely handle by the driver	
15.2	Steering wheel positioning on the left side. Yes/No	
15.3	It must be possible to travel along a straight section of the road without unusual steering correction by the driver and without unusual vibration in the steering system at the maximum designed speed of the vehicle	
	Explain the test carried out to check this requirement.	
15.4	What is the maximum steering angle of the wheel steered to the left and right?	
15.5	No considerable difference between the left and right steering force. What is the force applied on both sides?	
15.6	Shock absorbing and collapsing away from drivers chest when steering column of vehicle is at an angle less than < 35 degrees .(except heavy duty trucks and buses). Explain the steering column provided.	

16. CONTROL DEVICES

No.	Requirement	Status/Results
16.1	Every motor vehicle shall be provided with suitable controls, tell tales and indicators for the safe operation of the vehicle. Explain the controls provided.	
16.1.1	The controls shall be located to left and right of the centre of the steering wheel and so as to be easily identified and operated by the driver in a normal driving position. Indicate the function of the controls provided.	
16.1.2	The controls to be used by a driver while driving the vehicle shall be located so that they are operable by the driver restrained by the crash protection system, adjusted to be free to move within constraints of that system. Explain the restrained systems provided.	
16.1.3	The tell-tales and indicators, shall be located so that they are visible and recognizable to a driver during night and day when activated. Yes/No	

16.1.4	The identifications of tell-tales, indicators and controls shall be placed on or adjacent to the tell-tales, indicators and controls that they identify.	
16.1.5	The controls may be identified by symbols/or words. How can be the controls identified?	
16.1.6	The location, identification, color and illumination of the controls, telltales and indicators shall be in accordance with the relevant SASO Regulation.	

17. FRAME AND BODY

No.	Requirement	Status/Results
17.1	The frame and body shall be so secure and strong enough as to fully withstand the operation of the vehicle. Explain the construction.	
17.2	The whole design and construction of vehicles, shall withstand the impact forces to the front, rear, side and roof to reduce the likelihood of injuries to the driver and passengers.	
	Explain the tests carried out.	
17.3	The external shape of a motor vehicle shall be free from any sharp or protruding rotating part likely to endanger other traffic. Yes/No	
17.6	In case of passenger cars and multipurpose vehicles the surfaces of metal bumpers which are most likely to come into contact with other objects shall be provided with rubber (or any equivalent material) of suitable hardness. Explain the type of bumper provided and the materials provided to its surface.	
17.9	The front and rear of the vehicles shall be provided with designated location sufficient in size to fix the number plates made in accordance with the SASO technical regulation No. SASO GSO 289. Yes/No	

19. WHEELS (TYRES AND RIMS)

No.	Requirement	Status/Results
19.1	The tyres shall comply with all relevant	
19.1	The tyres shall comply with the following minimum requirement applicable in Saudi Arabia countries: Speed Symbol and Temperature Rating: (a) PC tyres: temp “A” or “B” and speed “S” (b) MPV with PC tyres: temp “A” or “B” and speed “S” (c) MPV with LT tyres: Speed “S”	
19.2	Prohibition of re-grooved, recapped or retreaded tyres on a front wheel (bus). Yes/No	
19.4	No crack or cut on the tyre	
	No pinch or strike of metal pieces, etc. in tyres	
	Uniform tread without separated piles	
19.5	Compliance of temporary use spare wheels (tyre with rim)	
19.7	Provision with a spare tyre. The vehicles provided with a run flat tyre may be exempted.	
19.8	All light duty vehicles and public transport busses shall be provided with a Tyre Pressure Monitoring system (TPMS) which informs the driver when a tyre is below the vehicle manufacturers recommended running pressure except those vehicles with dual wheels on an axle. Explain the type provided?	

20. SEATS

No.	Requirement	Status/Results
20.1	Every adjustment and displacement system provided to the seats shall incorporate a locking system, which shall operate automatically. Locking systems for armrests or other comfort devices are not necessary unless the presence of such devices will cause additional risk of	
	injury to the occupants of a vehicle in the event of a collision. Explain the adjustment devices provided and the locking system provided to the vehicle seats?	

20.2	In the case of seats provided with head restraints, the strength of the seat-back and of its locking devices shall be strong enough to meet the required force without any breakage. Explain the test carried out and the force applied.	
20.3	Driver's seat	
20.3.1	Construction and location for full view for driving by the driver at all times. Yes/No	
20.3.2	He should be able to control the vehicle without being obstructed by the passengers or loaded goods. Yes/No	
20.4	Passenger's seats	
20.4.1	The minimal distance between the seats located facing one another to have double space of ordinary located seats. Yes, provided or Not. The space in front shall be sufficient for the passenger to move out from the seat easily without any obstruction or difficulty. Yes/No	
20.4.2	The distance between the seats at the aisles shall be sufficient for the passengers to exit in an emergency without any obstruction or difficulty and be not less than 300mm. Indicate the aisles distance.	

21. SAFETY BELTS

No.	Requirement	Status/Results
21.1	Provide suitable hardware equipment for installation for the safety belt assemblies and their anchorages. Yes/No	
21.2	Motor vehicles shall be equipped with safety belt assemblies and safety belt anchorages in order to restrain the passengers on the seats from moving forward or inclining their upper torso forward excessively in case of collision. Explain the details of safety belts provided.	
21.3	Equipment with three-point safety belts for the front and rear outboard seats (passenger cars and MPV)	
	Provisions with either two-point or three-point safety belts (except side facing seats) for seats of all other vehicles.	
21.4	Compulsory retractor for three-point seats. Yes/No	

	Optional retractor for two-point seats. Yes/No	
21.5	Design and construction of belt assembly when correctly installed and properly used it shall provide satisfactory operation and reducing the risk of bodily injury. Yes/No	
21.6	The belt assembly design for only one person. Yes/No	
21.7	Warning on ignition switch on start of the vehicle without fastening the driver's seat belt. Yes/No	
	Warning of audible or visible signal and the period (period). Yes/No	

22. AIR BAGS

No.	Requirement	Status/Results
22.1	The air bag shall be located in suitable position to assist in preventing the driver's head and chest from impact the steering wheel or windshield.	
22.2	Location of air bags for driver in preventing the driver's head and chest from impact the steering wheel/windshield.	
22.3	Non-toxic material and shall not cause any irritation.	
22.4	<p>Passenger cars, Multipurpose Passenger vehicles, buses and trucks with GVW less than 3500kg shall be provided with air bags to the driver and front passenger outboard seat.</p> <p>Buses carrying twenty two (22) passengers and less shall be provided with air bags to the driver side and the front passenger outboard seat.</p> <p>Explain the airbags provided.</p>	
22.5	<p>The curtain air bags if provided to the side of the vehicle shall comply with the above requirement and shall activate in a side impact situation.</p> <p>Is it provided to the vehicle or Not?</p>	

23. WINDSHIELD AND WINDOW

No.	Requirement	Status/Results
23.1	Laminated glass for a windshield and safety or laminated glass for all windows.	

23.2	The glass shall be free from faults such as blisters, bubbles, cracks, crazing, scratch, separation, and wedge and shall not have any color/tint, which shall interfere with the appearance, service or vision. Yes/No	
23.3	Front visibility through the windshield broken glass by the driver should be possible. Yes/No	
23.4	Locations where flexible plastic materials are used	
23.5	Restriction of forward or side vision reducing labels, in the windshield provided. Any label provided or Not.	
23.6	Allowable minimum light transmissibility for the glasses and plastic of the windows shall be more than 70%.(except the sun strip of the windshield on the top of the glass) Indicate the percentage of transmissibility?	
23.7	Provision with anti fog system for rear window for Vehicles when necessary.	
	Indicate the category of vehicle fitted with anti fog system.?	
23.8	Identification marks on safety glasses: Indicate the marking on the safety glass	
23.9	What is the Marking on windshield to indicate it is Laminated?	

24. HEAD RESTRAINT

No.	Requirement	Status/Results
24.1	Compulsory for front outboard seats of light duty vehicles with GVW not exceeding 3500kg and shall be of tower back type or with adjustable head restraints. Explain what is provided?	
24.2	The height of tower back type and the adjustable type when fully extended. Indicate the value.	
24.2.1	Height of head restraint	
24.2.2	Width of head restraint	
24.3	Design and construction not to injure occupants head or neck. Yes/No	

24.4	Mounting of adjustable type restraint not to become dislodged as a result of vibration or Impact. Yes/No	
24.5	The head restraint shall be secured to the seat or to the vehicle structure in such a way that no rigid and dangerous parts project from the padding of the head restraint or from its attachment to the seat-back as a result of the pressure exerted by the head. Yes/No	

25. REAR-VIEW MIRRORS

No.	Requirement	Status/Results
25.1	The vehicles shall be provided with devices for indirect vision to observe the traffic area adjacent to the vehicle, which cannot be observed, by direct vision. These can be conventional mirrors, camera-monitors or other devices able to present information about the indirect field of vision to the driver. Explain the type of devices provided.	
25.2	The rear-view mirrors shall be of adjustable type and mounted in such a manner that by means of them, the driver in his seat can clearly observe the traffic conditions of other vehicles on both sides, right and left of the vehicle, and directly behind and is also able clearly to observe traffic conditions near the right side of the vehicle, other than in the area he in his seat can view directly. Explain its type and function	
25.3	The mirror and mounting shall be free from sharp projecting edges or points, which may cause injury and the external mirror holder, shall be of breakaway or folding type.	
25.4	The mirrors shall be firmly fixed in such a way that, they will not move so as significantly to change the field of vision and thus cause the driver to misinterpret the nature of the image perceived when the vehicle is moving at high speed. Yes/No	
25.5	The external mirror and the mounting shall not protrude beyond the widest part of the body of the vehicle, except to the extent necessary to produce a field of vision necessary. If protrude, indicate size.	

26. SOUND SIGNALLING

No.	Requirement	Status/Results
26.1	Equipped with horn. (except trailer and semi-trailers) Yes/No	
26.2	The sound level of horn(s): > 88 dB(A) and <125 dB(A). Indicate its value?	
26.3	Emitting a continuous and uniform sound. Yes/No	
26.4	Prohibition of horn producing a sequence of sounds of varying frequencies except for priority vehicles. Explain what is provided?	
26.5	The sound level shall not be a nuisance to the public and other vehicle users. Yes/No	

29. FLAMMABILITY OF INTERIOR MATERIALS

No.	Requirement	Status/Results
29.1	Flammability rating of different material of the vehicle. (indicate the maximum value)	
29.2	The materials used in the interior interior/occupant compartment, of the vehicles shall comply with this regulation with respect to burning rate of 100mm/min. Indicate the test results	
29.3	The materials and/or equipment used in the interior compartment, and any separate heating compartment shall be so installed as to minimize the risk of flame development and flame propagation. Yes/No	
29.4	Any Adhesive agent used to affix the interior material to its supporting structure shall not, as far as possible, exacerbate the burning behavior of the material. Yes/No	
29.5	Electric cables inside the passenger compartment of M3 Class II (seated and standing passengers) and Class III (seated passengers) vehicles shall undergo the resistance to	

	flame propagation test and comply with the SASO technical regulation . Yes/No	
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30. LIGHTING EQUIPMENT

No.	Requirement	Status/Results
30.1	General	
30.1.1	Only authorized lighting equipment fitting shall be used.	
30.1.2	Firm mounting, to be correctly adjusted and be readiness for operation Yes/No	
30.1.3	Requirements for lighting equipment in pairs shall have same calorimetric and photometric requirements. Yes/No	
30.1.4	Prohibition of interference of the head lamp light with the driving operation and discomfort to the driver and to the other vehicles. Yes/No	
30.2	Head lamp	
30.2.1	Equipment with one or two on each side at the front. Indicate how many.	
30.2.2	The intensity of the main beam head lamp or head lamps on the motor vehicle when on main beam setting shall be capable of allowing any obstacle on the road at night at a distance of 100 meters to be seen clearly. Yes/No	
30.2.3	Construction for dimmed or dipped beam in order that other traffic may not be dazzled. Yes/No	
30.2.4	Height of the top and the lower edge above the ground	
	Location in level and symmetry	
30.2.5	White light emission	
30.2.6	Mounting for aim not to be disturbed by vibration	
30.2.7	Tell-tale device be provided at high beam on Yes/No	
30.3	Stop lamp (brake lamp)	
30.3.1	Equipment with each side at the rear. Yes/No	
	Equipment with a high mounted stop lamp on the rear (passenger cars and MPV) Provided. Yes/No	

30.3.2	Visibility in day time from a distance. Yes/No	
30.3.3	Actuation upon application of the service brake. Yes/No	
30.3.4	Intensity when combined with tail lamp. Indicate its value.	
30.3.5	Display of a red color	
30.3.6	Mounting height above the ground	
30.4	Tail lamp (rear position lamp)	
30.4.1	Equipment with at least one on each side at the rear Yes/No	
30.4.2	Visibility at night from a distance. Yes/No	

30.4.3	Display of red color Yes/No	
30.4.4	Location height above the ground. Indicate.	
30.4.5	Wiring for simultaneous lighting on both sides with the front parking lamps. Yes/No	
30.5	Front parking lamp	
30.5.1	Equipment with one each side at the front. Yes/No	
30.5.2	Visibility at night from a distance. Yes/No	
30.5.3	All lamps wiring for simultaneous lighting	
30.5.4	Design and construction to turn on regardless of with or without running. Yes/No	
30.5.5	Amber or white in color	
30.6	Reversing lamp	
30.6.1	Equipment with not more than two. Yes/No	
30.6.2	Intensity not greater than 5000 Candela - Indicate the value	
	White in color	
30.6.3	Wiring to light only when set in reverse position of transmission. Yes/No	

30.6.4	Location height above the ground	
30.7	Turn signal lamp (Direction Indicator Lamp)	
30.7.1	Equipment with two on the front end and the rear end Yes/No	
	Optional on the side – Provided or Not.	
30.7.2	Mounting for visibility	
30.7.3	Illuminated surface to have a projected area measured on the vertical plane perpendicular to the longitudinal axis of the vehicle	
	> 40 sq cm (vehicle with overall length not less than 6 cm)	
	30.7.3.1 > 7 sq cm (motor cycle)	
	30.7.3.2 > 20 sq cm (any other motor vehicle)	
30.7.4	When mounted on each side, illuminating surface to have a projected area measured both on the longitudinal plane of the vehicle and on a vertical plane intersecting the longitudinal plane at an angle of 45 degrees	
	30.7.4.1 > 20 sq cm (vehicle with overall length not less than 6 m)	
	30.7.4.2 > 10 sq cm (any other motor vehicle)	
30.7.5	Visibility in operation even in daytime from a distance. Yes/No Amber/red in color.	
30.7.6	Flash at a constant rate in operation	
30.7.7	Locations on vehicle - Indicate	
30.7.8	Provision of tell-tale device Yes/No	
30.7.9	Design and construction for also acting as hazard warning flashing lamp.	

	Yes/No	
30.8	Hazard warning flashing lamp	
30.8.1	Compulsory equipment. Yes/No	
30.8.2	Compliance with the requirements of turn signal lamp (item 30.7) Yes/No	
30.9	Clearance lamp	

30.9.1	Equipment with at least one on each side at the front and rear (tractors, trailers, semi-trailers and buses with width exceeding 2.1 m). Yes/No	
30.9.2	Mounting for indicating the extreme width of the vehicle. Yes/No	
30.9.3	Intensity shall be such that it is visible at night from a distance. Indicate its intensity.	
30.9.4	Front display of amber or white color and rear amber or red. Yes/No	
30.9.5	Mounting symmetrical on the left and right at a maximum height. Yes/No	
30.10	Auxiliary head lamp, (if mounted)	
30.10.1	Not more than two light. How many provided.?	
30.10.2	Intensity Indicate.	
30.10.3	Main beam direction. Indicate	
30.10.4	White or light yellow in color Indicate the colour.	
30.11	Side marker lamps and side reflector	
30.11.1	Equipment provided according to the following:	
	30.11.1.1 Compulsory for vehicle length	
	- more than 9 m : front, center and rear	
	- from 6 m to 9 m : front and rear	
	30.11.1.2 Tractor	
	30.11.1.3 Trailer	
	30.11.1.4 Trailer	
30.11.2	Requirements for the side marker lamps	
	30.11.2.1 Visibility	
	30.11.2.2 Mounting height above the ground	
	30.11.2.3 Color to mounting position	
30.11.3	Requirements for the side reflectors	
	30.11.3.1 Visibility	
	30.11.3.2 Shape of reflecting surface	
	30.11.3.3 Color to mounting position	
30.12	Registration plate lamp	

30.12.1	Every motor vehicle shall be equipped with a registration plate lamp of such construction as to illuminate, with a white light, the rear registration number plate, making it clearly visible from a distance of 20 meters to the rear. Yes/No	
30.13	Courtesy lamps (room lamp) Compulsory (passenger compartment) Provided yes/No	
30.14	Rear Fog Lamp	
30.14.1	All motor vehicles shall be provided with a minimum of one rear fog lamp. The rear fog lamp is optional provided if the intensity of the rear lamps comply with the SASO Regulation on lamps to be formulated. Are the fog lamps are provided or not?	

31. DOOR LOCKS (Light Duty Vehicles)

No.	Requirement	Status/Results
31.1	The door locks and side door retention components including latches, hinges, and other supporting means, fitted to the light duty vehicles shall be such to minimize the likelihood of occupants being thrown out from the vehicle as a result of impact. Explain the system provided.	
31.2	Indicate the details of latches provided (intermediate and fully latched)	
31.3	Latches shall be designed in such a way as to prevent the doors opening accidentally. Explain the tests carried out.	
31.4	The driver's door lock shall be locked from outside by the help of a key or by the help of a remote system for light duty vehicles. Indicate what is provided.	
31.5	Are there any alarm system provided at the ignition to alert the driver that the key is in the ignition? Yes/No	
31.6	Describe the functions of the locking mechanisms provided to the doors of passenger cars and MPV vehicles.	

31.7	When any of the doors are not locked fully, are there any telltale indication lamp provided to indicate one of the doors is not fully locked. Provided or Not	
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32. SPEEDOMETER

No.	Requirement	Status/Results
32.1	Equipment at the location for drivers direct vision to observe easily and should be clearly visible by day and night. Explain what is provided.	
32.2	Graduation in km/h Yes/No	
32.3	Graduation range including maximum speed	
32.4	Graduation division (1,2,5 or 10Km/h) Yes/No	
32.5	The numerical values shall be spaced at intervals not exceeding 20 km/h intervals when the highest value on the dial does not exceed 200km/h and at intervals not	
	exceeding 30km/h when the highest value on the dial exceed 200km. Yes/No	
32.6	Accuracy	
32.6.1	Indicated speed shall never be less than the true speed. What is the indicated speed?	
32.6.2	What is the actual speed of the vehicle?	
32.7	What is the maximum designed speed/ and set speed of the vehicle.	

33. ODOMETER

No.	Requirement	Status/Results
33.1	Equipped with in a suitable place in front of the driver's direct field of vision in dashboard. Yes/No	
33.2	Indication of distance travelled in mechanical type Indicate which one.	
	Indication of distance travelled in electronic type. Indicate which one.	

34. SPEED WARNING DEVICE AND SPEED LIMITING DEVICE

No.	Requirement	Status/Results
34.1	Every motor vehicle shall be equipped with light and /or sound emitting devices which automatically give warning to the driver when the speedometer indicates a speed exceeding $(120 \pm (+ \text{ or } -) 5)$ km/h. The light shall be continuous and the sound shall be as a minimum once until the speed is reduced to below 120 km/h. Explain the system provided.	
34.2	Structure of device for the warning signal. Explain its function.	
34.3	Equipment with speed limiting device (Dangerous substances trucks and Pilgrim Buses). Provided or not.	

35. WINDSHIELD WIPING AND WASHING SYSTEMS

No.	Requirement	Status/Results
35.1	Equipment with wiping system with at least two speeds (Indicate the Speeds)	
35.2	Equipment with windshield washing system, provided or not.	

37. PROTECTION AGAINST THEFT

No.	Requirement	Status/Results
37.1	All passenger cars and multipurpose vehicles with GVW less than 3500kg shall be provided with an electronically coded immobilizer to prevent unauthorized use of vehicles. Explain the type provided.	
37.2	If provided explain how it function and which circuit it disable.	
37.3	The key and the lock shall not be visibly coded. Are they coded? Yes/No	
37.4	In the case of automatic transmission the transmission shift mechanism shall become locked in park position when the key is removed. Will it get locked when the key is removed.	

40. EXTERIOR PROTECTION (Passenger Cars)

No.	Requirement	Status/Results
40.1	The exterior devices provided to the vehicles shall reduce damage to this vehicle in an accident situation. Explain what is provided.	
40.2	Surfaces of protective devices at the front and rear end of the vehicle which are most likely to come into contact with other objects shall be covered by, or made of rubber, or equivalent material, of suitable hardness. What is the material used to cover.	

41. ELECTRIC VEHICLE

No.	Requirement	Status/Results
41	The requirement specified in this regulation is applicable to electric passenger cars, multi-purpose passenger vehicles, trucks and buses with maximum designed speed exceeding 25km/h.	
41.1	Protection Against Electric shock	
41.1.1	Protection against direct contact	
41.1.1.1	The protections against direct contact with live parts, such as solid insulator, barrier, enclosure, etc. shall not be able to be opened, disassembled or removed without the use of tools, which can be done only by a competent person. Explain the protection provided.	
41.1.1.2	Connectors Located underneath the floor and are provided with a locking mechanism. or Provided with a locking mechanism and other components shall be removed with the use of tools in order to separate the connector. or The voltage of the live parts becomes equal or below DC 60V or below AC 30V(rms) within 1 second after the connector is separated Explain the safety factors and design of the connectors provided.	
41.1.2	Protection Against Indirect Contact	
41.1.2.1	The exposed conductive parts, such as the conductive barrier and enclosure, shall be galvanically connected securely to the electrical chassis by connection with electrical wire or ground cable, or by welding, or by connection using bolts, etc. so that no dangerous potentials are produced.	

	Explain the connections.	
41.1.2.2	The resistance between all exposed conductive parts and the electrical chassis shall be less than 0.1ohm when there is current flow of at least 0.2amperes. Indicate the exact value of resistance.	
41.1.3	Isolation Resistance	
41.1.3.1	Mechanically robust protections that have sufficient durability over vehicle service life such as motor housings, electronic converter cases or connectors shall be provided. Explain the protection provided..	
41.2	Rechargeable Energy Storage System It shall have the following:	
41.2.1	Protection against excessive current	
41.2.2	The REESS shall not overheat. Supply any tests carried out.	
41.2.3	REESS shall be equipped with a protective device such as fuses, circuit breakers or main contactors. Explain what is provided.	
41.2.4	Accumulation of gas places for containing open type traction battery that may produce hydrogen gas shall be provided with a ventilation fan or a ventilation duct to prevent the accumulation of hydrogen gas. Explain what is the ventilation provided.	

42. ADDITIONAL REQUIREMENTS FOR PARTICULAR VEHICLES

No.	Requirement	Status/Results
42.1	Buses - The following classes (I, II, III) are applicable for vehicles having a capacity exceeding 22 passengers in addition to the driver. The following classes (A, B) are applicable for vehicles having a capacity not exceeding 22 passengers in addition to the driver. Indicate the class and the number of passengers of the bus.	
42.1.1	Explain how the load distribution of the bus was determined.	

42.1.2	Explain how the area for passengers was calculated.	
42.1.3.	Passenger Capacity	
42.1.3.1	What is the total number of seating or seating and standing passengers: what is the mass of passengers and what is the mass on each axle	
42.1.3.2	The vehicle shall be clearly marked in a manner visible on the inside in the vicinity of the front door in letters or pictograms the number of seating places for which the vehicle is designed, the maximum number of standing	

	places if any the vehicle is designed to carry, the maximum number of wheelchairs which the vehicle is designed to carry and the total number of passengers for which the vehicles designed. Indicate all details of marking:	
42.1.4	Fire Protection	
	The materials used in the interior interior/occupant compartment, of the vehicles shall comply with this regulation with respect to burning rate of 100mm/min. Indicate the burning rate.	
42.1.4.1	No flammable sound-proofing material or materials liable to become impregnated with lubricant or other combustible material shall be used in the compartment unless the material is covered by an impermeable sheet. Explain what is provided.	
42.1.4.4	All cables shall be well insulated and all cables and electrical equipment shall be able to withstand the temperature and humidity conditions to which they are exposed Explain the tests carried out to comply.	
42.1.4.5	No cable used in an electrical circuit shall carry a current in excess of that acceptable for such a cable in the light of its mode of installation and the maximum ambient temperature. What is the electrical rating of cables used.	
42.1.4.7	All cables shall be well protected and shall be held securely in position in such a way that they cannot be damaged by cutting, abrasion or chafing. Explain how it is secured in position to prevent damage.	
42.1.4.8	All batteries shall be well secured and easily accessible. How is it secured?	

42.1.4.9	The battery compartment shall be separated from the passenger compartment and driver's compartment and ventilated to outside air. Where is the battery fitted?	
42.1.4.10	The battery terminals shall be protected against the risk of short circuit.	
42.1.4.11	Space shall be provided for the fitting of one or more fire extinguishers, one being near the driver's seat. How many fire extinguishers provided?	
42.1.4.12	Space shall be provided for the fitting of one or more firstaid kits.	
42.1.5	Sighting of Exits	
42.1.5.1	The service door(s) shall be situated on the right side of the vehicle that is nearer to the side of the road corresponding to the direction of the traffic.	
42.1.5.2	The exits shall be placed in such a way that there is at least one exit on each side of the vehicle.	

	How many exits are provided and its position.	
42.1.5.3	The forward half and the rearward half of the passenger space shall each contain at least one exit. Yes/No	
42.1.5.4	At least one exit shall be situated either in the rear face or in the front face of the vehicle unless an escape hatch is fitted. Yes /No	
42.1.6	Exits	
42.1.6.1	The minimum number of exits shall depend on the total number of passengers of the vehicle. What is the number of passengers and the number of exits provided.	
42.1.7	Emergency exit	
42.1.7.1	Every motor vehicle having more than 9 (8 passengers + driver) passenger seating capacity shall be equipped with either two service doors or one service door and one emergency exit. Explain what is provided.	

42.1.7.2	<p>The emergency exit shall be located on the left side at the rear or in the rear of the passenger compartment. The aisle leading to the emergency exit shall be free from any obstacles.</p> <p>Explain where the emergency exit is provided.</p>	
42.1.7.3	<p>The width and height of the emergency exit shall not be less than 550mm and 1,250mm for buses having capacity exceeding 22 passenger seats. This is applicable for class I, II or III vehicles.</p> <p>The width and height of the emergency exit shall not be less than 550mm and 1,100mm for buses having capacity not exceeding 22 passenger seats.</p> <p>Indicate the emergency exit sizes and the number of passengers.</p>	
42.1.7.4	<p>The position and method of opening of the emergency exit shall be indicated in an easily legible way, at or near the emergency door.</p> <p>Is it indicated.</p>	
42.1.7.5	<p>All emergency doors on class I, II and III shall be provided with an audible device to warn the driver when they are not securely closed. The warning device shall be operated by movement of the door catch or handle and not by movement of the door itself.</p> <p>Explain what is provided.</p>	
42.1.7.6	<p>Service doors shall be capable of being easily opened from inside and from outside when the vehicle is stationary.</p> <p>Explain its operation.</p>	
42.1.7.7	<p>The width and height of the service door shall be 650mm (single) 1200mm (double) and 1650mm (classA), 1400 (classB).</p> <p>Indicate the sizes and the class.</p>	
42.1.7.8	<p>An emergency window (provided) shall have a minimum area of 400,000 mm². It shall be possible to inscribe in this area a rectangle measuring 500 mm x 700 mm.</p> <p>Explain the size of emergency window if provided</p>	
42.1.7.9	<p>An escape hatch (if provided) shall have a hatch aperture with a minimum area of 400,000 mm². It shall be possible to inscribe in this area a rectangle measuring 500 mm x 700 mm.</p> <p>Indicate the size if provided.</p>	

42.1.8	Interior arrangement for buses having capacity more than 22 passengers. The following shall be provided	
42.1.8.1	The automatic lighting system which is lighted when the door opens. Is it provided	
42.1.8.2	Support handles to provide comfort to passengers while boarding or alighting.	
42.1.8.3	A mechanism used to open it during the emergency from outside. Is it provided.	
42.1.8.4	Mirrors shall be provided to enable the driver to observe the condition near the entrance doors and inside the compartment from the driver's seat. Are the mirrors provided.	
42.1.8.5	The step edges shall have slip-resistant surfaces. Explain what is provided.	
42.1.8.6	The height of aisle and standing space shall be suitable for standing passengers in case the bus (Class I and Class II) is provided with standing space. No provision for standing space shall be made in buses carrying children. Indicate the height of aisle provided.	
42.1.8.7	Every bus shall have an aisle easy and safe for access through and of width not less than 300 mm. The aisle floor shall be covered with slip resistance material. Indicate the width of aisle.	
42.1.8.8	Every bus shall be provided with a three-point safety belt for the driver seat and two point safety belt for the other seats. Is it provided.	
42.1.9	Access to service doors	
42.1.9.1	Indicate the vehicle class and the width and height of access to the service door..	
42.1.10	Access to emergency doors	
42.1.10.1	Indicate the free passage of access to the emergency door.	
42.1.11	Gangways	

42.1.11.1	<p>The gangway(s) of a vehicle shall be so designed and constructed as to permit the free passage of passengers.</p> <p>Indicate the following: Class of Bus, Space between seats above 1400mm from the floor, distance between seats from floor to 900mm up, Height above 1400mm, Total free height of gangway from the floor, height above the floor where the free space is 350mm.</p>	
42.1.12	Steps	
42.1.12.1	Indicate the height and depth of steps provided for service and emergency doors of the bus	
42.1.13	Passenger seats	
42.1.13.1	Indicate the class of bus and the width of seats.	
42.1.13.2	Indicate the class of bus and the depth of seat cushion	
42.1.13.3	Indicate the height of seat cushion	
42.1.13.4	Indicate the class of bus and its seat spacing	
42.1.13.5	Indicate the class of bus and the free height over the seating position	
42.1.14	Communication with the driver	
42.1.14.1	<p>On vehicles of Classes I, II and A, a means shall be provided to enable passengers to signal that the driver should stop the vehicle.</p> <p>Indicate the class and the signal provided</p>	
42.1.14.2	<p>Activation of the control shall also be indicated to the passengers by means of one or more illuminated signs. The sign shall display the words "bus stopping" or equivalent, and/or a suitable pictogram and shall remain illuminated until the service door(s) open.</p> <p>Indicate what type of signals are provided to the passengers.</p>	
42.1.15	Drivers compartment	
42.1.15.1	<p>The driver shall be protected from standing passengers and from passengers seated immediately behind the driver's compartment who may be projected into the driver's compartment in the event of braking or cornering.</p> <p>Explain how the driver is protected</p>	
42.1.15.2	<p>The rear of the driver's compartment may be enclosed by a partition; or a guard be fitted</p> <p>What type of guard is provided.</p>	
42.1.16	Driver's Seat	

42.1.16.1	Indicate the class of bus and width of driver's seat.	
42.1.16.2	Indicate the depth of the seat cushion, and the class of bus.	
42.1.16.3	What is the minimum overall width of the seat back measured up to a height of 250 mm above the horizontal plane tangential to the uppermost surface of the uncompressed seat cushion?	
42.1.16.4	The seat shall be adjustable in its longitudinal positions and in its seat back inclination. It shall lock automatically in the selected position and, if fitted with a swiveling mechanism, it shall lock automatically when in the driving position. Explain the adjustment of the seat provided.	
42.1.17	Interior Lighting	
42.1.17.1	Internal electrical lighting shall be provided for the illumination of passenger compartment, crew compartments, any steps, access to exits, service doors and places where there are obstacles. What is the intensity of the lights provided for for each access and passenger compartment.	

44. SAFETY REQUIREMENTS

No.	Requirement	Status/Results
44.1	Indicate the changing wheel tools provided to the vehicle.	
44.2	Indicate the size and number of dry powder fire extinguisher provided to the vehicle.	
44.3	Indicate the details emergency equipments provided.	
44.4	Provision with first aid box with essential first aid . Indicate the first aid facilities provided for emergency treatment.	
44.5	Provision tyre pressure gauge. Yes/No	
44.6	Who provide the safety equipment mentioned in item 44.2 to 44.5 .	
44.7	Any safety warning or statement for any parts be in Arabic also. Yes/No	

44.8	The information given in the Navigation system shall as a minimum be available in Arabic or Arabic and English. All data, maps and the voice guidance systems shall be in Arabic and English Yes/No	
44.9	All instructions indicated on the driver's monitor/display shall be available in Arabic and English. Yes/No	
44.10	All light duty vehicles shall be provided with brake throttle override system (BOS) so that when applying the brake to reduce the speed of the vehicle. Provided, Yes/No	

45. INFORMATION OF VEHICLE

No.	Requirement	Status/Results
45.1	Affix of label on the door edge, door latch post, and on dash board under the windshield on the left side, chassis of trailer etc.	
45.1.1	Label material resistant to deterioration	
45.1.2	Label affixed permanently	
45.1.3	Information in Arabic or English to be written	
	Name of manufacturer and the country of manufacturer (production)	
	Year and month of production	
	GVW (Trucks + Bus)	
	GAW (Trucks + Bus)	
	The statement "This vehicle complies with Standards mentioned in SASO electric vehicles Technical regulation in effect up to the date of manufacture"	
45.2	Vehicle Identification Number	
45.2.1	17 characters complying with SASO Standard	
45.2.2	Readable location	
	Complying with SASO Technical regulation	
45.2.3	Legible, durable and not easily altered	

46: OWNER'S MANUAL (Operating Instructions)

No.	Requirement	Status/Results
46	Equipment with in Arabic and English including the following information	
46.1	Technical specifications of vehicle	
46.2	Operation of vehicle	
46.3	Periodic maintenance	
46.4	Recommended tyre designation, inflation pressure, tyre changing procedure etc.	
46.5	Use and change of spare wheel/tyre	
46.6	Electric Vehicle Charging System	

Name of Responsible Person :

Date of the Report :

Signature, Name and designation of the Responsible Person :

MOTOR VEHICLES - TEST REPORTS

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TEST REPORT DURABILITY (1)

1. **OBJECTIVE** The objective of the test report is to check the compliance of the vehicle
: type ...
 with the country of origin standard/ /
 International standards/Company standards acceptable to the Saudi
 Standards, Metrology and Quality Organization (SASO).
2. Name and address of Manufacturer:
3. Category, Type and Model Year of the Tested Vehicle:
4. Vin Number of the Tested Vehicle:
5. Kerb Weight and the load applied to the vehicle:
6. Maximum Gross Vehicle Weight:
7. Date of Test started:
8. Name and full address of Testing Facility:
9. The status of test facility: Manufacturer/Independent/Accredited
10. Brief details of the Testing Facility (e.g. test tract, test road conditions, test equipments used, etc.):
11. Test Requirement: Indicate the requirements to be complied by the vehicle to pass the required tests.
12. Date of Test Completed:
13. Describe the full Test Procedure carried out stage by stage:
14. Explain in detail the repairs done, parts replaced and any modification carried out to the vehicle during or after the test indicating the distance covered for each repair, any services carried out to the vehicle during the test :
15. Total Distance Traveled:
16. The number of working days taken to complete the test:
17. Test Results:
18. Decision of the Testing Authority:
19. Name, designation and Signature of the Responsible Person from the Testing Facility:
20. Date of Report:

TEST REPORT ON BATTERIES (2)

- 1. Objective of the Test:** To check the compliance of the batteries type in accordance with the SASO GSO 34 and 35/2007.
- 2. Manufacturer's Name and Address:**
- 3. Type of Battery (Standard or Maintenance free MF or Heavy duty battery):**
- 4. Date of Test:**
- 5. Name, Place and address of Testing Facility:**
- 6. Instruments Used for the Test:**
- 7. The status of test facility: Company/Independent/Accredited:**
- 8. Indicate the Dimensions of the Battery:**
- 9. Electrical Performance:**
 - 9.1** The Rapid Discharge Capacity of a Dry Charged battery at normal temperature:
 - 9.2** The Rated Capacity C20 (Slow discharge rate capacity) of the Battery:
 - 9.3** The Rapid Discharge Capacity at low Temperature:
 - 9.4** The reserve Capacity "RC" of the battery:
 - 9.5** The Charge rate Acceptance:
 - 9.6** The conservation of Charge after storing for 21 days:
 - 9.7** Overcharge Resistance
 - 9.8** The battery life cycle (Endurance): Standard battery/maintenance free batteries, and heavy duty batteries.
- 10. Mechanical Characters**
 - 10.1** Indicate the terminal voltage (30S) after the vibration resistance test. What is the voltage decrease in each cell.
 - 10.2** Any loss of liquid electrolyte at the end electrolyte retention test.
 - 10.3** Indicate the terminal torque strength of the battery at the end of the test.
 - 10.4** Heat endurance.
- 11. Marking:**
 - 11.1** Indicate the details of the Marking on the battery and the language used.
 - 11.2** The details of the safety symbols
 - 11.3** Any instruction for the precautions to be followed on handling the battery.
- 12. Warranty:**

What is the warranty period given to the battery fitted on the vehicle?
- 13. Decision of the Testing Authority:**
- 14. Signature, Name and designation of the Responsible Person from the Testing Facility:**
- 15. Date of Report:**

TEST REPORT ON SAFETY BELTS (3)

1. **Objective of the Test:** To check the safety belts for compliance of the safety belts installed on vehicle type with SASO GSO 96 and 97/1988.
2. Name of Manufacturer:
3. Type of Safety Belt:
4. Description of Safety Belt Assembly:
5. Name, Place and address of Testing Facility:
6. Type of test facility : Company/Independent/Accredited
7. Date of Test carried out:
8. Category and Type of Vehicle Suitable for this Belt:
9. Details of the Test Equipments Used:
10. Details of the performance tests carried out and the results shall be indicated as follows:
 - 10.1 Webbing
 - 10.1.1 Breaking strength:
 - 10.1.2 Width: Diagonal:
Lap :
 - 10.1.3 Resistance to Temperature:
 - 10.1.4 Resistance to Water:
 - 10.1.5 Resistance to Light:
 - 10.1.6 Resistance to Abrasion:
 - 10.1.7 Resistance to Cold:
 - 10.2 Buckle
 - 10.2.1 All metal parts shall be made from corrosion resistant material or suitably protected against corrosion:
 - 10.2.2 The width of the securing buckle shall be not less than the width of the strap and the width of the buckle contact surface shall not be less than 46 mm:
 - 10.2.3 It shall be designed to prevent the possibility of accidental release and capable of with standing repeated operation:
 - 10.2.4 Release Force:
 - 10.2.5 Button Area:
 - 10.2.6 Button Linear:
 - 10.2.7 The securing buckle shall not break or damaged under a load of less than 1,000 Kgf:
 - 11.3 Performance Test
 - 10.3.1 Dynamic: _____ maximum at lap belts
_____ maximum at diagonal belts
 - 10.3.2 Static Load:

10.3.3 It shall show neither damage nor fail:

10.3.4 Forward Displacement: Lap : _____ maximum

Chest : _____ maximum

10.3.5 Energy Absorption:

10.3.6 Buckle Release:

10.4 Retractor

10.4.1 Locking Position:

10.4.2 Strap: _____ maximum

At Tension 1.4 Kgf---2.2 Kgf **10.4.3**

Emergency Locking Retractor:

10.4.4 Deceleration of the Vehicle:

10.4.5 Acceleration of the Strap shall be not less than 7.8 m/sec²:

10.4.6 Retracting Force of the Strap: (Lap Belt) _____ Kgf minimum.

10.4.7 Retracting Force of the Strap: (Diagonal Belt) _____ (Kgf).

10.4.8 The design of the retractor shall be such that, where its operation depends on an external signal or power source, it will lock automatically upon failure or interruption of that signal or power source:

11. Test Results:

12. Decision of the Testing Authority:

13. Signature of the Responsible Person from the Testing Facility:

14. Date of Test Report:

TEST REPORT ON FLAMMABILITY OF INTERIOR MATERIALS –
SASO GSO 98 (4)

1. **Test Objective:** To check the compliance of flammability of interior materials of vehicle type in accordance with the SASO GSO 98/1988.
2. Name of Manufacturer:
3. Category of Vehicle:
4. Type of Vehicle:
5. Date of Test:
6. Name, Place and address of Testing Facility:
(If accredited supply a copy of the accreditation letter)
7. Apparatus Used for the Test:
8. Procedure Adopted:
9. Requirements to be complied:
10. Test Results (Maximum Burn Rate):
11. Observation by the Testing Authority:
12. Signature of the Responsible Person from the Testing Facility:
13. Date of Test Report:
(In case if the test was carried out in accordance with other more severe standard such as FMVSS 302 where the max burn rate is 100mm/min, then that test report may be accepted depending on the report.)

TEST REPORT ON SOUND SIGNALLING DEVICES (5)

(SASO GSO 99/1988)

- 1. Objective of the Test:** To check the compliance of sound signaling devices installed on vehicle type
in accordance with the SASO GSO 99/1988.
- 2. Name of Manufacturer:**
- 3. Category of Horn:**
- 4. Type of Horn:**
- 5. Category and Type of Vehicle:**
- 6. Name, Place and address of Testing Facility:**
- 7. Type of test facility: Company/Independent/Accredited:**
(If accredited supply a copy of the accreditation letter)
- 8. Date of Test:**
- 9. The Operating Voltage of the Device:**
- 10. Test conditions:**
- 11. The following requirements shall be checked:**
 - 11.1** The Sound shall be Continuous and Uniform:
 - 11.2** The Sound Level shall be less 125 dB(A):
 - 11.3** The Sound Level at 900 to 3550 Hz shall be greater than Sound at a Frequency Exceeding 3550 Hz, Greater than 105 dB(A):
 - 11.4** The Sound shall be Crackle-Free at \square 15% Test Voltage:
 - 11.5** It shall function normally at -10 \square C and then at +40 \square C:
- 12. Endurance Test:**

The Sound Signaling Device shall be Operated for at least 50,000 times in an Ambient Temperature at 15 \square C and 30 \square C at a rate of 1S Operation followed by 4S rest. At the end of the Test the Device shall be Checked for its Normal Function:
- 13. Test Procedure:**
- 14. Test Result:**
- 15. The Decision of the Testing Authority:**
- 16. Signature of the Responsible Person from the Testing Facility:**
- 17. Date of Test Report:**

TEST REPORT ON PASSENGER CARS IMPACT STRENGTH
FRONTAL IMPACT - ECE 94 or FMVSS 208 until updating SASO GSO
36 and SASO GSO 40 (6)

1. **Test Objective:** To check the compliance of the vehicle type
with the requirements of the ECE 94 or FMVSS 208 until updating SASO GSO 36 and SASO GSO 40.
2. Name of Manufacturer:
3. Name, Place and address of Testing Facility:
4. Type of test facility: Company/Independent/Accredited:
5. Date of Test:
6. Category of Vehicle:
7. Type of Vehicle:
8. Type of Engine:
9. Description of Impact Resistance Devices Provided to the vehicle:
10. Description of Test Vehicle:
11. GVW of the tested vehicle:
12. Kerb Weight of Test Vehicle:
13. Requirement to be complied with:
 - 13.1 Displacement of steering shaft:
 - 13.2 Residual steering wheel displacement measured at the centre of the steering wheel hub:
 - 13.3 The amount of fuel spillage from the fuel tank:
 - 13.4 Apparatus and Instruments used:
 - 13.5 Test Conditions
 - 13.6 Test procedure
 - 13.7 Test results
14. Dummy "A" performance test requirement:
 - 14.1 Barrier
 - 14.2 Orientation of the barrier
 - 14.3 State of vehicle
 - 14.4 Dummies
 - 14.5 Instruments used
 - 14.6 Procedure
 - 14.7 Measurements made on Dummy
 - 14.8 Test results

-Dummy performance criteria -Any
doors left open

- Front doors locking/opening
- Removal of dummy from the vehicle
- Amount of fuel leaked out
- 15.** Dummy “B” performance test requirement:
 - 15.1** Apparatus and Instruments used
 - 15.2** Test Conditions
 - 15.3** Dummies
 - 15.4** Test procedure
 - 15.5** Measurement made on Dummy
 - 15.6** Test results
 - Dummy performance criteria
 - Any doors left open
 - Front doors locking
 - Front doors opening
 - Removal of the dummy from the vehicle
 - Amount fuel leaked out
- 16.** Electrical Protection
 - 16.1** Protection against Electrical Shock
 - 16.2** Physical protection
 - 16.3** Isolation resistance
- 17.** Electrolyte spillage
- 18.** RESS retention
- 19.** Decision of the Testing Facility:
- 20.** Signature of the Responsible Person from the Testing Facility:
- 21.** Date of Report:

□ TEST REPORT ON PASSENGER CARS IMPACT STRENGTH
REAR IMPACT – ECE 32 or FMVSS 301 until updating SASO GSO 37
and SASO GSO 40 (7)

1. **Test Objective:** To check the compliance of the vehicle type
with the requirements of the ECE 32 or FMVSS 301 until updating SASO GSO 37 and SASO GSO 40.
2. Name of Manufacturer:
3. Name, Place and address of Testing Facility:
4. Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
5. Date of Test:
6. Category of Vehicle
7. Type of Vehicle:
8. Type of Engine:
9. Description of Impact Resistance Devices Provided:
10. Description of the Test Vehicle:
11. Kerb Weight of Test Vehicle:
12. Gross Vehicle Weight:
13. Description of the test equipments used:
14. Requirements to be complied:
 - 14.1 Fuel Leakage:
 - 14.2 The amount of longitudinal displacement of the vehicle structure:
15. Test Conditions (A)/ (B)/(C)
 - 15.1 Details of Test site
 - 15.2 Details of Moving impact barrier
 - 15.3 Details of test vehicle
 - 15.4 Test procedure
16. Test Results (A)/ (B)/(C)
 - 16.1 Load of test vehicle
 - 16.2 Load of barrier
 - 16.3 Barrier speed at the moment of impact (Indicate the speed for each tests A,B, or C.)
 - 16.4 Indicate the vehicle rear and the barrier face alignment in the case of test (C).
 - 16.5 Location of test devices
 - 16.6 Lateral misalignment of barrier
 - 16.7 Angle of Impact

16.8 Type of test carried out

16.9 The amount of liquid spillage

16.10 The longitudinal displacement of the floor of the tested vehicle

17. Decision of the Testing Facility:

18. Signature of the Responsible Person from the Testing Facility:

19. Date of Report:

TEST REPORT ON PASSENGER CARS IMPACT STRENGTH
SIDE IMPACT – ECE 95 or FMVSS 214 until updating SASO GSO
38 and SASO GSO 40 (8)

1. Test Objective: To check the compliance of the vehicle type
with the requirements of ECE 95 or FMVSS 214 until updating SASO GSO 38 and SASO GSO 40.
2. Name of Manufacturer:
3. Name, Place and address of Testing Facility:
4. Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
5. Date of Test:
6. Category of Vehicle:
7. Type of Vehicle:
8. Type of Engine:
9. Description of Impact Resistance Devices Provided:
10. Description of Test Vehicle:
11. Kerb weight of the Vehicle:
12. Gross Vehicle weight:
13. Description of the Test Device:
14. Any conditions of the test:
15. Test Procedure:
16. Test Results:
 - 16.1. Initial crush resistance
 - 16.2. Intermediate crush resistance
 - 16.3. Peak crush resistance
 - 16.4. Rate of travel of test device
 - 16.5. Total time taken to apply the load
 - 16.6. The amount of fuel leaked out
17. Decision of the Testing Facility:
18. Signature of the Responsible Person from the Testing Facility:
19. Date of Report:

TEST REPORT ON PASSENGER CARS IMPACT STRENGTH
MOVING BARRIER SIDE IMPACT FMVSS 214 until updating
SASO GSO 1707 and SASO GSO 40 (9)

1. **Test Objective:** To check the compliance of the vehicle type
with the requirements of the FMVSS 214 until updating SASO GSO 1707 and SASO GSO 40.
2. Name of Manufacturer:
3. Name, Place and address of Testing Facility:
4. Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
5. Date of Test:
6. Category of Vehicle:
7. Type of Vehicle:
8. Type of Engine:
9. Description of Impact Resistance Devices Provided:
10. Description of Test Vehicle:
11. Kerb weight of the Vehicle:
12. Gross Vehicle weight:
13. Description of the moving barrier:
14. Any conditions of the test:
15. Test speed:
16. Details of the Dummy
17. Electrical Protection
 - 17.1 Protection against Electrical Shock
 - 17.2 Physical protection
 - 17.3 Isolation resistance
18. Electrolyte spillage
19. RESS retention
20. Test Procedure:
21. Test Results
 - 21.1 Thorax Trauma Index (TTI) (DPC)
 - 21.2 Peak lateral acceleration of the pelvis from the accelerometer (DPC)
 - 21.3 Condition of the side doors, latches, hinges, and striker.
 - 21.4 Any doors left open.
 - 21.5 Angle of impact
 - 21.6 Amount of fuel leaked out.
22. Decision of the Testing Facility:
23. Signature of the Responsible Person from the Testing Facility:
24. Date of Report:

TEST REPORT ON PASSENGER CARS IMPACT STRENGTH SIDE IMPACT –
ECE 95 until updating SASO GSO 1708 and SASO GSO 40 (10)

1. Test Objective: To check the compliance of the vehicle type
with the requirements of ECE 95 until updating SASO GSO 1708 and SASO GSO 40.
2. Name of Manufacturer:
3. Name, Place and address of Testing Facility:
4. Type of test facility: Company/Independent/Accredited: (If accredited supply a copy of the accreditation letter)
5. Date of Test:
6. Category of Vehicle:
7. Type of Vehicle:
8. Type of Engine:
9. Description of Impact Resistance Devices Provided:
10. Description of Test Vehicle:
11. Kerb weight of the Vehicle:
12. Gross Vehicle weight:
13. Description of the moving barrier used:
14. Any test conditions:
15. Moving barrier speed during the impact:
16. Preparation of the vehicle for the test:
17. Details of the dummy used and its installation
18. Electrical Protection
 - 18.1. Protection against Electrical Shock
 - 18.2. Physical protection
 - 18.3. Isolation resistance
19. Electrolyte spillage
20. RESS retention
21. Test Procedure:
22. Calculation used for the test
23. Test Results:
 - 23.1. The head performance criteria (HPC) of the dummy
 - 23.2. The thorax (RDC & VC) of the dummy
 - 23.3. The pelvis (PSPF) of the dummy
 - 23.4. The abdominal peak force (APF) of the dummy.
 - 23.5. The amount of liquid spillage from the fuel tank and fuel system
 - 23.6. Lateral misalignment of barrier
 - 23.7. Angle of impact
 - 23.8. Any doors left open after the impact
 - 23.9. The door(s) opening operation
 - 23.10. The removal of the dummy from the vehicle
 - 23.11. Any projections that can cause injury.
24. Decision of the Testing Facility:
25. Signature of the Responsible Person from the Testing Facility:
26. Date of Report:

TEST REPORT ON PASSENGER CARS IMPACT STRENGTH
ROOF STRENGTH – FMVSS 216 until updating SASO GSO 39 and
SASO GSO 40 (11)

1. To check the compliance of the vehicle type with the requirements of FMVSS 216 until updating SASO GSO 39 and SASO GSO 40
2. Name of Manufacturer:
3. Name, Place and address of Testing Facility:
4. Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
5. Date of Test:
6. Category of Vehicle:
7. Type of Vehicle:
8. Type of Engine:
9. Description of Impact Resistance Devices Provided to the vehicle:
10. Description of Test Vehicle:
11. Kerb weight of the Empty Vehicle:
12. Gross vehicle weight
13. Detail of the test device.
14. The Test Device Speed
15. The Total Time taken to Reach the Test Load:
16. The Test Load applied:
17. Test Procedure:
18. The Maximum Displacement of the Roof:
19. The Maximum Test Load Applied:
20. Decision of the Testing Facility:
21. Signature of the Responsible Person from the Testing Facility:
22. Date of Report:

TEST REPORT
DOOR LOCKS AND DOOR HINGES (SASO GSO 419/1994&
420/1994) (12)

1. Test Objective: To check the compliance of light duty vehicle type with the SASO GSO 419 and SASO GSO 420.
2. Name of Manufacturer:
3. Category, Type and Model Year of the Vehicle:
4. Name, Place and address of Testing Facility:
5. Type of test facility: Company/Independent/Accredited:
6. Date of Test Carried Out:
7. Details of the Test Equipments Used:
8. Procedure Adopted for following Test:
 - 8.1 Corrosion test for door locks and hinges
 - 8.2 Longitudinal load test (Static test) for latch and striker
 - 8.3 Transverse load test (Static test) for latch and striker
 - 8.4 Inertia load test (Dynamic test) for latch and striker
 - 8.5 Longitudinal load test (Static test) for hinges
 - 8.6 Transverse load test (Static test) for hinges.
9. The following requirements shall be checked:
 - 9.1 Provision of Intermediate and Fully Locking Positions:
 - 9.2 Provision of Locking Mechanism and the Operating Means Inside the Vehicle:
 - 9.3 When the Mechanism of the Side Front and Rear Door is engaged the Outside Door Handle shall be Inoperative:
 - 9.4 The Key Combination of Locking System shall be at least 1000:
 - 9.5 The Drivers Door Lock shall be Locked from Outside by the help of a Key or by a Remote Control System:
 - 9.6 Provision of Key operated Protective Device:
10. Test Results:
 - 10.1 Latch and Striker:
 - 10.1.1 Longitudinal Load:
 - 10.1.2 Transverse Load:
 - 10.1.3 Inertia Load:
 - 10.2 Door Hinges:
 - 10.2.1 Longitudinal Load:
 - 10.2.2 Transverse Load:
11. Decision of the Testing Authority:
12. Signature of the Responsible Person from the Testing Facility:
13. Date of Report:

TEST REPORT – REAR VIEW MIRRORS (13)

1. Test Objective : To check the compliance of Vehicle type provided with rear view Mirrors complying with Saudi Standards SASO GSO 421/2005 and 422/2005
2. Name of the manufacturer of Mirrors :
3. Category, Type of the Vehicle the mirrors can be used :
4. Name and Place of Testing Facility :
5. Type of test facility: Company/Independent/Accredited:

6. Details of the Test Equipment used :
7. Procedure adopted :
8. Test results :

Sec	Requirements	Results	Decision
8.1	All rear-view mirrors shall be of adjustable type.		
8.2	The reflecting surface of the mirror shall be either flat or spherically convex.		
8.3	The external mirror holder shall be fixed, breakaway or folding type.		
8.4	The mirror and mounting shall be free from sharp projecting edges or points which may cause injury		
8.5	The edge of the internal mirror shall be enclosed in a holder with a rounded rim of at least 2.5 mm radius.		
8.6	The mirror shall be firmly fixed in such a way that the mirror does not move so significantly as to change the field of vision when the vehicle is moving at speeds of up to 80 percent of its maximum designed speed or 150 km/h whichever is less, which would cause the driver to misinterpret the nature of the image perceived.		
8.7	The mirror shall be so designed that the average of the radii of curvature shall be not less than 1000 mm for vehicles having maximum weight not exceeding 3500 kg and preferably not less than 1800 mm for vehicles having maximum weight exceeding 3500 kg.		
8.8	The difference between the radius of curvature at any one point on the central part of the mirror shall not be greater than 0.25 of the average radius of curvature of the mirror.		

8.9	The pendulum shall swing to a point forming an angle of not less than 20° with the vertical during the impact test of internal and external mirrors, if the mounting breaks off, the part remaining shall not project from its base by more than 10 mm.		
8.10	During the impact test or bending test of internal and external mirrors, if the mirror breaks, the fragments of glass shall adhere to the back of the holder or to the surface firmly attached to the holder ; partial separation of glass from it's backing is allowed provided that it is not more than 2.5mm on each side of the cracks.		
8.11	Reflecting surface of the mirror		
8.11.1	The characteristics of the reflecting surface shall not be affected by heat, humidity and dust.		

8.11.2	The coefficient of reflection of the reflecting surface shall be not less than 35%.		
8.11.3	If the mirrors has <day> and <night> positions, the coefficient of reflection of the reflecting surface in the<right> position shall be less than 4%.		
8.12	Dimensions		
8.12.1	The internal mirror shall be a rectangle of a width not less than 40 mm and the length shall be not less than the value calculated from the following formula; Where, $B = 150 / (1 + 1000/R)$ R= The average of the principal radius of curvature of the mirror in mm B= Length in mm		
8.12.2	The external mirror shall be a rectangular of a height not less than 40 mm and the length shall not be less than the value calculated from the following formula: $B = 130 / (1 + 1000R)$ (for vehicles having Maximum weight not exceeding 3500 kg) = $170 / (1 + 1000R)$ (for vehicles having maximum weight exceeding 3500 kg or with an area greater than or equal to :12580 mm ² for MPVs and trucks with GVW <u>≤ 4600 KG</u>		
8.13	Field of vision		
8.13.1	The field of vision of the internal mirrors shall be such that the driver can see at least a 20 m wide plane and horizontal portion of the road centered on the vertical longitudinal median of the vehicle, with the said portion measured 60 m from the point of the driver		

8.13.2	The field of vision at the left hand (driver's side) external mirror shall be such that the driver can see at least 2.5 m wide plane and horizontal portion of the road, the said portion being bounded on the right by the plane which is parallel to the vertical longitudinal median of the vehicle and passes through the left-most point of the overall width of the vehicle, with the said portion measured 10 m from the eye point of the driver.		
8.13.3	The field of vision of the right-hand external mirror shall be such that the driver can see at least 3.5 m wide plane and horizontal portion of the road, said portion being bounded on the left by the plane which is parallel to the vertical longitudinal median of the vehicle and passes through the right-most point of the overall width of the vehicle, with the said portion measured 20 m from the eye point of the driver the driver shall be able to see a 7.5m wide plane measured at 4 m, from the eye point of the driver.		
8.14	Position	--	
8.14.1	The internal mirror shall be adjustable by tilting in both the horizontal and vertical directions from the driver's seated position.		
8.14.2	If the internal mirror is located where impact by the hand is likely in case of accident, the mounting shall deflect collapse or break away without leaving dangerous projections or sharp edges which might cause injury.		
8.14.3	The external mirror and mounting shall not protrude beyond the widest part of the body of the vehicle, substantially more than is necessary to produce a field of vision as specified in 3.13		
8.14.4	If the external mirror is less than 2 m above the ground, when the vehicle is loaded to its maximum technically permissible weight, this mirror shall not project more than 0.35 m beyond the overall width of the vehicle.		
8.14.5	The external mirror shall be directly visible from the normal driving position through the side windows or thorough the windscreen.		

9. Decision of the testing Authority :
10. Signature of the Responsible Person From the Testing Facility :
11. Date of test carried out:
12. Date of Report :
13. Official Stamp of the Testing Facility:

TEST REPORT – HEAD RESTRAINTS (14)

1. Test Objective: To check the compliance of Motor Vehicle type provided with head restraint complying with Saudi Standards SASO GSO 1598/2002
2. Name of the manufacturer of head restraints :
3. Category, Type of the Vehicle the head restraints can be used :
4. Name and Place of Testing Facility :
5. Type of test facility: Company/Independent/Accredited:
6. Details of the Test Equipment used :
7. Details of the three dimensional manikin used for the tests:
8. Procedure adopted for each Static, Dynamic and Endurance tests :
9. Test results :
 - 9.1 **Performance:**
 - 9.1.1 What is the backward displacement of the head restraint during the static load test:
 - 9.1.2 Indicate the results when a static load of 89daN(90 kgf) is applied to the head restraint and its anchorage.
 - 9.1.3 Indicate the condition of the head restraint when the head form of 165mm diameter is impacted at a speed of 24.1km/h.
 - 9.1.4 Indicate the condition of the head restraint after it is subjected to a durability test of 200 operation.
10. Decision of the testing Authority :
11. Signature of the Responsible Person From the Testing Facility :
12. Date of test carried out:
13. Date of Report :
14. Official Stamp of the Testing Facility :

TEST REPORT FORMAT
MOTOR VEHICLES-LAMINATED SAFETY GLASS
(SASO-GSO 1677, SASO-GSO 1007 and SASO-GSO 684.) (15)

1. Name of Manufacturer:
2. Name and Place of Testing Facility:
3. Type of test facility: Company/Independent/Accredited:
4. Applicable Standard:
5. Part Description:
6. Date of Test:
7. Test Procedure:
8. Applicable Vehicle Category:
9. Type of Vehicle:
10. Test Results:

General – Laminated Glass

Item	Requirements	Results	Judgment
3.1	The Safety glass shall not cause appreciable distortion of objects seen through it, and if fractured permits a sufficient view ahead of vehicle to enable the driver to control the vehicle whilst bringing it to a halt.		
4.1.1	It shall be free from faults such as blisters, bubbles, cracks, crazing, haze, scratch, separation, wedge, and shall not have any color/tint (excluding shade bands and obscuration bands permitted in this standard), which shall interfere with the appearance service or vision.		
4.1.2	It shall have surfaced sufficiently resistant to abrasion, likely to be encountered in normal traffic such as spot crack and possibility of propagation of this crack to be minimum.		
4.1.3	It shall not be effected by the atmospheric conditions, chemicals and heat.		
4.1.4	It shall be that in the event of shattering, due to an accident or otherwise, the danger of injuries to persons around is reduced to minimum.		

Laminated Windscreens – Mechanical Strength

Item	Requirements	Results	Judgment
4.2.1.1	2260 Ball Test: The ball shall be dropped from the height (4 m) and it shall not pass through glass within five seconds of the impact.		
4.2.1.2	Head form Test: The head form shall be dropped from height) 1.5 m) and it shall meet the requirements as set out in item 4.2.1.2.1 to 4.2.2.5.		
4.2.1.2.1	The head form shall not pass through the glass, although tears in the interlayer may occur.		
4.2.1.2.2	The glass shall break in numerous circular cracks on the point of impact, the nearest shall not more than 80 mm		
	from the approximate center of impact.		
4.2.1.2.3	On the side of the impact, not more than 2000 mm ² of interlayer shall be exposed.		
4.2.1.2.4	A split in the interlayer shall not exceed 33 mm in length.		
4.2.1.2.5	The glass fragments shall remain adhering the plastic material interlayer. One or more partial separation from the interlayer with distance of less than 4 mm in breadth, on either side of the crack shall be permitted outside a circle of 60 mm diameter centered on the point of impact.		
4.2.1.3	Fragmentation Test (For Treated Glass): For each point of impact the fragmentation test shall be deemed to have given a satisfactory result if the total surface area of fragments with the surface are of more than 200 mm ² represents not less than 15% of a 200 mm X 500 mm area of the test piece.		
4.2.1.4	227 g Ball Test: The ball shall be dropped from height mentioned in table 3 and it shall not pass through the test sample, interlayer shall not be torn and total mass of fragments detached from the opposite side of the impact as mentioned in table 3. (Refer to standard for table 3)		

Laminated Windscreens – Optical Requirements.

Item	Requirements	Results	Judgment
4.2.2.1	Light Transmission: The regular transmission shall not less than 70 %. Shade obscuration bands are exempt.		

4.2.2.2	Optical Distortion: The maximum value throughout the primary vision are shall not exceed 2 of arc in zone A, 1 and 6' in zone B.		
4.2.2.3	Secondary image Separation: The separation of the primary image and secondary image shall not exceed 15 of arc in zone a ,I and 25 in zone b		

Laminated Windscreen Resistance To Environment.

Item	Requirements	Results	Judgment
4.2.3.1	Resistance to Abrasion: The light scattered shall not exceed 2 % as a result of this test		
4.2.3.2	High Temperature Resistance: No Defects as described in 4.1.1 shall be formed on the test sample at a distance more than 15 mm from an uncut edge, 25 mm from a cut edge, or at a distance more than 10 mm from any cracks which may occurred during the test.		
4.2.3.3	Resistance to Radiation: The regular light transmittance shall not be less than 70 % during this test. The following exceptions are allowed. Shade or abrasion bands and that the glass that shows slight coloration (and/ or discoloration). No defect shall appear (see 4.1.1).		
4.2.3.4	Resistance to Humidity: When the safety glass Is kept for two weeks in a closed container where the temperature is maintained at (50 to 2) c and the relative humidity at (95 to 4) % there shall be no separation of materials and or loss of transparency at the surface of the safety glass.		

4.3 Other Windows Laminated Glass.

Item	Requirements	Results	Judgment
4.3.1	Material Strength:		
4.3.2	Optical Requirements		
4.3.3	Resistance to Environment		

Marketing

Item	Requirements	Results	Judgment
6	Every piece of laminated safety glass shall be legible and indelibly marked with the following information in Arabic and English language.		
6.1	Name or trademark of the manufacturer.		

6.2	Identification marks in accordance with the SASO Standard mentioned in item (2.5) [SASO-GSO 42:2015 Motor Vehicles General Requirements)		
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11 Decision of the Testing Facility:

12 Signature of Responsible Person:

TEST REPORT FORMAT
MOTOR VEHICLES- PROTECTION AGAINST THEFT
(SASO-GSO 1053) (16)

1. Name of Manufacturer:
2. Name and Place of Testing Facility:
3. Type of test facility/Company/Independent/ Accredited:
4. Detail description of different parts of the immobilizer system provided:
5. Detail function of the immobilizer system provided:
6. Date of Test:
7. Test Procedure:
8. Applicable Vehicle Category:
9. Type of Vehicle:
10. Test procedure:
11. Test Results:

(Accordance with GS 1053)

Item	Requirements	Results	Judgment
4.1	Are the vehicles provided with electronically coded immobilizer		
4.1.1	If provided, It shall be designed to be set and unset according to the following:		
4.1.1.1	If the immobilizer includes radio transmission remote control, it shall emit on 433.92Mhz or 315 Mhz frequency and the maximum radiated power of 25mW		
4.1.1.2	The immobilizer and its fittings shall be so designed that it will not affect the technical characteristics and safety requirements of the vehicle equipped with such device.		
4.1.1.3	It shall not be possible for an immobilizer to enter the set state when the ignition key is in the engine running mode.		
4.1.1.4	It shall only be possible to override an immobilizer when it is in the unset condition using a suitable key.		
4.1.1.5	The immobilizer shall be designed and built in such a way that when installed and unset it shall not affect the designed function and performance of the vehicle, even in the case of its malfunctioning.		

4.1.1.6	The immobilizer shall be designed and built in such a way that when installed on a vehicle, it cannot be rendered ineffective or easily destroyed and it shall be difficult to replace any of the major components or reassemble the immobilizer in order to bypass it.		
4.1.1.7	When replacing the immobilizer, the new device shall not lead to normal functioning (Unset State) of the		
	vehicle.		
4.1.1.8	-The electrical or electronic properties of the electrical circuits in the vehicle shall not be affected by the addition of the immobilizer. The system shall not affect the on board diagnostics or pollution control devices provided to the vehicle.		
4.1.1.9	The immobilizer shall be so designed as to prevent the operation of the vehicle under its own power by at least one of the following means: Disable at least two separate vehicle circuits that are needed for vehicle operation under its own power such as starter motor, ignition system or fuel supply or gear transmission. Interference by code in at least one control unit required for the vehicle operation.		
4.1.1.10	The immobilizer when unset shall not affect the proper functioning of the emission control systems fitted to the vehicle and other sensors.		
4.1.1.11	The immobilizer shall be in set condition without any additional action from the driver by at least one of the following means: When rotating the ignition key into “O” position in the ignition lock and activation of opening a door. The immobilizers which unset immediately before or during the normal starting procedure of the vehicle are permitted to set on turning the ignition off. After a maximum of 5 minutes of removing the key from the ignition lock. On locking the vehicle.		

4.1.1.12	<p>Unsetting of the immobilizer shall be achieved by using one or more of the following combination devices:</p> <p>A mechanical key.</p> <p>A key pad for inputting an individually selectable code having at least 10,000 variants.</p> <p>Electrical/electronic self powered remote control device with at least 50,000 variants and shall incorporate rolling codes and/or have a minimum scan time of 10 days, e.g. a maximum of 5000 variants per 24 hours for 50,000 variants minimum. Any other devices giving equivalent performance.</p>		
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4.2 Additional Protective Devices (Acoustic or Visual warning Devices)

Item	Requirements	Results	Judgment
4.2.1	Additional acoustic or visual warning devices are provided or not to prevent unauthorized use of the vehicles.		
4.2.2	The external acoustic signals emitted by the warning device shall automatically end after not more than 30 seconds.		
4.2.3	The visual warning signals shall end automatically not more than 5 minutes after the alarm has been activated.		
4.2.4	These warning signals shall recommence only if the protective device is activated again.		
4.2.4.1	If the signal is acoustic, it may be emitted by the audible warning device fitted to the vehicle.		
4.2.4.2	If the signal is visual, it shall be produced by flashing of the vehicle's lights (direction indicators or lamps).		
4.2.5	The driver shall be able to immediately switch off the warning device.		
4.2.6	Vehicle key		
4.2.6.1	The vehicle may be provided with a single key both for the ignition and the door and boot locks or with two separate keys one for the door and boot locks and the other for the ignition. Explain how many keys are provided?		
4.2.6.2	It shall not be possible to create a functional ignition key from a door or boot lock.		
4.2.7	A sticker may be provide inside the glass in the passenger compartment indicating that this vehicle is fitted with an alarm system. If provided indicate.		
4.2.8	A device to indicate the location of the vehicle to the authorized body, may be fitted to the vehicle. If provided indicate.		

4.2.9	A digital door opening system may be fitted, whose secret digits are only known to the driver.		
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4.3 Vehicle Identification number (VIN)

Item	Requirements	Results	Judgment
4.3.1	The Vehicle Identification Number (VIN) characters shall be in accordance with the SASO technical regulation SASO-GSO 1780/2010.		
4.3.2	Every vehicle shall have the VIN affixed or inscribed on the chassy /underframe in addition to the parts mentioned in the SASO technical regulation SASO GSO 1782/2008. Indicate all the places where the VIN is affixed?		
4.3.3	Every vehicle shall have the vehicle or manufacturers identification number affixed or inscribed on the engine and transmission.		
4.3.4	The VIN number of each vehicle may be affixed or inscribed on each of the following parts:		
4.3.4.1	Right and left front fenders.		
4.3.4.2	Hood.		
4.3.4.3	Right and left front doors.		
4.3.4.4	Right and left rear doors.		
4.3.4.5	Front and rear bumpers.		
4.3.4.6	Right and left quarter panels.		
4.3.5	Replacement parts:		
4.3.5.1	Each replacement part for the parts mentioned in 4.3.4 may be affixed or inscribed with the trademark of the spare part manufacturer and the letter “R”.		
4.3.5.2	The trademark and the letter “R” shall be at least one (1) centimeter high and shall be placed within the target area specified by the vehicle manufacturer.		
4.3.5.3	The target area shall not exceed 25 percent of the surface area of the surface on which the replacement part marking will appear.		
4.4	Any access space to the door locks system from outside at the door opening handles shall be avoided.		
4.5	The windshield and the rear glass shall be fixed in such a way so that it is not possible to remove it from outside.		
4.6	The locks of the side sliding glass shall be made of materials difficult to break and avoid releasing from outside.		

12. Decision of the Testing Facility:

13. Signature, Name and designation of Responsible Person from the test facility:

TEST REPORT FORMAT ON MOTOR VEHICLE HEAD LAMPS (17)
(SASO-GSO 1503)

1. Objective: To check the compliance of the vehicle type ---- with requirement of SASO GSO 1503.
2. Name of Manufacturer:
3. Country of manufacturer:
4. Category of Vehicle:
5. Type of Vehicle:
6. Applicable Standard:
7. Date of test:
8. Name and Place of Testing facility:
9. Type of test facility: Company/Independent/Accredited:
10. Test Result:

INSTALLATION OF LIGHTING FOR MOTOR VEHICLES

Item	Requirements	Status
2.1	Mounting devices The lighting devices shall be so fitted that normal condition of use, and withstanding any vibration to which they may be subjected, they retain the characteristics laid down in, and enable the vehicle to comply with the requirements of this international standard. In particular, it shall not be possible for the adjustment of the lamp to be inadvertently disturbed.	
2.2	The main-beam and front fog lamps shall be capable of being easily adjusted to permit them to be carefully oriented.	
2.3	The horizontal angles shall be B1 corresponding to the longitude outboard and B2 corresponding to the longitude in board and the vertical angles shall be a1: corresponding to the up latitude and a2: corresponding to the down latitude. There shall be no obstacle within the angles of geometric visibility to the spread of light from any part of the apparent surface of the lamp observed from infinity.	
	F measurements are taken closer to the lamp; the direction of observation must be moved in parallel to achieve the same accuracy. On the inside of the angles of obstacles if geometric visibility, no account is taken of they were already present when the lamp was tested. If, when the lamp is installed, any part of the apparent surface of the lamp is hidden by any further parts of the vehicle, proof shall	

	be provided that the part of the lamp not hidden by obstacles still conforms to the photometric values set for the device.	
2.5	Lamp constituting a pair. In the absence of specific requirements, lamp constituting a pair shall a) be fitted to the vehicle symmetrically in relation to the median longitudinal plane (this estimate shall be based on the exterior geometrical form of the lamp and not on the edge	

	if its illuminating surface.) b) by symmetrical to be one another on relation to the median longitudinal plane (not applicable to the interior structure of the lamp) c) satisfy the same colour metric characteristics. d) have substantially identical photometric characteristics.	
2.6	Vehicle with asymmetrical external shape. On vehicles, the external shape of which is asymmetrical, the requirements in clause 2.5 shall be met as far as possible.	
2.8	Electrical connections The electrical connection shall be such that the main-beam and dipped-beam headlines and the front and rear fog lamps cannot be switched on unless the lamps are also switched on. This requirement shall not apply, however, to main-beam or dipped-beam headlamps when luminous warnings are given by the intermittent illuminating at short intervals of the main-beam headlamps or the alternate illuminating.	
2.9	Lamp colours The colours of the light emitted by the lamps or reflectors are as follows. -Main-beam headlamp : white or selective yellow -Dipped-beam headlines : white or selective yellow -Front fog lamp : white or enlarged selective yellow	
2.10	Concealable lamps	
2.10.1	The concealment of lamps shall be prohibited with the exception of the main-beam headlamp, the dipped-beam head lamp and the front fog lamp which may be concealed when not in use.	
2.10.2	An illuminating device in the position of use shall remain in that position if the malfunction referred to in a) occurs alone in conjunction with on of the malfunctions described in b): a) the absence of power for manipulating the lamp; b) a break; impedance or short circuit to earth in the electrical circuit, defects in the hydraulic or pneumatic lines, flexible cables, solenoids or other components controlling the energy intended to activate the concealment device.	

2.10.3	In the event of a defect in the concealment control or other defects referred to in sub clause) 2.102. a and b), a concealed lighting device shall be capable of being moved into the position of use with out the aid of tools.	
2.10.4	It shall be possible to move illuminating devices into the position of use and tos with them on by means of a single control, while allowing the possibility of moving them into the position of use without switching them in. However, in the case of grouped mainbeam and dipped-beam headlamps, the headlamps, the control referred to above is required only to active the dipped-beam headlamps.	
2.10.5	It shall not be possible from the drivers sear deliberately to stop the movement illuminated headlamps before they reach the position of use. If there is a danger of dazzling other road users by the movement of headlamps. They may illuminate only when they have reached their final position.	
2.10.6	Within the temperature range-30 to +50 C, the concealment device shall allow the headlamps to be fully exposed within 2s of initial operation of the control.	
2.11	Dipped-beam Head Lamps	
	a) Application : For motor vehicle only	

	b) Number : 2	
	c) Dimensions (in millimeters) H1 ≤ 1500 H2 ≥ 500 E: D:	
	d) Configuration	
	May be grouped with the main-beam head and the other front lamps May not be combined with any other lamp.	
	May be reciprocally incorporated - with the main-beam head lamps, unless the later swivels with the steering.	
	e) Angle of range of geometric visibility a1 : 2° – 15° a2 : 4° – 10° b1 : 12° – 45° b2 : 10° - 12°	
	f) adjustment of dipped-beam (<i>Note: the adjustment of dipped beam is optional</i>)	
	The vertical inclination of the dipped-beam be expressly laid down by the manufacturer.	
	The initial adjustment for each type vehicle shall be expressly laid down by the manufacturer.	

	g) Electrical connections The control for changing over to the dipped-beam headlamps simultaneously. The dipped-beams may remain switched on at the same time as the main beams	
2.12	Main-beam Headlamps	
	a) Application : For motor vehicle only	
	b) Number 2 or 4	
	c) Dimensions (in millimeters) H1: H2: E ≥ dipped beams D:	
2.12	d) Configuration	
	May be grouped with the dipped-beam headlamps and other front lamps. May not be combined with any other lamp.	
	May be reciprocally incorporated - with the dipped-beam headlamps. - with the from position lamp. - With front fog lamp. - With the parking lamp.	
	d) Angles Range of geometric visibility a1 : 2° – 5° a2 : 4° – 5° b1 : b2 :	
	f) Electrical connection	
	The main-beam headlamps may be switched on whither simultaneously or in pairs.	
	For changing over from the main o the dipped beam, all main-beam headlamps shall be switched off simultaneously.	
	The dipped beams may remain switched on at the same time as the main beams.	
2.13	Front fog lamp`	
	a) Application : For motor vehicle only	
	b) Number : 2	
	c) Dimensions (in millimeters) H1 : No point on the illuminating surface shall be higher than the highest point of the illuminating surface of he dipped-beam headlamps. H2 ≥ 250 E: D:	
	d) Configuration	
	May be grouped with other front lamps.	
	May not be combined with other front lamps.	

	May not be combined with incorporated <ul style="list-style-type: none"> - with main-beam headlamps, unless these swivel with the steering. - With front position lamps. - With the parking lamps. 	
	e) Angles range of geometric visibility a1 : 4° – 5° a2 : 3° – 5° B1 : 15° – 45° B2 : 10°	
	f) Electrical connections it shall be possible to switch the fog lamps on and off independently of the main or dipped-beam headlamps and vice versa.	

LEVELLING DEVICES FOR DIPPED BEAM HEADLAMP

3.1	General specification	
3.1.1	If manual leveling devices are used, either continuously or through a series of position, they shall have marked "0" position where the lamps can be put back to the initial alignment defined in relevant standard for dipped beams (passing beams) by means of the usual adjusting screws.	
3.1.2	These manual leveling devices shall be operated from the driving seat.	
3.1.3	Continuous leveling devices shall have reference marks near the control indicating <ul style="list-style-type: none"> a) the initial loading condition b) the main condition that requires adjustment of the dipped beam 	
3.1.4	The number of position on discontinuous leveling devices or devices operating with a series of positions shall be such as to ensure compliance, starting from an initial downwards inclination with the range of values for the loading conditions as defined in relevant standard.	
	For these devices, <ul style="list-style-type: none"> a) the initial loading condition and b) the loading conditions that require adjustment of the dipped beam shall be clearly marks near the control of the device. 	
3.2	Controls for headlamps leveling device	

3.2.1	<p>Downwards inclination of the dipped beam shall be produced in one of the following ways.</p> <p>a) by moving a control downwards or to the left or forwards</p> <p>b) by depressing or touching a button (push control or touch key).</p> <p>In this case, the button or the key which gives the downward inclination shall be installed to the left or below the button(s) for other dipped beam position.</p>	
3.2.2	On or near the control, symbol shall indicate clearly the movements corresponding to the downwards and upwards inclination of the dipper beams.	
3.2.3	The marked "0" position, corresponds to the initial alignment specified in 3.1.1	
3.2.4	The marked "0" position, as in 3.1.1, need not be at the end of the scale: it shall be identified unambiguously.	
3.2.5	The marking specified in 3.2.2 shall be explained in the owner's handbook.	
3.2.6	Only the symbols shown in figure 4 may be used to identify headlamp leveling control.	
3.2.7	Symbols should be used in figure 4 and 5	

- 11.** Any approved mark on the light:
- 12.** Decision of Testing Authority:
- 13.** Signature of the responsible person.

TEST REPORT FORMAT ON MOTOR VEHICLE BRAKE TEST
(SASO-GSO-ECE 13H: 2010) (18)

1. Objective: To check the compliance of the vehicle type ---- with requirement of SASO-GSO-ECE 13H. on braking system
2. Name of Manufacturer and address:
3. Country of production:
4. Category of Vehicle:
5. Type of Vehicle:
6. Applicable Standard:
7. Date of test:
8. Name and address of testing facility:
9. Status of test facility: Independent/Accredited/company
10. Requirements of vehicle Tested :

Item	Requirements	Status
10.1	General	
10.1.1	Braking equipment	
10.1.1.1	The braking equipment shall be so designed, constructed and fitted as to enable the vehicle in normal use, despite the vibration to which it may be subjected, to comply with the requirements of this standard.	
10.1.1.2	The braking equipment shall be so designed, constructed and fitted as to be able to resist the corroding and ageing phenomena to which it is exposed.	
10.1.1.3	Brake linings shall not contain asbestos.	
10.1.1.4	The effectiveness of the braking equipment shall not be adversely affected by magnetic or electrical fields.	
10.1.1.5	It shall be possible to generate maximum braking forces under static conditions on a rolling road or roller brake tester.	
10.1.1.6	A failure detection signal shall interrupt momentarily (< 10 ms) the demand signal in the control transmission, provided that the braking performance is thereby not reduced.	
10.1.2	Functions of the braking equipment The braking equipment shall fulfill the following functions:	
10.1.2.1	Service Braking System	

10.1.2.1.1	The service braking system shall make it possible to control the movement of the vehicle and to halt it safely, speedily and effectively, whatever its speed and load, on any up or down gradient.	
10.1.2.1.2	It shall be possible to graduate the braking action.	
10.1.2.1.3	The driver shall be able to achieve the braking action from his driving seat without removing his hands from the steering control.	
10.1.2.2	Secondary braking system The secondary braking system shall make it possible by application of the service brake control to halt the vehicle within a reasonable	

	distance in the event of failure of the service braking system.	
10.1.2.2.1	It shall be possible to apply the braking action gradually.	
10.1.2.2.2	The driver shall be able to obtain the braking action from his driving seat without removing his hands from the steering control.	
10.1.2.2.3	For the purpose of these requirement it shall be assumed that not more than one failure of the service braking system can occur at one time.	
10.1.2.3	Parking braking system	
10.1.2.3.1	The parking braking system shall hold the vehicle stationary on an up or down gradient even in the absence of the driver.	
10.1.2.3.2	The working parts shall be held in the locked position by a purely mechanical device.	
10.1.2.3.3	The driver shall be able to achieve this braking action from his driving seat	
10.1.2.4	Provisions for the periodic technical inspection of braking systems	
10.1.2.4.1	It shall be possible to assess the wear condition of the components of the service brake that are subject to wear e.g. friction linings and drums/discs	
10.1.2.4.2	It shall be possible to verify, in a simple way, the correct operational status of those complex electronic systems which have control over braking. Explain how it can be checked.	
10.1.2.4.3	It shall be possible to generate maximum braking forces under static conditions on a rolling road or roller brake tester.	
10.2	Characteristics of braking systems	
10.2.1	The set of braking systems with which a vehicle is equipped shall satisfy the requirements laid down for service, secondary and parking braking systems.	
10.2.2	The systems providing service, secondary and parking braking may have common components so long as they fulfill the following conditions:	

10.2.2.1	There shall be at least two controls, independent of each other and readily accessible to the driver from his normal driving position.	
10.2.2.2	Every brake control shall be designed such that it returns to the fully off position when released. This requirement shall not apply to a parking brake control when it is mechanically locked in an applied position;	
10.2.2.3	The control of the service braking system shall be independent of the control of the parking braking system;	
10.2.2.4	The effectiveness of the linkage between the control of the service braking system and the different components of the transmission systems shall not be liable to diminish after a certain period of use;	
10.2.2.5	The parking braking system shall be so designed that it can be activated when the vehicle is in motion. This requirement may be complied by the actuation of the vehicle's service braking system, by means of an auxiliary control.	
10.2.2.6	In the event of breakage of any component other than the brakes and the components referred to in item 10.2.2.9 below, or of any other failure of the service braking system, that part of the service braking system which is not affected by the failure, shall be able to bring the vehicle to a halt in the conditions prescribed for secondary braking;	
10.2.2.7	If the service braking is ensured by the action of the driver's muscular energy assisted by one or more energy reserves, secondary braking shall, in the event of failure of that assistance, be capable of being ensured by the driver's muscular energy assisted by the energy reserves, if any, which are unaffected by the failure, the force applied to the service brake control not exceeding the prescribed maximum;	
10.2.2.8	If the service braking force and transmission depend exclusively on the use, controlled by the driver, of an energy reserve, there shall be at least two completely independent energy reserves, each provided with its own transmission, likewise independent; each of them may act on the brakes of only two or more wheels so selected as to be capable of ensuring by themselves the prescribed degree of secondary braking without endangering the stability of the vehicle during braking. Each of the energy reserves shall be equipped with a warning device.	

10.2.2.9	The pedal and its bearing, the master cylinder and its piston or pistons, the control valve, the linkage between the pedal and the master cylinder or the control valve, the brake cylinders and their pistons, and the lever-and-cam assemblies of brakes, shall not be regarded as liable to breakage if they are amply dimensioned, are readily accessible for maintenance, and exhibit safety features at least equal to those prescribed for other essential components of the vehicle. Any such part as aforesaid whose failure would make it impossible to brake the vehicle with a degree of effectiveness at least equal to that prescribed for secondary braking shall be made of metal or of a material with equivalent characteristics and shall not undergo notable distortion in normal operation of the braking systems.	
10.2.3	Failure of hydraulic transmission system	
10.2.3.1	The failure of a part of a hydraulic transmission system shall be signaled to the driver by a device comprising a red tell-tale signal lighting up before or upon application of a differential pressure of not more than 15.5 bar between the active and failed brake equipment, measured at the master cylinder outlet and remaining lit as long as the failure persists and the ignition (start) switch is in the "ON" (run) position.	
10.2.3.2	A device comprising a red tell-tale signal lighting up when the fluid in the reservoir is below a certain level specified by the manufacturer shall be provided.	
10.2.3.3	The tell-tale signal shall be visible even by daylight.	
10.2.3.4	The satisfactory condition of the signal shall be easily verifiable by the driver from the driver's seat.	
10.2.3.5	The failure of a component of the device shall not entail total loss of the braking equipment's effectiveness.	
10.2.3.6	Application of the parking brake shall be indicated to the driver.	
10.2.5	The requirements of items 10.2.2, 10.2.3 and 10.2.4 above shall be met without the use of any automatic device of a kind such that its ineffectiveness might pass unnoticed through the fact that parts normally in a position of rest come into action only in the event of failure in the braking system.	
10.2.6	The service braking system shall act on all the wheels of the	
	vehicle.	
10.2.7	The action of the service braking system shall be appropriately distributed among the axles.	
10.2.8	The action of the service braking system shall be distributed between the wheels of one and the same axle symmetrically in relation to the longitudinal median plane of the vehicle.	

10.2.8.1	Compensation by the electric control transmission for deterioration or defect within the braking system shall be indicated to the driver by means of the yellow warning signal specified in item 10.2.20.1.2. This requirement shall apply for all conditions of loading when compensation exceeds the following limits:	
10.2.8.1.1	A difference in transverse braking pressures on any axle: <ul style="list-style-type: none"> - of 25 per cent of the higher value for vehicle decelerations $\square 2 \text{ m/sec}^2$, - A value corresponding to 25 per cent at 2 m/sec^2 for decelerations below this rate. 	
10.2.8.1.2	An individual compensating value on any axle: <ul style="list-style-type: none"> - > 50 per cent of the nominal value for vehicle decelerations $\square 2 \text{ m/sec}^2$, - A value corresponding to 50 per cent of the nominal value at 2 m/sec^2 for decelerations below this rate. 	
10.2.9	Malfunctions of the electric control transmission shall not apply the brakes contrary to the drivers intension	
10.2.10	The service, secondary and the parking braking system shall act on braking surfaces permanently connected to the wheels through components of adequate strength.	
10.2.10.1	No braking surface shall be capable of being disconnected from the wheels. In the case of the service braking system and the secondary braking system, such disconnection of the braking surfaces shall be	
	permitted provided that it is only momentary, for instance, during a change of gear, and that both the service braking and the secondary braking continue to operate with the prescribed degree of effectiveness. Disconnections a braking surfaces of the parking braking surface shall be permitted on condition that it is controlled exclusively by the driver from his driving seat by a system incapable of being brought into action by a leak.	
10.2.11	Wear of the brakes shall be capable of being easily taken up by means of a system of manual or automatic adjustment. The control and the components of the transmission and of the brakes shall possess a reserve of travel and, if necessary, suitable means of compensation such that, when the brakes become heated, or the brake linings have reached a certain degree of wear, effective braking shall be ensured without immediate adjustment.	
10.2.11.1	Wear adjustment shall be automatic for the service brakes. Automatic wear adjustment devices shall be such that after heating followed by cooling of the brakes, effective braking is still ensured. The vehicle shall remain capable of normal running after the fade and recovery test mentioned in the braking tests.	

10.2.11.2	It shall be possible to easily check the wear on service brake linings from the outside or underside of the vehicle without the removal of	
	<p>the wheels,utilizing only the tools or equipment normally supplied with the vehicle, for instance, by the provision of appropriate inspection holes or by some other means.</p> <ul style="list-style-type: none"> - Alternatively, a sensing device per wheel which will warn the driver (acoustic or optical devices) at his driving position when lining replacement is necessary shall be provided. - Assessment of the wear condition of the friction surfaces of brake discs or drums may only be performed by direct measurement of the actual component or examination of any brake disc or drum wear indicators, which may necessitate some level of disassembly. - The yellow warning signal specified in paragraph 10.2.20.1.2 below may be used as the optical warning signal. 	
10.2.12	Hydraulic braking systems	
10.2.12.1	The filling ports of the fluid reservoirs shall be readily accessible.	
10.2.12.2	The receptacles containing the reserve fluid shall be so designed and constructed that the level of the reserve fluid can be easily checked without opening the receptacles.	
10.2.12.3	The minimum total reservoir capacity shall be equivalent to the fluid displacement resulting when all the wheel cylinders or caliper pistons serviced by the reservoirs move from a new lining, fully retracted position to a fully worn, fully applied position.	
10.2.12.4	If these latter conditions are not fulfilled, the red warning signal mentioned below shall draw the driver's attention to any fall in the level of reserve fluid liable to cause a failure of the braking system.	
10.2.13	The type of fluid to be used in hydraulic transmission braking systems shall be in accordance with the relevant Saudi standard. The symbols shall be affixed in a visible position in indelible form with 100 mm of the filling ports of the fluid reservoirs.	
10.2.18	Special additional requirements for the electric transmission of the parking braking system:	
10.2.18.1	In the case of a failure within the electric transmission, any unintended actuation of the parking braking system shall be prevented;	

10.2.18.2	In the case of a break in the wiring within the electric control transmission between the control and the ECU directly connected with it, excluding the energy supply, it shall remain possible to apply the parking braking system from the driver's seat and achieve the parking braking performance by holding the laden vehicle stationary on a 8% up or down gradient. The parking brake shall be automatically released as soon as the driver starts to set the vehicle in motion. It shall also be possible to release the parking braking system, if necessary by the use of an auxiliary release device carried/fitted on the vehicle. The engine/ manual transmission or the automatic transmission (park position) may be used to achieve the above performance;	
10.2.18.2.1	A break in the wiring within the electric transmission, or an electrical failure in the control of the parking braking system shall be signaled to the driver by the yellow warning signal specified in item 10.2.20.1.2. An electrical failure in the control or break in the wiring external to the electronic control unit(s) and excluding the energy supply shall	
	be signalled to the driver by flashing the red warning signal specified in item 10.2.20.1.1. as long as the ignition(start) switch is in the "on" (run) position including a period of not less than 10 seconds thereafter and the control is in the "on" (activated) position.	
10.2.18.4	After the ignition/start switch which controls the electrical energy for the braking equipment has been switched off and/or the key removed, it shall remain possible to apply the parking braking system, whereas releasing shall be prevented.	
10.2.20	Brake failure and defect warning signals:	
10.2.20.1	Motor vehicles shall be capable of providing optical brake failure and defect warning signals, as follows:	
10.2.20.1.1	A red warning signal, indicating a failure within the vehicle braking equipment which precludes achievement of the prescribed service braking performance and/or which precludes the functioning of at least one of two independent service braking circuits.	
10.2.20.1.2	Where applicable, a yellow warning signal indicating an electrically detected defect within the vehicle braking equipment, which is not indicated by the red warning signal described in item 10.2.20.1.1.	
10.2.20.2	The warning signals shall be visible, even by daylight; the satisfactory condition of the signals shall be easily verifiable by the driver from the driver's seat.	
10.2.20.3	The failure of a component of the warning devices shall not entail any loss of the braking system's performance;	

10.2.20.4	A specified failure or defect shall be signaled to the driver by the above-mentioned warning signal(s) not later than on actuation of the service braking control.	
10.2.20.5	The warning signal(s) shall remain displayed as long as the failure/defect persists and the ignition (start) switch is in the “on” (run) position; The warning system shall be constant.	
10.2.20.6	The warning signal(s) mentioned above shall light up when the electrical equipment of the vehicle (and the braking system) is energized.	
10.2.20.7	With the vehicle stationary, the braking system shall verify that none of the specified failures or defects are present before extinguishing the signals.	
10.2.20.8	Specified failures or defects which should activate the warning signals mentioned above, but which are not detected under static conditions, shall be stored upon detection and be displayed at startup and at all times when the ignition (start) switch is in the “on” (run) position, as long as the failure or defect persists.	
10.2.20.9	Non specified failures or defects or other information concerning the brakes or running gear of the vehicle may be indicated by the yellow signal specified in item 10.2.20.1.2.	

- 11.** Distribution of mass of each axle (maximum value)
- 12.** Make and type of brake linings
 - 12.1 Brake linings tested to all relevant requirements (Indicate the details of the Standard)
 - 12.2 Alternative brake linings tested
- 13.** Engine type
- 15.** Final drive ratio(s)
- 16.** If applicable, maximum mass of trailer which may be coupled:
- 17.** Tyre dimensions
- 18.** Maximum design speed of the vehicle:
- 19.** Brief description of braking equipment

Service braking system

Secondary braking system:.....

Parking braking system:.....
- 20.** Mass of vehicle when tested

	Laden (kg)	Un laden (kg)
Axle No. 1		
Axle No. 2		
Total		

21. Details of the test equipment used for the tests:
22. Preparation of the vehicle for the tests:
23. Test conditions for each test:
24. Test Procedure for each test:
25. The formula used and the results obtained for the deceleration of the vehicle.
26. Measured stopping distance for each tests:
27. Behavior of the vehicle during braking:
28. Result of the tests:

TEST SPEED (km/h)	Measured Performance (m/s ²)		Measured force applied to pedal control (daN)	
	unladen	laden	unladen	laden

29.1 Performance Test:

29.1.1 Service braking system:

29.1.2 Secondary braking system:

29.1.3 Parking braking system:

29.2 Type-0 tests (Performance test with cold brakes)

service braking (laden)

service braking (un laden)

29.4 Type-I tests (fade and recovery test)

preliminary snubs (to determine pedal force)

hot performance (1st stop)

hot performance (2nd stop)

recovery performance

29.5 Dynamic parking brake performance

30. Vehicle is / is not equipped to tow a trailer with electrical braking systems

31. Vehicle is / is not equipped with an anti-lock system.

31.1 The vehicle fulfills the requirement of anti-lock systems of SASO standard : Yes / No

31.2 Category of anti-lock system: category 1 / 2 / 3

32. The vehicle is equipped with an ESC (Electric Stability Control) system:
Yes/No

If yes: The ESC system has been tested according to and fulfils the requirements of this
standard..... Yes/No

33. Technical Service responsible for conducting the tests:

34. Date of report issued by that Service

35. Approval granted / refused

36. Date

37. Signature of the responsible person signed the report:

38. Stamp of the testing laboratory:

39. Signature of the manufacturer:

TEST REPORT FORMAT ON MOTOR VEHICLE WMI
(SASO GSO 1781) (19)

1. Objective: To check the compliance of the vehicle type ---- with the requirement of SASO GSO 1781.
2. Name of Manufacturer:
3. Country of manufacturer:
4. Category of Vehicle:
5. Type of Vehicle:
6. Applicable Standard:
7. Date of test:
8. Name and Place of Test:
9. Test Result:
 - 9.1 Indicate the WMI characters assigned to the vehicles.
 - 9.2 The name of the organization who assigned WMI codes to your vehicles.
 - 9.3 What are the Arabic numerals and capital roman letters used for the VIN.
10. Specific characteristics required
 - 10.1 What are the numeric character designating your geographic area.
 - 10.2 The alphabetic or numeric character in second position.
 - 10.3 Details of the first and second positions
 - 10.4 The alphabetic or numeric character assigned by the national organization for the third position.
11. Signature, Designation and full name of the person who signed this report.
12. Decision of the testing authority.
13. Stamp of the testing organization.

TEST REPORT OF VEHICLE IDENTIFICATION NUMBER
(SASO GSO 1780/2010) (20)

1. Objective: To check the compliance of the vehicle type ---- with the requirement of SASO GSO 1780/2010
2. Name of Manufacturer:
3. Country of manufacturer:
4. Category of Vehicle:
5. Type of Vehicle:
6. Applicable Standard:
7. Date of test:
8. Name and Place of Test:
9. Test Result:
 - 9.1 Indicate the VIN characters assigned to the test vehicle.
 - 9.2 Are the vehicles manufactured in single stage or multi stage?
 - 9.3 How many characters are assigned to the vehicle?
 - 9.4 Are there any check digit, if so which position it takes in the VIN?
 - 9.5 VIN Content
 - 9.5.1 How many sections the VIN consists of. Describe all of them.
 - 9.5.2 In the second section of the VDS (4-8) in the VIN indicate the fourth character.

Also indicate the other four characters.
 - 9.5.3 Indicate the code number designated for the model year.
 - 9.5.4 Which character of the VIN indicates the vehicle steering position. How the characters identify the left hand steering/right hand steering.
10. Reporting of VIN
 - 10.1 Sixty days before dispatching the first consignment of any type of vehicles, in each year the manufacturer shall send to the authority in Saudi Arabia the list of VIN.
 - 10.2 Indicate the locations where the VIN numbers are attached on the vehicle.
11. Signature, Designation and full name of the person who signed this report.
12. Decision of the testing authority.
13. Stamp of the testing organization.

**TEST REPORT OF TYRE TREADWEAR, TRACTION AND TEMPERATURE
RESISTANCE GRADING OF TYRES (21)
(SASO GSO 1783)**

1. Objective: To check the compliance of the vehicle Tyres ---- with the requirement of SASO GSO 1783.
2. Name of Manufacturer of Tyre:
3. Country of manufacturer:
4. Category of Vehicle for which the tyres are fitted:
5. Type of Vehicle:
6. Applicable Standard:
7. Date of test:
8. Name and Place of Test:
Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
9. Test Result:
 - 9.1 Specify the grading of the tyres used for the vehicle:
 - 9.2 What is the tread wear grade of the tyre?
 - 9.3 What is the traction performance grade of the tyre?
 - 9.4 What is the temperature resistance grade of the tyre?
 - 9.5 The following information shall be molded on the tyre side wall:
 - 9.5.1 Manufacturers name and /or trademark: Indicate the details
 - 9.5.2 The date of manufacture: Indicate the week and the year.
 - 9.5.3 Country of manufacture: Indicate the country
 - 9.5.4 Tread wear grade: Indicate
 - 9.5.5 Traction grade: Indicate
 - 9.5.6 Temperature grade: Indicate
10. Signature, Designation and full name of the person who signed this report.
11. Decision of the testing authority.
12. Stamp of the organization.

TEST REPORT OF TEMPERATURE RESISTANCE GRADING OF TYRES
FITTED TO PASSENGER CARS/MPV'S (22)
(SASO GSO 1784)

1. Objective: To check the compliance of the vehicle Tyres ---- with the requirement of SASO GSO 1784.
2. Name of Manufacturer of Tyre:
3. Country of manufacturer:
4. Category of Vehicle for which the tyres are fitted:
5. Type of Vehicle:
6. Applicable Standard:
7. Date of test carried out
8. Details of test equipment and apparatus used:
9. Name and Place of Test facility:

Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
10. Procedure adopted for the test:
11. Temperature of the room during the Test:
12. What is the load rating marked on the tyre:
13. Indicate the speed and the duration, of the tyre tested without fail.
14. Indicate the test results:
15. Are there any evidence of bead separation, tread chunking, broken cords, cracking or open splices observed at the end of the test.
16. Decision of the Testing Authority:
17. Signature of the Responsible Person from the Testing Facility:
18. Date of Report:

TEST REPORT OF PASSENGER CAR TYRES PART 1,2 & 3:
NOMENCLATURE, DESIGNATION, MARKING, DIMENSIONS, LOAD
CAPACITY AND INFLATION PRESSURE
PASSENGER CAR TYRES (23)

1. Objective: To check the compliance of the Passenger car Tyres ---- With the requirement of SASO GSO 51.52 and 53
2. Name of Manufacturer of Tyre:
3. Country of manufacturer:
4. Category of Vehicles for which the tyres can be fitted:
5. Type of Tyre:
6. Applicable SASO Standards:
7. Date of test:
8. Name and Place of Test facility:
Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
9. Date of Manufacture of Tyre tested:
10. Test requirement to be complied:
 - 10.1 Visual Inspection: Indicate the appearance to be complied with.
 - 10.2 Dimensions to be complied with:
 - 10.3 Load Capacity and Inflation pressure to be complied with:
 - 10.4 Tensile strength and Elongation to be complied with:
 - 10.5 Ageing to be complied with:
 - 10.6 Breaking Energy to be complied with:
 - 10.7 Endurance to be complied with:
 - 10.8 High speed performance to be complied:
 - 10.9 Bead unseating resistance to be complied:
11. Apparatus Used for each test: Explain the apparatus and equipment used for each test.
12. Detailed out the test procedure carried out for each test mentioned in item 10:
13. The calculations used for each test:

15. Test Result:

15.1 Marking on the tyre

15.1.1 The nominal section width of the tyre:

15.1.2 Nominal Aspect Ratio:

15.1.3 The type of construction of tyre:

15.1.4 The nominal rim diameter:

15.1.5 The load index of the tyre:

15.1.6 The speed code of the tyre:

15.1.7 The service characteristics of the tyre:

15.1.8 Temperature Rating:

15.1.9 Traction:

15.1.10 Tread wear:

15.1.11 Country of Origin/Production:

15.1.12 Date of Manufacture:

15.2 Tensile strength:

15.3 Elongation:

15.4 Ageing:

15.5 Breaking Energy:

15.6 Endurance:

15.7 High speed performance:

15.8 Bead unseating resistance:

Signature of the Responsible Person:

Date:

Company Stamp:

TEST REPORT OF MPV, TRUCKS AND BUSES TYRES PART 1, 2 & 3:
NOMENCLATURE, DESIGNATION, MARKING, DIMENSIONS, LOAD
CAPACITY AND INFLATION PRESSURE
HEAVY DUTY VEHICLES TYRES (42)

1. Objective: To check the compliance of the Truck Tyres ---- with the requirement of SASO GSO 645, 646 and 647
2. Name of Manufacturer of Tyre:
3. Country of manufacturer:
4. Category of Vehicles for which the tyres can be fitted:
5. Type of Tyre:
6. Applicable SASO Standards:
7. Date of test:
8. Name and Place of Test facility:

Type of test facility: Company/Independent/Accredited:
(If accredited supply a copy of the accreditation letter)
9. Date of Manufacture of Tyre tested:
10. Test requirement to be complied:
 - 10.1 Visual Inspection: Indicate the appearance to be complied with.
 - 10.2 Dimensions to be complied with:
 - 10.3 Load Capacity and Inflation pressure to be complied with:
 - 10.6 Strength to be complied with:
 - 10.7 Endurance to be complied with:
11. Apparatus Used for each test: Explain the apparatus and equipment used for each test.
12. Detailed out the test procedure carried out for each test mentioned in item 10:
13. The calculations used for each test:
15. Test Result:
 - 15.1 Marking on the tyre
 - 15.1.1 The nominal section width of the tyre:
 - 15.1.2 Nominal Aspect Ratio:
 - 15.1.3 The type of construction of tyre:

- 15.1.4** The nominal rim diameter:
- 15.1.5** The load index of the tyre:
- 15.1.6** The speed code of the tyre:
- 15.1.7** The service characteristics of the tyre:
- 15.1.11** Country of Origin/Production:
- 15.1.12** Date of Manufacture:
- 15.2** Strength
- 15.3** Endurance:

Signature of the Responsible Person:

Date:

Company Stamp:

TEST REPORT ON MOTOR VEHICLES FRONT AND REAR EXTERIOR
PROTECTION DEVICE
SASO GSO 41/ 2007 (25)

- 1** Test Objective: To check the compliance of the vehicle type with the requirements of the SASO GSO 41/2007.
- 2** Name and address of Manufacturer:
- 3** Country of production:
- 4** Name, Place and address of Testing Facility:
States of the test facility: Manufacturer/ Independent/Accredited
- 5** Date of Test:
- 6** Category of Vehicle:
- 7** Type of Vehicle:
- 8** Type of Engine:
- 9** Description of exterior protection devices provided:
- 10** Description of Test Vehicle:
- 11** Kerb weight of the Vehicle:
- 12** Gross Vehicle weight:
- 13** Description of the impact test device:
 - 13.1** What is the length of the pendulum used for the test:
 - 13.2** What is the mass of the impact test device:
- 14** Describe the material of impact test device and its mass:
- 15** Describe the preparation of the test vehicle:
- 16** Describe the test Procedures of Longitudinal Impact and Corner impacts separately:
- 17** Test Results:

Sec	Requirements	Results
3.1	The surfaces of protective devices at the front and rear which are most likely to come into contact with other objects shall be provided with rubber or equivalent material. Describe the material provided?	
3.2	Indicate the results at the end of the Longitudinal Impact and corner Impact tests	
3.2.1	The lighting and signaling devices shall not be damaged and operate properly. Indicate the conditions of lighting and signaling devices after the test.	
3.2.2	The bonnet, boot lid, and doors shall operate without any damage at the end of the test. Indicate the conditions.	
3.2.2	The doors shall remain closed as a result of the impact. Are the side doors operable after the test.	

3.2.3	The fuel and cooling systems shall have neither leaks nor constricted fluid passages, and the sealing and caps shall be operable.	
3.2.4	The exhaust system shall not suffer any damage or displacement after the test and function normally	
3.2.5	The propulsion, suspension, steering and braking systems shall remain in adjustment and shall operate in normal manner.	

- 18.** What is the longitudinal Impact test speed:
- 19.** What is the corner impact test speed:
- 20.** Decision of the Testing Facility:
- 21.** Signature of the Responsible Person from the Testing Facility:
- 22.** Date of Report:

Other Requirements:

- The manufacturer must provide a separate test report for the **charging cable** in accordance with the EV's Technical regulation requirements.
- The manufacturer must provide a separate test report for the **Battery** in accordance with the EV's Technical regulation requirements.

Section	Requirements	
	The overall length of the EV supply cable:	
		Result P/F
	EV supply equipment equipped with a plug for household and similar use, if the charging cycle can exceed 2 hours, the maximum rated current is 10 A.	
	Every User manual accompanying the Electric Vehicle must be available in Arabic and English	