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Draft Jamaican Standard  
Specification  
for  
**Motor vehicle braking systems**

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**BUREAU OF STANDARDS JAMAICA**

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DRAFT JAMAICAN STANDARD

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**Specification**  
**for**  
**Motor vehicle braking systems**

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Jamaican Standards establish requirements in relation to commodities, processes and practices, but do not purport to include all the necessary provisions of a contract.

The attention of those using this standard specification is called to the necessity of complying with any relevant legislation.

#### Amendments

No.	Date of Issue	Remarks	Entered by and date

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DRAFT JAMAICAN STANDARD

## Foreword

Motor vehicles are expected to comply with the road safety provisions to ensure that the public is protected against unreasonable risk of crashes occurring as a result of the design, construction, performance or functions of the motor vehicle braking system.

The motor vehicle braking system standard will assist in mitigating the number of collisions that could have been caused from faulty brakes.

This standard is voluntary.

## Committee representation

## Related Documents

This standard makes reference to the following:

- a) *United Nation Agreement Addendum 12, Regulation number 13; Uniform provisions concerning the approval of vehicles of categories M,N and O with regard to braking*
- b) *International Organization of Standardization, ISO 3996, Road vehicles – Brake hose assemblies for hydraulic braking systems used with non-petroleum-based brake fluid*
- c) *International Organization of Standardization, ISO 611, Road vehicles – Braking of automotive vehicles and their trailers – Vocabulary*
- d) *The Road Traffic Act, The Road Traffic Regulations*
- e) *International Organization of Standardization, ISO 19723, Road vehicles – Liquefied natural gas (LNG) fuel systems– Part 1: Safety requirements*
- f) *United Nations Economic Commission for Europe, Amendments UN Regulation number 131, Uniform provisions concerning the approval of motor vehicles with regard to the Advanced Emergency Braking System(AEBS) for M<sub>2</sub>, M<sub>3</sub>, N<sub>2</sub> and N<sub>3</sub> vehicles*

# Jamaican Standard Specification for Motor Vehicle Braking Systems

## 1. Scope

This standard specifies minimum safety and performance requirements for motor vehicles' braking systems. It is applicable to both light-duty vehicles (e.g. passenger cars, vans and motorcycles), heavy-duty vehicles (e.g. trucks, buses and coaches) and earth moving vehicles (e.g. tractors, backhoes and excavators) with a gross vehicle weight rating of 3, 500 kilograms (7,716 pounds).

## 2. Terms and definitions

For the purposes of this document, the following terms and definitions apply:

### 2.1

#### **actuation**

the application and release of the control

### 2.2

#### **anti-lock braking system**

system which automatically modulates the pressure producing the braking forces at the wheels to limit the degree of wheel slip

### 2.3

#### **advanced emergency braking system**

system which can automatically detect an imminent forward collision and activate the vehicle braking system to decelerate the vehicle with the purpose of avoiding or mitigating a collision

### 2.4

#### **automatic braking**

automatic application of one or more brake due to a failure within the braking equipment

### 2.5

#### **brake**

parts of a braking system in which the forces opposing the movement or tendency to movement of the vehicle are developed

### 2.6

#### **braking force**

force at the contact surface between a wheel and the ground, produced by the effect of a braking system, which opposes the speed or the tendency to movement of the vehicle

**2.7**

**brake lining**

friction material component of a brake lining assembly

**2.8**

**brake lining assembly**

component of drum brake or disc brake which is pressed against the drum or disc, respectively, to produce the friction force

**2.9**

**braking system**

combination of parts which fulfil one or more of the following functions:  
control (usually to reduce) a vehicle's speed bring the vehicle to a halt or hold it stationary

**2.10**

**brake torque**

product of the frictional forces resulting from the actuation force(s) in a brake and the distance between the points of generation of these frictional forces and the axis of rotation

**2.11**

**control device**

part of a braking system which initiates its operation and control its outputs, and which starts at the point of application when directly operated by the driver (or in another person) or at the point where a control signal is fed into the braking system when indirectly operated by the driver

**NOTE 1** The control signal may be conveyed within the control device by, for example, mechanical, pneumatic, hydraulic or electrical means, including the use of auxiliary or non-muscular energy.

**2.12**

**control line**

means of connecting the signal which controls braking to devices which adjust the braking level in the trailer accordingly

**2.13**

**braking deceleration**

reduction of speed obtained by the braking system in the time considered

**2.14**

**disc brake**

friction brake in which the friction forces are produced between the components attached to a fixed part of the vehicle and the faces of one (more) discs

**2.15****drum brake**

friction brake in which the friction forces are produced between the components attached to a fixed part of the vehicle and the internal or external surface of a drum

**2.16****emergency braking**

braking demand emitted by the advanced emergency braking system to service braking system of the vehicle

**2.17****electric vehicle (EV)**

motor vehicle that is powered by an electric motor drawing current from rechargeable storage batteries, fuel cells, or other portable sources of electrical current, and which may include a non-electrical source of power designated to charge batteries and components thereof

**2.18****hydraulic motor**

a part of the hydraulic control unit. The hydraulic control unit is an assembly which contains the solenoid valves, fluid accumulators, pump and an electric motor

**2.19****parking braking system**

braking system allowing a vehicle to be held stationary mechanically, even on an inclined surface, particularly in the absence of the driver

**2.20****secondary braking system**

braking system allowing the driver to control, directly or indirectly and in a graduated manner, the speed of a vehicle or to bring the vehicle to a halt in case of failure of the service braking system

**2.21****service braking system**

braking system allowing the driver to control, directly or indirectly and in a graduated manner, the speed of a vehicle during normal driving or to bring the vehicle to a halt

**2.22****transmission device**

part of a braking system which transmits the energy distributed by the control device, starting either at the point where the control device terminates or at the point where the energy-supply device terminates, and terminating at the point where the brake starts

**NOTE 1** The transmission device may, for example, be of mechanical, hydraulic, pneumatic (pressure above or below atmospheric), electric or combined (e.g. hydromechanical, hydropneumatic) type.

**2.23****warning device**

optical or audible device warning the driver when certain conditions of operation of the braking system or systems have become critical, have failed or require maintenance

**2.24**

### Abbreviations and symbols

- M2 – vehicles used for the carriage of passengers and comprising more than eight seats in addition to the driver's seat and having a maximum authorized mass not exceeding 5 000 kg
- M3 - vehicles used for the carriage of passengers and comprising more than eight seats in addition to the driver's seat and having a maximum authorized mass exceeding 5 000 kg
- N – power-driven vehicles having at least four wheels and used for the carriage of goods
- O - Trailers

### 3. Braking system requirements

**3.1** The braking 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 provisions of this Standard.

**3.2** The braking system shall be so designed, constructed and fitted as to be able to resist the corroding and aging phenomena to which it is exposed.

**3.3** Brake linings shall not contain asbestos.

**3.4** The effectiveness of the braking system, including the electric control line, shall not be adversely affected by magnetic or electric fields.

**3.5** A failure detection signal may interrupt momentarily (< 10 ms) the demand signal in the control transmission, provided that the braking performance is thereby not reduced.

#### 3.6 Service braking system

**3.6.1** 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. It should graduate from this braking action. The driver shall be able to achieve this braking action from his driving seat without removing his hands from the steering control.

#### 3.6.2 Wear adjustment

Wear of the service brakes shall be compensated for means of a system of automatic adjustments.

##### 3.6.2.1 Wear Status

The wear condition of all service brakes shall be indicated by either:

- a) Acoustic or optical devices warning the driver at his or her driving position when lining replacement is necessary, or
- b) A means of visually checking the degree of braking lining wear, from the outside or underside of the vehicle, utilizing only the tools or equipment normally supplied with the vehicle. The removal of wheels is permitted for this purpose.

### **3.6.3 Regenerative braking systems**

- a) For an EV equipped with regenerative braking system, the regenerative braking system is considered to be part of the service brake system if it is automatically activated by an application of the service brake control, if there is no means provided for the driver to disconnect or otherwise deactivate it, and if it is activated in all transmission positions, including neutral.
- b) For an electric vehicle (EV) that is equipped with both anti-lock braking system and regenerative braking system that is part of the service brake system, the anti-lock braking system shall control the regenerative braking system.

### **3.6.4 Controls**

**3.6.4.1** The service brakes shall be activated by means of a foot control. The control of the parking brake shall be independent of the service brake control and may be either a hand or foot control.

**3.6.4.2** For vehicles equipped with anti-lock braking system, a control to manually disable the anti-lock braking system, either fully or partially, is prohibited.

### **3.7 Secondary braking system**

**3.71** The secondary braking system shall be able to halt the vehicle within a reasonable distance in the event of failure of the service braking system and graduate from this braking action where applicable. The driver shall be able to obtain this braking action from his driving seat while keeping at least one hand on the steering control. For the purposes of these provisions it is assumed that not more than one failure of the service braking system will occur at one time.

### **3.8 Parking braking system**

**3.8.1** The parking braking system shall make it possible to hold the vehicle stationary on an up or down gradient even in the absence of the driver, the working parts being held in the locked position by a purely mechanical device. The driver shall be able to achieve this braking system from his or her driving seat.

**3.8.2** The trailer air brake and the parking braking system of the towing vehicle may be operated simultaneously provided that the driver is able to check at any time that the parking brake performance of the vehicle combination, obtained by the purely mechanical action of the parking braking system, is sufficient.

#### **3.8.3 Connection for compressed-air braking systems, between power-driven vehicles and trailers**

**3.8.3.1** The connections of the compressed-air braking system between power-driven vehicles and trailers shall be provided according to (a) and (b).

- a) One pneumatic supply line and one pneumatic control line;
- b) One pneumatic supply line, one pneumatic control line and one electric control line.

### **3.9 Provisions for the periodic technical inspection of braking systems**

**3.9.1** 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 or discs.

**NOTE 1** Drums or discs, wear assessment may not necessarily be carried out at the time of periodic technical inspection.

**3.9.2** It shall be possible to verify, in a frequent and simple way, the correct operational status of those complex electronic and pneumatic systems which have control over braking.

**3.9.3** Where the operational status is indicated to the driver by warning signals, it shall be possible at a periodic technical inspection to confirm the correct operational status by the visual observation of the warning signal following a power-on.

**3.9.4** At the time of type approval, the means implemented to protect against simple unauthorized modification of the operation to the verification means chosen by the manufacturer (e.g. warning signal) shall be confidentially outlined. Alternatively, this protection requirement is fulfilled when a secondary means of checking the correct operational status is available.

**3.9.5** It shall be possible to generate maximum braking forces under static conditions on a rolling road or roller brake tester.

### **3.10 Characteristics of braking systems**

**3.10.1** The set of braking systems with which a vehicle is equipped shall satisfy the requirements laid down for service, secondary and parking braking systems.

**3.10.2** The systems providing service, secondary and parking braking, may have common components which fulfil the following conditions:

- a) There shall be at least two controls, independent of each other and readily accessible to the driver from his or her normal driving position. Every brake control shall be designed such that it returns to the full off position when released. This requirement shall not apply to a parking brake control ( or that of a combined control) when it is mechanically locked in an applied position;
- b) The control of the service braking system shall be independent of the control of the parking braking system;
- c) If the service braking system and the secondary braking system have the same control, 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;
- d) If the service braking system and the secondary braking system have the same control, the parking braking system shall be so designed that it can be actuated when the vehicle is in motion. This requirement shall not apply if the vehicle's service braking system can be actuated, even partially, by means of an auxiliary control;
- e) Without prejudice to the requirement of Clause 3.8 ,the service braking system and the

parking braking system, may use common components in their transmission(s), provided that in the event of a failure in any part of the transmission(s) the requirements for secondary braking are still ensured;

- f) If 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;
- g) 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 accordingly:
  - i. each provided with its own transmission, likewise independent;
  - ii. 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; and
  - iii. each of the aforesaid energy reserves shall be equipped with a warning device.
- h) If the service braking force and transmission depends exclusively on the use of an energy reserve, one energy reserve for the transmission is deemed to be sufficient, provided that the prescribed secondary braking is ensured by the action of the driver's muscular energy acting on the service brake control;
- i) The particular components such as 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 (such as the steering linkage) of the vehicle;
- j) 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 system.

**3.11** The failure of a part of a hydraulic transmission system shall be signalled 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 failure persists and the ignition (start) switch is in the 'On' (run) position.

**NOTE 1** The device consisting of a red tell-tale signal lighting up when the fluid in the reservoir is below a certain level specified by the manufacturer is permitted.

**3.12** The service braking system shall act on all wheels of the vehicle and shall distribute its action appropriately among the axles.

**3.12.1** In case of vehicles with more than two axles, in order to avoid wheel locking or glazing of the brake linings, the brake force on certain axles may be reduced to zero automatically when carrying a much reduced load.

**3.12.2** The vehicles with electric regenerative braking systems, the braking input from other sources of braking, may be suitably phased to allow the electric regenerative braking system alone to be applied, provided that both the following conditions are met:

- i. Intrinsic variations in the torque output of the electrical regenerative braking system (e.g. as a result of changes in the electric state of charge in the traction batteries) are automatically compensated by an appropriate variation.
- ii. Wherever necessary, to ensure that braking rate remains related to the driver's braking demand, having regard to the available tyre or road adhesion, braking shall automatically be caused to act on all wheels of the vehicle.

**3.13** 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.

**3.13.1** Compensation and functions, such as anti-lock, which may cause deviations from this symmetrical distribution, shall be declared.

**3.13.1.1** 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. This requirement shall apply for all conditions of loading when compensation exceeds the following limits:

**3.13.1.1.1** A different in transverse braking pressure on any axle of:

- a) 25 percent of the higher value for vehicle decelerations  $\geq 2 \text{ m/s}^2$ ;
- b) a value corresponding to 50 percent at  $2 \text{ m/s}^2$  for decelerations below this rate.

**3.13.1.1.2** An individual compensating value on any axle of:

- a)  $> 50$  percent of the nominal value for vehicle decelerations  $\geq 2 \text{ m/s}^2$ ;
- b) a value corresponding to 50 percent of the nominal value at  $2 \text{ m/s}^2$  for decelerations below this rate.

**3.14** Malfunctions of the electric control transmission shall not apply the brakes contrary to the driver's intentions.

**3.15** The service, secondary and parking braking system shall act on braking surfaces connected to the wheels through components of adequate strength.

**3.15.1** In all cases the permanently connected friction braking source shall ensure that both the service and secondary braking systems continue to operate with the prescribed degree of effectiveness.

**3.15.2** Disconnection of the braking surfaces of the parking braking system shall be permitted only on condition that the disconnection is controlled exclusively by the driver from his driving seat, by a system incapable of being brought into action by a leak.

**3.16** The wear of the brakes shall be capable of being easily taken up by means of a system of manual or automatic adjustment.

**3.16.1** 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 is ensured without immediate adjustment being necessary.

**3.16.2** The wear adjustment shall be automatic for the service brakes.

**NOTE 1** The fitting of automatic brake adjustment devices is optional for off-road vehicles.

**3.16.2.1** Brakes equipped with automatic brake adjustment devices shall, after heating followed by cooling, be capable of free running.

### **3.17 Checking the wear of the service brake friction components**

**3.17.1** It shall be possible to easily assess this wear on service brake linings from the outside or underside of the vehicle, without removal of the wheels, by the provision of appropriate inspection holes or by some other means.

**3.17.2** 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.

**3.18** In hydraulic-transmission braking systems, the filling ports of the fluid reservoirs shall be readily accessible; in addition, the receptacles containing the reserve fluid shall be so designed and constructed that the level of the reserve fluid can be easily checked without the receptacles having to be opened.

### **3.19 Warning device**

**3.19.1** Any vehicle fitted with a service brake actuated from an energy reservoir shall, where the prescribed secondary braking performance cannot be obtained by means of this braking system without the use of the stored energy, be provided with a warning device.

**NOTE 1** Additionally, a pressure gauge, where fitted, giving an optical or acoustic signal when the stored energy, in any part of the system, falls to a value at which without recharging of the reservoir and irrespective of the load conditions of the vehicle, it is possible to apply the service brake control a fifth time after four full-stroke actuations and obtain the prescribed secondary braking performance.

**3.19.2** This warning device shall be directly and permanently connected to the circuit. When the engine is running under normal operating conditions and there are no faults in the braking system, as is the case in approval tests for this type, the warning device shall give no signal except during the time required for charging the energy reservoir(s) after start-up of the engine.

**3.20** The auxiliary source of energy which is essential to the functioning of a braking system shall reserve energy to ensure if the engine stops or in the event of a failure of the means by which the energy source is driven, the braking performance remains adequate to bring the vehicle to a halt in the prescribed conditions.

**3.21** In the case of a power-driven vehicle to which the coupling of a trailer equipped with a brake controlled by the driver of the towing vehicle is authorized, the service braking system of the towing vehicle shall be equipped with a device so designed that in the event of failure of the trailer's braking system, or in the event of an interruption in the air supply pipe between the towing vehicle and its trailer, it shall still be possible to brake the towing vehicle with the effectiveness prescribed for secondary braking; it is accordingly prescribed, in particular, that this device shall be situated on the towing vehicle.

**3.22** The pneumatic or hydraulic auxiliary equipment shall be supplied with energy in such a way that during its operation, the prescribed deceleration values can be reached in the event of damage to the source of energy. The operation of the auxiliary equipment cannot cause the reserves of energy feeding the braking systems to fall below the level indicated in Clause 3.19.1.

**3.22.1** In the event of a failure (e.g. breakage or leak) in one of the pneumatic connecting lines, interruption or defect in the electric control line, it shall nevertheless be possible for the driver, fully or partially, to actuate the brakes of the trailer by means either of the service braking control, secondary braking control or of the parking braking control, unless the failure automatically causes the trailer to be braked with the performance.

**3.22.2** The automatic braking in Clause 3.22.1 shall apply the following conditions:

- a) When the designed brake control of service, secondary or parking braking controls are fully actuated, the pressure in the supply line shall fall to 150 kPa within the following two seconds; in addition, when the brake control is released, the supply line shall be re-pressurized.
- b) When the supply line is evacuated at the rate of at least 100 kPa per second the automatic braking of the trailer shall start to operate before the pressure in the supply line falls to 200 kPa.

**3.23** In the case of a power-driven vehicle equipped to draw a trailer with an electrical braking system, the following requirements shall be met:

**3.23.1** The power supply (generator and battery) of the power-driven vehicle shall have a sufficient capacity to provide the current for an electrical braking system;

**3.23.2** In the event of a failure in the towing vehicle's service braking system, where that system consists of at least two independent parts, the part or parts not affected by the failure should be capable of partially or fully actuating the brakes of the trailer;

**3.23.3** The use of the stop-lamp switch and circuit for actuating the electrical braking system is permissible only if the actuating line is connected in parallel with the stop-lamp and the existing stop-lamp switch and circuit are capable of taking the extra load;

**3.24** In the case of a pneumatic service braking system comprising two or more independent sections, any leakage between those sections at or downstream of the control shall be continuously vented to the atmosphere;

**3.25** In the case of a power-driven vehicle authorized to tow a trailer of categories O3 or O4, the service braking system of the trailer may only be operated in conjunction with the service, secondary or parking braking system of the towing vehicle.

**3.26** A motor vehicle to be used on the road shall be equipped with proper braking systems.

### 3.27 Brake system warning indicator

Each vehicle shall have one or more visual brake system warning indicator, mounted in front of and in clear view of the driver, which meets the standard requirement. In addition, a vehicle manufactured without a split service brake system shall be equipped with an audible warning signal that activates under the conditions specified.

#### Activation

An indicator shall be activated when the ignition (start) switch is in the “on” (“run”) position and whenever any of conditions (a) through (g) occur:

A gross loss of fluid or fluid pressure (such as caused by rupture of a brake line but not by a structural failure of a housing that is common to two or more subsystems) as indicated by one of the following conditions (chosen at the option of the manufacturer);

## 4. Requirements for Anti-locking braking systems

### 4.1 Service brake systems

[49 CFR § 571.105 - Standard No. 105: Hydraulic and electric brake systems. | Electronic Code of Federal Regulations \(e-CFR\) | US Law | LII / Legal Information Institute \(cornell.edu\)](#)

**4.1.1** Each vehicle shall be equipped with a service brake system acting on all wheels.

**4.1.2** Wear of the service brake shall be compensated for by means of a system of automatic adjustment.

**4.1.3** Each passenger car and each multipurpose passenger vehicle, truck and bus with a GVWR of 10,000 pounds or less should be capable of meeting these requirements.

**4.1.4** Each school bus with a GVWR greater than 10,000 pounds should be capable meeting these requirements.

**NOTE 1** If a vehicle is incapable of attaining a speed specified in Clause XXX, its service brakes may be capable of stopping the vehicle from the multiple of 5 mph that is 4 to 8 mph less than the speed attainable in 2 miles, within distances that do not exceed the corresponding distance.

## 5. General principles for installed advanced emergency braking system

**5.1** The effectiveness of advanced emergency braking systems shall not be adversely affected by magnetic or electric fields. This shall be demonstrated by fulfilling the technical requirements and respecting the transitional provisions.

### 5.2 Warning for an advanced emergency braking system (AEBS)

**5.2.1** The collision warnings system shall provide the driver with appropriate warning(s).

**5.2.2** The warning shall be specified, if necessary, for a failure warning when there is a failure in the advanced emergency braking system that prevents the requirements.

**5.2.2.1** There shall not be an appreciable time interval between each advanced emergency

braking system self-check, and subsequently there shall not be a delay in illuminating the warning signal, in the case of an electrically detectable failure;

**5.2.2.2** Upon detection of any non-electrical failure condition (e.g., sensor blindness or sensor misalignment), the warning signal shall be in accordance with Clause 4.2.2.

**5.2.3** Where the system has not been calibrated after a cumulative driving time of 15 seconds above a speed of 10km/h, information of this status shall be indicated to the driver. This information shall exist until the system has been successfully calibrated.

**5.2.4** If the vehicle is equipped with a means to manually deactivate the advanced emergency braking system, a deactivation warning shall be given when the system is deactivated.

### **5.3 False reaction avoidance**

**5.3.1** The system shall be designed to minimise the generation of collision warning signals and to avoid advanced emergency braking in situations where there is no risk of an imminent collision.

### **5.4 Collision warning**

**5.4.1** When an imminent collision with a preceding vehicle is detected in the same lane with a relative speed above that speed up to which the subject vehicle is able to avoid the collision, a collision warning shall be provided and shall be triggered at the latest 0.8 seconds before the start of emergency braking.

### **5.5 Emergency braking**

**5.5.1** When the system has detected the possibility of an imminent collision, there shall be a braking demand of at least 4 m/s<sup>2</sup> to the service braking system of the vehicle. This does not prohibit higher deceleration demand values than 4 m/s<sup>2</sup> during the collision warning for very short durations.

**NOTE 1** The emergency braking may be aborted, or the deceleration demand reduced below the threshold, if the conditions prevailing a collision are no longer present or the risk of a collision has decreased.

## **6. Speed range**

**6.1** The system shall be active at least within the vehicle speed range between 10 km/h and the maximum design speed of the vehicle and at all vehicle load conditions, unless deactivated.

### **Standards Council**

The Standards Council is the controlling body of the Bureau of Standards Jamaica and is responsible for the policy and general administration of the Bureau.

The Council is appointed by the Minister in the manner provided for in the Standards Act, 1969. Using its powers in the Standards Act, the Council appoints committees for specified purposes.

The Standards Act, 1969 sets out the duties of the Council and the steps to be followed for the formulation of a standard.

### **Preparation of standards documents**

The following is an outline of the procedure which must be followed in the preparation of documents:

1. The preparation of standards documents is undertaken upon the Standard Council's authorisation. This may arise out of representation from national organisations or existing Bureau of Standards' Committees of Bureau staff. If the project is approved it is referred to the appropriate sectional committee or if none exists a new committee is formed, or the project is allotted to the Bureau's staff.
2. If necessary, when the final draft of a standard is ready, the Council authorises an approach to the Minister in order to obtain the formal concurrence of any other Minister who may be responsible for any area which the standard may affect.
3. The draft document is made available to the general public for comments. All interested parties, by means of a notice in the Press, are invited to comment. In addition, copies are forwarded to those known, interested in the subject.
4. The Committee considers all the comments received and recommends a final document to the Standards Council
5. The Standards Council recommends the document to the Minister for publication.
6. The Minister approves the recommendation of the Standards Council.
7. The declaration of the standard is gazetted and copies placed on sale.
8. On the recommendation of the Standards Council the Minister may declare a standard compulsory.
9. Amendments to and revisions of standards normally require the same procedure as is applied to the preparation of the original standard.

### **Overseas standards documents**

The Bureau of Standards Jamaica maintains a reference library which includes the standards of many overseas standards organisations. These standards can be inspected upon request.

The Bureau can supply on demand copies of standards produced by some national standards bodies and is the agency for the sale of standards produced by the International Organization for Standardization (ISO) members.

Application to use the reference library and to purchase Jamaican and other standards documents should be addressed to:

Bureau of Standards Jamaica  
6 Winchester Road  
P.O. Box 113,  
Kingston 10 JAMAICA, W. I.