

# Passenger cars - Service brake - Structural integrity dynamometer test procedure

## 1 Scope

This standard sets forth strength test methods on service brakes that normally operate in passenger car, through the use of an inertial dynamometer.

## 2 Normative reference

The following standards contain which, thorough reference in this Standard, constitute provisions of this Standard. Only the edition of indicated year constitutes the provisions of this Standard but the revision and amendment made thereafter are not applied.

**JIS D 0210:1995** General rules of brake test method of automobiles and motor cycles

## 3 Definitions

The principal terms used in this standard, in addition to those defined in 2 of **JIS D 0210:1995**, are as follows:

### 3.1

#### **Deceleration 7.8 m/s<sup>2</sup> equivalent torque (ideal allocation: 80 % equivalent torque)**

The term applies to the torque required per brake wheel when a vehicle comes to a halt at a 7.8 m/s<sup>2</sup> deceleration, by taking any shift in load into consideration. This torque is calculated according to the following equations:

#### a) For forward direction control

$$\text{Front wheel } T_{ff} = \frac{0.8}{2} \left( W_f + 0.8 \frac{H}{L} W \right) r_f$$

$$\text{Rear wheel } T_{rf} = \frac{0.8}{2} \left( W_r - 0.8 \frac{H}{L} W \right) r_r$$

#### b) For backward direction control

$$\text{Front wheel } T_{fr} = \frac{0.8}{2} \left( W_f - 0.8 \frac{H}{L} W \right) r_f$$

$$\text{Rear wheel } T_{rr} = \frac{0.8}{2} \left( W_r + 0.8 \frac{H}{L} W \right) r_r$$

where,

$T_{ff}$ : Torque per front wheel during forward direction control (N·m)

$T_{rf}$ : Torque per rear wheel during forward direction control (N·m)

$T_{fr}$ : Torque per front wheel during backward direction control (N·m)

$T_{rr}$ : Torque per rear wheel during backward direction control (N·m)

$W$ : Load equivalent to the total mass of the vehicle (N)

$W_f$ : Load equivalent to the mass of the front wheels when the vehicle is loaded (N)

$W_r$ : Load equivalent to the mass of the rear wheels when the vehicle is loaded (N)