ISO 7635:2006-06 (E)

Road vehicles - Air and air/hydraulic braking systems of motor vehicles, including those with electronic control functions - Test proced ures

Contents

Page

Foreword v

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 Symbols 4

5 Test site conditions 6
5.1 Test site 6
5.2 Road surface condition 6
5.3 Ambient conditions 7

6 General requirements 7

7 Recommended sequence of the tests 8
7.1 Preparation and static checks and tests 8
7.2 Basic performance tests -- Unladen 9
7.3 Failure tests - Unladen 9
7.4 ABS tests -- Unladen 9
7.5 ABS tests -- Laden 10
7.6 Failure tests -- Laden 10
7.7 Basic performance tests -- Laden 10

8 Vehicle preparation 11
8.1 Documents and basic data 11
8.2 Braking system condition and bedding 11
8.3 Adjustment of braking equipment 11
8.4 Tyre conditions 11
8.5 Devices and instruments needed for the testing 11

9 Static tests and checks 13
9.1 Static braking force and control force vs. line pressure 13
9.2 Capacity of energy sources 13
9.3 Service braking system -- Response time measurement 14
9.4 Automatic braking 15
9.5 Brake failure and defect warning signals 15
9.6 Tests on vehicles equipped with spring brake actuators 17
9.7 Additional tests on vehicles equipped with EBS 18

10 Basic performance tests -- Unladen 18
10.1 Type 0 test (service braking system cold brake effectiveness, engine disconnected) 18
10.2 Type 0 test (service braking system cold brake, engine connected) 19
10.3 Parking braking system -- Hill holding test 19
10.4 Secondary braking system test 19
10.5 Wheel locking sequence 20

11 Failure tests -- Unladen 20

11.1 Service braking system partial failure test (type 0 test, cold brake effectiveness, engine disconnected) 20
11.2 Failed load sensing device test/function test 21
11.3 Failure of the energy source on vehicles equipped with EBS 21

12 ABS tests -- Unladen 22
12.1 ABS failure 22
12.2 Determination of the peak coefficient of adhesion on the high adhesion surface 23
12.3 Determination of adhesion utilization on high adhesion surface 24
12.4 Determination of adhesion utilization on low adhesion surface 26
12.5 Additional checks 26

13 ABS tests -- Laden 27
13.1 Additional split adhesion test 27
13.2 Energy consumption on low adhesion surface 27

14 Failure tests -- Laden 30
14.1 Service braking system partial failure test (type 0 test, cold brake effectiveness, engine disconnected) 30
14.2 Failed load sensing device test 30
14.3 Energy source failure test 30

15 Basic performance tests -- Laden 30
15.1 Parking braking system -- Hill holding test 30
15.2 Parking braking system -- Dynamic test 32
15.3 Wheel locking sequence 32
15.4 Type 0 test (service braking system cold brake effectiveness, engine disconnected) 32
15.5 Type 0 test (service braking system cold brake, engine connected) 32
15.6 Warning device test 33
15.7 Energy storage capacity test 33
15.8 Type II or type IIA tests (downhill, endurance braking test) 33
15.9 Type I test (fade test) 36

Annex A (normative) Typical braking equipment 38

Bibliography 40