DIN ISO 15082:2018-02 (E)

Road vehicles - Tests for rigid plastic safety glazing materials (ISO 15082:2016)

Contents

Page

National foreword 5

National Annex NA (informative) Bibliography 6

Foreword 7

1 Scope 8

2 Normative references 8

3 Terms and definitions 8

4 Test conditions 8

5 Conditioning of test specimens 8

6 Application of tests 9

7 Optical properties test 9

8 Head-form/fragmentation test 9
8.1 Principle 9
8.2 Apparatus 9
8.3 Test specimens 10
8.4 Procedure 11
8.5 Expression of results 11

9 Head-form test with deceleration measurement 12
9.1 Principle 12
9.2 Test conditions 12
9.3 Conditioning of test pieces 12
9.4 Apparatus 12
9.5 Calibration procedure and adjustment of the head-form 18
9.6 Test pieces 19
9.7 Test procedure 19
9.8 Evaluation 20
9.9 Expression of results 21

10 Ball test 21
10.1 227 g ball test 21
10.1.1 Principle 21
10.1.2 Apparatus 21
10.1.3 Test specimens 22
10.1.4 Procedure 22
10.1.5 Expression of results 23
10.2 2260 g ball test 23
10.2.1 Principle 23
10.2.2 Apparatus 23
10.2.3 Test specimens 23
10.2.4 Procedure 23
10.2.5 Expression of results 23

11 Abrasion resistance test 24
11.1 Principle 24
11.2 Abrasion resistance under dry conditions 24
11.2.1 Apparatus 24
11.3 Test specimens 28
11.4 Standardization of abrading wheels 28
11.5 Procedure 28
11.5.1 Cleaning 29
11.5.2 Conditioning 29
11.5.3 Initial haze measurement 29
11.5.4 Abrasion 29
11.5.5 After abrasion 30
11.5.6 Final haze measurement 30
11.6 Expression of results 31
11.7 Abrasion resistance under wet conditions (car wash test) 32
11.7.1 Apparatus 32
11.7.2 Reagents 34
11.7.3 Test specimens 34
11.7.4 Procedure 35
11.7.5 Expression of results 35

12 Cross-cut test 35
12.1 Principle 35
12.2 Apparatus 35
12.3 Test specimens 36
12.4 Procedure 36
12.5 Expression of results 37

13 Chemical resistance test 37
13.1 Principle 37
13.2 Chemical agents 37
13.3 Test specimens 38
13.4 Test procedure 38
13.5 Expression of results 39

14 Resistance to simulated weathering test 39
14.1 Principle 39
14.2 Exposure apparatus 39
14.2.1 Long arc xenon lamp 39
14.2.2 Measurements 40
14.3 Test specimens 40
14.4 Procedure 40
14.4.1 Temperature 41
14.4.2 Relative humidity 41
14.4.3 Water 42
14.5 Evaluation 42
14.6 Expression of results 42
14.7 Report of test parameters 42

15 Fire resistance test 43
15.1 Principle 43
15.2 Apparatus 43
15.3 Test specimens 43
15.4 Test procedure 43
15.5 Expression of results 44

Annex A (informative) Flexibility/rigidity categorization test for plastic safety glazing material 45

Annex B (informative) Vacuum pick-up nozzle modification 46

Annex C (normative) Calibration of the washing equipment 47

Annex D (informative) Calibration verification of Taber abraser 49

D.1 Verification of calibration of the Taber abraser 49
D.1.1 Wheel alignment and tracking 49
D.1.2 Wheel bearings condition 49
D.1.3 Vacuum suction force 49
D.1.4 Turntable platform position 49
D.1.5 Turntable speed 49
D.1.6 Load 49

Annex E (informative) Round robin test results to determine values for AS 4000S hard-coated polycarbonate reference samples in the Taber abrasion test 51

Bibliography 52