DIN EN 1191:2013-04 (E)

Windows and doors - Resistance to repeated opening and closing - Test method

Contents

Page

Foreword 4

Introduction 5

1 Scope 6

2 Normative references 6

3 Terms and definitions 7

4 Test equipment 9
4.1 Test rig 9
4.2 Operating equipment 9
4.3 Measuring equipment 9
4.4 Velocity measurement 10

5 Test requirements 10
5.1 General 10
5.2 Number of cycles 10
5.3 Reference velocity 10
5.4 Rest time 11
5.5 Operation of the fastening systems 11

6 Preparation for testing 12

7 Test procedure 12
7.1 Pre-test operation 12
7.2 Initial measurements 13
7.3 General cycle description 13
7.4 Measurements and maintenance 14
7.5 Stroke 15
7.6 Special cases 15
7.7 Final measurements 15

8 Test results 15

9 Test report 16

Annex A (normative) Test procedures for Tilt and Turn, Tilt-First, Turn-Only or Tilt-Only windows and door-height windows 17

A.1 Scope 17
A.2 General 17
A.3 Testing 17

Annex B (normative) Test procedures for Sliding, Lift and Slide or Lift and Slide and Tilt windows and door-height windows 23

B.1 Scope 23
B.2 Terms and definitions 23
B.3 General 24
B.4 Testing 24

Annex C (normative) Test procedures for Tilt and Slide windows and door-height windows 28

C.1 Scope 28
C.2 Terms and definitions 28
C.3 General 29
C.4 Testing 29

Annex D (normative) Test procedures for Fold and Slide windows and door-height windows 34

D.1 Scope 34
D.2 General 34
D.3 Testing 34

Annex E (normative) Test procedures for horizontal or vertical pivot windows and door-height windows 37

E.1 Scope 37
E.2 Terms and definitions 37
E.3 General 38
E.4 Testing 38

Annex F (normative) Test procedures for Vertical Sliding windows 40

F.1 Scope 40
F.2 Terms and definitions 40
F.3 General 41
F.4 Testing 41

Annex G (normative) Test procedures for side-hung and top-hung windows, opening outwards (including reversible windows) 43

G.1 Scope 43
G.2 Terms and definitions 43
G.3 General 44
G.4 Testing 44

Annex H (normative) Test procedures for side-hung pedestrian doorsets excluding power operated doors 46

H.1 Scope 46
H.2 Terms and definitions 46
H.3 General 47
H.4 Testing 49

Annex I (normative) Test procedures for power-operated (automatic) side-hung single action pedestrian doorsets 52

I.1 Scope 52
I.2 Terms and definitions 52
I.3 General 52
I.4 Testing Test order 52

Bibliography 54