

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