ISO 16316:2024-10 (E)

Windows, doors and curtain walling - Impacted by windborne debris in windstorms - Test method and classification

Contents

Page

Foreword ..... **v**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Symbols and abbreviated terms **4**

5 Principle and significance **4**
5.1 General 4
5.2 Significance and use 5
5.3 Options 5

6 Test apparatus **5**

7 Test specimens **7**
7.1 General 7
7.2 Test specimen size 7
7.3 Test specimen 7
7.4 Order of testing 8

8 Test procedure **8**
8.1 General 8
8.2 Preparation 8
8.2.1 General 8
8.2.2 Installation 8
8.2.3 Conditioning 8
8.2.4 Missile impact 8
8.3 Missile impact test 9
8.3.1 Projectile descriptions 9
8.3.2 Impact-speed tolerance 9
8.3.3 Impact angle 9
8.3.4 Impact location 10
8.4 Air pressure cycling test 16
8.4.1 General 16
8.4.2 Leakage 16
8.4.3 Air-pressure differential 17
8.4.4 Cyclic test loading 17

9 Pass and fail assessment criteria **18**
9.1 General 18
9.2 Glass infill(s) 18
9.3 Panel(s) 18
9.4 External emergency exit doorset (panic exit doorset) 18
9.5 Edge releases 18
9.6 Windstorm protective systems 18

10 Product qualification **18**
10.1 Requirements 18
10.2 Applicable missile for impact test 19
10.3 Levels of protection 19
10.4 Reference wind-speed zones 19

Annex A (normative) **Required information and test report** **21**
Annex B (informative) **Recommended missile-propulsion devices** **24**
Annex C (informative) **Reference wind speed** **26**
Annex D (normative) **Flow chart of test procedure** **27**
Annex E (informative) **Guidance on substitution criteria for fenestration assemblies qualified under this document** **29**
Annex F (informative) **Test program examples** **43**
Annex G (informative) **Flow chart of engineering analysis for wind-borne debris resistant building envelope design** **62**
Bibliography **64**