

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