

ISO 7170:2021-09 (E)

Furniture - Storage units - Test methods for the determination of strength, durability and stability

| Contents | | Page |
|--------------------|--|-------------|
| Foreword | | v |
| Introduction | | vi |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| 4 | General test conditions | 4 |
| 4.1 | Preliminary preparation | 4 |
| 4.2 | Application of forces | 5 |
| 4.3 | Tolerances | 5 |
| 4.4 | Prevention of movement during test | 5 |
| 4.5 | Loading | 6 |
| 5 | Test equipment and apparatus | 6 |
| 6 | Test procedures for non-movable parts | 8 |
| 6.1 | Shelves | 8 |
| 6.1.1 | General | 8 |
| 6.1.2 | Shelf retention test -- Horizontal outward force | 8 |
| 6.1.3 | Shelf retention test -- Vertical downward force | 8 |
| 6.1.4 | Deflection of shelves | 9 |
| 6.1.5 | Strength of shelf supports | 9 |
| 6.2 | Tops and bottoms | 10 |
| 6.2.1 | Sustained load test for tops and bottoms | 10 |
| 6.2.2 | Static load test for tops and bottoms | 11 |
| 6.3 | Clothes rails and supports | 11 |
| 6.3.1 | Strength of supports | 11 |
| 6.3.2 | Strength of clothes rails | 12 |
| 6.4 | Strength of the structure | 13 |
| 6.4.1 | Test for structure, underframe and/or legs | 13 |
| 6.4.2 | Drop test | 14 |
| 6.4.3 | Tests for units with castors or wheels | 15 |
| 7 | Test procedures for movable parts | 15 |
| 7.1 | Pivoted doors | 15 |
| 7.1.1 | General | 15 |
| 7.1.2 | Strength of pivoted doors -- Vertical load | 15 |
| 7.1.3 | Strength of pivoted doors -- Horizontal force | 16 |
| 7.1.4 | Slam shut of pivoted doors | 17 |
| 7.1.5 | Durability of pivoted doors | 17 |
| 7.2 | Sliding doors and horizontal roll fronts | 18 |
| 7.2.1 | General | 18 |
| 7.2.2 | Slam shut/open of sliding doors and horizontal roll fronts | 18 |
| 7.2.3 | Durability of sliding doors and horizontal roll fronts | 19 |
| 7.3 | Flaps | 20 |
| 7.3.1 | General | 20 |
| 7.3.2 | Strength of bottom-hinged flaps | 20 |

| | | |
|------------------------|---|----|
| 7.3.3 | Durability of flaps | 21 |
| 7.3.4 | Drop test for horizontally top-hinged doors/flaps | 21 |
| 7.3.5 | Vertical downward static load of top hinged flaps | 22 |
| 7.4 | Vertical roll fronts | 22 |
| 7.4.1 | General | 22 |
| 7.4.2 | Slam shut/open of vertical roll fronts | 22 |
| 7.4.3 | Durability of vertical roll fronts | 23 |
| 7.5 | Extension elements | 23 |
| 7.5.1 | General | 23 |
| ISO 7170:2021(E) 7.5.2 | Strength of extension elements | 23 |
| 7.5.3 | Durability of extension elements | 24 |
| 7.5.4 | Slam shut of extension elements | 26 |
| 7.5.5 | Slam open of extension elements | 26 |
| 7.5.6 | Strength of bottoms in extension elements | 27 |
| 7.5.7 | Interlock test | 27 |
| 7.6 | Locking and latching mechanism test | 27 |
| 7.6.1 | General | 27 |
| 7.6.2 | Strength test for locking and latching mechanisms for extension elements | 27 |
| 7.6.3 | Locking and latching mechanisms for doors, flaps and roll fronts | 28 |
| 7.6.4 | Locking and latching mechanism durability test | 28 |
| 8 | Trays | 28 |
| 8.1 | General | 28 |
| 8.2 | Sustained load test for trays | 28 |
| 8.3 | Drop test for trays | 28 |
| 9 | Strength of coat hooks | 29 |
| 10 | Units mounted to the building or other structure | 29 |
| 10.1 | Units not supported by the floor | 29 |
| 10.1.1 | General | 29 |
| 10.1.2 | Movable parts, shelf supports, tops and bottoms | 30 |
| 10.1.3 | Static load | 30 |
| 10.1.4 | Dislodgement test | 31 |
| 10.1.5 | Sideward detachment test | 31 |
| 10.2 | Units supported by the floor | 32 |
| 11 | Stability tests | 32 |
| 11.1 | General | 32 |
| 11.2 | Doors, extension elements and flaps closed, all storage units unloaded | 33 |
| 11.2.1 | Units that are, or can be adjusted to, a height of 1 000 mm or less | 33 |
| 11.2.2 | Units that are, or can be adjusted to, a height of more than 1 000 mm | 33 |
| 11.3 | Opening doors, extension elements and flaps, all storage units unloaded | 34 |
| 11.4 | Doors, extension elements and flaps opened and unlocked | 35 |
| 11.4.1 | All storage areas unloaded and all doors, extension elements and flaps open | 35 |
| 11.4.2 | All storage areas unloaded with overturning load | 36 |
| 11.4.3 | All storage areas loaded with overturning load | 37 |
| 11.4.4 | Storage areas partly loaded | 38 |
| 11.5 | Doors, extension elements and flaps closed and locked, all storage units loaded | 39 |
| 11.6 | Dynamic stability test for units with castors | 40 |
| 11.7 | Strength test for anti-overturning device | 41 |
| 11.8 | Additional stability test methods for TV furniture | 42 |
| 11.8.1 | Determination of TV template | 42 |
| 11.8.2 | Stability of TV-furniture with one door and/or extension element opened | 42 |
| 11.8.3 | Stability of TV furniture with doors and extension elements closed -- Storage areas unloaded | 42 |
| 12 | Test report | 43 |
| Annex A (informative) | Guidance for the choice of loads, cycles, etc. for storage furniture strength, durability and stability tests | 44 |

Annex B (informative) Suggested loads, cycles and forces for strength, durability and stability tests for storage furniture for domestic use47

Annex C (informative) Rationale for selected test methods 52

Annex D (normative) Apparatus for slam-shut/open test of extension elements59