

Standards

This standard provides details on product types, classification by use, test cycles, door mass, corrosion resistance, as well as definitions, product performance requirements, test apparatus, test methods and marking of products. In addition, the published standard includes annexes with details for special applications.

Scope

This European standard specifies requirements for single-axis hinges for windows and **doors opening in one direction only**, whose **rotation axis is no more than 30mm from the face of the sash or door**. It covers both fixed pin and lift-off hinges, and contains additional requirements for hinges intended for use on fire doors.

Digit 1 - Category of use

Four categories of use are identified:

- grade 1: light duty
- grade 2: medium duty
- grade 3: heavy duty
- grade 4: severe duty

Door type	Mass kg	Duty
Cupboard, wardrobe, cabinet, louvered doors and shutters	3.0–10.0	Light
Light internal large wardrobe and large louvered doors	10.0–17.5	Light
Medium internal doors	17.5–25.0	Medium
Heavy internal doors	25.0–37.5	Medium
Heavy internal doors	40.0–60.0	Heavy
Oversize or special external doors	55.0–110.0	Heavy

Digit 2 - Durability

Three grades are identified for single-axis hinges manufactured to this European standard:

- grade 3: 10,000 test cycles, for light duty hinges on windows only
- grade 4: 25,000 test cycles, for light duty hinges on windows and doors
- grade 7: 200,000 test cycles, for medium, heavy and severe duty hinges on doors only

Digit 3 - Test Door Mass

Eight door mass grades related to single-axis hinges are identified in this European standard as shown in Table 1 below.

Test door mass grade	Door mass
0	10 kg
1	20 kg
2	40 kg
3	60 kg
4	80 kg
5	100 kg
6	120 kg
7	160 kg

Digit 4 – Suitability for fire/smoke door use

Four categories of use are identified:

- grade 0: not suitable for fire/smoke resistant door assemblies
- grade 1: suitable for fire/smoke resistant door assemblies subject to satisfactory assessment of the contribution of the single-axis hinge to the fire resistance of the specified fire/smoke door assemblies.
- Such assessments beyond the scope of this European standard (see EN 1634-1).

Digit 5 – Safety

- Single-axis hinges are required to satisfy the essential requirements of safety in use. Therefore, only grade 1 is identified

Digit 6 – Corrosion Resistance

Five grades of corrosion resistance are identified in accordance with EN 1870:

- grade 0: no defined corrosion resistance.
- grade 1: mild resistance.
- grade 2: moderate resistance.
- grade 3: high resistance.

Digit 7 – Security

Two grades of security are identified for single-axis hinges:

- grade 0: not suitable for use on burglar-resistant door assemblies
- grade 1 : suitable for applications requiring a degree of security. Annex C of this European standard details the hinge grade to use for the level of security required

Digit 8 – Hinge Grade

Fourteen grades are identified in this European standard and are detailed in Table 2 below. The full classification is shown in the standard

Hinge Grade	Usage	Test cycles	Door mass
1	Window	10 000	10 kg
2	Window	10 000	20 kg
3	Window/Door	25 000	20 kg
4	Door	200 000	20 kg
5	Window	10 000	40 kg
6	Window/Door	25 000	40 kg
7	Door	200 000	40 kg
8	Window	10 000	60 kg
9	Window/Door	25 000	60 kg
10	Door	200 000	80 kg
11	Door	200 000	80 kg
12	Door	200 000	100 kg
13	Door	200 000	120 kg
14	Door	200 000	160 kg