Lloyd Worrall
ARCHITECTURAL SOLUTIONS

BS EN 1935 : 2002

BS EN 1935 : 2002 Single axis hinges

Products tested to British and European standards provide greater durability, longer warranty periods, peace of mind and evidence of professional specification.

This European standard specifies requirements for single-axis hinges of lift-off or fixed-pin type for windows and doors opening only in one direction whose rotation axis is no more than 30mm from the face of the sash or door. The windows and doors may or may not be fitted with closing devices.

Under the standard each product is tested and classified accordingly to show its compliance. The identification of an 8-digit code is visible on the individual product. Each digit represents a category and how it measured against the standard to which it was tested.

Digit 1 - Category of use
Four categories of duty are used:

Category 1: light duty.

Category 2: medium duty.

Category 3 – heavy duty.

Category 4 – severe duty.

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.

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 the table below.

Test Door Mass Grade	Door Mass
0	10kg
1	20kg
2	40kg
3	60kg
4	80kg
5	100kg
6	120kg
7	160kg

Digit 4 - Suitability for use on fire/smoke doors
Two grades of suitability are identified

Grade 0 - not suitable for fire/smoke resistance door assemblies.

Grade 1 - Suitable for use on fire / smoke resistant door assemblies subject to satisfactory assessment of the contribution of the hinges to the fire resistance of the specified fire / door assemblies.

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 1670:

Grade 0: no defined corrosion resistance

Grade 1: mild resistance.

Grade 2: moderate resistance.

Grade 3: high resistance.

Grade 4: very high resistance.

Digit 7 – Security
Two grades of security are identified for single-axis hinges

Grade 0: no security.

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 as detailed in the table below.

Hinge Grade	Window / Door	Test Cycles	Door Mass
1	window	10,000	10kg
2	window	10,000	20kg
3	window/door	25,000	20kg
4	door	200,000	20kg
5	window	10,000	40kg
6	door/winodow	25,000	40kg
7	door	200,000	40kg
8	window	10,000	60kg
9	window/door	25,000	60kg
10	door	200,000	60kg
11	door	200,000	80kg
12	door	200,000	100kg
13	door	200,000	120kg
14	door	200,000	160kg

Safe
Secure
Accessible

Lloyd Worrall
ARCHITECTURAL SOLUTIONS

BS EN 1935 : 2002

Example

4	7	6	1	1	3	1	14

The above code signifies a single-axis hinge for use in severe duty situations, tested to 200,000 cycles, for use on doors with a mass up to 120kg, with stated fire door suitability, high corrosion resistance, suitable for burglar-resistant doors, and with a hinge grading of 14.

CE

Product Marking

This standard requires that each single-axis hinge manufactured to the standard be marked with the following:

a: manufacturer's name or trademark, or other means of identification.

b: the hinge grade.

c: number of this European standard.