

DIN EN 12184:2022-12 (English)

Electrically powered wheelchairs, scooters and their chargers - Requirements and test methods

Contents		Page
European foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	8
4	Test apparatus	9
5	Type classes	10
6	General requirements	11
6.1	Risk management	11
6.2	Intended performance and technical documentation	11
6.3	Clinical evaluation and investigation	11
6.4	Wheelchairs that can be dismantled	11
6.5	Single-use fasteners	11
6.6	Biocompatibility and toxicity	12
6.7	Contaminants and residues	12
6.8	Infection and microbiological contamination	12
6.9	Overflow, spillage, leakage, and ingress of liquids	13
6.10	Safety of moving parts	14
6.11	Prevention of traps for parts of the human body	15
6.12	Folding and adjusting mechanisms	16
6.13	Surfaces, corners, edges and protruding parts	16
6.14	Ergonomic principles	17
6.15	General modifications to normative references	17
6.16	Applicable provisions for specified types of wheelchair	17
6.17	Recommendations	17
7	Preparation for testing	17
7.1	General	17
7.2	Test dummy	18
7.3	Human test occupant	18
8	Wheelchair performance	18
8.1	Driving characteristics	18
8.2	Static, impact and fatigue strength	21
8.3	Wheelchairs for use as seats in motor vehicles	21
8.4	Climatic performance	22
9	Component properties	22
9.1	Foot supports, lower leg support assemblies and arm supports	22
9.2	Component mass	24
9.3	Pneumatic tyres	24
9.4	Means for maintaining a sitting posture	24
9.5	Resistance to ignition	24

10	Propulsion and braking systems	25
10.1	Means for operating brakes	25
10.2	Braking functions	26
10.3	Freewheel device	29
11	Operations	29
11.1	Operations intended to be carried out by the occupant and/or assistant	29
11.2	Controls intended for operation by the occupant	30
11.3	Controls intended for operation by an assistant	30
11.4	Assistant control unit, push handles and handgrips	31
11.5	Operating forces	32
11.6	Occupied seating adjustments	33
12	Electrical systems	33
12.1	General requirements	33
12.2	Circuit protection	33
12.3	Battery chargers	34
12.4	Charging connector	35
12.5	Battery enclosures and containers	35
12.6	Emergency stop	35
12.7	Lighting	36
12.8	Switching off while driving	36
12.9	Software	36
12.10	Lithium cells and batteries	36
12.11	Remote control	36
13	Information supplied by the manufacturer	37
13.1	General	37
13.2	Pre-sale information	37
13.3	User information	38
13.4	Service information	39
13.5	Labelling	39
14	Test report, tables and figures	40
Annex A (informative)	Recommendations for dimensions and manoeuvring space of electrically powered wheelchairs	49
Annex B (informative)	Recommended design features	51
Annex C (informative)	Recommendations for lighting and reflectors	55
Annex E (informative)	Recommendations for safety in freewheel mode	58
Annex F (informative)	Hazardous substances	60
Annex G (normative)	Applicable provisions for particular types of wheelchair	66
Bibliography	75