

DIN EN ISO 11199-1:2021-09 (E)

Assistive products for walking manipulated by both arms - Requirements and test methods - Part 1: Walking frames (ISO 11199-1:2021)

Contents		Page
European foreword		4
Foreword		5
Introduction		6
1	Scope	7
2	Normative references	7
3	Terms and definitions	7
4	Apparatus	12
5	Test conditions	12
6	General requirements and test methods	13
6.1	Risk analysis	13
6.2	Walking frames that can be dismantled	14
6.3	Fasteners	14
6.4	User mass/Load limits	14
6.5	Structure requirements	14
6.6	Brakes	14
6.6.1	Requirements	14
6.6.2	Test method	15
6.7	Handgrip	15
6.8	Leg section and tip	15
7	Materials	15
7.1	General	15
7.2	Flammability	16
7.3	Biocompatibility and toxicity	16
7.4	Infection and microbiological contamination	16
7.4.1	General	16
7.4.2	Cleaning and disinfection	16
7.5	Resistance to corrosion	16
8	Ingress of liquids	16
9	Temperatures of parts that come in contact with human skin	17
10	Safety of moving parts	17
10.1	Squeezing	17
10.2	Mechanical wear	18
11	Prevention of traps for parts of the human body	18
11.1	Holes and clearances	18
11.2	V-shape openings	18
12	Folding, adjusting and locking mechanisms	18
12.1	General	18

12.2	Folding mechanisms	19
12.3	Locking mechanisms	19
13	Lifting and carrying handles	19
13.1	General	19
13.2	Requirement	19
13.3	Test method	20
14	Surfaces, corners and edges	20
15	Static stability	20
15.1	Requirements for static stability	20
15.2	Test method for static stability	21
15.2.1	General requirement	21
15.2.2	Forward-direction static stability test	21
15.2.3	Rearward-direction static stability test	22
15.2.4	Sideway-direction static stability test	23
16	Static strength	24
16.1	Static strength of walking frame	24
16.1.1	General requirement	24
16.1.2	Requirements for static strength of walking frame	24
16.1.3	Test method for static strength of walking frame	24
16.2	Static strength for the legs with tip	25
16.2.1	General requirement	25
16.2.2	Requirements for static strength of the legs with tip	25
16.2.3	Test method for static strength of the legs with tip	25
17	Durability test	26
17.1	General requirement	26
17.2	Requirement for durability	26
17.3	Test method for durability	26
18	Ergonomic principles	27
19	Packaging	27
20	Information supplied by the manufacturer	27
20.1	General	27
20.2	Information marked on the product	28
20.3	Instruction manual	28
20.4	Test report	29
	Annex A (informative) Consideration items for hazards when designing the products	31
	Annex B (informative) General recommendations	33
	Bibliography	35