

# ISO 24553:2023-02 (E)

## Ergonomics - Accessible design - Ease of operation

---

<b>Contents</b>		<b>Page</b>
	<b>Foreword</b> .....	<b>iv</b>
	<b>Introduction</b> .....	<b>v</b>
<b>1</b>	<b>Scope</b> .....	<b>1</b>
<b>2</b>	<b>Normative references</b> .....	<b>1</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>1</b>
<b>4</b>	<b>General requirements</b> .....	<b>2</b>
4.1	General.....	2
4.2	Layout of controls and control panels.....	2
4.3	Strength required for operation.....	3
4.4	Dexterity.....	3
4.5	Avoidance of simultaneous multiple operations.....	4
4.6	Provision of multiple means of operation.....	4
4.7	Provision of feedback.....	4
4.8	Logical process.....	5
4.9	Safety and a fail-safe mechanism.....	5
4.10	Other (assembling, installation, storage and maintenance).....	6
<b>5</b>	<b>Ergonomic requirements and recommendations for ease of operation</b> .....	<b>6</b>
5.1	General.....	6
5.2	Holding, lifting, carrying, pushing or pulling with hands or feet.....	7
5.2.1	Shape and size of products.....	7
5.2.2	Mass to hold, to lift and to carry with hands.....	7
5.2.3	Strength (pushing or pulling with hands or feet).....	7
5.3	Gripping, grasping, rotating, twisting, pushing or pulling (with fingers), pinching, sliding and touching.....	8
5.3.1	Shape and size of products, controls and control panels.....	8
5.3.2	Strength (hands and fingers).....	9
5.4	Reach range.....	10
5.4.1	Height of operation plane of products, controls and control panels.....	10
5.4.2	Reach range of the upper limbs.....	10
5.4.3	Useful field of view for finding products, controls and control panels.....	10
	<b>Annex A (informative) Design items to consider accessibility of products related to ease of operation</b> .....	<b>11</b>
	<b>Annex B (informative) Reference data for human physical characteristics and strength</b> .....	<b>12</b>
	<b>Annex C (informative) Textual descriptions of figures in Annex <a href="#">B.3</a></b> .....	<b>37</b>
	<b>Bibliography</b> .....	<b>60</b>