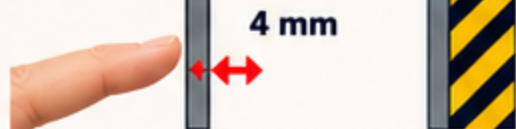




Guarding Gaps and Safety Distances

What can get through the opening, and how far could it reach?

Body part	Example	Conservative opening size to assume entry is possible (mm)	Conservative minimum distance to hazard (mm)	Illustration (side view)
Fingertip		4 mm Fingertip can enter openings larger than 4 mm	2 mm Keep the hazard at least 2 mm away	
Finger		6 mm Finger can enter openings larger than 6 mm	20 mm Keep the hazard at least 20 mm away	
Hand		12 mm Hand can enter openings larger than 12 mm	120 mm Keep the hazard at least 120 mm away	
Arm		40 mm Arm can enter openings larger than 40 mm	850 mm Keep the hazard at least 850 mm away	
Toe		15 mm Toe can enter openings larger than 15 mm	80 mm Keep the hazard at least 80 mm away	
Foot		35 mm Foot can enter openings larger than 35 mm	650 mm Keep the hazard at least 650 mm away	
Lower leg		80 mm Lower leg can enter openings larger than 80 mm	1,100 mm Keep the hazard at least 1,100 mm away	
Whole leg		95 mm Whole leg can enter openings larger than 95 mm	1,100 mm Keep the hazard at least 1,100 mm away	
Whole body		180 mm Whole body access is possible through openings larger than 180 mm	— Treat as potential body entry. Use appropriate access control measures (e.g. interlocking gates, isolation).	

Reference standards (current editions)

- **AS/NZS 4024.1801:2025** – Safety distances to prevent danger zones being reached by upper and lower limbs (Australia/New Zealand)
- **ISO 13857:2019** – Safety distances to prevent hazard zones being reached by upper and lower limbs (International)
- **EN ISO 13857:2019** – Safety distances to prevent hazard zones being reached by upper and lower limbs (Europe)
- **CAN/CSA-ISO 13857:22** – Safety distances to prevent hazard zones being reached by upper and lower limbs (Canada)

Whole-body access

- **AS/NZS 4024.1702:2014** – Human body measurements: Principles for determining the dimensions required for openings for whole body access into machinery (Australia/New Zealand)
- **EN 547-1:1996+A1:2008** – Anthropometric data for the design of workspaces (Europe)
- **ISO 15534-1:2000** – Ergonomic design for the safety of machinery (International)

