Safety Distances for Safety Systems

General safety distances

Safety distances relative to human size must be taken into consideration when securing dangerous areas. These safety distances are based on the reach of a person (14 years or older) in the direction of the dangerous area with their own body parts and without the use of objects, then a safety margin is added.

Opening width e	Safety clearance		
	Slot	Square	Circle
e ≤ 4	≥ 2	≥ 2	≥ 2
4 < e ≤ 6\	≥ 10	≥ 5	≥ 5
6 < e ≤ 8	≥ 20	≥ 15	≥ 5
8 < e ≤ 10	≥ 80	≥ 25	≥ 20
10 < e ≤ 12	≥ 100	≥ 80	≥ 80
12 < e ≤ 20	≥ 120	≥ 120	≥ 120
20 < e ≤ 30	≥ 850*	≥ 120	≥ 120
30 < e ≤ 40	≥ 850	≥ 200	≥ 120
40 < e ≤ 120	≥ 850	≥ 850	≥ 850

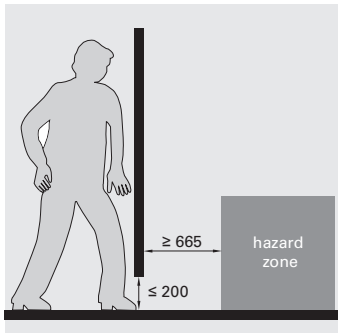
* If the length of the slit-shaped opening ≤ 65 mm, the thumb acts as a limit and the safety distance can be reduced to 200 mm.

Reaching around edges

When reaching around arbitrary edges, the safety distances are as follows:
for the hand from the base to the tips of the fingers
at least 130 mm
for the hand from the wrist to the tips of the fingers
at least 230 mm
for the arm from the elbow to the tips of the fingers
at least 550 mm
for the arm from the shoulder to the tips of the fingers
at least 850 mm

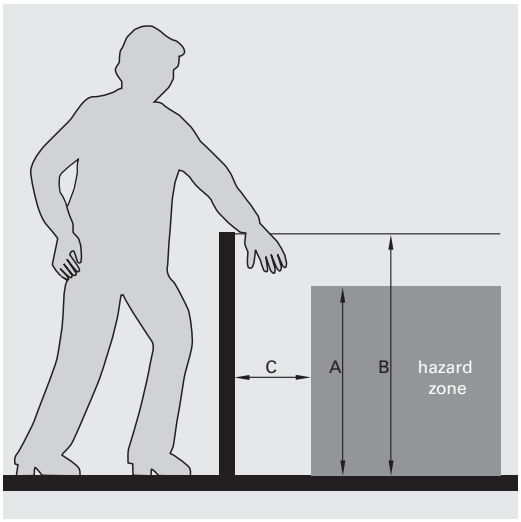
Entry into dangerous areas with the lower limbs

Acc to DIN EN ISO 13857, for a ground clearance ≤ 200 mm, the foot safety distance must be ≥ 665 mm. This strictly assumes a standing position without any additional assistance.
According to DIN EN ISO 13857, slotted openings > 180 mm and square or round openings > 240 mm permit entry for the entire body.
If there is a risk of slipping or abuse, the specified value may be unsuitable. Additional measures may be necessary to restrict access.



Reaching over edges on work or safety equipment

When reaching over edges on equipment or safety mechanisms, the required safety distance is satisfied if the height of the dangerous area in mm (A) and the height of the protective structure in mm (B) are no less than the corresponding value in the table below for horizontal distance from the dangerous area in mm (C). This assumes that the protective structure has a height of over 1000 mm. The area between the safety structure and the dangerous area may not be entered.



Height of danger area in mm (A)	Height of protective structure in mm (B)							
	2400	2200	2000	1800	1600	1400	1200	1000
	Horizontal distance from danger area in mm (C)							
2400	300	400	600	700	800	900	1000	1100
	100	100	100	100	100	100	100	100
2200	300	400	600	800	900	1000	1200	1300
		250	350	400	500	500	600	600
2000	-	400	600	800	900	1100	1300	1400
	-	-	350	500	600	700	900	1100
1800	-	-	600	800	900	1100	1400	1500
	-	-	-	600	900	900	1000	1100
1600	-	-	500	800	900	1100	1400	1500
	-	-	-	500	900	900	1000	1300
1400	-	-	-	800	900	1100	1400	1500
	-	-	-	100	800	900	1000	1300
1200	-	-	-	700	900	1100	1400	1500
	-	-	-	-	500	900	1000	1400
1000	-	-	-	-	800	1000	1400	1500
	-	-	-	-	300	900	1000	1400
800	-	-	-	-	600	900	1300	1500
	-	-	-	-	-	600	900	1300
600	-	-	-	-	-	800	1300	1400
	-	-	-	-	-	-	500	1200
400	-	-	-	-	-	400	1200	1400
	-	-	-	-	-	-	300	1200
	Values for high risk				Values for low risk			