

UMBC Electrical Safety Written Plan
Appendix B: Approach Boundaries for Shock Protection from Live Parts

NFPA 70E 2018: Table 130.4 (D) (a) Alternating Current (AC) Systems

Nominal System Voltage (phase to phase) ^a	Limited Approach Boundary ^b		Restricted Approach Boundary ^b ; Includes Inadvertent Movement Adder
	Exposed Movable Conductor ^c	Exposed Fixed Circuit Part	
Less than 50V	Not specified	Not specified	Not specified
50V to 300V	10 ft	3 ft 6 in	Avoid Contact
301V to 750V	10 ft	3 ft 6 in	1 ft
751V to 15 kV	10 ft	5 ft	2 ft 2 in
15.1 kV - 36 kV	10 ft	6 ft	2 ft 9 in
36.1 kV - 46 kV	10 ft	8 ft	2 ft 9 in
46.1 kV - 72.5 kV	10 ft	8 ft	3 ft 6 in
72.6 kV - 121 kV	10 ft 8 in	8 ft	3 ft 6 in
138 kV - 145 kV	11 ft	8 ft	3 ft 10 in
161 kV - 169 kV	11 ft 8 in	11 ft 8 in	4 ft 3 in
230 kV - 242 kV	13 ft	13 ft	5 ft 8 in
345 kV - 362 kV	15 ft 4 in	15 ft 4 in	9 ft 2 in
500 kV - 550 kV	19 ft	19 ft	11 ft 8 in
765 kV - 800 kV	23 ft 9 in	23 ft 9 in	15 ft 11 in

NFPA 70E 2018: Table 130.4 (D) (b) Direct Current (DC) Voltage Systems

Nominal System Voltage (phase to phase)	Limited Approach Boundary		Restricted Approach Boundary; Includes Inadvertent Movement Adder
	Exposed Movable Conductor ^c	Exposed Fixed Circuit Part	
Less than 50V	Not specified	Not specified	Not specified
50V to 300V	10 ft	3 ft 6 in	Avoid Contact
301V to 1 kV	10 ft	3 ft 6 in	1 ft
1.1 kV - 5 kV	10 ft	5 ft	1 ft 5 in
5 kV - 15 kV	10 ft	5 ft	2 ft 2 in
15.1 kV - 45 kV	10 ft	8 ft	2 ft 9 in
45.1 kV - 75 kV	10 ft	8 ft	3 ft 6 in
75.1 kV - 150 kV	10 ft 8 in	10 ft	3 ft 10 in
150.1 kV - 250 kV	11 ft 8 in	11 ft 8 in	5 ft 3 in
250.1 kV - 500 kV	20 ft	20 ft	11 ft 6 in
500.1 kV - 800 kV	26 ft	26 ft	16 ft 5 in