Errata to
2023 Edition
National Electrical Safety Code®

Correction Sheet #1
Issued 15 November 2023

The following corrections should be made:

Section 23.
Clearances

233. Clearances between wires, conductors, and cables carried on different supporting structures

Page 107: Replace "× V_L" with "+ V_L" in the following equations in Rule 233B3:

$$D = 3.28\left[\frac{\{V_H \times (PU) + V_L\} \times a}{500 \times K}\right]^{1.667} b \quad \text{(ft)}$$

$$D = 1.00\left[\frac{\{V_H \times (PU) + V_L\} \times a}{500 \times K}\right]^{1.667} b \quad \text{(m)}$$

234. Clearance of wires, conductors, cables, and equipment from buildings, bridges, rail cars, swimming pools, supporting structures, and other installations

Page 125: In the elevation view, replace "18" max" with "18" min" as follows in Figure 234-2(c):

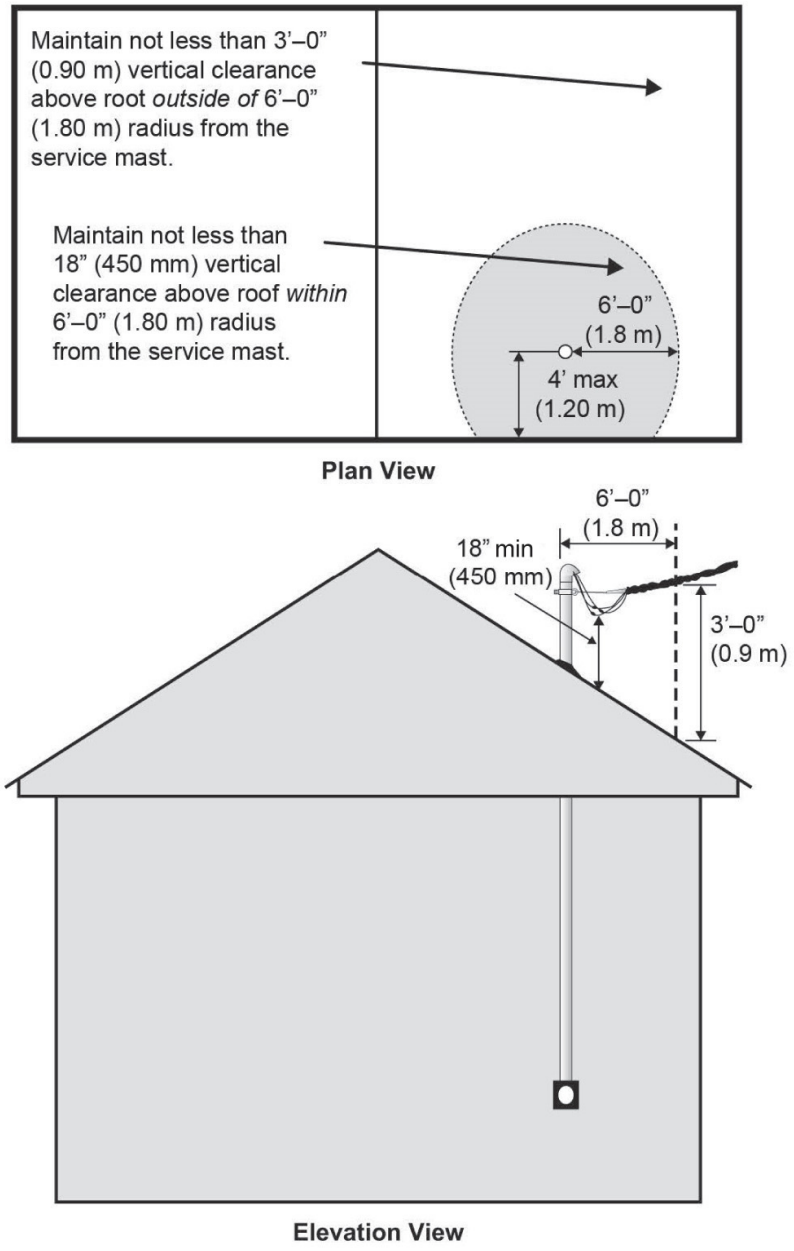


Figure 234-2(c)—Clearances of service drop terminating on support mast

Page 127: For horizontal clearance in the legend, replace "Rule 234F1a" with "Rule 234F1b" in Figure 234-4(a) as follows:

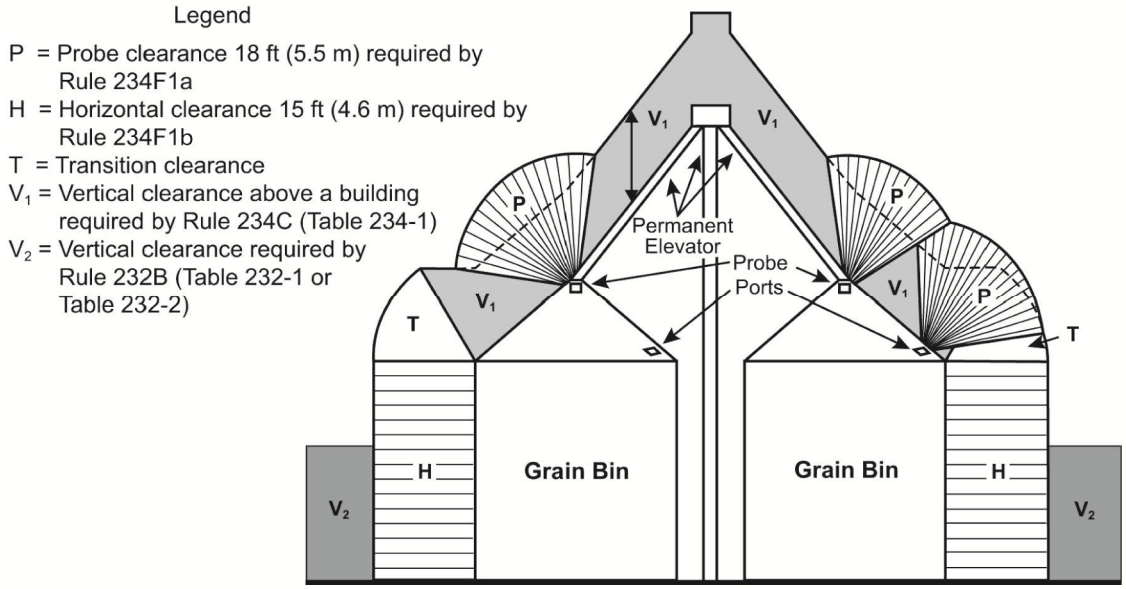


Figure 234-4(a)—Clearance envelope for grain bins filled by permanently installed augers, conveyors, or elevators

235. Clearance for wires, conductors, or cables carried on the same supporting structure

Page 144: Replace "× V_L" with "+ V_L" in the following equations in Rule 235C3b(1):

$$D = 3.28\left[\frac{\{V_H \times (PU) + V_L\} \times a}{500 \times K}\right]^{1.667} bc \quad \text{(ft)}$$

$$D = 1.00\left[\frac{\{V_H \times (PU) + V_L\} \times a}{500 \times K}\right]^{1.667} bc \quad \text{(m)}$$

Section 25.
Structural loadings for Grades B and C

250. General loading requirements and maps

Page 178: Reformat Rule 250C1b and the following text in order to properly display Rule 250C1 as follows:

C. Extreme wind loading

1. Where either of the following conditions exist:

   a. A structure or its supported facilities exceeds 60 ft (18 m) above ground or water level,

   b. As required by Rule 261A1c, 261A2e, or 261A3d,

   the structure and its supported facilities shall be designed to withstand the extreme wind load associated with the Basic Wind Speed, as specified by Figure 250-2. The wind pressures calculated shall be applied to the entire structure and supported facilities without ice. The following formula shall be used to calculate wind load.

   NOTE: The basic wind speeds shown on Figure 250-2(a) and Figure 250-2(b) are for purposes of safety per grade of construction. See Rule 010C.

$$\text{Load in pounds} = 0.00256 \times \left(V_{mi/h}\right)^2 \times k_z \times G_{RF} \times C_f \times A\left(ft^2\right)$$

$$\text{Load in newtons} = 0.613 \times \left(V_{mi/s}\right)^2 \times k_z \times G_{RF} \times C_f \times A\left(m^2\right)$$

where [19]

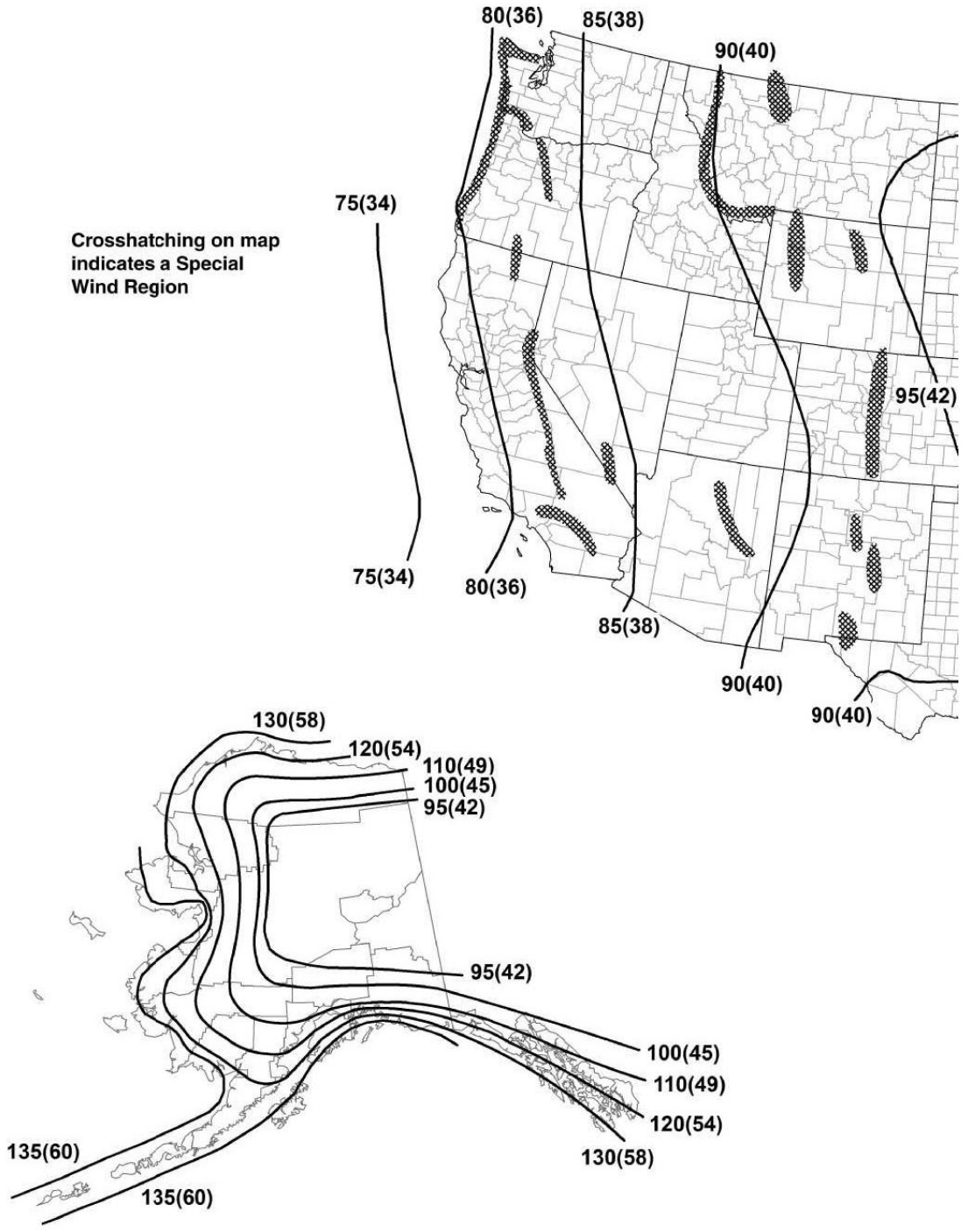
0.613 0.00256	Velocity-pressure numerical coefficient reflects the mass density of air for the standard atmosphere, i.e., temperature of 59 °F (15 °C) and sea level pressure of 29.92 in (760 mm) of mercury. The numerical coefficient 0.00256 customary (0.613 metric) shall be used except where sufficient climatic data are available to justify the selection of a different value of this factor for a design application.
k_z	Velocity pressure exposure coefficient, as defined in Rule 250C2, Table 250-2
V	Basic wind speed, 3 s gust wind speed in m/s at mi/h at 33 ft (10 m) above ground or water level: Figure 250-2(a), Grade B, 100 year Mean Recurrence Interval (MRI) Figure 250-2(b), Grade C, 50 year Mean Recurrence Interval (MRI)
G_{RF}	Gust response factor, as defined in Rule 250C3, Table 250-3(a) and Table 250-3(b)
C_f	Force coefficient (shape factor). As defined in Rules 251A2 and 252B
A	Projected wind area, ft^2 (m^2)

The wind pressure parameters (k_z, V, and G_{RF}) are based on open terrain with scattered obstructions (Exposure Category C as defined in ASCE 7-16). Exposure Category C is the basis of the NESC extreme wind criteria. Topographical features such as ridges, hills, and escarpments may increase the wind loads on site-specific structures. A Topographic Factor, K_{zt}, from ASCE 7-16, may be used to account for these special cases.

NOTE: Special wind regions—Although the wind speed map is valid for most regions of the country, special wind regions indicated on the map are known to have wind speed anomalies. Winds blowing over mountain ranges or through gorges or river valleys in these special regions can develop speeds that are substantially higher than the values indicated on the map.

[19] The metric versions of Table 250-3(a) and Table 250-3(b) can be found in Annex 1.

Pages 182 and 183: Replace Figure 250-2(a) as follows in order to correct some differences in county boundaries and wind speed contours:

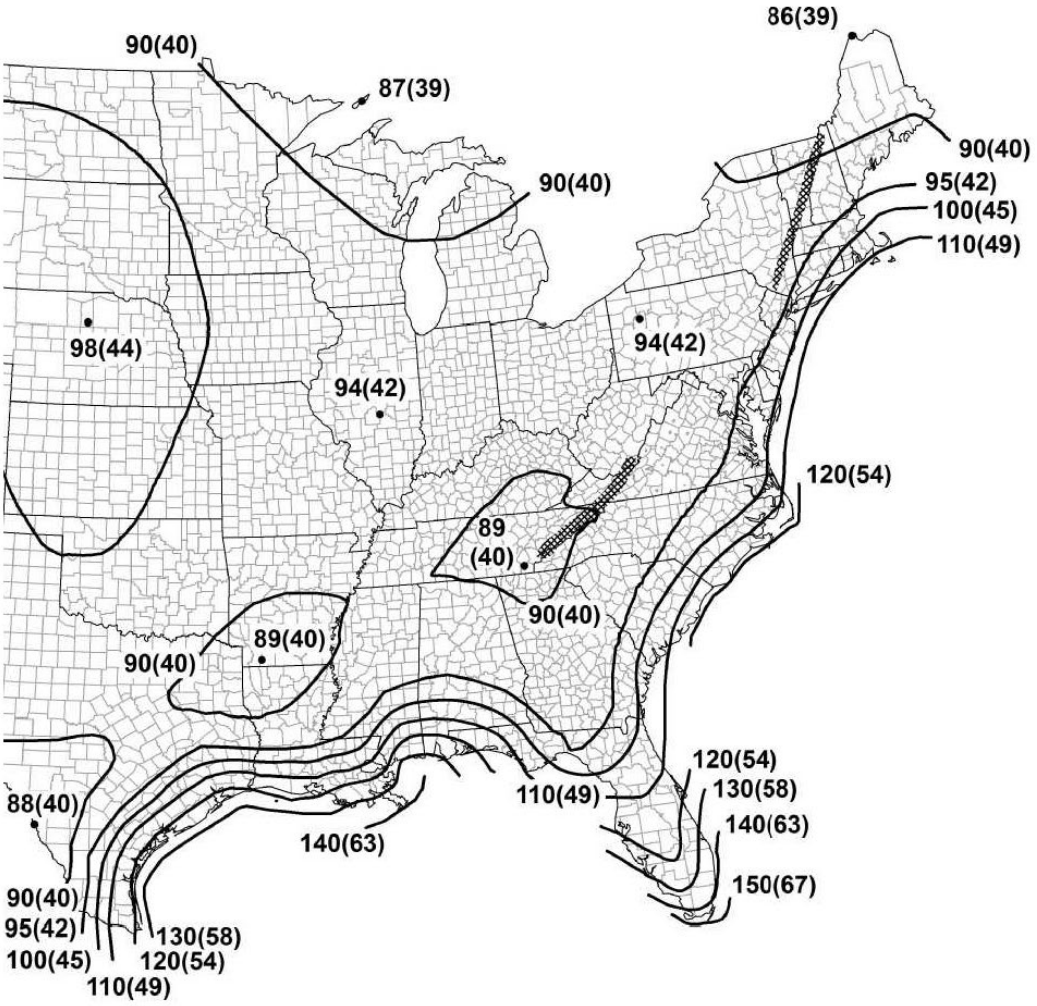


Notes

1. Values are nominal design 3-s gust wind speeds in mi/h (m/s) at 33 ft (10 m) above ground for Exposure Category C.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

Figure 250-2(a)—Grade B, 100 year Mean Recurrence Interval (MRI) 3 s gust wind speed map in mph (m/s) at 33 ft (10 m) aboveground (ASCE 7-16)

NOTE: Figure 250-2(a) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191 from ASCE 7-16, Minimum Design Loads for Buildings and Other Structures. Copyright © 2017.



Location	Vmph	(m/s)
Guam	163	(73)
Virgin Islands	143	(64)
American Samoa	134	(60)
Hawaii – Special Wind Region Statewide	86	(38)

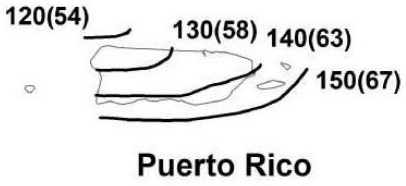
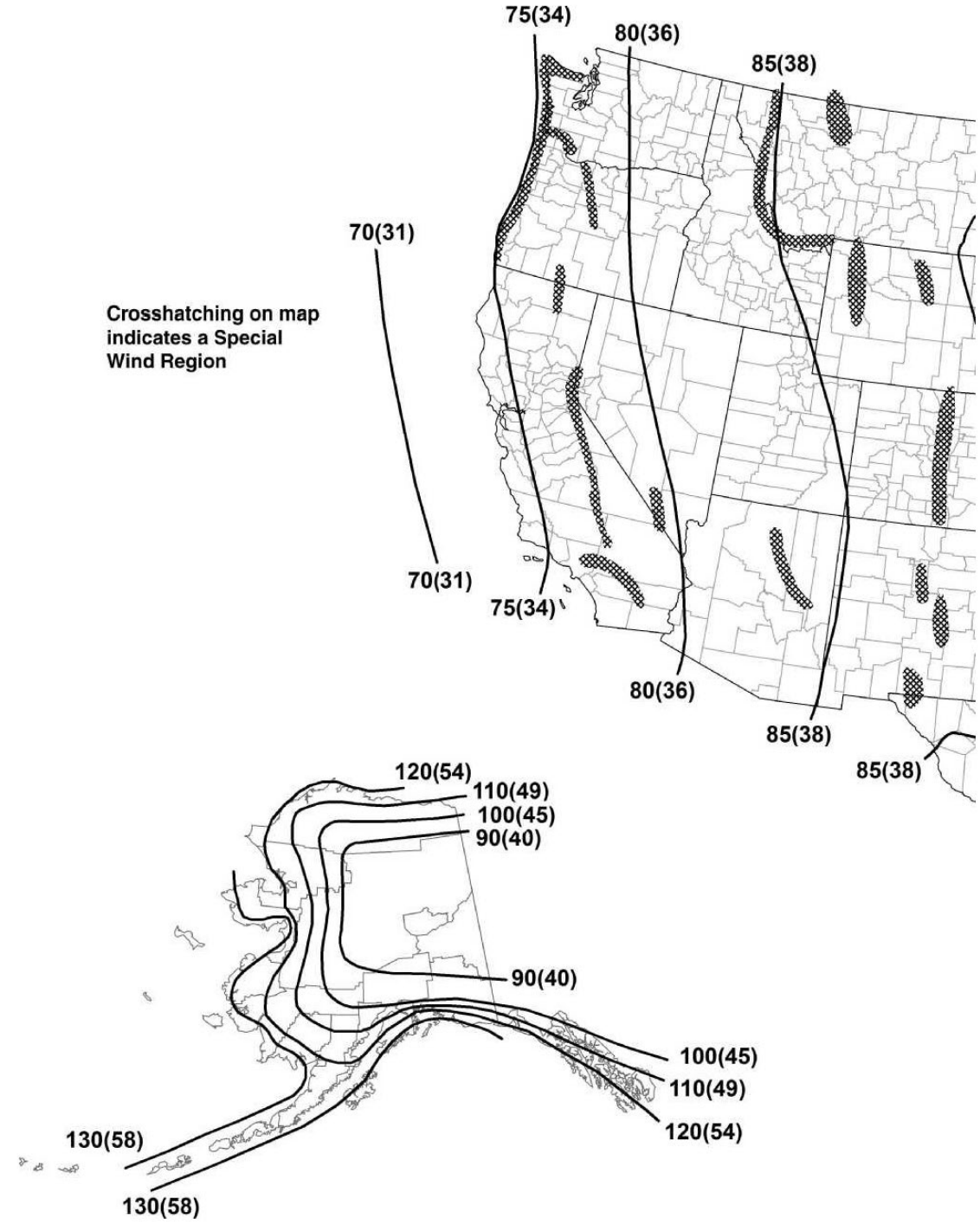


Figure 250-2(a)—Grade B, 100 year Mean Recurrence Interval (MRI) 3 s gust wind speed map in mph (m/s) at 33 ft (10 m) aboveground (ASCE 7-16) *(continued)*

NOTE: Figure 250-2(a) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191 from ASCE 7-16, Minimum Design Loads for Buildings and Other Structures. Copyright © 2017.

Pages 184 and 185: Replace Figure 250-2(b) as follows in order to correct some differences in county boundaries and wind speed contours:

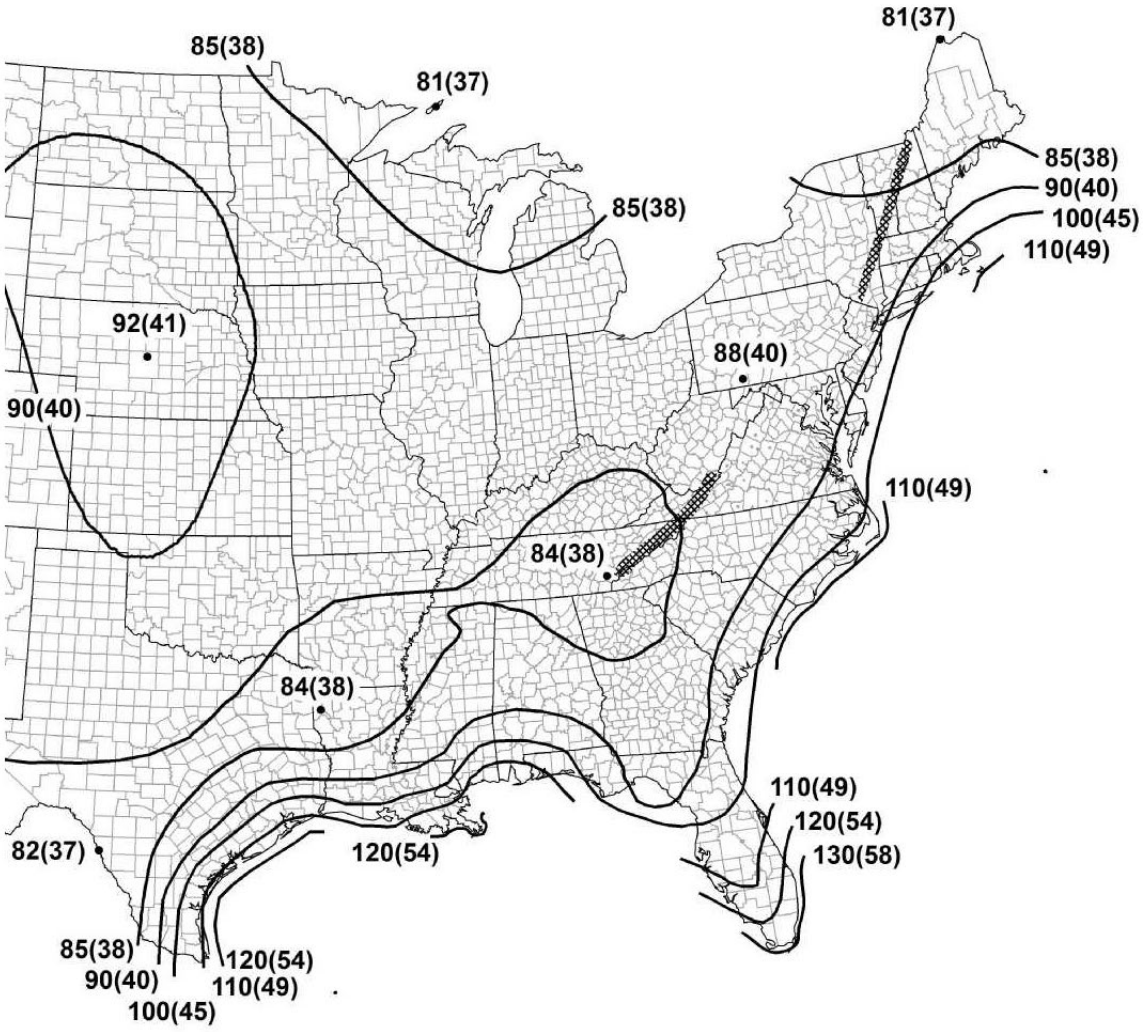


Notes

1. Values are nominal design 3-s gust wind speeds in mi/h (m/s) at 33 ft (10 m) above ground for Exposure Category C.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

Figure 250-2(b)—Grade C, 50 year Mean Recurrence Interval (MRI) 3 s gust wind speed map in mph (m/s) at 33 ft (10 m) aboveground (ASCE 7-16)

NOTE: Figure 250-2(b) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191 from ASCE 7-16, Minimum Design Loads for Buildings and Other Structures. Copyright © 2017.



Location	Vmph	(m/s)
Guam	146	(65)
Virgin Islands	130	(58)
American Samoa	125	(56)
Hawaii – Special Wind Region Statewide	67	(30)

Figure 250-2(b)—Grade C, 50 year Mean Recurrence Interval (MRI) 3 s gust wind speed map in mph (m/s) at 33 ft (10 m) aboveground (ASCE 7-16)

NOTE: Figure 250-2(b) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191 from ASCE 7-16, Minimum Design Loads for Buildings and Other Structures. Copyright © 2017.

Section 41.
Supply and communications systems—Rules for employers

410. General requirements

Page 256: Transpose footnotes 3 and 4 below Table 410-4 as follows:

Table 410-4—Clothing and clothing systems—voltage, fault current, and maximum clearing time for medium voltage 1 kV to 36 kV enclosed equipment [1, 2]

Fault current (kA)	Live-front transformer, live-front terminations, and horizontally racked circuit breaker [3]			Live-front pad-mounted style switch [4]		
	8 cal system	25 cal system	40 cal system	8 cal system	25 cal system	40 cal system
	Max clearing time (cycles)	Max clearing time (cycles)	Max clearing time (cycles)	Max clearing time (cycles)	Max clearing time (cycles)	Max clearing time (cycles)
2	94	294	470	125	291	412
5	36	111	178	45	105	149
8	22	67	108	27	63	89
10	17	53	85	21	49	69
15	11	35	55	13	31	44
20	8	25	41	10	23	32
25	6	20	32	8	18	25
30	5	17	26	6	14	20
35	4	14	22	5	12	17
40	4	12	19	5	10	15
45	3	11	17	4	9	13
50	3	10	15	4	8	12

[1] This table shall not be used for working distances less than 48 in. The values in this table are based on a 48 in working distance.

[2] Values for 2 kA through 10 kA based on field testing (see Eblen and Short [B32]).

~~[3] Values based on derived formula for PMH cabinets (see Eblen et al. [B33]).~~

~~[4] Values based on IEEE Std 1584-2002 with 3x multiplier (see Eblen and Short [B32]) for live-front terminations and horizontally racked circuit breakers.~~

[3] Values based on IEEE Std 1584-2002 with 3x multiplier (see Eblen and Short [B32]) for live-front terminations and horizontally racked circuit breakers.

[4] Values based on derived formula for PMH cabinets (see Eblen et al. [B33]).