

S_1 = The mapped spectral accelerations for a 1-second period as determined in Section 1613.5.1.

1613.5.4 Design spectral response acceleration parameters. Five-percent damped design spectral response acceleration at short periods, S_{DS} , and at 1-second period, S_{D1} , shall be determined from Equations 16-39 and 16-40, respectively:

$$S_{DS} = \frac{2}{3} S_{MS} \quad \text{(Equation 16-39)}$$

$$S_{D1} = \frac{2}{3} S_{M1} \quad \text{(Equation 16-40)}$$

where:

S_{MS} = The maximum considered earthquake spectral response accelerations for short period as determined in Section 1613.5.3.

S_{M1} = The maximum considered earthquake spectral response accelerations for 1-second period as determined in Section 1613.5.3.

1613.5.5 Site classification for seismic design. Site classification for Site Class C, D or E shall be determined from Table 1613.5.5.

The notations presented below apply to the upper 100 feet (30 480 mm) of the site profile. Profiles containing dis-

TABLE 1613.5.3(1)
VALUES OF SITE COEFFICIENT F_a^a

SITE CLASS	MAPPED SPECTRAL RESPONSE ACCELERATION AT SHORT PERIOD				
	$S_s \leq 0.25$	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	$S_s \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	Note b	Note b	Note b	Note b	Note b

- a. Use straight-line interpolation for intermediate values of mapped spectral response acceleration at short period, S_s .
- b. Values shall be determined in accordance with Section 11.4.7 of ASCE 7.

TABLE 1613.5.3(2)
VALUES OF SITE COEFFICIENT F_v^a

SITE CLASS	MAPPED SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIOD				
	$S_1 \leq 0.1$	$S_1 = 0.2$	$S_1 = 0.3$	$S_1 = 0.4$	$S_1 \geq 0.5$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	Note b	Note b	Note b	Note b	Note b

- a. Use straight-line interpolation for intermediate values of mapped spectral response acceleration at 1-second period, S_1 .
- b. Values shall be determined in accordance with Section 11.4.7 of ASCE 7.

TABLE 1613.5.5
SITE CLASSIFICATION^a

SITE CLASS	\bar{v}_s	\bar{N} or \bar{N}_{ch}	\bar{s}_u
E	< 600 ft/s	< 15	< 1,000 psf
D	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
C	1,200 to 2,500 ft/s	> 50	> 2,000

For SI: 1 foot per second = 304.8 mm per second, 1 pound per square foot = 0.0479 kN/m².

- a. If the \bar{s}_u method is used and the \bar{N}_{ch} and \bar{s}_u criteria differ, select the category with the softer soils (for example, use Site Class E instead of D).