competent rock with moderate fracturing and weathering. Softer and more highly fractured and weathered rock shall either be measured on site for shear wave velocity or classified as *Site Class* C.

The hard rock category, *Site Class* A, shall be supported by shear wave velocity measurements either on site or on profiles of the same rock type in the same formation with an equal or greater degree of weathering and fracturing. Where hard rock conditions are known to be continuous to a depth of 100 feet (30 480 mm), surficial shear wave velocity measurements are permitted to be extrapolated to assess V_s.

The rock categories, *Site Classes* A and B, shall not be used if there is more than 10 feet (3048 mm) of soil between the rock surface and the bottom of the spread footing or mat foundation.

TABLE 1613.5.5 SITE CLASSIFICATION[a]

SITE CLASS	$\overline{v}_s$	$\overline{N}$ or $\overline{N}_{ch}$	$\overline{s}_u$
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/m^2.

a. If the S_u method is used and the N_{ch} and criteria differ, select the category with the softer soils (for example, use Site Class E instead of D).

1613.5.5.1 Steps for classifying a site.
1. Check for the four categories of *Site Class* F requiring site-specific evaluation. If the site corresponds to any of these categories, classify the site as *Site Class* F and conduct a site-specific evaluation.
2. Check for the existence of a total thickness of soft clay > 10 feet (3048 mm) where a soft clay layer is defined by: S_u < 500 psf (24 kPa), $w \geq 40$ percent and $PI > 20$. If these criteria are satisfied, classify the site as *Site Class* E.
3. Categorize the site using one of the following three methods with V_s, N, and S_u and computed in all cases as specified.
3.1. V_s for the top 100 feet (30 480 mm) (V_s method).
3.2. N for the top 100 feet (30 480 mm) ($\overline{N}$ method).
3.3. N_{ch} for cohesionless soil layers ($PI < 20$) in the top 100 feet (30 480 mm) and average, $\overline{s}_u$ for cohesive soil layers ($PI > 20$) in the top 100 feet (30 480 mm) (S_u method).

1613.5.6 Determination of seismic design category. Structures classified as *Occupancy Category* I, II or III that are located where the mapped spectral response acceleration parameter at 1-second period, S_1, is greater than or equal to 0.75 shall be assigned to *Seismic Design Category* E. Structures classified as *Occupancy Category* IV that are located where the mapped spectral response acceleration parameter at 1-second period, S_1, is greater than or equal to 0.75 shall be assigned to *Seismic Design*