49. We denote the mass of the slab as m, its density as ρ, and volume as V. The angle of inclination is $\theta = 26^\circ$.

(a) The component of the weight of the slab along the incline is

$$\begin{aligned} F_1 &= mg\sin\theta = \rho V g \sin\theta \\ &= (3.2\times 10^3\,\text{kg/m}^3)(43\,\text{m})(2.5\,\text{m})(12\,\text{m})(9.8\,\text{m/s}^2)\sin 26^\circ = 1.77\times 10^7\ \text{N}\ . \end{aligned}$$

(b) The static force of friction is

$$\begin{aligned} f_s &= \mu_s N = \mu_s mg\cos\theta = \mu_s \rho V g\cos\theta \\ &= (0.39)(3.2\times 10^3\,\text{kg/m}^3)(43\,\text{m})(2.5\,\text{m})(12\,\text{m})(9.8\,\text{m/s}^2)\cos 26^\circ = 1.42\times 10^7\ \text{N}\ . \end{aligned}$$

(c) The minimum force needed from the bolts to stabilize the slab is

$$F_2 = F_1 - f_s = 1.77\times 10^7\,\text{N} - 1.42\times 10^7\,\text{N} = 3.5\times 10^6\ \text{N}\ .$$

If the minimum number of bolts needed is n, then $F_2/nA \leq 3.6\times 10^8\,\text{N/m}^2$, or

$$n \geq \frac{3.5\times 10^6\,\text{N}}{(3.6\times 10^8\text{N/m}^2)(6.4\times 10^{-4}\,\text{m}^2)} = 15.2\ .$$

Thus 16 bolts are needed.