

Category	Factor	Number of grades	Grade	Range
Seismic parameter	ME: the magnitude of the earthquake $M_w$	4	Super	$8 \leq M_w$
			Big	$7 \leq M_w < 8$
			Strong	$6 \leq M_w < 7$
			Medium	$4.5 \leq M_w < 6$
	ED: epicentral distance $r$ (km)	4	Super	$100 < r$
			Far	$50 < r \leq 100$
			Medium	$10 < r \leq 50$
			Near	$0 < r \leq 10$
	DE: duration of the earthquake $t$ (s)	3	Long	$60 \leq t$
			Medium	$30 < t < 60$
			Short	$0 < t \leq 30$
	PGA: peak ground acceleration (g)	4	Super	$0.40 \leq \text{PGA}$
			High	$0.30 \leq \text{PGA} < 0.40$
Medium			$0.15 \leq \text{PGA} < 0.30$	
Low			$0 \leq \text{PGA} < 0.15$	
Soil parameter	FC: fine content (%)	3	Many	$50 < \text{FC}$
			Medium	$30 < \text{FC} \leq 50$
			Less	$0 \leq \text{FC} \leq 30$
	ST: soil type	4	SP	–
			SM	–
			SC	–
			GM	–
	$D_{50}$ : average particle size (mm)	4	Super	$2 \leq D_{50}$
			Big	$0.425 \leq D_{50} < 2$
			Medium	$0.075 \leq D_{50} < 0.425$
			Small	$0 \leq D_{50} < 0.075$
	SPTN: SPT number	4	Dense	$30 < \text{SPTN} \leq 0$
			Medium	$15 < \text{SPTN} \leq < 30$
Slight			$10 < \text{SPTN} \leq 15$	
Loose			$0 < \text{SPTN} \leq 10$	
Field condition	$\sigma'_v$ : vertical effective stress ( $\text{KN m}^{-1}$ )	4	Super	$150 \leq \sigma'_v$
			Big	$100 \leq \sigma'_v < 150$
			Medium	$50 \leq \sigma'_v < 100$
			Small	$0 \leq \sigma'_v < 50$
	GT: groundwater table $D_w$ (m)	3	Deep	$4.0 \leq D_w$
			Medium	$2.0 \leq D_w \leq 4.0$
			Shallow	$D_w \leq 2.0$
	DSD: depth of soil deposit $D_s$ (m)	4	Deeper	$20 \leq D_s$
			Deep	$10 \leq D_s < 20$
			Medium	$5 \leq D_s < 10$
			Shallow	$0 \leq D_s < 5$
	TSL: thickness of soil layer $T_s$ (m)	3	Thick	$10 \leq T_s$
			Medium	$5 \leq T_s < 10$
Thin			$0 \leq T_s < 5$	