

Coarse particles make up the basic skeleton and shape of soils and endow them with a positive resistance to loading and deformation. As a result, the hydraulic reclamation mouth is piled high with abundant calcareous coarse-grained soil (Wang et al. 2020, 2021), which forms some "reef hills" and tremendous areas of "ponds" (Figure (2.29-a)). The "reef hills" pile at the hydraulic reclamation mouth is on the whole calcareous coarse-grained soil with a maximum particle size of 300 mm. The "ponds" are within the low-lying area of the hydraulic reclamation website and contain massive quantities of calcareous fine-grained soil with a particle size less than 0.075 mm and a plasticity index of 6.5 (termed calcareous silt). Calcareous sand is a marine biogenic, porous, loose granular geomaterial (Wang et al. 2011, 2017), whose mechanical behaviour is affected by the FC. Calcareous sand serves as the handiest filling material for land reclamation in the extension projects of several island-reefs inside the South China Sea (Shen et al. 2020; Wu et al. 2020). The enormously compressible, saturated calcareous silt and silty quality sand basis is liable to differential settlement below loading, which impacts the safety and durability of homes (Wang et al. 2020).