Description
A sludge drying bed is a common method utilized to dewater sludge via filtration and evaporation. Perforated pipes situated at the bottom of the bed are used to drain seepage water or filtrate. A reduction of about 35% or less in moisture content is expected after drying. Sludge drying beds are usually situated beside treatment plants to readily receive and treat incoming sludge coming from primary or secondary treatment facilities.

The basic design components of the drying bed are composed of (i) concrete structure for bed and walls, (ii) sand and gravel to be used as filter media, (iii) splash block, (iv) underdrain, and (v) inlet.

Applicability
Sludge drying beds are suitable for treatment plants serving a population ranging from 1,000 to 20,000. These facilities exhibit reliability and good process flexibility. However, during the wet season, its efficiency decreases.

Performance
In terms of its efficiency, while dried sludge is not fully disinfected, the solid content is increased to 50%–70% of total solids.

Cost
Among the available sludge dewatering methodologies, investment cost for sludge drying beds is considered the lowest. For operation and maintenance, the only item to be considered is the labor cost.

Advantages
• Sludge drying beds are simple to operate and energy-efficient.
• It presents the least cost technology option for dewatering sludge.

Disadvantages
• Treatment is required for seepage water.
• Solar power is required.
• The beds are prone to odor and insect problems.

References: