

## **A Review of Material and Methods Used in Liner Layers in Various Landfills**

**Authors :** S. Taghvamanesh

**Abstract :** Modern landfills are highly engineered containment systems that are designed to reduce the environmental and human health impacts of solid waste (trash). In modern landfills, waste is contained by a liner system. The primary goal of the liner system is to isolate the landfill contents from the environment, thereby protecting the soil and groundwater from pollution caused by the leachate of a landfill. Landfill leachate is the most serious threat to groundwater. Therefore, it is necessary to design a system that prevents the penetration of this dangerous substance into the environment. These layers are made up of two basic elements: clay and geosynthetics. Hydraulic conductivity and flexibility are two desirable properties of these materials. There are three different types of liner systems that will be discussed in this paper. According to available data, the current article analyzed materials and methods for constructing liner layers made of distinct leachates, including various harmful components and heavy metals from all around the world. Also, this study attempted to gather data on leachates for each of the sites discussed. In conclusion, every landfill requires a specific type of liner, which depends on the type of leachate that it produces daily. It should also be emphasized that, based on available data, this article focused on the number of landfills that each country or continent possesses.

**Keywords :** landfill, liner layer, impervious layer, barrier layer

**Conference Title :** ICSME 2022 : International Conference on Soil Mechanics and Engineering

**Conference Location :** New York, United States

**Conference Dates :** August 08-09, 2022