GEOLABS®

Tailings Testing

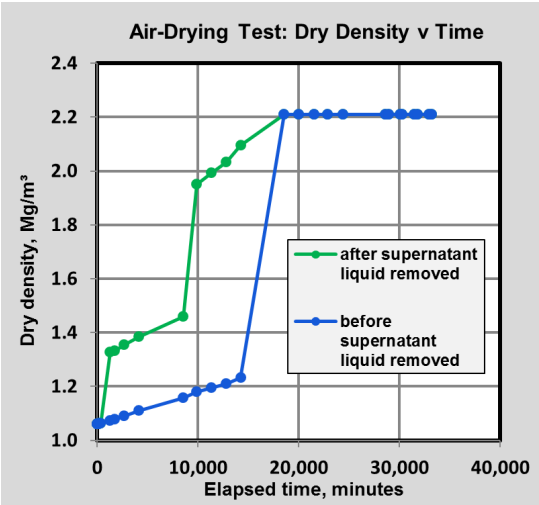
Independent Soil and Rock Geotechnical Laboratory Testing

Tailings tests are an important tool for understanding the behaviour of the fine materials that are often pluviated into holding ponds and dams as part of the extraction processes performed at ore and precious metals processing plants. Geolabs provides a range of tests that measure how these materials settle under various conditions and their physical properties once settled.

- Drained Settling
- Undrained Settling
- Permeability (constant head and falling head)
- Coefficient of Consolidation
- Air-Drying
- Pulp Density
- Marsh Cone Viscosity
- Particle Settling Velocity

Undrained Settling measures how the fines settle out of a homogenous slurry that has been either supplied by the client, or mixed by Geolabs to a specified pulp density from dried materials. Where permitted by the materials, two properties are measured over time during the test: the gradually rising height of the settled materials, and the gradually lowering height of the fines above which there is clear water.

The **Drained Settling** test is similar to the Undrained Settling test except that water is allowed to drain out of the base through the settling material. This simulates how water levels would drop in tailings ponds by permeating through the surrounding soil.



Once the tailings have settled out of the slurry and reached a constant height, water can be percolated through them to determine their **Permeability.**

Alternatively, the head of water can be maintained and water allowed to drain from the base. This allows the **Coefficient of Consolidation** to be determined.

The **Air-Drying** test replicates the desiccation of a tailings slurry as it dries naturally once no more slurry is being added to the pond or dam. The bulk and dry densities, together with the water content, are measured during the drying.

Geolabs can measure a sample's **Pulp Density** - how much solids there are in a slurry - or mix a sample to a specific Pulp Density to perform a test.

Often required to assess pumping requirements, the **Marsh Cone Viscosity** test measures how easily the slurry flows.

The **Particle Settling Velocity** measures how fast differently sized fractions of particles settle through a column of water.

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