

Table 1. Typical Geotechnical Properties of Pond Ash

Parameter	Range
Specific Gravity	1.90 – 2.55
Plasticity	Non-Plastic
Maximum Dry Density (gm/cc)	0.9 – 1.6
Optimum Moisture Content (%)	38.0 – 18.0
Cohesion (kN/m ²)	Negligible
Angle of Internal Friction (ϕ)	30° – 40°
Coefficient of Consolidation C_v (cm ² /sec)	1.75×10^{-5} – 2.01×10^{-3}
Compression index C_c	0.05 – 0.4
Permeability (cm/sec)	8×10^{-6} – 7×10^{-4}
Particle Size Distribution (% of materials)	
Clay size fraction	1 – 10
Silt size fraction	8 – 85
Sand size fraction	7 – 90
Gravel size fraction	0 – 10
Coefficient of Uniformity	3.1 – 10.7

3.3.1.8. The chemical characteristics of fly ash, which need to be evaluated, are pozzolanic property, leachability and self-hardening characteristics. The pozzolanic property of fly ash would be of importance if stabilisers, like, lime are used. Self-hardening property of bituminous coal ashes is insignificant. Fly ash to be used as fill material should not have soluble sulphate content exceeding 1.9 gm (expressed as SO₃) per litre when tested according to BS: 1377 Test 10 but using a 2:1 water-soil ratio. Otherwise, it shall not be deposited within 500 mm (or other distance prescribed by the Engineer) of concrete, cement bound materials and other cementitious material or metallic surface forming part of permanent works. Generally, Indian fly ashes are found to be safer on this parameter. For details, MOST Specifications for Road and Bridge Works, Section 305.2 may be referred.