

Atterberg Limits

Civil Engineering

Water contents where a clay changes state.

The water contents at which a fine soil passes between solid, plastic and liquid behaviour.

LOW PLASTICITY CLAY

PI under about 20

HIGH PLASTICITY CLAY

PI above about 40

- Liquid limit LL: plastic to liquid boundary
- Plastic limit PL: brittle to plastic boundary
- Plasticity index $PI = LL - PL$
- High PI signals an active, shrink-swell clay
- Liquidity index places the natural water content
- Run on the fraction passing the 425 μm sieve

LOOK FOR IT

A PI near 45 warns of heave and shrinkage under a shallow footing.

Educational reference. Indicative bands only. Site testing and a qualified engineer govern foundation decisions.