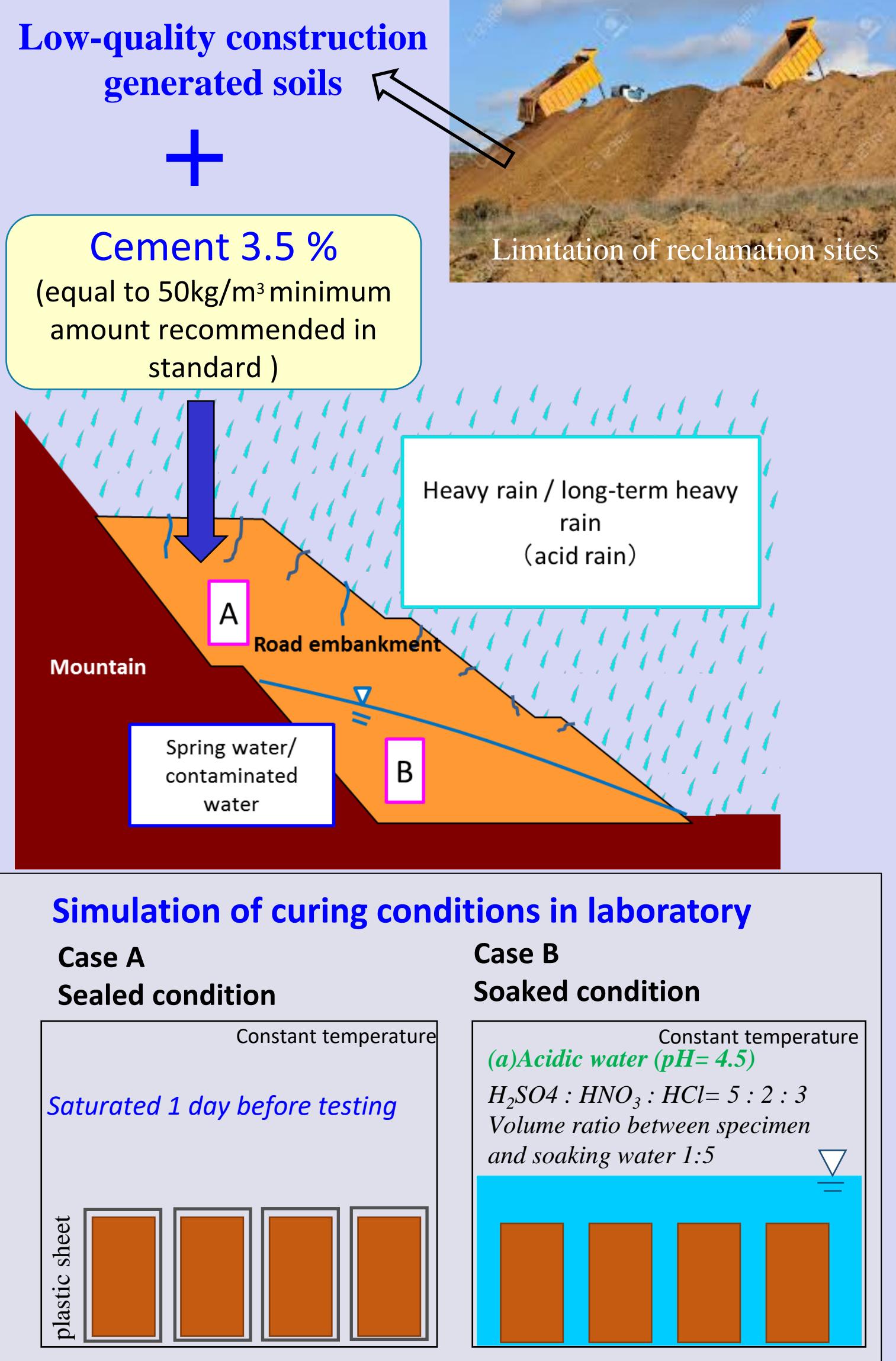


The progression of deterioration in cement treated surplus soils under ground water was investigated by conducting mechanical and chemical testing periodically. Deterioration was identified in two stages; primary deterioration (0-25 days) and secondary deterioration. Primary deterioration appeared due to moving of soluble ions from pore solution before creating hydration products. Secondary deterioration was found as a result of leaching of ettringite. In addition to that it was found that secondary deterioration depth show a linear relationship with squared root of soaking time.

低改良率セメント改良土の水浸による強度低下について検討した。強度低下は水浸後1か月程度までに起こる一次劣化、その後徐々に起こる二次劣化の2段階で確認された。一次劣化は、水和生成物が生成される前に間隙水から可溶性イオンが移動するため、二次劣化はエトリンガイトの浸出が原因であると考えられる。また、二次劣化深さの二乗と浸漬時間は線形関係を示した。

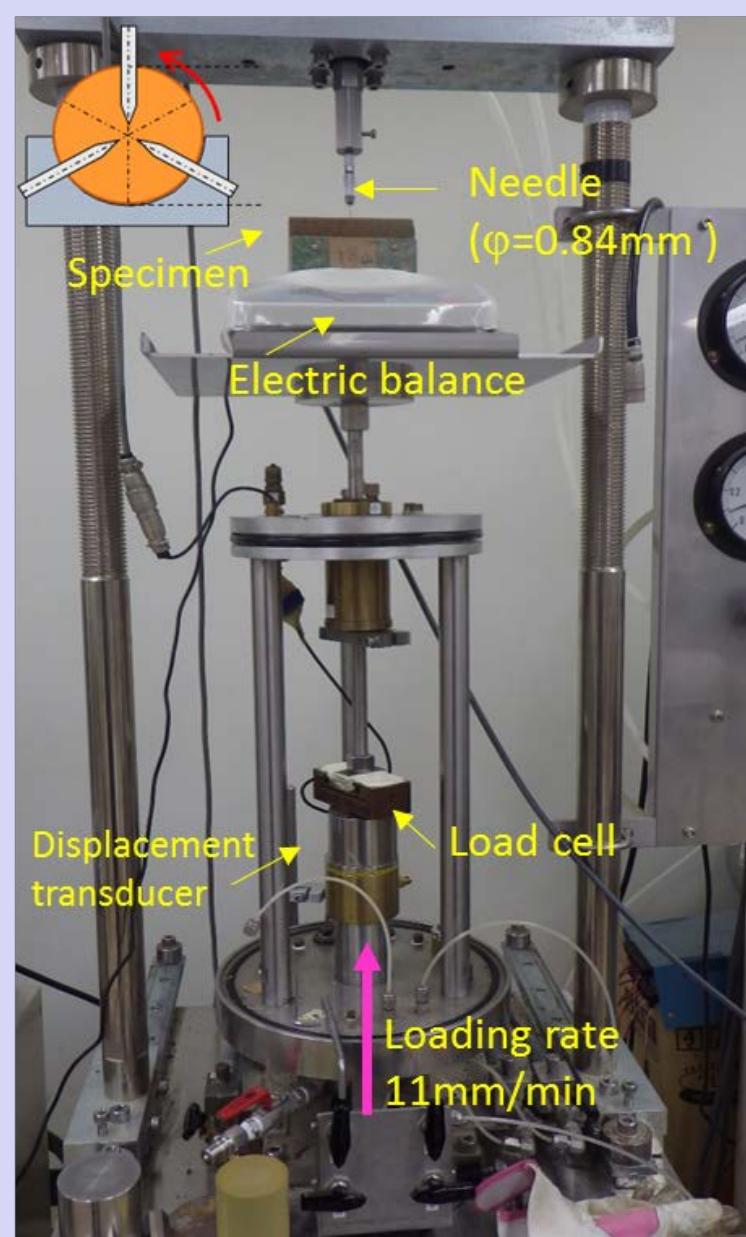
(1) Introduction



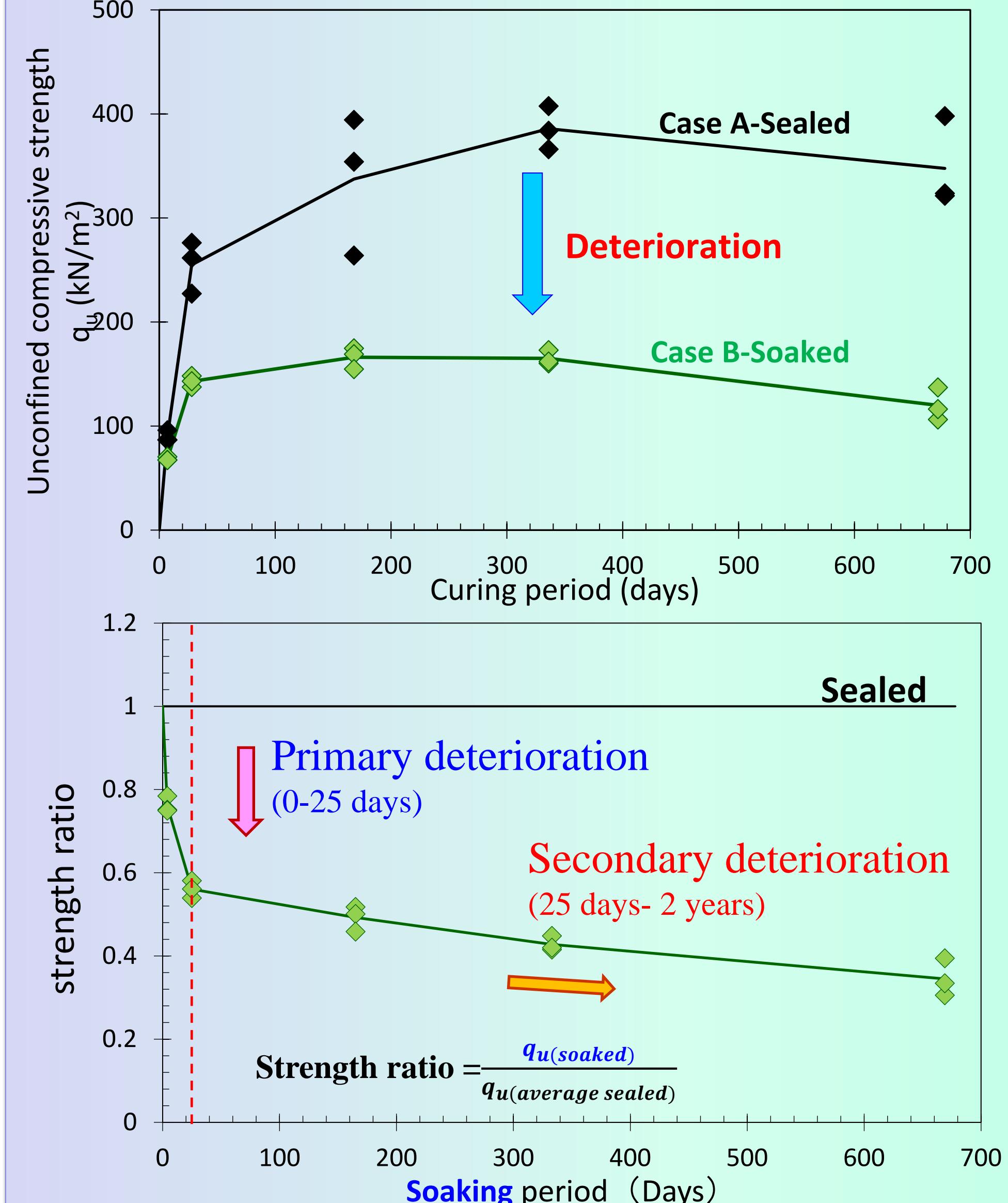
Materials and testing method

Soil classification (JGS 0051)	SF sandy soil
Soil particle density, ρ_s (g/cm ³)	2.693
Optimum water content, w_{opt} (%)	21.6
Maximum dry density, ρ_{dmax} (g/cm ³)	1.62
Cone index, qc (kN/m ²)	68
Sand (%)	52.9
Silt (%)	21.6
Clay (%)	24.7

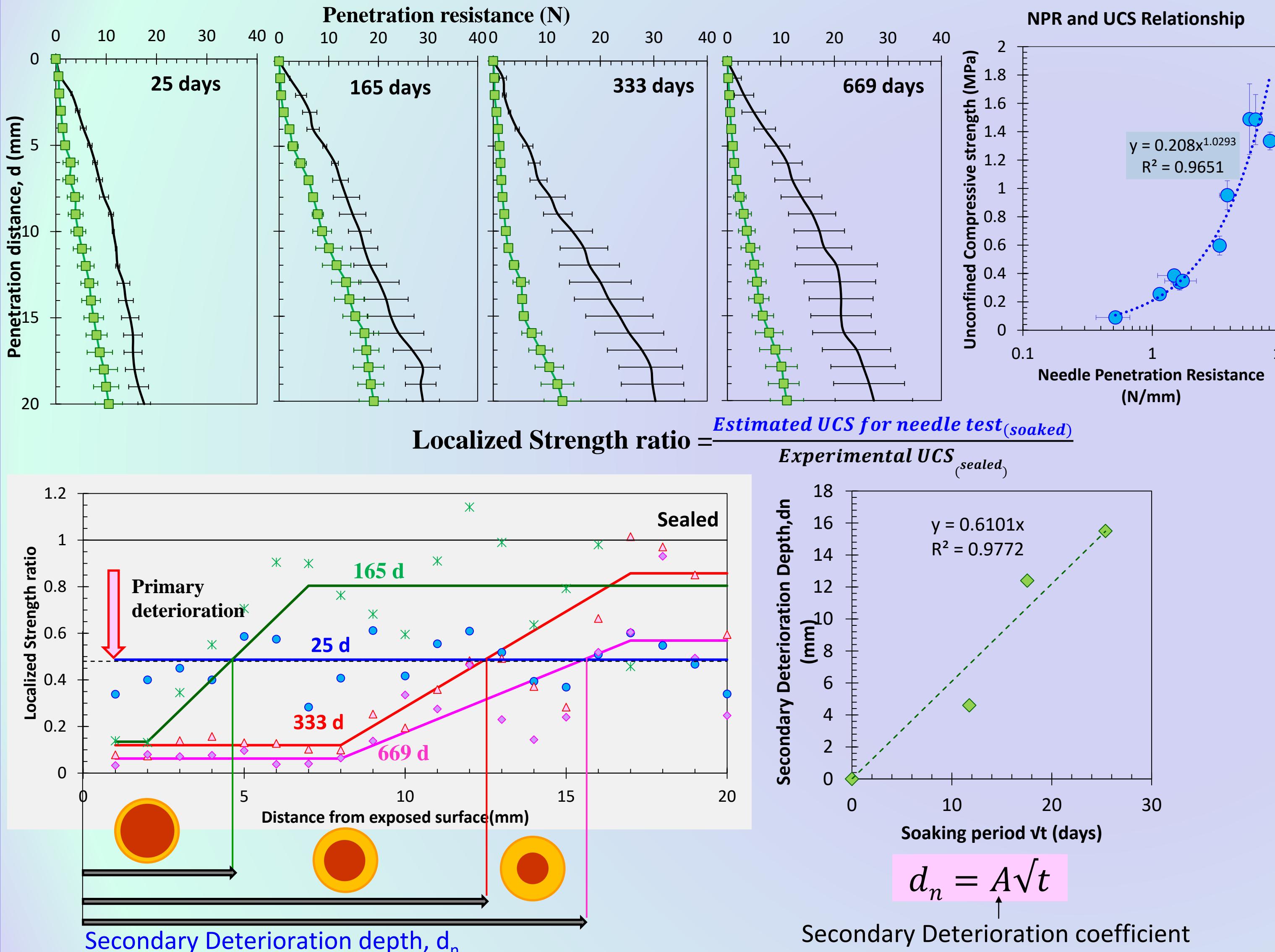
- ✓ Unconfined compression test
- ✓ Needle penetration test



(2) Unconfined compression test results

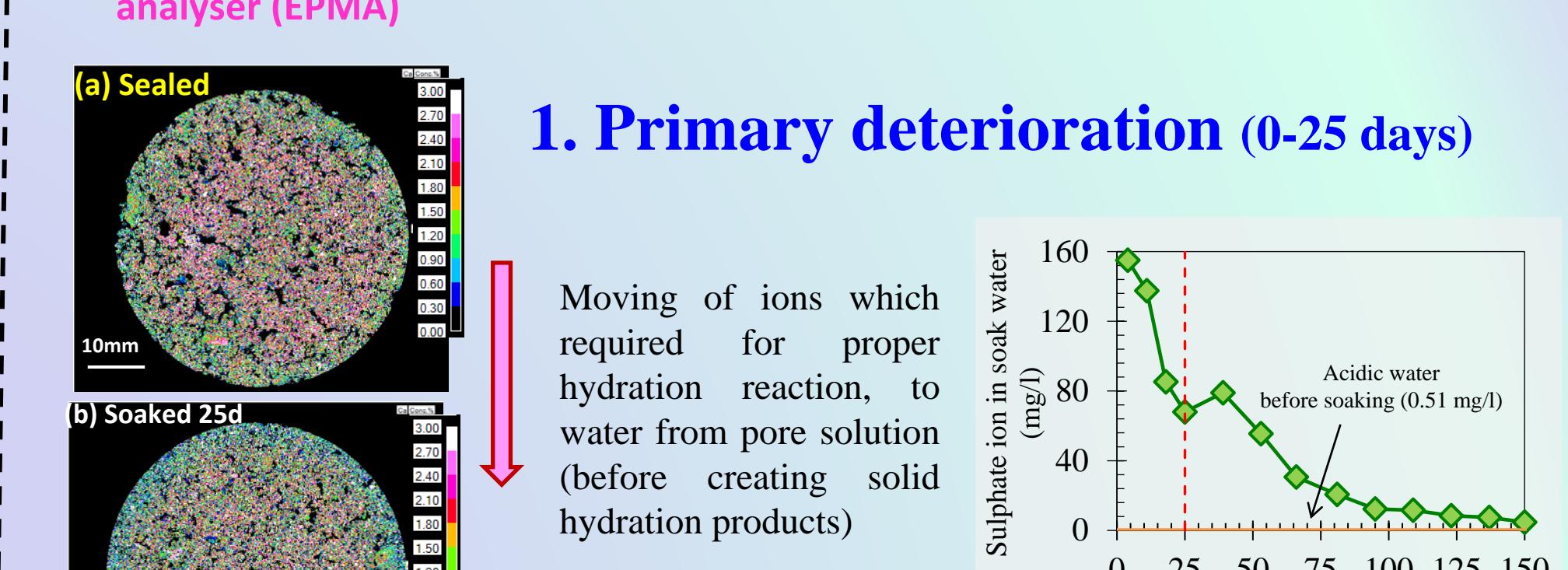


(3) Needle penetration Test results



(4) Mechanism of deterioration

1. Primary deterioration (0-25 days)



2. Secondary deterioration

