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Time-varying ultimate strength of aging sheet pile considering corrosion effect

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Abstract : Steel Sheet pile walls are widely used in excavation support systems, cofferdams, cut-off walls under dams, slope stabilization, water front structures, and floodwall. Corrosion in sheet pile leads to severe degradation processes which usually affect both the ultimate and serviceability limit state performance of the structure. Recent developments in mathematical modeling strategies, in association with in situ thickness measurements, have significantly enhanced the qualitative understanding of the corrosion processes at various locations within marine structures. A comprehensive mathematical model is developed that allows capturing all the main effects of corrosion.

Keywords : Sheet pile, corrosion, Mathematical, modeling