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**Efficiency Analysis and Assessment of Interlocking PVC Sheet
Piling Walls**

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The use of PVC sheet piling in marine environments offers a number of unique advantages that include weight saving, corrosion resistance and environmentally safe material. In this study, one of the widely used classical methods as well as a finite element analysis are used to analyze such sheet piling walls. The analysis focuses on the effect of some important parameters on the wall global behavior, bending moments, stresses and deflections. The parameters include wall cross-section, wall height, embedment depth, number and spacing of anchor rods, and type of soil and loading conditions. Furthermore, the effect of the shape of the wall cross-section and the location of the interlocking joints has been studied by using plane frame and arch-like models. Results indicate that the finite element modeling is an effective tool for numerical approximation of soil-structure interaction problems. The required theoretical embedment depth is nearly 30 % of the clear wall height. Also, the modulus of subgrade reaction has a minor effect on both cantilever wall and one anchor sheet-pile wall. Finally, lateral (horizontal) action shows that deep sections tend to behave like an arch under radial loading which might increase normal stresses at some critical sections.