



Coastal Construction Manual

FORMULA CALCULATOR

12.10 Effective Length of Unbraced Pile

E :		L =	ft
I :			
n_h :			
K :			
H :			

$$L = K(H + d/12)$$

L = length of pile (feet)

d = depth of embedment from level of localized scour to point of fixity = $(1.8)(EI/n_h)^{1/5}$
(inches)

E = Modulus of Elasticity of pile material (lb/in²)

I = moment of inertia of pile material (in⁴)

n_h = modulus of subgrade reaction (lb/in²)

K = effective length factor based on end conditions

H = length of pile between horizontal load and eroded ground surface (see Figure 12-57)
(feet)