



Coastal Construction Manual

FORMULA CALCULATOR

11.10b Localized Scour Around Vertical Enclosure

| | | | |
|------------------------|--------------------------|--------------------------|-----------|
| d_s : | | S_{max} = | ft |
| a : | | | |
| V : | | | |
| g : | 32.2 ft/sec ² | | |
| K : | | | |

(Non-Tsunami Condition)

$$S_{max} = d_s \{ 2.2(a/d_s)^{0.65} [V/(gd_s)^{0.50}]^{0.43} \} K$$

S_{max} = maximum localized scour depth in feet

d_s = design stillwater flood depth in feet (upstream of the structure)

a = half the width of the solid foundation perpendicular to the flood flow

V = average velocity of water in ft/sec (see Formula 11.2)

g = gravitational constant (32.2 ft/sec²)

K = factor applied for Flow Angle of Attack (see Table 11.4)