

Bazı ifadeler, Some Relations

$$\bar{E} = \frac{1}{8} \rho g H^2$$

$$R = \bar{E} \times n \times c$$

$$u = \frac{a\omega \cosh[k(z+d)]}{\sinh kd} \sin(kx - \omega t)$$

$$w = \frac{-a\omega \sinh[k(z+d)]}{\sinh kd} \cos(kx - \omega t)$$

$$\frac{p}{\rho g} = \frac{\cosh\left(\frac{2\pi(d+z)}{L}\right)}{\cosh\left(\frac{2\pi d}{L}\right)} \times \eta - z$$

$$\xi = \frac{s}{\sqrt{\frac{H_0}{L_0}}}$$

$$\frac{\sin \alpha}{\sin \alpha_0} = \frac{c}{c_0} = \frac{L}{L_0} = \tanh kd$$

$$K_r = \sqrt{\frac{\cos \alpha_0}{\cos \alpha}}$$

$$W = \frac{H_{1/10}^3 \gamma_r}{K_D \left(\frac{\gamma_r}{\gamma} - 1 \right)^3 \cot \alpha} = \frac{H_{1/10}^3 \gamma_r}{K_D \Delta^3 \cot \alpha} \quad \text{veya} \quad M = \frac{\rho_r H_{1/10}^3}{K_D \Delta^3 \cot \alpha}$$

$$M_{50} = \rho_r D_{n50}^3$$

$$\xi_m < \xi_{mc} \quad \text{için} \quad \frac{H_s}{\Delta D_{n50}} = 6.2 P^{0.18} \left(\frac{S}{\sqrt{N}} \right)^{0.2} \xi_m^{-0.5}$$

$$\xi_m > \xi_{mc} \quad \text{için} \quad \frac{H_s}{\Delta D_{50}} = 1.0 P^{-0.13} \left(\frac{S}{\sqrt{N}} \right)^{0.2} \sqrt{\cot \alpha} \xi_m^P$$

$$\xi_{mc} = \left[6.2 P^{0.31} \sqrt{\tan \alpha} \right]^{\frac{1}{P+0.5}}$$

$$\xi_m = \frac{\tan \alpha}{\sqrt{s_{0m}}} = \frac{\tan \alpha}{\sqrt{\frac{2\pi H_s}{g T_m^2}}}$$

$$\xi_{m-1,0} = \frac{\tan \alpha}{\sqrt{s_{0m-1,0}}} = \frac{\tan \alpha}{\sqrt{\frac{2\pi H_{s0}}{g T_{m-1,0}^2}}}$$

$$\Delta = \frac{(\rho_r - \rho)}{\rho}$$

$$t_l = n K_\Delta (W_r / \rho_s g)^{1/3} \quad b_{\min} = 3 K_\Delta (W_r / \rho_s g)^{1/3}$$

$$R_u / H_0 = 1.016 \tan \beta (H_0 / L_0)^{-0.5} \gamma_r$$

$$\frac{R_{u\%2}}{H_{mo}} = 1.75 \gamma_b \gamma_r \gamma_\beta \xi_{m-1.0}$$

$$T_p = 1.25 T_m \quad T_{m-1,0} \cong 1.13 T_m \\ T_p \cong 1.107 T_{m-1,0} \quad T_s = T_{1/3} = 1.16 T_m$$

Tablo Değişik koruyucu tabakalar için tabaka katsayıları ve poroziteler
Table Layer coefficients and porosities for different armour layers

Koruyucu tabaka	Taş kaplama sırası n	K_{Δ}	Porozite Pr (%)
Düzgün ocaktaşı	2	1.02	38
Kaba ocaktaşı	2	1.00	37
Kaba ocaktaşı	>3	1.00	40
Tetrapod	2	1.10	50
Tibar	2	1.02	54
Dolos	2	0.94	56

$$F_{\text{etk}} = \frac{\sum F_i \cos^2 \alpha_i}{\sum \cos \alpha_i}$$

$$F_{\text{FAS}} = (U_A/0.62)^{1.96}$$

$$t_{\text{FAS}} = 2.027 U_A$$

$$U_A = 0.71 U^{1.23}$$

Boyutsuzlar	H (m), T (s), U_A (m/s), F (m), t (s)	H(m), T(s), U_A (m/s), F(km), t (saat)
GELİŞMEKTE OLAN		
$\frac{gH_s}{U_A^2} = 1.6 \times 10^{-3} \left(\frac{gF}{U_A^2} \right)^{1/2}$	$H_s = 5.112 \times 10^{-4} U_A F^{1/2}$	$H_s = 1.616 \times 10^{-2} U_A F^{1/2} \quad (3.12)$
$\frac{gT_m}{U_A} = 2.857 \times 10^{-1} \left(\frac{gF}{U_A^2} \right)^{1/3}$	$T_m = 6.238 \times 10^{-2} (U_A F)^{1/3}$	$T_m = 6.238 \times 10^{-1} (U_A F)^{1/3} \quad (3.13)$
$\frac{gt}{U_A} = 6.88 \times 10^{-1} \left(\frac{gF}{U_A^2} \right)^{2/3}$	$t = 3.215 \times 10^1 \left(\frac{F^2}{U_A} \right)^{1/3}$	$t = 8.93 \times 10^{-1} \left(\frac{F^2}{U_A} \right)^{1/3} \quad (3.14)$
TAM GELİŞMİŞ		
$\frac{gH_s}{U_A^2} = 2.433 \times 10^{-1}$	$H_s = 2.482 \times 10^{-2} U_A^2$	$H_s = 2.482 \times 10^{-2} U_A^2 \quad (3.15)$
$\frac{gT_m}{U_A} = 8.134$	$T_m = 8.30 \times 10^{-1} U_A$	$T_m = 8.30 \times 10^{-1} U_A \quad (3.16)$
$\frac{gt}{U_A} = 7.15 \times 10^4$	$t = 7.296 \times 10^3 U_A$	$t = 2.027 U_A \quad (3.17)$