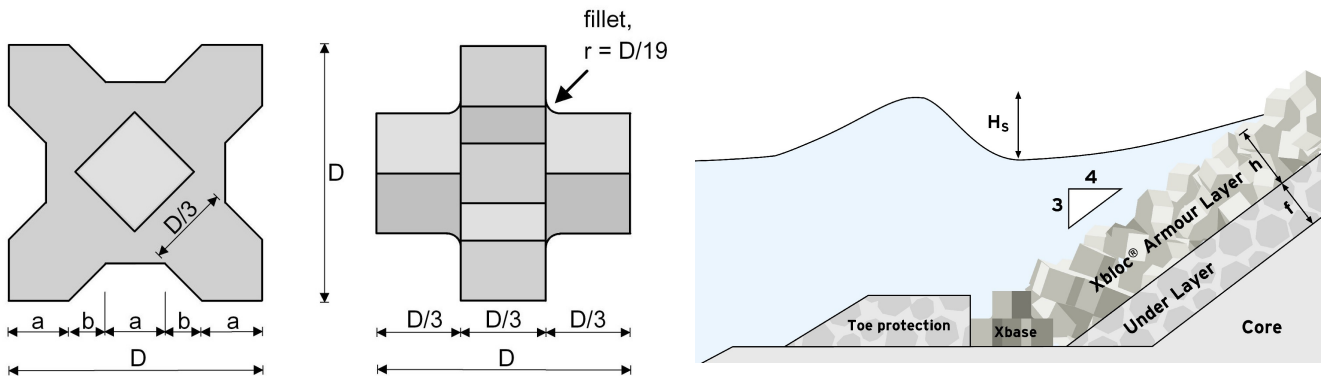


# Guidelines for design using Xbloc® armour units

Below information can be used for the preparation of a concept design. DMC is pleased to make a concept design for Xbloc® armoured slopes. Please return the client data sheet [to be downloaded from [www.xbloc.com](http://www.xbloc.com)] or contact us directly for a preliminary design – without any obligations.



Xbloc® unit volume  $V = \left[ \frac{H_s}{2.77\Delta} \right]^3$ ;  $\Delta = \left[ \frac{\rho_c}{\rho_w} - 1 \right]$

Xbloc® unit height  $D = \sqrt[3]{3 \cdot V}$

Thickness armour layer  $h = 0.97 \cdot D$

Equations and design table are based on:

Slope: 3V : 4H

$\rho_c$ : 2400 kg/m<sup>3</sup> = concrete density

$\rho_w$ : 1030 kg/m<sup>3</sup> = water density

$K_D$ : 16 for trunk section

13 for head section [armour units are 25% heavier than for trunk section]

Unit volume V [m <sup>3</sup> ]	Design wave height H <sub>s</sub> [m]	Unit height D [m]	Unit weight W [t]	Thickness Xbloc® armour layer h [m]	Packing Density [number of units per 100 m <sup>2</sup> ]	Concrete volume per m <sup>2</sup> [m <sup>3</sup> /m <sup>2</sup> ]	Advised placement grid		Porosity Xbloc® armour layer [%]	Standard rock grading for under layer [t]	Thickness under layer f [m]
							horizontal Δx	up-slope Δy			
0.75	3.35	1.31	1.8	1.3	70.00	0.53	1.70	0.84	58.7	0.06-0.3	0.8
1.0	3.69	1.44	2.4	1.4	57.78	0.58	1.87	0.92	58.7	0.06-0.3	0.8
1.5	4.22	1.65	3.6	1.6	44.10	0.66	2.15	1.06	58.7	0.3-1.0	1.3
2.0	4.65	1.82	4.8	1.8	36.40	0.73	2.36	1.16	58.7	0.3-1.0	1.3
2.5	5.01	1.96	6.0	1.9	31.37	0.78	2.55	1.25	58.7	0.3-1.0	1.3
3.0	5.32	2.08	7.2	2.0	27.78	0.83	2.70	1.33	58.7	0.3-1.0	1.3
4.0	5.86	2.29	9.6	2.2	22.93	0.92	2.98	1.47	58.7	0.3-1.0	1.3
5.0	6.31	2.47	12.0	2.4	19.76	0.99	3.21	1.58	58.7	1.0-3.0	1.8
6.0	6.70	2.62	14.4	2.5	17.10	1.03	3.49	1.68	59.6	1.0-3.0	1.8
7.0	7.06	2.76	16.8	2.7	15.43	1.08	3.67	1.77	59.6	1.0-3.0	1.8
8.0	7.38	2.88	19.2	2.8	14.12	1.13	3.84	1.85	59.6	1.0-3.0	1.8
9.0	7.67	3.00	21.6	2.9	13.05	1.17	3.99	1.92	59.6	1.0-3.0	1.8
10.0	7.95	3.11	24.0	3.0	12.17	1.22	4.13	1.99	59.6	1.0-3.0	1.8
12.0	8.44	3.30	28.8	3.2	10.78	1.29	4.39	2.11	59.6	1.0-3.0	1.8
14.0	8.89	3.48	33.6	3.4	9.51	1.33	4.73	2.22	60.5	3.0-6.0	2.4
16.0	9.29	3.63	38.4	3.5	8.70	1.39	4.94	2.33	60.5	3.0-6.0	2.4
18.0	9.67	3.78	43.2	3.7	8.04	1.45	5.14	2.42	60.5	3.0-6.0	2.4
20.0	10.01	3.91	48.0	3.8	7.50	1.50	5.32	2.51	60.5	3.0-6.0	2.4

