

Wall Type	Perm.	Temp.	Cost Effective Height Range (m)	Wall Face Cost (\$/m ²) ⁽¹⁾	Required R / W ⁽²⁾	Differential Settlement Tolerance ⁽³⁾	Advantages	Disadvantages
Concrete Gravity	X		1 – 3	2.50 – 3.50	0.5 – 0.7H	1 / 500	<ul style="list-style-type: none"> • Durable • Requires small quantity of select backfill than MSE wall • Concrete can meet aesthetic rqmts. 	<ul style="list-style-type: none"> • Deep foundation support may be necessary • Relatively long construction time
Concrete Cantilevered	X		1.5 – 10	2.50 – 6.00	0.4 – 0.7H	1 / 500	<ul style="list-style-type: none"> • Durable • Requires small quantity of select backfill than MSE wall • Concrete can meet aesthetic rqmts. 	<ul style="list-style-type: none"> • Deep foundation support may be necessary • Relatively long construction time
Concrete Counterfort	X		10 – 20	2.50 – 6.00	0.4 – 0.7H	1 / 500	<ul style="list-style-type: none"> • Durable • Requires small quantity of select backfill than MSE wall • Concrete can meet aesthetic rqmts. 	<ul style="list-style-type: none"> • Deep foundation support may be necessary • Relatively long construction time
Concrete Crib	X		1.5 – 12	2.50 – 3.50	0.5 – 0.7H	1 / 300	<ul style="list-style-type: none"> • Does not require skilled labor or specialized equipment • Rapid construction 	<ul style="list-style-type: none"> • Difficult to make height adjustments in field
Metal Bin	X		1.5 – 12	2.50 – 3.50	0.5 – 0.7H	1 / 300	<ul style="list-style-type: none"> • Does not require skilled labor or specialized equipment • Rapid construction 	<ul style="list-style-type: none"> • Difficult to make height adjustments in field • Subject to corrosion in aggressive environment
Gabion	X		1.5 – 8	2.50 – 5.00	0.5 – 0.7H	1 / 50	<ul style="list-style-type: none"> • Does not require skilled labor or specialized equipment 	<ul style="list-style-type: none"> • Needs adequate stone source • Construction requires significant labor
MSE (Precast Facing)	X		3 – 20	2.00 – 3.50	1.7 – 2.0H	1 / 100	<ul style="list-style-type: none"> • Does not require skilled labor or specialized equipment • Flexibility in facing choice 	<ul style="list-style-type: none"> • Requires select backfill • Subject to corrosion in aggressive environment
MSE (Geotextile / Geogrid / Welded Wire Facing)	X	X	1.5 – 15	1.50 – 3.50	0.7 – 1.0H	1 / 60	<ul style="list-style-type: none"> • Does not require skilled labor or specialized equipment • Flexibility in facing choice 	<ul style="list-style-type: none"> • Facing may not be aesthetically pleasing • Geosynthetic reinf. subject to degradation in some environments
Modular Block with Soil Reinforcement	X		1.5 – 8	1.50 – 2.50	0.7 – 1.0H	1 / 200	<ul style="list-style-type: none"> • Does not require skilled labor or specialized equipment • Flexibility in facing choice • Blocks are easily handled 	<ul style="list-style-type: none"> • Requires select backfill • Metal reinf. subject to corrosion in aggressive environment • Difficult to achieve positive reinf. connection to blocks
Reinforced Soil Slopes	X	X	3 – 30	1.00 – 2.50	0.5 – 1.0H	1 / 60	<ul style="list-style-type: none"> • Does not require skilled labor or specialized equipment • Flexibility in facing choice • Vegetation provides ultraviolet light protection to geosynthetic reinforcement 	<ul style="list-style-type: none"> • Facing may not be aesthetically pleasing • Geosynthetic reinf. subject to degradation in some environments • Vegetated soil face requires significant maintenance

Notes: (1) Total installed cost in 1998 U.S. dollars.

(2) R/W requirements expressed as distance, as fraction of wall height H, behind the wall face where fill placement is generally required for flat backfill conditions.

(3) Ratio of the difference in vertical settlement between two points along the wall to the horizontal distance between the points.

FILL-SECTION WALL SYSTEM SELECTION CHART

Figure 68-2B