GSA # GS-07F-0340M

What is the true cost of sandbagging?

Stop and think about it.

What is the true cost of sandbagging?

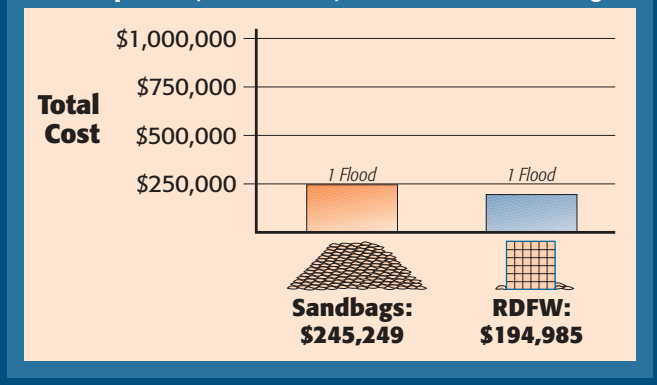
Sandbags may seem cheap to purchase, but they are expensive to use. Sandbag walls have inefficient trapezoidal or triangular cross-sections, requiring up to twice as much fill as square walls. Sandbags require enormous amounts of physical labor which, while it is often provided by "free" volunteers, is often compensated after the flood event as part of disaster relief. Sandbag walls can only be used once and are costly to dispose of, typically being hauled off to landfills at great expense. And in stockpiling sandbags, there is almost always some loss to vermin and mildew.

But beyond the hidden monetary costs of sandbags, consider the true cost of relying on sandbags.

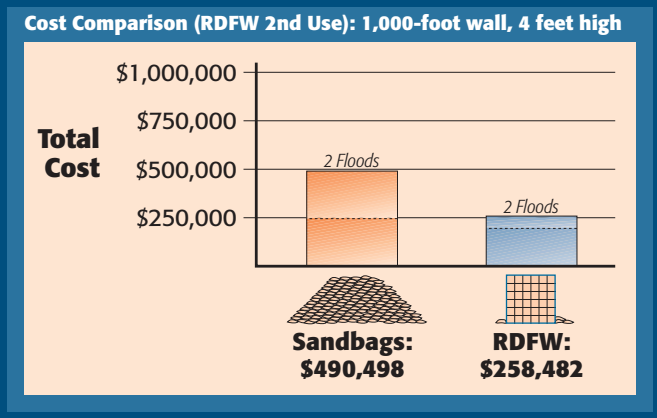
Sandbags have proven insufficient defense against flooding time and again. The slow, manual rate at which sandbag walls can be constructed has resulted in billions of dollars in flood damages, year after year. But more significant than any amount of dollars is the trauma resulting from flooded homes and the loss of life that occurs annually as the result of flooding. ***That*** is the true cost of sandbags.

Even in its first use, Geocell's Rapid Deployment Flood Wall (RDFW) is cheaper than sandbagging. As RDFW is re-used multiple times, it becomes dramatically cheaper than sandbagging. Depending upon exposure, RDFW may be re-used up to six times.

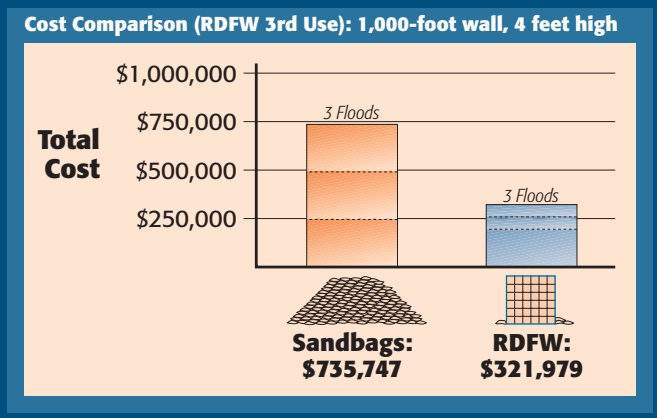
1 Use



2 Uses



3 Uses



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With RDFW, a crew of six laborers and one loader operator can build a wall 100 feet long, four feet wide and four feet high in one hour. An equivalent sandbag wall requires 35 laborers over 19 hours to construct. RDFW is highly cost-competitive with sandbags.

Geocell Systems Inc.

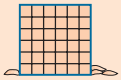
TRUE COST OF SANDBAGGING

RDFW is cost-competitive with sandbags in its first use. When re-used it becomes dramatically cheaper.

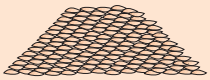
The re-use cost of an RDFW operation, including cleanup and recertification, is only about 1/4th the cost of a sandbagging operation.

How the Costs Stack Up

Comparison Scenario: 1,000-foot wall, 4 feet high



RDFW:
1,740 RDFW units
70 workers
1 hour
70 man-hours



Sandbags:
103,320 sandbags
350 workers
19.5 hours
6,825 man-hours

	RDFW:	Sandbags:
RESPONSE		
RDFW Units	$174,000	n/a
Sandbags	$1,000	$25,807
Sand Fill	$11,860	$23,720
Equipment Rental	$125	$1,800
Hand Tools	$200	$4,000
Material Costs Subtotal	*$187,185*	*$55,327*
Labor	$1,400	$136,500
Response Subtotal	***$188,585***	***$191,827***
RECOVERY		
Equipment	$4,000	$5,000
Transport	n/a	$14,000
Dump Fees	n/a	$32,022
Labor	$2,400	$2,400
Recovery Subtotal	***$6,400***	***$53,422***
Total Cost	**$194,985**	**$245,249**
RE-USE		
RDFW Recertification	$17,400	
RDFW Units (replace 20% per event)	$34,800	
Sandbags	$1,000	
Sand Fill (20% stockpile loss)	$2,372	
Equipment	$125	
Labor	$1,400	
Re-Use Deployment Subtotal	*$57,097*	
Cleanup/Recovery	$6,400	
Re-Use Total Cost	**$63,497**	

Sandbags Not Re-Usable

Assumptions:

Sand weight	100 lbs/cf
Sandbag weight	31 lbs. (.31 cf)
Sandbag Cost	$0.25 each
Sand Cost	$20.00 per cy
Loader	$125.00 per hr
Shovels	$20.00 each
RDFW Panel	$100.00 each
Laborer	$20.00 per hour
Trucking	$70 per truck per hr
Dump Fee	$27 per cy
Recovery Crew	2 Laborers & Operators
Recertification	$10 per grid
Loss of RDFW Grids	20% per use
Loss of Sand (Re-Use)	20% per use