

**Gravitas**  
International Ltd



**Flex MSE™**  
Vegetated Wall System



## Simplicity, Adaptability, and Longevity

Flex MSE is a Patented engineered solution for vegetated retaining walls and erosion control.



Flex MSE Bags and interlocking Plates are used to build naturally resilient Geomodular structures.

A unique soft building material which exhibits hard material qualities, Flex MSE adapts to events that would ruin lesser systems, and only gets stronger and greener as time goes on.

Flex MSE is a Patented system which leverages Mechanically Stabilized Earth (MSE) principles along with geotextile technology to create strong and easy to install Geomodular block structures.

- Economical
- Eco Friendly
- Permanent
- Aesthetically Pleasing



## Build it Green

### Building with Flex MSE

Flex MSE is one of the easiest systems on the market to install, vegetate and maintain.

#### Flex MSE Bags are:

- Filled with sand and soil
- An ideal 'planter block' for many types of vegetation
- Water and root permeable
- Flexible enough to create almost any shape

#### Flex MSE Plates are:

- Made from 100% recycled material
- Designed to bridge the gap between Bags to create an interlocking connection
- Engineered with Friction Strips for greater Bag to Bag contact and Grid Hooks to mechanically connect to Geogrid

The Flex MSE Vegetated Wall system provides the strength of interlocking components without the need for concrete, rebar, wire mesh or other formwork.



## Applications & Uses



**Vegetated Culvert Headwalls**



**Riverbank Protection**



**Highway Walls**



**Landscaping and Development**

### Infrastructure and Erosion Control

- Slope Repairs
- Retaining Walls
- Highway Walls
- Bridge Abutments
- Noise Barriers
- Levees/Dikes

### Commercial and Residential

- Landscaping
- Garden Walls
- Site Leveling and Optimization
- Golf Courses and Parks

### Anywhere Land Meets Water

- Vegetated Culvert Headwalls
- Streambank Protection
- Riverbank Protection
- Coastal Protection
- Irrigation Canals
- Ponds and Reservoirs
- Ditch Linings

### Emergency Use

- Permanent Flood Protection Walls
- Wind and Storm Protection Walls
- Blast Walls and Bunkers



# Build it Green

## Flex MSE Advantages

- **Flex MSE cuts installation times.**

Flex MSE walls install in 2/3 to 1/2 the time of conventional walls.

- **Flex MSE walls are easy to construct.**

DIY'ers to professional contractors can install Flex MSE using our simple installation methods.

- **Flex MSE is lightweight and easy to transport.**

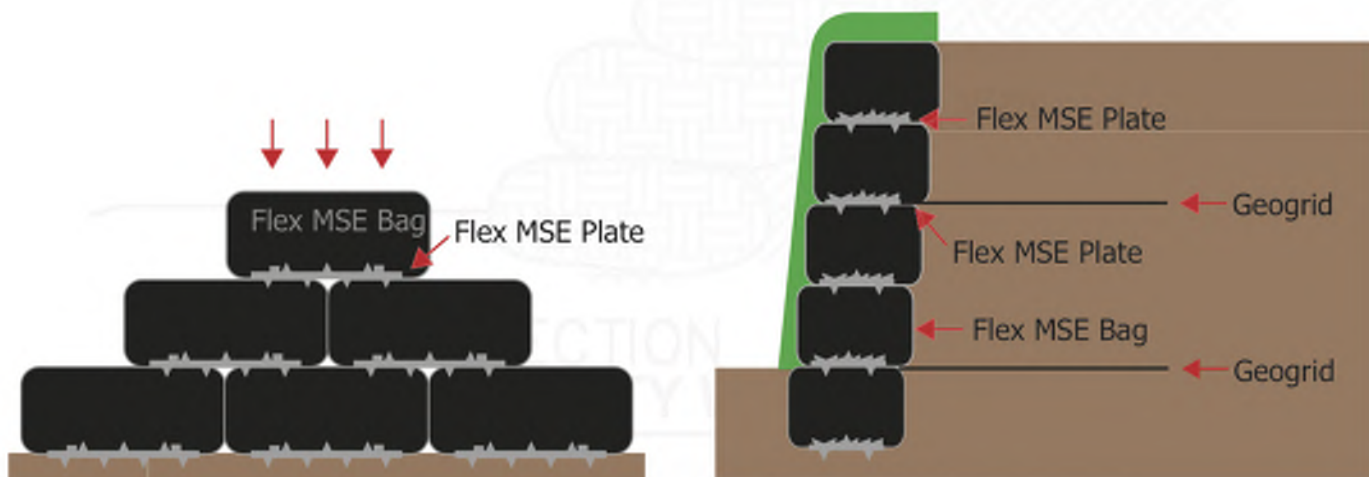
1,000 ft<sup>2</sup> of unfilled Flex MSE units ship on a single pallet.

- **Flex MSE is ideal for a wide variety of applications.**

Flex MSE works seamlessly with culverts and landforms and integrates perfectly with other building materials and systems.

- **Flex MSE is cost effective.**

The all-in costs for a Flex MSE wall are generally 40-50% less than other systems. Savings in machine, material and transportation costs make Flex MSE an obvious choice for helping generate project cost savings.



## Installation & Vegetation

### Installation

- Dig a shallow, relatively level trench and place a row of Flex MSE Interlocking Plates at the bottom of the trench about 76mm (30") apart.
- Place the first row of Flex MSE Bags end to end centered over the Plates.
- Place Flex MSE Plates on top of each Bag row centering them over the joint between the Bags.
- Lay the next row of Bags squarely over the Flex MSE Plates, creating an offset 'running bond' pattern.
- Tamp or lightly compact the Bags to create a level course.
- Place and compact Backfill every two courses or as required.
- Repeat this process until the desired height is reached, adding reinforcement as required.
- When using Geogrid, our Plate's Patented Grid Hook secures geogrid at select layers.

### Vegetation:

- A key advantage of Flex MSE is its ability to accept almost all types of vegetation.
- Vegetation can include grasses, ground cover, flowers, vines and small shrubs.
- Hydroseeding or live planting/staking finished walls are examples of Vegetation methods that work well with the Flex MSE system.



**Beginning Construction**



**Underway**



**Applying Hydroseed**



**After Vegetation**

No.	Size	Material	Qty



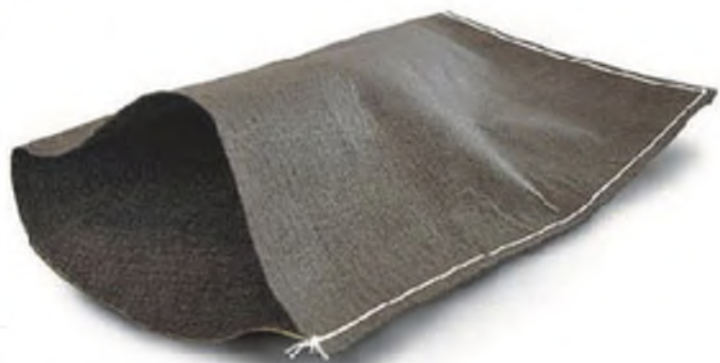
## Build it Green

### Flex MSE System Component Specification

#### Flex MSE Plate

Provides a positive connection between the Flex MSE Bags, effectively interlocking each and every Bag into one solid unit. The Flex MSE Plate incorporates our Patented Friction Strips and two Geogrid Hooks per Plate.

Height	42 mm (1.65")
Length	285 mm (11.22")
Width	99 mm (3.90")
Spikes	11
Hooks	2
Weight	63g (2.2 oz)



#### Flex MSE Bag

Flex MSE Bags provide the ideal planter block for permanent vegetation. These Bags have a filtering functionality to prevent soil particle seepage while permitting water and roots to pass.

#### Unfilled:

Width	380 mm (15")
Length	890 mm (35")

#### Filled:

Width	300 mm (12")
Length	760 mm (30")
Height	140 mm (5.50")





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The Flex MSE system is subject to pending and registered patents worldwide.

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