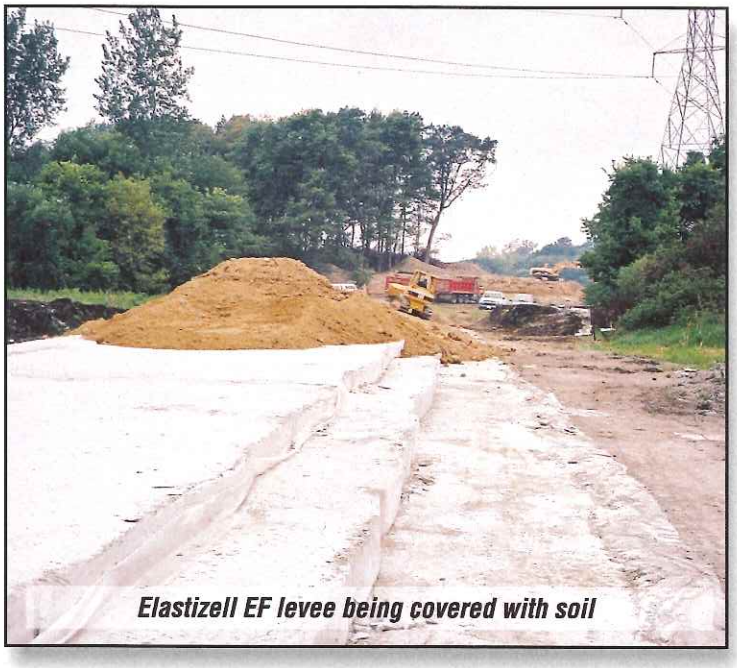
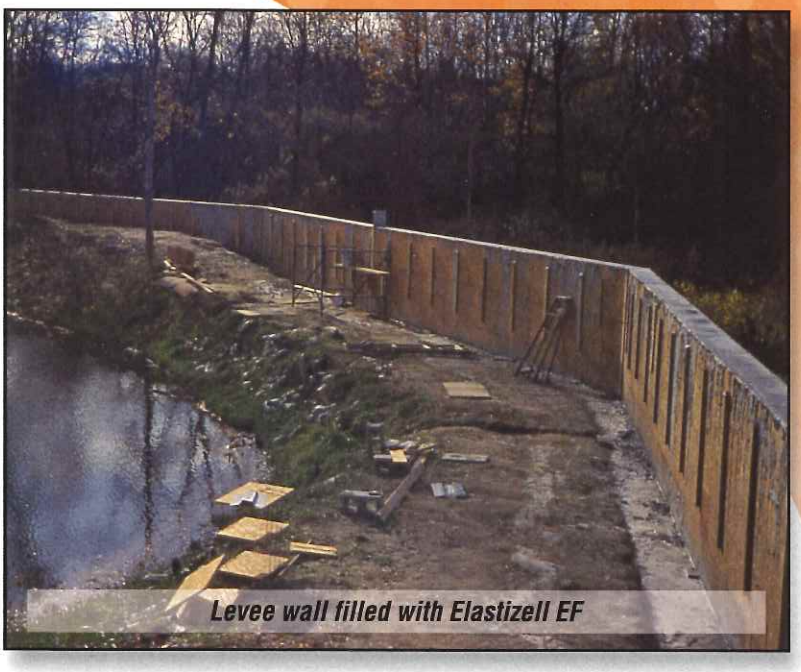
LIGHTWEIGHT LEVEE STRUCTURES

Elastizell EF Permits Higher Levee Structures Over Poor Soils



Elastizell EF levee being covered with soil



Levee wall filled with Elastizell EF

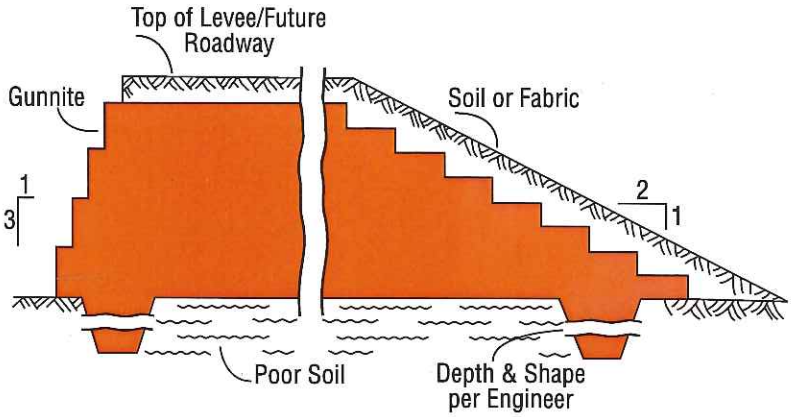
Problem

A levee requires constant maintenance to preserve the designed levee height. How can maintenance be reduced with minimal construction time and cost?

Discussion

In low bearing capacity soils, often found near waterways, levee construction is challenging because embankments constructed with standard fill material settle from their own excessive weight.

The compaction of granular fill alters the density and permeability of the levee. Therefore, stringent construction requirements are necessary and lifts frequently need to be recompacted. Contractors may over compact lifts, increasing the weight of the levee unnecessarily.



= ELASTIZELL EF

Solution

Removal of a portion of the low bearing capacity soil allows load balancing with Elastizell EF. This increases elevation without increasing consolidation. Elastizell EF is batched on site then pumped into place which reduces transportation cost and logistics problems associated with poor soils. Elastizell EF requires no compaction and allows levees to be constructed with specially designed cross sections with minimal consolidation, reducing maintenance requirements.

Advantages

- *The levee shape and weight can be customized for specific application and soil bearing capacities.*
- *A greater variety of cross sectional profiles may be utilized with Elastizell EF than with standard fill materials.*
- *Higher embankments may be constructed with Elastizell EF than with normal weight fill materials, increasing containment capacity.*
- *Elastizell EF does not require compaction, saving time and reducing cost.*
- *Consistent material independent of variations in locally available fill.*

BASIC PHYSICAL PROPERTIES

Elastizell EF

*Greater values may be obtained if required per Elastizell Corporation design.

CLASS	MAXIMUM CAST DENSITY pcf (kg/m³)	MINIMUM COMPRESSIVE STRENGTH* psi (Mpa)	ULTIMATE BEARING CAPACITY Tons/sf (kN/m²)
I	24 (384)	10 (0.07)	0.7 (69)
II	30 (480)	40 (0.28)	2.9 (276)
III	36 (576)	80 (0.55)	5.8 (552)
IV	42 (672)	120 (0.83)	8.6 (827)
V	50 (800)	160 (1.10)	11.5 (1103)
VI	80 (1280)	300 (2.07)	21.6 (2068)

Comparison of Maximum Fill Material Densities

ELASTIZELL EF			
Class I	24 pcf (384 kg/m³)	Water	62.4 pcf (1000 kg/m³)
Class II	30 pcf (480 kg/m³)	Lightweight Aggregates	60-90 pcf (961-1442 kg/m³)
Class III	36 pcf (576 kg/m³)	Flowable Fills	90+ pcf (1442+ kg/m³)
Class IV	42 pcf (672 kg/m³)	Soils	120 pcf (1922 kg/m³)
Class V	50 pcf (800 kg/m³)	Aggregates, Asphalts	125 pcf (2002 kg/m³)
Class VI	80 pcf (1280 kg/m³)	Lean Concrete	145 pcf (2323 kg/m³)

For specific design values and more detailed specifications, as well as design assistance, please contact the ELASTIZELL CORPORATION OF AMERICA or our local applicator below.

Elastizell Cellular Concrete
ENGINEERED FILL

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