



# MULTI-CELL®

Extensively used in the construction industry since the early eighties as a fast and effective solution to channel / canal protection, slope protection, load support and concrete roads.



JHB: Tel +27 11 922 3300  
 CT: Tel +27 21 531 8110  
 KZN: Tel +27 31 717 2300  
 EL: Tel +27 43 727 1055  
 PE: Tel +27 41 453 0755

| Fax +27 11 392 1112  
 | Fax +27 21 531 5498  
 | Fax +27 31 702 0435  
 | Fax +27 43 727 1065

WEB: [www.kaytech.co.za](http://www.kaytech.co.za)



## What is Multi-Cell®?

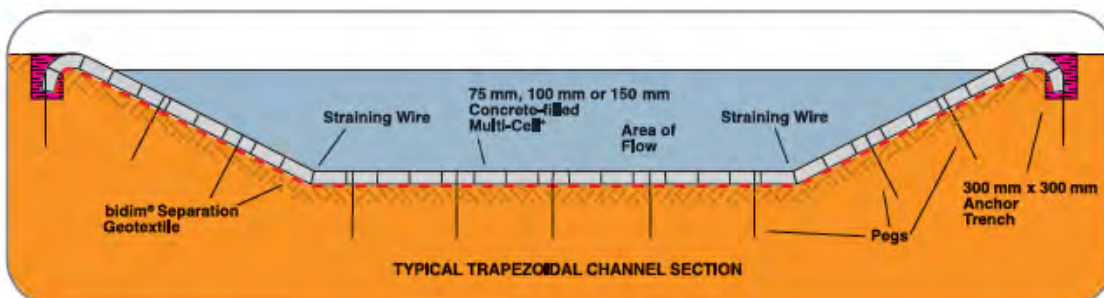
A cellular honeycomb structure, manufactured from woven slit film tape strips that are stitched alternately together, forming three dimensional square cells. **Multi-Cell®** is used as an in-situ shuttering to cast continuous interlocking concrete paving for road or canal construction, in load support applications to prevent shearing and lateral movement of the infill material and as an erosion control formwork for vegetated soil embankments.

### Advantages

- Economical & effective system.
- New Tension Frame allows quick, simple and easy installation.
- Light weight and low packaged volume in relation to installation area.
- Flexible, conforms to existing surface.
- Provides a concrete shuttering and finished height profile.
- Rot proof and resistant to most chemicals and ultra violet light.
- High cell wall / infill interlock.
- High tensile strength and seam strength.
- Labour intensive - ideal for unskilled labour.

## Channel / Canal Protection

**Multi-Cell®** provides a flexible effective erosion protection treatment for hydraulic structures. Cells can be either concrete filled for high velocity structures (velocities up to 8 m/s) or soil filled and vegetated where moderate/intermittent flows occur (velocities up to 1.5 m/s - 2 m/s).



### Advantages

- Allows hydrostatic pressure relief through joints.
- Concrete infill has built in joints.
- Soil nailed to surface by pegging.
- Permits building on clays or areas prone to settlement as it is a flexible system.
- Can be installed in high water table areas.
- Can be shaped to conform to the in-situ natural finished profile.
- Cell wall heights provide uniform concrete thickness profile throughout.

### Applications

- Concrete road side drains.
- Down chutes - road embankments, mine dumps and landfill sites.
- Irrigation and outfall canals.
- Dam spillways and causeways.
- Headwall scour protection aprons.
- River scour re-vegetation protection.





## Slope Protection

**Multi-cell's**® cellular structure has been designed to protect slopes against erosion and can be filled with materials ranging from topsoil for vegetated finishes to concrete surfaces.

### Advantages

- Increases natural angle of repose on a slope.
- Forms mini-cascades, which slow down surface run-off and prevents the formation of rills and gullies.
- Improves the stability of the top soil layer and prevents surface slippage.
- Can be cut for installation around objects. The soil can be seeded, or small shrubs planted in the cells. Biodegradable **SoilSaver**® or more permanent **GrassRoots**® can be placed over the installed cells as scour protection to new growth.

### Applications

- Sand dune protection.
- Fill embankment slopes.
- Landfill cover / closure protection.
- Dam faces, shore protection and spillways.
- Road cut slopes.
- Mine dump slope protection.
- Bridge abutments.

## Load Support

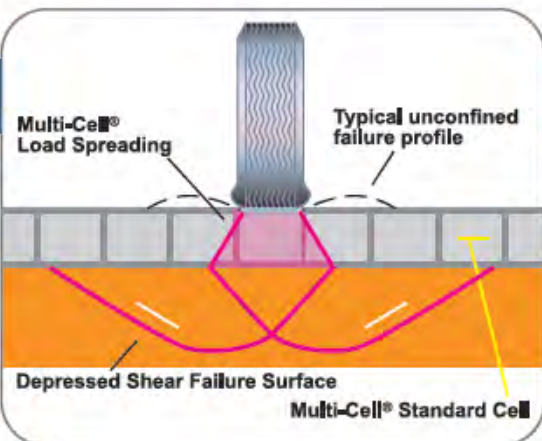
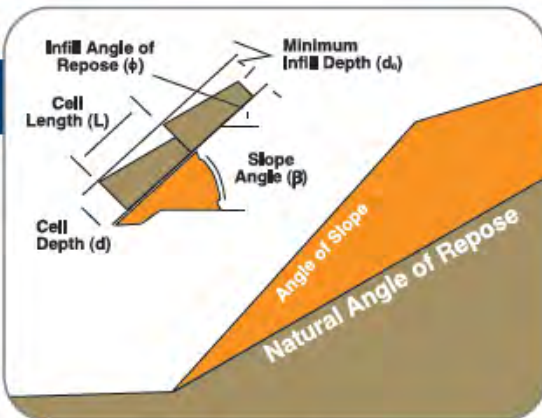
**Multi-Cell**® strengthens soils by introducing an apparent cohesion to cohesionless infill by limiting shearing through frictional interaction between the cell walls and the infill material and adding lateral support by a passive resistance of adjacent infilled cells.

### Advantages

- Provides a stiff base with high flexural strength.
- Reduces subgrade contact pressures.
- Distributes loads laterally.
- Individual hoop strength provided by each cell.
- Prevents lateral displacement of infill material.
- Reduces vertical deflections.
- Limits differential settlement.

### Applications

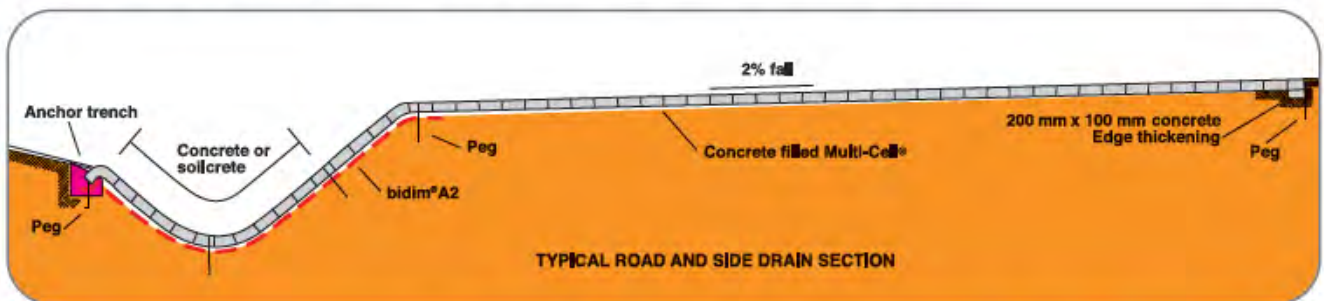
- Weak road sub-bases and bases.
- High load parking / loading / storage areas. (ie reach-stackers).
- Retaining wall spread footings.
- Foundation mattresses.
- Underground pipe support.
- Rail track.





# Concrete Roads

Multi-Cell® cellular structure provides an ideal formwork for cast in-situ concrete roads.



## Advantages

- Use existing subgrade material and alignment.
- Can be laid to very steep grades.
- Provides a concrete shuttering and finished height profile.
- Concrete infill has built in joints.
- Stormwater sidedrain can be cast integral with road.
- Very low maintenance costs.
- Dish-shaped roads to channel stormwater.
- Ideal for low volume roads in hilly terrain or on steep topography.
- Built in skid resistance.

## Applications

- Low volume residential roads.
- Dish-shaped low volume residential roads.
- Steep roads. (ie: microwave/ radio towers / residential).
- Special aprons (ie: fuel depots etc).
- Low level river crossings.
- Stormwater drifts (alternative to piped culverts).

## SPECIFICATIONS

### Base product

UV stabilised laminated polypropylene woven slit film tape.

### Strength properties

Woven tape strips have a tensile strength of 26kN/m with seam strengths at 12% of ultimate strength.

### Cell size

200mm x 200mm with cell heights: 75mm, 100mm and 150mm.

### Panel size

10m x 5m expanded coverage (450mm x 750mm packaged).

## Multi-Cell® is used in numerous other specialised applications such as:

- Protection to plastic liners (soilcrete or concrete infill).
- Grass covered porous pavements (filled with no-fines concrete).
- Sludge drying beds (load support and height control to filter sand).
- Boat ramps (concrete or stone filled).
- Roadways constructed using in-situ sands.

**Note:** Special size or height Multi-Cell® panels can be made to order.

DISCLAIMER: The application, handling and conditions of use of our products are critical and beyond our control. Information given by us in our documentation or orally, or by any employee or agent and any advice, recommendation or assistance, is given in good faith but without creating any obligation or warranty.

© Kaymac (Pty) Limited t/a Kaytech 2015