



TECHFAB INDIA

At the Heart of Geosynthetic Activity



GROUND IMPROVEMENT & ABUTMENT PROTECTION SOLUTIONS FOR REINFORCED SOIL WALLS

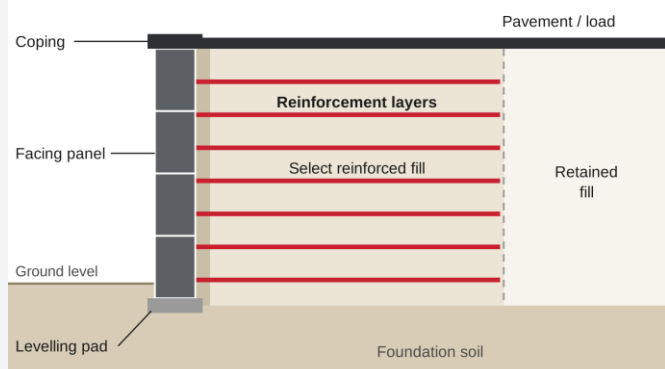
STRONGER GROUND. STABLE RS WALLS.

Geosynthetic solutions for stable foundations
and scour-protected bridge abutments

TechDrain PVD | TechCell Geocell | TechGrid Biaxial Geogrid | TechLink | TechMat

An RS wall is only as good as the ground it stands on. TechFab India supplies the **complete RS wall package** — soil reinforcement for the wall itself, geosynthetic **ground improvement for weak foundations** beneath it and **TechMat** protection where the wall meets a river crossing — backed by design support and installation methodology.

01 THE REINFORCED SOIL WALL SYSTEM



Typical section. Reinforcement length, spacing and grade are fixed by project-specific design.

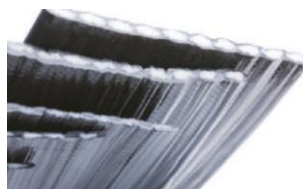
A reinforced soil (RS / MSE) wall is built from compacted select fill with layers of polymeric reinforcement tied to a facing. The reinforced block behaves as a **coherent gravity mass**, carrying traffic and earth loads while tolerating differential settlement far better than rigid RCC walls.

APPLICATIONS

ROB & flyover approaches
VUP / PUP / LVUP
Ramps & abutment walls
Industrial & port platforms
Embankment widening

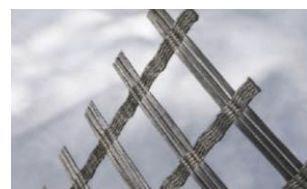
ADVANTAGES

- ✓ Faster construction
- ✓ Settlement-tolerant
- ✓ Lighter foundations
- ✓ Corrosion-free reinforcement
- ✓ Economical at height



TechStrap

Polymeric strips for panel-faced walls



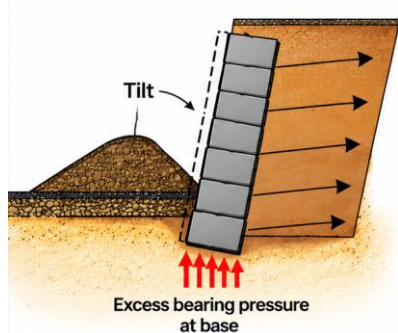
TechGrid (PET)

Uniaxial geogrids for walls & slopes

02 WHY THE FOUNDATION MATTERS

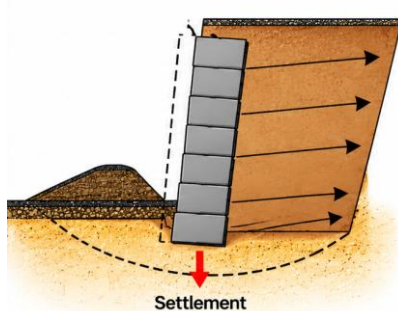
Bearing capacity

Weak soil under the reinforced zone cannot carry the wall's base pressure.



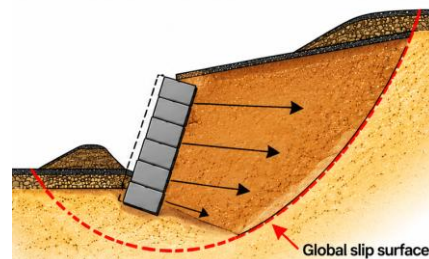
Settlement

Large or uneven settlement opens panel joints and distorts the facing.



Global stability

Deep slip surfaces can pass beneath the wall through soft strata.

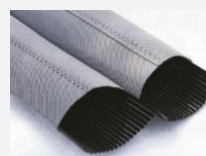
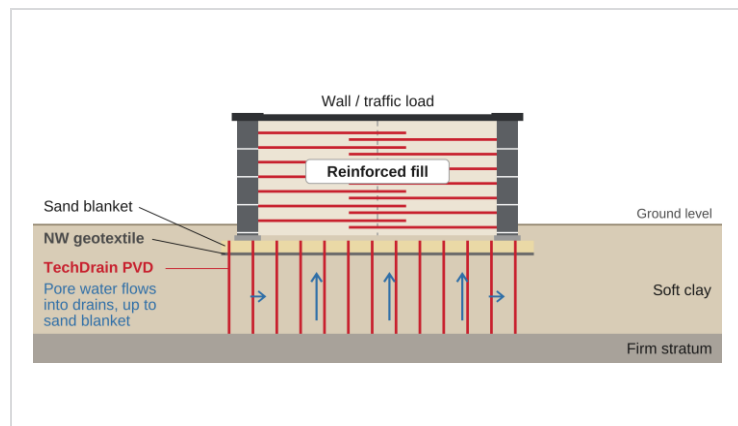


SELECTING GROUND IMPROVEMENT UNDER THE WALL

FOUNDATION CONDITION	TECHFAB SOLUTION	WHAT IT DOES
Deep soft, compressible clay	TechDrain PVD	Accelerates consolidation before the wall is finished
Weak or variable founding layer	TechCell Geocell	Stiff raft that spreads load and evens out settlement
Soft subgrade under the base	TechGrid Biaxial Geogrid	Basal reinforcement and stable working platform
Weak foundation soil	TechLink	Increases global stability of the structure

03 GROUND IMPROVEMENT OPTIONS

The right treatment depends on what is wrong with the ground beneath the wall. Each method below is shown under a back-to-back RS wall; **on larger projects they are often combined** (see page 4).



A · DEEP SOFT CLAY TechDrain PVD

Prefabricated vertical drains installed through soft clay before the wall is built **shorten the drainage path**, so most consolidation settlement happens during construction — not after the facing is in place.

- ✓ Drains extend to sand blanket top; NW geotextile below
- ✓ Drain spacing and depth fixed by design
- ✓ Suits deep, saturated compressible clay

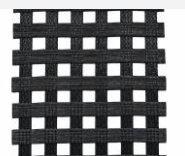
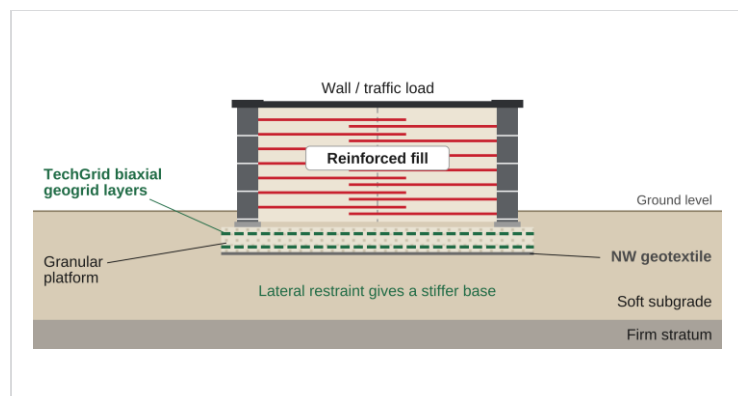
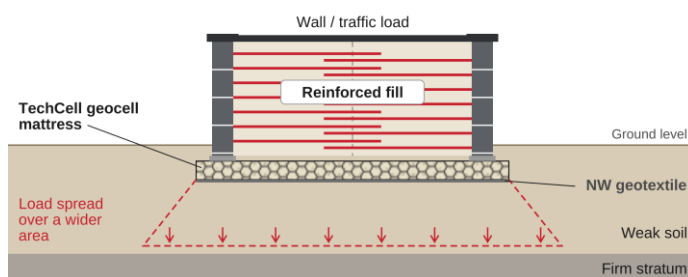


B · WEAK / VARIABLE FOUNDING LAYER

TechCell Geocell Mattress

A cellular HDPE mattress below the wall base **confines granular fill into a stiff raft** that spreads the wall load over a wider area.

- ✓ Raises bearing capacity of the founding layer
- ✓ Reduces differential settlement along the facing
- ✓ Panels joined on site with the SELCO self-locking connector



C · SOFT SUBGRADE TechGrid Biaxial Geogrid

Laid in the granular layer at the wall base, aggregate **interlocks in the geogrid apertures** to form a stiff, laterally restrained platform.

- ✓ Basal reinforcement for the wall foundation
- ✓ Stable working platform on soft subgrade
- ✓ Often combined with a geocell mattress

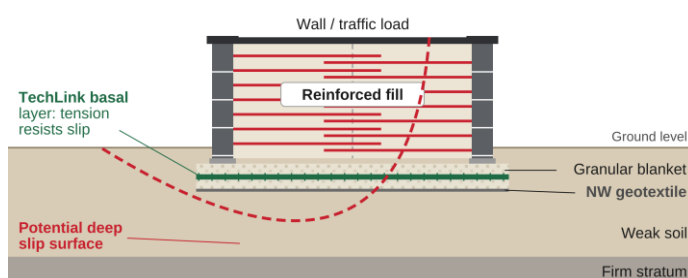


D · WEAK FOUNDATION SOIL

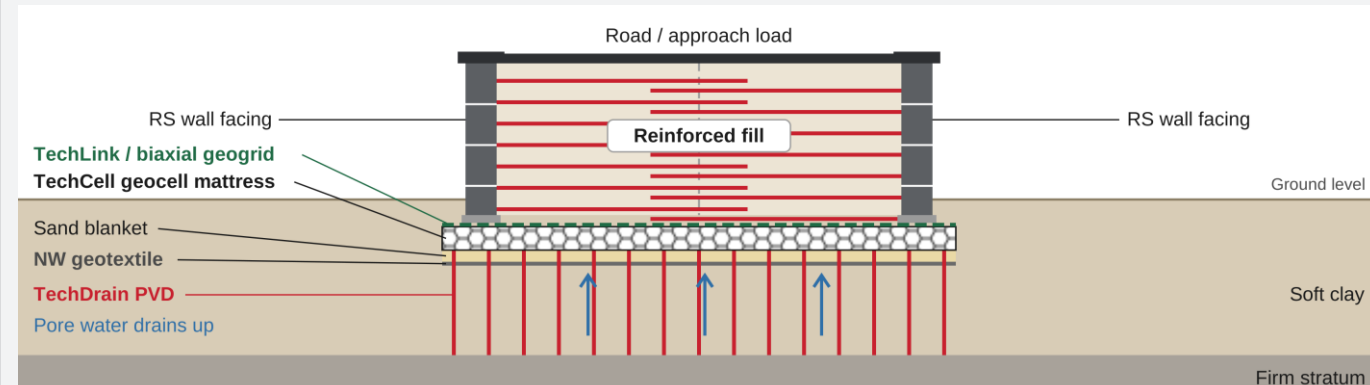
TechLink

High-strength grid of bonded polymeric strips in both directions. Laid as a basal layer beyond the wall footprint, it **intercepts deep slip surfaces** and **increases global stability** of the structure.

- ✓ High to ultra-high tensile strength
- ✓ Basal reinforcement for high RS walls & slopes
- ✓ Placed mid-depth in a granular blanket over NW geotextile



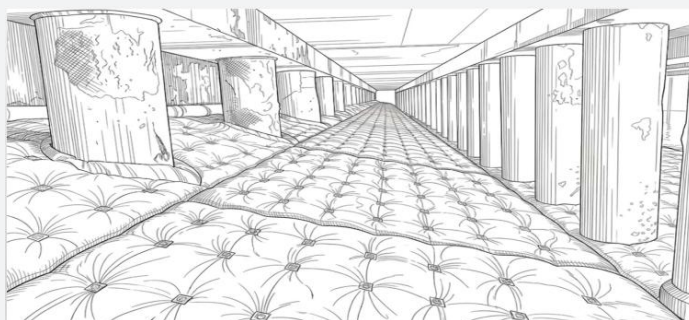
04 COMBINED GROUND TREATMENT



RS wall with PVDs, NW geotextile, sand blanket, geocell mattress and basal geogrid / TechLink. Illustrative only — the treatment adopted for each wall, single or combined, is fixed by design.

Solutions are often combined — e.g. PVDs to consolidate deep clay, with a geocell mattress or basal geogrid to carry the wall during construction. Final selection follows site investigation and design.

05 ABUTMENT PROTECTION — TECHMAT®



Jetty revetment / bridge abutment protection — Filter Point / Articulated Block mattress

TechMat® — Fabric Form Grout Mattress

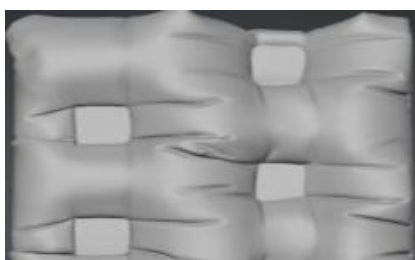
A double-layered mattress of **high-strength woven multifilament geotextile**, filled on site with **cement slurry**. Where an RS wall approach meets a river or nallah crossing, it armours the abutment slope and toe against **scour and erosion**, protecting the foundation the wall depends on.

TYPES

AB Articulated Block — toe, apron, abutment & jetty

FP Filter Point — canals, riverbanks, high-GWT slopes

US Uniform Section — slopes, channels & embankments



Filter Point TechMat® FP

- ✓ Drainage ports relieve pore pressure
- ✓ Prevents uplift, soil migration & piping
- ✓ Canals, riverbanks, high-GWT slopes

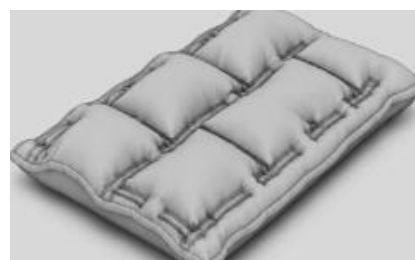
Thickness: 75 / 100 / 150 mm



Uniform Section TechMat® US

- ✓ Monolithic surface for slopes & channels
- ✓ Embankments & water conveyance
- ✓ Resists erosion; keeps slope intact

Thickness: 75 / 100 / 150 mm



Articulated Block TechMat® AB

- ✓ Linked blocks with revetment cables
- ✓ Articulates with ground movement
- ✓ Toe, apron, abutment & jetty protection

Thickness: 150 / 200 / 400 mm