Kontain

FIELD INSTALLATION + PRELIMINARY PRODUCT SELECTION GUIDE

Extruded geogrids for pavement use

Rigid biaxial and multi-directional polymeric grids · standalone and nonwoven composite systems

CRITICAL CONSTRUCTION RULE

Never traffic exposed geogrid or composite.

Keep delivery, spreading and compaction plant on previously placed granular cover. Use the minimum compacted cover in this guide unless the project design requires more.

STATUS	DOCUMENT	SCOPE
Rev 1.0	KON-GDE-PAV-001 20 July 2026	Unbound granular pavements and working platforms

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PURPOSE, LIMITS AND NON-NEGOTIABLE CONTROLS

Read this first

This guide gives practical installation controls and a conservative preliminary product-screening framework for Kontain extruded pavement geogrids. It is intended to help contractors and asset owners avoid common field failures when a complete project-specific design or installation specification is not available.

DESIGN BOUNDARY

This guide does not determine pavement thickness.

Where no pavement redesign has been completed, retain the full unreinforced pavement thickness and treat the grid as an additional reliability and performance measure. Any thickness reduction or design-life claim requires a suitably qualified pavement or geotechnical engineer using an accepted method and product-specific evidence.

Seven critical rules

- Do not place any vehicle, tracked plant, grader, compactor or delivery truck directly on exposed grid or composite unless a project-specific written method expressly permits it. Kontain's default is no direct trafficking.
- Do not use BG20 as the fallback selection where design CBR is below 4%. Use BG30 above CBR 3% and BG40 for CBR 2–3%, subject to the project gates in this guide.
- Treat CBR below 2%, unknown CBR, progressive rutting, pumping or inaccessible ground as an engineer-review condition. BG40 is not an automatic solution for extremely soft ground.
- Use a compatible nonwoven geotextile or geocomposite where the subgrade is fine-grained, wet, pumping, visibly soft, contamination-prone or where separation/filtration is otherwise required.
- Overlap in every direction. Use CBR-based side laps and a minimum 900 mm overlap at every roll end. Shingle overlaps in the direction of advancing fill.
- Place aggregate by end-dumping onto previously placed fill and spreading forward. Maintain cover; never push the blade down to the grid.
- Stop if the grid moves, folds, tears, delaminates, becomes exposed, or if rutting/pumping progresses. Repair and correct the cause before continuing.

Applications included and excluded

INCLUDED	NOT COVERED
• Unbound granular pavements, haul roads, access roads, hardstands and working platforms • Extruded/integrally formed biaxial PP grids and multi-directional polymeric grids • Standalone grid, separate geotextile + grid, and factory-bonded nonwoven composites	• Reinforced-soil walls/slopes, embankment basal reinforcement, load-transfer platforms or bridging voids • Asphalt reinforcement, paving fabrics, rail ballast, geocells, erosion control or permanent exposed use • A substitute for pavement design, geotechnical assessment, drainage design, SWMS or authority approval

WHEN A PROJECT-SPECIFIC GRID DESIGN IS ABSENT

Preliminary selection guide

The following is a fallback product-class screen, not a structural design. It assumes the full unreinforced pavement thickness is retained, the formation has been assessed, and the aggregate is competent and compactable. Use the lowest representative design CBR—not an optimistic single result—and account for wet-season and disturbed strength.

DESIGN CBR	BIAXIAL STARTING CLASS	TRIAXIAL SCREEN	MINIMUM SIDE LAP	REQUIRED JUDGEMENT
≥ 5%	BG20 starting class	TG225 application tier	300 mm; use 450 mm where wet, uneven or difficult	BG30 for permanent, high-pass, high tyre-pressure or authority-controlled work.
4 to <5%	BG20 minimum fallback	TG225 application tier	300–450 mm	Grid-only only where separation/filtering is confirmed unnecessary.
>3 to <4%	BG30	TG295 application tier	300–450 mm	Use geotextile where fine, wet, pumping or visibly soft; BG30 is the safer default for trafficked pavement.
2 to 3%	BG40	No automatic TG equivalent	300–450 mm; use upper end where unstable	Composite or separate geotextile normally required. Review first-lift thickness and construction plant.
1 to <2%	Engineer review; BG40 is only a starting point	Engineer-selected	600–900 mm	Consider two grids, thicker first lift, staged construction, capping or ground improvement.
0.5 to <1%	No standard fallback selection	Engineer-selected	900 mm	Specialist geotechnical/pavement design. Construction method may govern more than product class.
<0.5% / unknown	Do not proceed on this table	Do not proceed on this table	Authority/engineer direction	Investigate, reclassify or treat ground. A grid is not a substitute for a stable plant platform.

Table 1. Kontain preliminary fallback screen. CBR overlap bands are adapted from Queensland TMR MRTS58 (November 2025); product-class mapping is Kontain guidance and remains subject to approved product data, project duty and specification.

SPECIFICATION GATE

Authority projects may require a heavier product than this fallback table.

Queensland MRTS58 distinguishes Type 1 products for design CBR >3% and Type 2 products for CBR ≤3%, with minimum 2%-strain tensile and junction values plus aperture, construction-damage, weathering and geotextile requirements. Kontain can prepare a compliance schedule for the exact grade and backing configuration proposed. The approved project specification always prevails.

How to use the biaxial and triaxial tiers

- BG15 and lighter triaxial grades are deliberately excluded from the no-design fallback selection. Use them only where a designer has accepted the duty and supporting data.
- TG225 and TG295 are placed in similar application tiers to BG20 and BG30 respectively for screening only.
- The triaxial mapping is not property equivalence. Selection must consider radial stiffness, low-strain response, aperture interaction, junction performance and construction survivability.
- There is no automatic triaxial substitute for the BG40 fallback condition. Seek a project-specific selection supported by full polar stiffness, junction and trafficking evidence.

INTERLOCK, SEPARATION, FILTRATION AND SURVIVABILITY

Select the complete system—not the grid alone

Biaxial and multi-directional grid geometries are not interchangeable on tensile class alone. A grid stabilises aggregate primarily through mechanical interaction and lateral restraint at working strain. It does not automatically prevent fine subgrade migration, pumping or moisture-driven loss of support. The grid and any geotextile must each be selected for its own function.

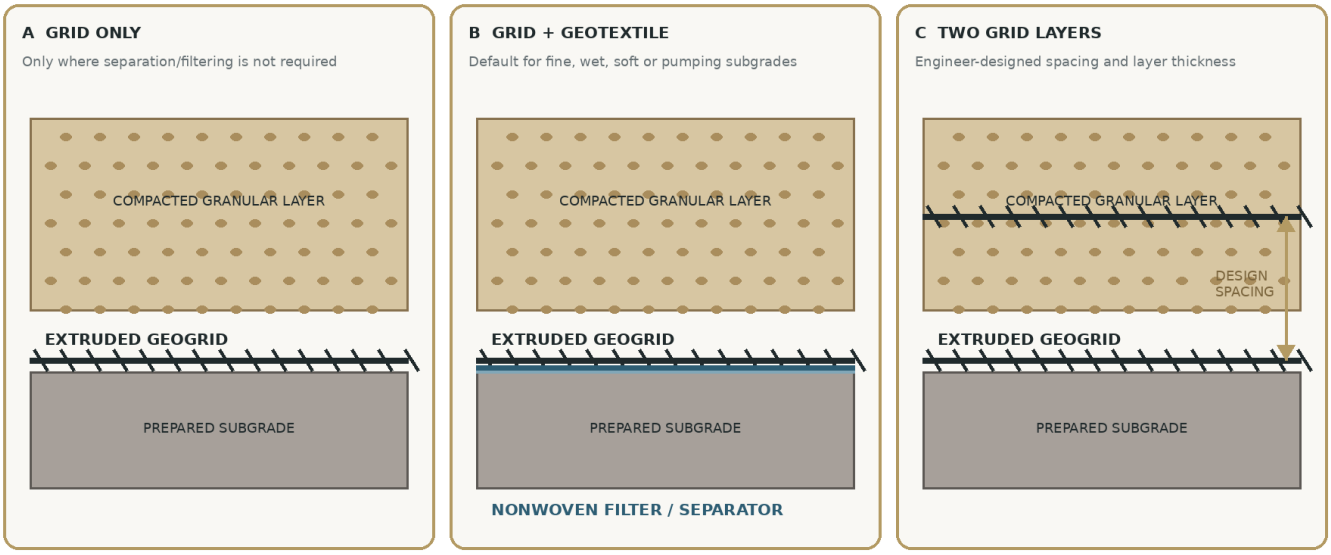

Figure 1. Typical layer configurations. The two-layer arrangement and spacing must be designed.

When a geotextile is required

- Use a compatible nonwoven geotextile below the grid—or a bonded composite with the geotextile side to subgrade—where the subgrade contains significant fines, is visibly soft or wet, pumps under load, or can migrate into the overlying aggregate.
- Treat untested fine-grained or wet ground conservatively. Do not wait for contamination or pumping to prove that separation was needed.
- A geotextile is a filter/separator, not a structural grid, and a standard pavement composite is not an in-plane drainage layer unless transmissivity is specifically established.
- A factory composite must retain adequate grid-to-aggregate interaction. Check bond integrity and reject rolls showing delamination, creasing or local loss of backing.

GT150 versus GT200 composite backing

BACKING	PREFERRED USE	NON-NEGOTIABLE CHECK
GT150	Prepared, reasonably firm and smooth subgrade; lower construction damage; filter compatibility confirmed	Confirm O95/AOS, flow/permittivity, puncture, tear and chemical compatibility for the proposed backing.
GT200	Preferred default for CBR ≤3%, visibly soft/wet ground, angular fill, more severe placement or higher damage risk	GT200 provides increased construction survivability, but filter compatibility must still be confirmed.

DURABILITY

PET chemistry check

For continuous-filament polyester geotextiles, review pH, alkalinity, temperature and exposure duration. MRTS58 recommends polyester products within 4 < pH < 9 unless additional testing supports use outside that range. A polypropylene grid and PET backing do not share the same chemical-resistance envelope.

DESIGN INPUTS, APPROVALS AND METHOD PLANNING

Before work begins

Do not release grid to the workfront until the following inputs and decisions are recorded. Where information is missing, adopt the conservative branch or obtain engineering direction.

INPUT	RECORD BEFORE APPROVAL
Subgrade	Design CBR or equivalent; test basis; moisture state; variability; sensitive/remoulded strength; DCP correlation; weak zones; expansive/dispersive/acid sulfate conditions
Water	Groundwater, seepage, rainfall exposure, pumping, crossfall, table drains, subsurface drainage and whether the filter can discharge without pressure buildup
Aggregate	Source and specification; grading; D50 and Dmax; angularity; fines/plasticity; compacted CBR or modulus; compaction moisture; construction-damage compatibility
Traffic	Construction and operating vehicles; axle/wheel loads; tyre pressure; passes/ESAs; channelisation; braking/turning areas; design life and allowable rutting
Grid	Approved TDS and certificate; low-strain response; junction performance; aperture geometry; construction damage; UV resistance; polymer/durability; roll dimensions
Geotextile	Separation/filtration need; soil PSD and internal stability; O95/AOS; flow/permittivity; puncture/tear; pH; composite bond and backing orientation
Construction	Plant type and ground pressure; first-lift thickness; fill direction; overlaps; wind controls; roll lifting; cut details; staging; stop-work triggers; repair materials

INVESTIGATION RISK

Do not rely on a single DCP-derived CBR for soft ground.

DCP-to-CBR correlations have high scatter, particularly below CBR 10. Use enough investigation to define the lowest representative design condition. Confirm critical weak ground with appropriate laboratory CBR, vane shear, proof response or other geotechnical assessment. Proof rolling itself can damage very soft or sensitive formation and must be controlled.

Product acceptance before installation

- Match product, grade, roll and batch identification to the approved submittal and certificate of analysis.
- Quarantine wet, UV-exposed, crushed, punctured, creased, delaminated or unidentifiable rolls.
- Confirm roll width/length, required overlaps, wastage, patch stock, compatible fixings and geotextile orientation.
- For authority work, follow the project hold points, onsite sampling and conformance testing—not this guide alone.

DO NOT ROLL GRID OVER A FAILED SUBGRADE

Step 1 — Prepare and accept the formation

Formation requirements

- Clear vegetation, topsoil, organics, debris, sharp protrusions and objects that could tear the grid or backing.
- Trim to the design line, level and crossfall without creating a polished or remoulded wet surface.
- Repair local holes and ruts with approved capping or granular material. Do not bridge isolated voids with grid and assume they are treated.
- Identify wet, pumping, shearing or deeply rutted zones. Undercut, drain, cap, stabilise or redesign as directed before deployment.
- Prevent surface water reaching the exposed formation. Maintain table drains, crossfall and temporary drainage throughout construction.
- Confirm the formation can safely support the intended construction plant and roll handling. Plant stability is a separate geotechnical and safety requirement.

Subgrade acceptance hold point

CHECK	ACCEPTANCE REQUIREMENT
Geometry	Line, level, crossfall and width match drawings; grid will extend to the required limits and will not terminate within a primary wheel path.
Condition	No standing water, uncontrolled seepage, progressive pumping, deep ruts, exposed roots, sharp objects or uncompacted repairs.
Strength	Observed response is consistent with the adopted design CBR. Any weaker zone is mapped, treated and accepted.
Drainage	Temporary and permanent drainage provisions are operable before cover is placed.
Evidence	Photographs, test locations, weak-zone treatment and acceptance sign-off are retained.

STOP

Stop-work trigger

Do not deploy onto ground that cannot be accessed without pumping, progressive rutting or lateral movement. Reassess the construction method, first lift, grid arrangement, geotextile and ground treatment. A heavier grid does not make unsafe plant access acceptable.

Roll storage and handling

- Store rolls dry, off the ground, stable, chocked and protected by opaque waterproof cover. Retain labels.
- Use a rated spreader/lifting bar or approved slings. Do not drag rolls, drop them, lift through ribs, or puncture them with fork tines.
- Control rolling hazards. Keep people clear of suspended and uncontrolled rolls, particularly on crossfall or grade.

MAINTAIN CONTINUITY DURING ADVANCING FILL

Step 2 — Deploy, orient, overlap and secure

1. Set out the approved roll plan, direction of advance, roll ends, curves, penetrations and patch locations.
2. Normally orient roll length parallel to the road direction unless drawings state otherwise. Follow directional markings for products with defined orientation requirements.
3. Unroll flat, smooth and reasonably taut. Remove folds, wrinkles and trapped material; do not tension the product as a structural membrane.
4. For composites, place the nonwoven side against the subgrade unless the approved project detail states otherwise. Prevent delamination during rollout.
5. Shingle overlaps so the leading edge is not lifted by advancing fill. Secure only as needed to prevent movement, wind uplift or opening during cover placement.
6. Use cable ties, pins, sandbags or aggregate spot loads suitable for the site. Fixings are construction aids and are not structural load-transfer connections.

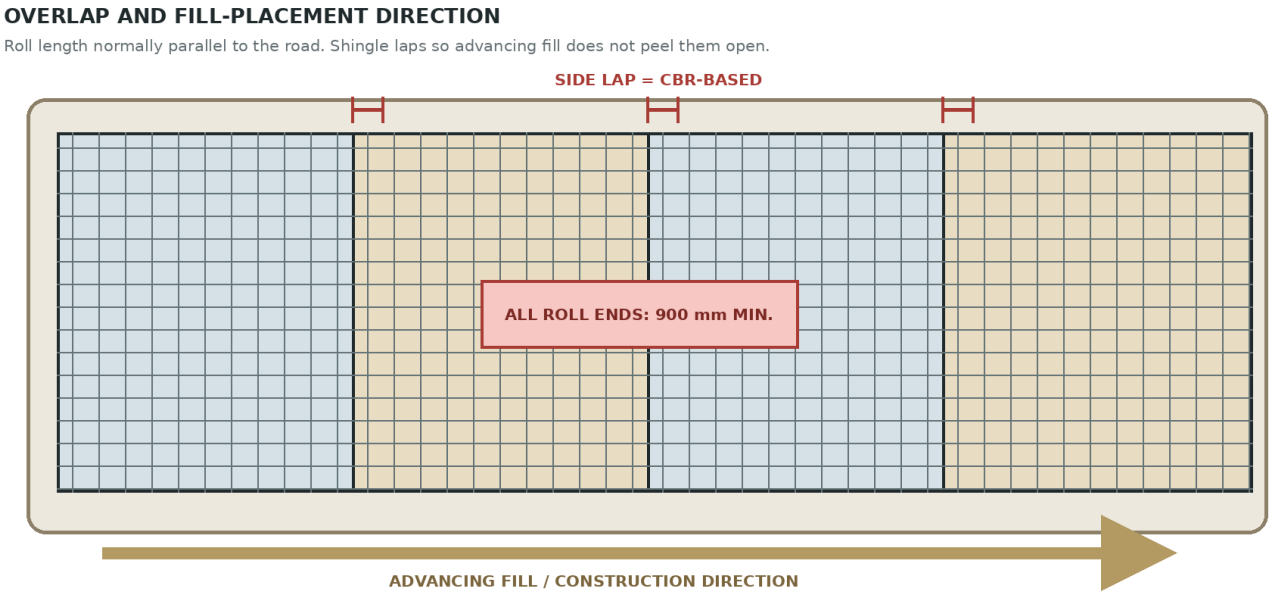

Figure 2. Typical overlap and shingling concept. Project drawings and authority requirements prevail.

DESIGN CBR	MINIMUM OVERLAP	FIELD RULE
>2%	300–450 mm	Use 450 mm where wet, uneven, windy, curved, on crossfall or where fill placement may pull the lap.
1–2%	600–900 mm	Use the upper end where the formation is unstable or overlaps cannot remain flat.
0.5–1%	900 mm	Engineer review is required for the complete platform and installation method.
<0.5%	No default	Seek authority/specialist advice before installation.
All roll ends	900 mm minimum	Apply regardless of CBR unless the approved design requires more.

Table 2. Minimum overlap guidance from Queensland TMR MRTS58, November 2025. The approved contract, drawings and administrator/engineer direction prevail.

NO DIRECT TRAFFICKING ON EXPOSED GRID

Step 3 — Place the first granular lift

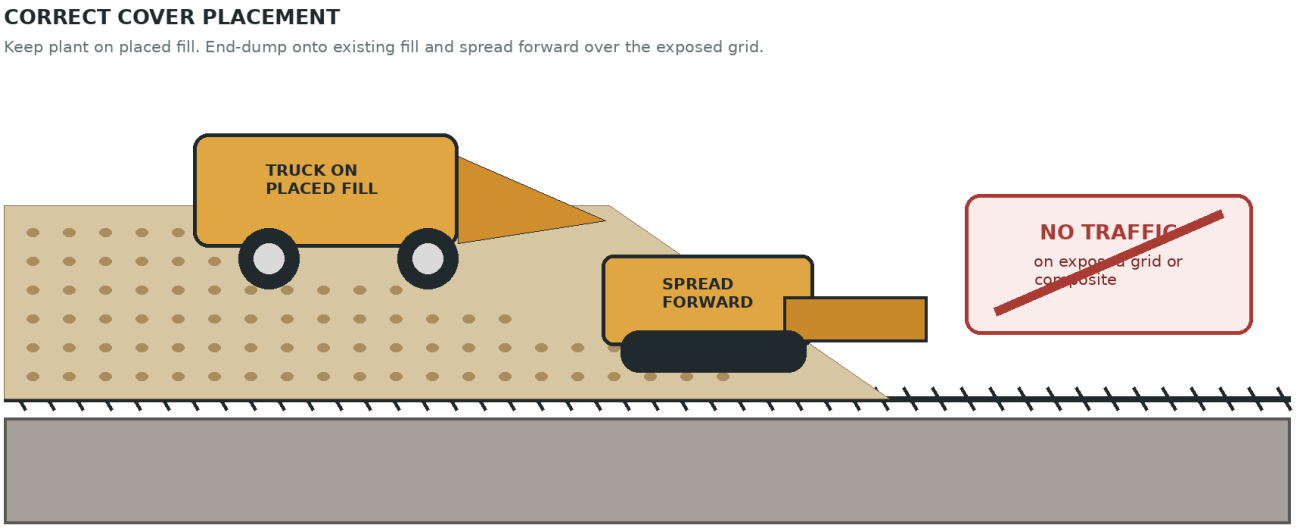

Figure 3. Place fill from the covered side and spread forward without exposing or dragging the grid.

Placement sequence

- Inspect and accept the full deployed area immediately before cover. Confirm grade, orientation, overlap, fixing, condition and geotextile continuity.
- Cover promptly. As a default, place fill within 24 hours and earlier where wind, rain, sunlight, site access or damage risk warrants.
- End-dump aggregate onto previously placed fill—not onto exposed grid. Spread forward with plant operating on sufficient cover.
- Build the first lift to the specified compacted thickness. Do not thin the lift to save material or repeatedly blade it down until the grid is exposed.
- Use clean, approved aggregate. Remove isolated oversized or sharp particles that can cut ribs or puncture the backing.
- Do not push aggregate in a way that rolls, wrinkles or opens overlaps. If the product moves, stop and correct it before placing more fill.

Minimum compacted cover before routine construction traffic

CONDITION	KONTAIN DEFAULT	COMMENT
Firm foundation; stable placement response	200 mm minimum over grid before tracked plant or turning/braking	Austroads cites 150 mm for firm geotextile foundations, but Kontain adopts 200 mm as the default grid-system minimum.
Soft foundation, CBR ≤2%, pumping risk or visibly unstable	300 mm minimum, or more if designed	Use low-ground-pressure spreading plant and consider staged/static compaction. First-lift thickness may govern system success.
Project design/specification requires more	Use the greater thickness	Do not reduce cover because a higher grid grade is installed.

MRTS58 permits limited rubber-tyred traffic directly on firm formations only where the contractor demonstrates no damage, wrinkling or folding to the administrator. Kontain's standard field rule is stricter: do not directly traffic exposed grid or composite unless a written project-specific method expressly permits it.

PROTECT THE FIRST LIFT AND MONITOR RESPONSE

Step 4 — Compact without destabilising the system

Compaction controls

- Use plant and compactive effort suitable for the formation and lift thickness. On soft or sensitive ground, begin with static passes and introduce vibration only after the platform is stable and the approved method allows it.
- Maintain the specified moisture condition of the granular material. Do not add water in a way that saturates or pumps the formation.
- Avoid sharp turns, spinning, hard braking and concentrated trafficking until adequate cover and compaction have been achieved.
- Compact progressively and uniformly. Do not create a thin edge that leaves the grid vulnerable or causes aggregate to roll off the system.
- Fill local ruts with suitable material. Do not grade surrounding material down to the rut and reduce effective cover.
- Do not allow grader teeth, blades, stabiliser drums, trenching plant or survey stakes to contact the grid.

First-lift observation and stop-work triggers

OBSERVATION	REQUIRED RESPONSE
Progressive rutting or lateral wave	Stop traffic; restrict access; review cover thickness, plant and subgrade response. Do not repeatedly traffic to 'work it in'.
Pumping, fines or water at surface	Stop; establish drainage and filter/separation adequacy. Replace contaminated material where required.
Grid visible or cover locally < requirement	Stop; place additional approved material. Inspect for rib/junction or backing damage before covering.
Overlap opens, grid folds or moves	Expose only as safely needed; flatten/reposition; restore full overlap and fixing; reassess fill direction.
Rutting exceeds 50 mm during first-lift construction	Default escalation trigger where no stricter project limit exists. Stop and seek engineering direction before continuing.
Repeated corrective grading is needed	Treat as evidence the system or construction method is not stable; escalate rather than conceal the response.

IMPORTANT DISTINCTION

The 50 mm trigger is a construction escalation threshold—not a pavement rutting acceptance criterion.

The designer may set a lower trigger. Finished-pavement rutting acceptance, serviceability and design life must be defined separately.

Weather and shutdown

- Do not leave exposed formation, geotextile or grid vulnerable to forecast rain, wind or uncontrolled traffic.
- Secure unfinished edges and rolls. Divert runoff away from the workfront and prevent water flowing beneath the system.
- After rain or shutdown, re-inspect formation response, overlaps, contamination, standing water and covered-layer condition before restarting.

REPAIR THE FUNCTION—NOT JUST THE VISIBLE TEAR

Damage, repairs and quality records

Damage assessment

- Treat cut ribs, broken junctions, tears, punctures, melted areas, permanent folds, stretched apertures and UV/chemical damage as defects.
- For composites, also inspect the nonwoven for holes, pulled fibres, contamination and delamination. A sound grid does not compensate for a failed filter/separator.
- Determine why the damage occurred—plant contact, sharp aggregate, insufficient cover, open overlap or unsuitable handling—and correct the cause before repair.

Default repair detail

7. Remove loose, contaminated or damaging material and expose the affected area without causing further damage.
8. Cut a patch from the same approved product and orientation unless the engineer accepts an alternative.
9. Extend the patch at least 1.0 m beyond every side of the damaged area. Maintain the full underlying overlap and shingle the patch for the direction of cover placement.
10. Secure the patch against movement. For a separate or bonded geotextile, restore continuous filtration/separation as well as grid continuity.
11. Photograph, locate and record the repair before cover. Escalate extensive, repeated or load-path-critical damage to the engineer.

ENGINEERING JUDGEMENT

Replacement may be safer than patching

Where damage is widespread, the product has shifted, the formation has failed, or composite delamination is extensive, remove and replace the affected roll/area. Do not create a patchwork system with uncertain continuity.

Minimum installation records

RECORD	MINIMUM CONTENT
Material	Product/grade, batch and roll identifiers; delivery inspection; TDS/CoA; approved submittal; quarantine/non-conformance records
Formation	Test results and basis; weak-zone map; treatment; drainage; pre-installation photographs; acceptance sign-off
Installation	Date/weather; roll plan; orientation; overlaps; fixings; composite orientation; personnel/plant; pre-cover inspection
First lift	Material/source; loose and compacted thickness; moisture/compaction; plant; observed rutting/pumping; corrective actions
Repairs	Location, cause, size, patch product/orientation, overlap and photographs
Closeout	As-built plan; departures; test certificates; hold/witness point releases; engineer/administrator acceptance where required

AN ENGINEERING OPTION—NOT A STANDARD DETAIL

When to consider two geogrid layers

A second grid layer can improve confinement within a thick granular platform and can help manage high construction stresses, weaker base material or a severe traffic duty. It must not be added casually: the designer must set each grid grade, elevation, vertical spacing, layer thickness and construction sequence.

Conditions that justify engineering assessment

- Design CBR below 2%, highly variable or sensitive subgrade, or a first lift that cannot be placed/compacted without excessive deformation.
- Very heavy plant, high tyre pressure, channelised haulage, large numbers of passes, braking/turning zones or long service periods.
- A thick granular platform where one interface grid cannot provide confinement through the full layer depth.
- Marginal aggregate strength or stiffness, subject to confirmation that the material itself will not fail or degrade.
- A design comparison shows two grids are more reliable or economical than additional aggregate, capping, stabilisation or ground improvement.

ELEMENT	DESIGN / CONSTRUCTION REQUIREMENT
Bottom layer	Usually at or close to the subgrade–aggregate interface to stabilise the working platform and distribute stress.
Filter/separator	Below the bottom grid or factory bonded where required. Do not omit because two structural grids are present.
Upper layer	Within the granular layer at an engineer-set elevation to confine aggregate closer to the principal stress/deformation zone.
Spacing	No universal spacing rule is given. It must suit aggregate size, compacted lift sequence, platform thickness, plant and product interaction.
Construction	Complete and accept the lower reinforced lift before deploying the upper grid. Never traffic the upper grid directly.
Credit	Do not double a single-layer benefit or assume two layers permit twice the thickness reduction. Analyse the full system.

OPTIONS ASSESSMENT

Ground improvement may be the better answer

For very soft, saturated, organic, uncontrolled fill or laterally unstable ground, thicker aggregate and additional grids may be uneconomic or unsafe. Compare undercut/replacement, drainage, capping, lime/cement treatment, geocells, bridging layers or specialist foundation solutions as appropriate.

USE DESIGN—NOT A CBR-TO-GRID SHORTCUT

Pavement thickness reduction and life extension

Mechanical interlock can reduce aggregate movement and rutting, improve construction performance and extend pavement life. In suitable cases it is reasonable to reduce granular thickness while targeting performance comparable with an unreinforced section. What is not reasonable is applying one universal percentage reduction based only on CBR or a product grade. Current TMR MRTS58 states that TMR has no published pavement or subgrade design method to quantify the reinforcement function, and the February 2026 TMR Pavement Design Supplement typically treats thin geosynthetic interlayers as non-structural [1,2].

DESIGN WARNING

There is no safe universal formula of the form: CBR + grid grade = reduced pavement thickness.

Required thickness also depends on wheel/axle load, tyre pressure, number and distribution of passes, allowable rut depth, subgrade variability and sensitivity, aggregate strength/modulus, drainage, compaction, grid–aggregate interaction, reliability and the paved/unpaved failure mechanism.

Three defensible design paths

PATH	REQUIREMENT
1 No structural credit	Retain the full unreinforced pavement thickness. Use the grid to improve constructability, limit aggregate migration, reduce deformation risk and potentially extend life. Required where no accepted redesign exists.
2 Unpaved road / platform	Use an accepted method such as Giroud–Han for compacted aggregate thickness within its assumptions. Inputs include passes, wheel load/contact pressure, allowable rut, subgrade/base strength, geosynthetic calibration/property and reliability.
3 Permanent sealed pavement	Design under the applicable Austroads Part 2 and authority supplement. Obtain approval for any benefit model using product-specific trafficking, accelerated pavement, trial-section or calibrated evidence.

Minimum design comparison

ITEM	REQUIRED OUTPUT
Baseline	Unreinforced section thickness, materials, drainage and construction assumptions for the required traffic and reliability.
Reinforced option	Same inputs plus product-specific properties/evidence, grid elevation, geotextile function, cover and construction method.
Performance criterion	Same allowable rutting, fatigue/subgrade strain, serviceability or other agreed failure criterion for both options.
Sensitivity	Lower subgrade strength, higher traffic/tyre pressure, poorer drainage, aggregate variability and construction tolerance.
Verification	Trial section or trafficking evidence where benefit is material, unfamiliar, high-risk or not covered by an accepted authority method.
Deliverable	Signed design report stating method, inputs, assumptions, product, thicknesses, limitations, inspection and acceptance requirements.

Kontain design resources and project enquiries: ben.lewis@kontainsolutions.com

Contact Kontain for application-led product selection, project data and support for an engineer-led pavement options assessment.

HOLD POINTS AND RELEASE SEQUENCE

Field inspection checklist

Use with the project ITP, drawings, SWMS and specification. Mark each item accepted, not applicable or non-conforming and attach supporting evidence.

POINT	RELEASE	MINIMUM EVIDENCE
HP1	Product + method approval	Approved grade/system; design CBR; aggregate; traffic duty; geotextile need; overlaps; first lift; plant; drawings; TDS/CoA; method and risk controls accepted
HP2	Formation acceptance	Line/level/crossfall; drainage; no standing water/pumping/deep rutting; weak zones treated; condition consistent with adopted CBR; photographs and sign-off
WP1	Rollout + overlaps	Correct product/orientation; flat and smooth; composite backing down; CBR side laps; 900 mm roll ends; shingled; fixings secure; no damage/delamination
HP3	Pre-cover release	Full deployed area inspected; no folds/open laps/contamination; repairs accepted; safe fill route established; weather suitable
WP2	First-lift trial	End-dump on fill; forward spread; no direct trafficking; compacted cover maintained; plant/method stable; no progressive rutting or pumping
HP4	Layer acceptance	Thickness, compaction and level conform; defects/repairs recorded; no exposed grid; departures resolved before next layer
CLOSE	As-built records	Roll/batch traceability; layout; tests; photographs; repair log; non-conformances; weather; first-lift observations; signed releases

Quick do / do not

DO	DO NOT
• Use the lowest representative design CBR • Install a filter/separator where fines, water or softness demand it • Use CBR-based overlaps and 900 mm roll ends • Keep plant on sufficient compacted cover • Stop, repair and record defects • Use engineering design for thickness reduction or two layers	• Select on ultimate tensile class alone • Use BG20 below CBR 4 as the no-design fallback • Assume TG225/TG295 are property-equivalent to BG20/BG30 • Traffic exposed grid or composite • Blade down until the grid is exposed • Use a heavier grid to conceal failed drainage or formation

STOP WORK

Emergency / unexpected condition

Make the area safe, stop affected work, protect the exposed system, record the condition and obtain direction from the project superintendent and suitably qualified engineer. Do not continue simply because material and plant are already mobilised.

CONTROLLED GUIDANCE

Use, responsibility and references

Use and responsibility

This document is general preliminary guidance for installation and initial product screening. It cannot account for every site, ground condition, vehicle, aggregate, drainage condition, construction method, authority requirement or failure mode. It is not a design certificate, project specification, warranty of pavement performance, or approval to depart from contract documents.

- Project-specific drawings, specifications, statutory and road-authority requirements, approved method statements, engineer directions and product certificates prevail over this guide.
- The designer is responsible for pavement and geotechnical design, adopted CBR, traffic, design life, aggregate, drainage, layer thickness, grid elevation, product approval and any structural benefit assigned to the geogrid.
- The contractor is responsible for site safety, SWMS, temporary works, plant stability, formation protection, installation, workmanship, inspection, testing, records and reporting unexpected conditions.
- Kontain's role is limited to the product supply and any separate written services agreed for the project. No thickness reduction, bearing capacity, number of passes, rutting performance or design life is warranted unless expressly stated in signed project-specific documentation.
- Product data and guidance may be revised as manufacturer verification, testing or standards change. Use the approved TDS, certificate and guide revision supplied for the project.
- Nothing in this guide excludes rights or obligations that cannot lawfully be excluded under applicable law.

Primary technical references

[1] Queensland Department of Transport and Main Roads, MRTS58 Geosynthetics for Subgrade and Pavement Reinforcement, November 2025. MRTS58 source

[2] Queensland Department of Transport and Main Roads, Pavement Design Supplement to Austroads Guide to Pavement Technology Part 2, February 2026. TMR supplement source

[3] Austroads, Guide to Pavement Technology Part 8: Pavement Construction, AGPT08/09, 2009. Austroads Part 8 source

[4] Austroads, Guide to Pavement Technology Part 4G: Geotextiles and Geogrids, publication page. Austroads Part 4G source

[5] Giroud, J.P. and Han, J., Design Method for Geogrid-Reinforced Unpaved Roads. I: Development of Design Method, Journal of Geotechnical and Geoenvironmental Engineering, 130(8), 2004. Giroud–Han Part I source

[6] Giroud, J.P. and Han, J., Design Method for Geogrid-Reinforced Unpaved Roads. II: Calibration and Applications, Journal of Geotechnical and Geoenvironmental Engineering, 130(8), 2004. Giroud–Han Part II source

[7] Han, J. and Giroud, J.P., Recommendations for the Proper Use of the Giroud–Han Method, Geosynthetics, April/May 2012. Method limitations source

[8] Giroud, J.P., Han, J., Tutumluer, E. and Dobie, M.J.D., The Use of Geosynthetics in Roads, Geosynthetics International, 30(1), 47–80, 2023. Roads review source

Referenced test and design concepts

Relevant project requirements may reference ASTM D6637 (geogrid tensile), ASTM D7737 (individual junction), ASTM D4355/EN 12224 (weathering), ISO 10722 (construction damage), ASTM D4751 (AOS), ASTM D4491 (water flow/permittivity), ASTM D6241 (static puncture), AS 3705 (identification/marking), and current Austroads/road-authority pavement design and construction documents. Use the edition nominated by the contract.

CONTROLLED RELEASE

Current guidance

Use the approved Kontain TDS, quotation, project compliance schedule and certificate documentation for the exact grade and backing configuration supplied. This guide supports installation planning and does not replace the project specification or engineer's design.

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