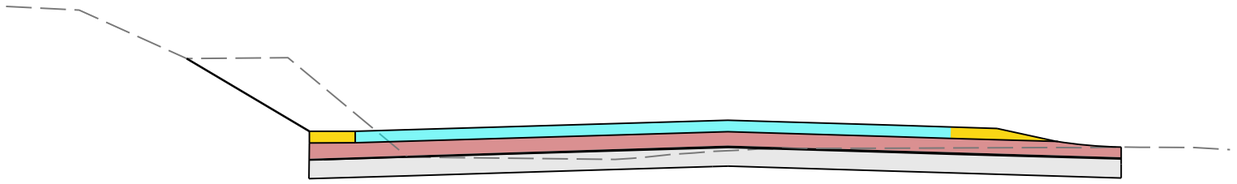
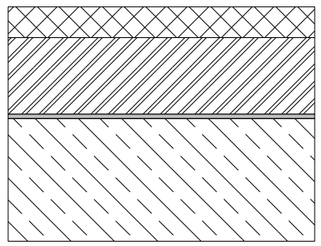
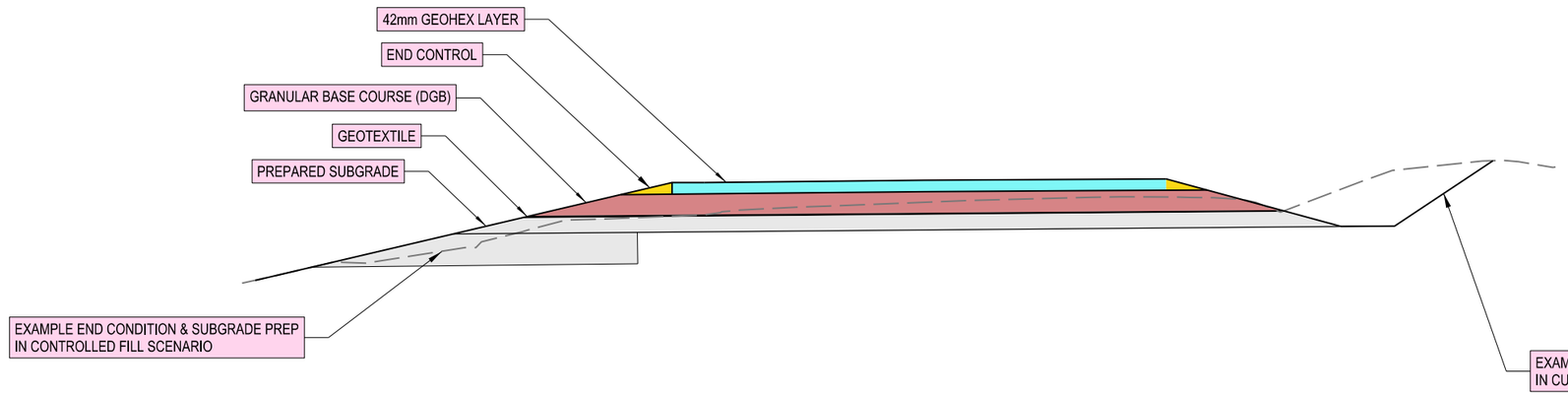
PAVEMENT TYPE 2 - CLASS D LOAD CASE

TYPICAL CROSS SECTION
GEOHEX APPLICATION - CLASS D VEHICLE USE







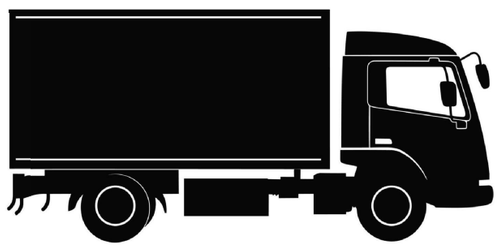
CLASS:
D

USE CASE:
CARRIAGEWAYS OF UNCLASSIFIED ROADS, AREAS OPEN TO COMMERCIAL VEHICLES, LIGHT TRUCKS INCLUDING LOADING DOCKS, LAYDOWN YARDS

ULTIMATE LIMIT STATE DESIGN LOAD:
210kN

SERVICEABILITY DESIGN LOAD:
160kN

NOMINAL WHEEL LOADING:
8,000kg



INSTALLATION PACKAGE - GEOHEX

SHEET: LOAD CLASS D INSTALLATION

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Published: 08/2024

NOTES ON CONSTRUCTION:

Base Course:

Place layer/s of well-graded crushed rock or road base on top of the subbase.

Compact this layer to 98% MPD or as otherwise specified by Principal

Geohex Installation:

Install the Geohex panels directly onto the prepared base course.

Lock the Geohex panels together using the interlocking mechanisms or screws

Once installed, check the alignment and level of the Geohex surface.

Surface Treatment:

Backfill the Geohex cells with a nominated material

Compact the fill material lightly to stabilize it within the Geohex cells.

Edge Restraints:

Installation of edge restraints (e.g., concrete or steel curbs) to prevent lateral movement of the Geohex panels, especially in areas subject to high lateral forces is recommended.

Maintenance:

Regularly inspect the pavement for signs of settlement, wear, or damage.

Refill and compact the Geohex cells if the fill material becomes displaced over time.

Weather Considerations:

Avoid construction during periods of heavy rain or when the subgrade is saturated, as this can negatively impact compaction and overall pavement performance.

NOTES ON SUBGRADE AND MATERIAL

Subgrade Assessment:

Perform a detailed geotechnical assessment to determine if the subgrade meets regulatory requirements for bearing capacity and stability. If the subgrade is found to be inadequate, stabilization methods such as lime or cement treatment as per regulatory guidelines must be implemented.

Proof Rolling:

Before placing any pavement layers, conduct proof rolling of the subgrade to identify any soft spots or areas of concern. TfNSW R44 provides guidelines on the equipment and procedures for proof rolling.

Subgrade Capping:

If the subgrade does not meet the required CBR values even after recompaction, consider the use of a capping layer as specified in regulatory guidelines. This might involve an additional layer of crushed rock or select material to improve the foundation for the pavement.

Material Sourcing:

Ensure that all materials, including the crushed rock base and subbase materials, are sourced from reputable quarries. Documentation of material compliance should be maintained.

Layer Thickness and Compaction:

Regulatory specifications outline specific compaction requirements, including the minimum number of passes with particular compaction equipment and the target density (typically 98% of Maximum Modified Dry Density for heavy-duty pavements).

Moisture Control:

Ensure that moisture content during compaction is within the optimal range. Excess moisture can lead to reduced compaction efficiency, while insufficient moisture can hinder the achievement of the required density.

CONSIDERATIONS:

Subgrade Preparation and Stabilization:

Soil Testing:
Before construction, it's crucial to conduct soil testing to confirm the subgrade's CBR value and to identify any areas that may require additional stabilization.

Stabilization Techniques:
If the subgrade's CBR is close to the minimum required value (5%), consider stabilizing the subgrade with lime, cement, or other stabilization methods to improve strength and reduce settlement risks.

Drainage Design:

Surface Drainage: Ensure the pavement surface is designed with a slight gradient (1-2%) to facilitate proper water runoff, preventing water accumulation on the surface and within the Geohex cells.

Subsurface Drainage: Incorporate subsurface drainage features, such as French drains or perforated pipes, to prevent water from saturating the subgrade, especially in areas prone to heavy rainfall or poor drainage.

Geotextiles: Use a geotextile layer beneath the subbase to prevent fines from migrating upward into the crushed rock layers, which could reduce the pavement's strength and stability.

Traffic Loading and Patterns:

Traffic Analysis: Conduct a detailed analysis of the expected traffic load, especially for Class G (900 kN) applications. This includes understanding the type and frequency of vehicles, as well as the direction and distribution of traffic loads.

Turning Radii: Attention to be given to areas with sharp turns, intersections, or high traffic concentrations, as these areas will experience more stress. In these zones, increasing the base course thickness or using a higher-strength material is recommended.

Geohex Material Compatibility:

Fill Material: Ensure that the fill material used within the Geohex cells is compatible with the expected traffic loads. For heavier loads, angular gravel may be more appropriate than finer materials like sand to provide better interlocking and load distribution.

Environmental Considerations:

Temperature Fluctuations: In regions with significant temperature variations, consider the effects of thermal expansion and contraction on the pavement structure. This is particularly important for concrete bases or areas where frost heave might be an issue.

Erosion Control: In areas with loose or erodible soils, implement erosion control measures, such as silt fences or erosion control blankets, during and after construction to protect the integrity of the subgrade.

Construction Phasing and Timing:

Phased Construction: If the project is large, consider phasing the construction to allow for proper curing and settlement between stages, reducing the risk of uneven settlement or compaction issues.

Seasonal Timing: Plan construction activities during optimal weather conditions to avoid delays and ensure proper compaction. Avoiding wet or extremely cold seasons can help maintain quality.

Long-Term Maintenance:

Inspection Schedule: Establish a regular inspection and maintenance schedule to monitor the condition of the pavement, Geohex cells, and subgrade. Early detection of issues can prevent more significant problems later.

Repairs: Develop a plan for quick and effective repairs, particularly in high-traffic or industrial areas, to minimize downtime and extend the pavement's service life.

GEOHEX

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SHEET: INSTALLATION INSTRUCTIONS/NOTES

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