ACT Government

DRAINAGE MATS 03K

MUNICIPAL INFRASTRUCTURE TECHNICAL SPECIFICATION

03 - UNDERGROUND SERVICES



City and Environment Directorate

September 2026

Machinery of Government changes: On 1 July 2025, administrative arrangements were made to establish the City and Environment Directorate (CED). As of the date of publication of this document, the transition from Transport Canberra and City Services (TCCS) to CED, including updates to internal organisational structure, are yet to be finalised. References in this document to the organisation TCCS are to mean CED.

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1/0	–	First release	Karl Cloos	July 2019
1/1	1.1.3.2	Minor update to guidance on proprietary products.	Tim Rampton	September 2026
	1.1.5.1	Witness Point 3K.3 removed for placement of the protective layer over Type B drainage mat extensions		
	1.2.1.1	Application requirements clarified for Type A and Type B drainage mats		

Edition/ Revision Number	Clause Number	Description of Revision	Authorised By	Date
	1.3.1.1	Permitted filter materials and selection requirements updated for drainage mats		
	1.4.3.3	Filter material, compaction and layer thickness requirements updated for Type A drainage mats		
	1.4.4.3	Filter material, compaction and layer thickness requirements updated for Type B drainage mats, and Witness Point 3K.3 removed		

ACKNOWLEDGEMENT OF COUNTRY

City and Environment Directorate (CED) acknowledges that Aboriginal people are the Traditional Owners of Australia. We acknowledge and pay respect to the Ngunnawal people as the custodians of the land and waters that we live and thrive on today and recognise any other people or families with connection to the lands of the ACT and region.

CED acknowledges that Canberra's cultural and natural heritage was maintained by the Traditional Custodians for many generations before colonial settlement on Australian soil. Aboriginal people's management of the land preserved the natural balance of local plants and animals. This knowledge of the environment in which we live is critical to the protection and restoration of our land today.

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1 DRAINAGE MATS

1.1 General

1.1.1 Responsibilities

1.1.1.1 General

Requirement: Provide drainage mats, as documented.

1.1.2 Cross references

General: The following documents are related to this Specification.

1.1.2.1 ACT Legislation

Road Transport (General) Act

Public Roads Act

Scaffolding and Lifts Act

Scaffolding and Lifts Regulation

Work Health and Safety Act

1.1.2.2 Specifications

Requirement: Conform to the following:

MITS 00	Preliminaries
MITS 01	Traffic Management
MITS 02	Earthworks
MITS 04	Flexible pavement construction
MITS 06	Concrete kerbs, footpaths and minor works
MITS 08	Incidental works
MITS 09	Landscape
MITS 10	Concrete works
MITS 16	WSUD Features

1.1.3 Referenced documents

1.1.3.1 Standards

General: The following documents are incorporated into this Specification by reference:

Australian standards

AS 1289	Methods of testing soils for engineering purposes.
AS 1289.5.6.1	Soil compaction and density tests - Compaction control test - Density index method for a cohesionless material

1.1.3.2 Other publications

Proprietary products: Email CED.RoadStandards@act.gov.au for advice on proprietary products.

1.1.4 Interpretation

General: For the purposes of this Specification the following abbreviations apply:

CED: City and Environment Directorate

TCCS: Transport Canberra and City Services, ACT Government, and its successors (including City and Environment Directorate)

Type A mats: Mats to maintain continuity of a sheet flow of water under fills, to collect surface seepage from a wet seepage area or for protection of vegetation or habitat downstream of the road reserve where a fill would otherwise cut the flow of water.

Type B mats: Mats constructed to intercept water which would otherwise enter pavements by capillary action or by other means on fills and to intercept and control seepage water and springs in the floors of cuttings.

1.1.5 Hold points and witness points

1.1.5.1 Notice

General: Give written notice to the Authorised Person so that the documented inspection and submissions may be made to the **Hold point table** and the **Witness point table.**

Table 3K-1 Hold point table

Item	Clause title	Requirement	Notice for inspection	Release by
Execution				
HP3K.1	1.4.3.2 – Type A Mats – Geotextile	Approval of condition or repair of geotextile	1 working day before next activity	Authorised Person
HP3K.2	1.4.3.3 – Type A Mats – Filter Material	Approval of thickness and layers of filter material	3 working days before placing filters	Authorised Person
HP3K.3	1.4.4.2 –Type B Mats – Geotextile	Approval of condition or repair of geotextile	1 working day before next activity	Authorised Person
HP3K.4	1.4.4.3 – Type B Mats – Filter Material	Approval of thickness and layers of filter material	3 working days before placing filters	Authorised Person

Table 3K-2 Witness point table

Item	Clause title	Requirement	Notice for inspection
Materials			
WP3K.1	1.4.3.3 – Type A Mats – Filter Material	Inspection of placement of protective layer over mat extension.	3 working days before placing materials
WP3K.2	1.4.3.4 – Type A Mats Discharge	Inspection of outlet proposals	7 days before set-out of layers
WP3K.3	1.4.4.4 – Type B Mats Discharge	Inspection of outlet proposals	7 days before set-out of layers

1.2 Pre-construction planning

1.2.1 Scheduling

1.2.1.1 Programming the works

Program: To conform to embankment and pavement construction as follows:

- Type A mats: After the site has been cleared and grubbed and before commencement of embankment construction, only at locations where specified on the drawings.
- Type B mats: After completion of the subgrade construction and before construction of the pavement, only at locations where specified on the drawings.

1.3 Materials

1.3.1 Filter material

1.3.1.1 Mat components

General: Conform to the following:

a. Selection of filter material in drainage mats: The filter material for use in drainage mats shall be as specified in the drawings and selected by the designer based on the requirements of the project. Where the drawings do not specify a filter material type, seek advice from the designer or geotechnical engineer.
b. Type A mats: The following filter material types are permitted for use in Type A drainage mats, to *MITS 03I Subsurface Drainage*, if specified by the designer in the drawings or if specified by a geotechnical engineer:
    i. Type TfNSW R44 Drainage Layer material
    ii. Type C filter material
    iii. Type D filter material
c. Type B mats: The following filter material types are permitted for use in Type B drainage mats, to *MITS 03I Subsurface Drainage*, if specified by the designer in the drawings or if specified by a geotechnical engineer:
    i. Type TfNSW R44 Drainage Layer material
    ii. Type D filter material

1.3.2 Geotextile

1.3.2.1 General

Geotextile: To *MITS 03I Subsurface drainage.*

1.3.3 Pvc-u pressure pipe

1.3.3.1 General

Thick walled unplasticised PVC-U pressure pipe: To *MITS 03I Subsurface drainage.*

1.4 Execution

1.4.1 Provision for traffic

1.4.1.1 General

Requirement: Conform to *MITS 01 Traffic Management*.

1.4.2 Site establishment

1.4.2.1 Survey

Requirement: Confirm site surface and benchmarks. Conform to *MITS 00 Preliminaries.*

1.4.2.2 General

Clearing and grubbing: Clear, grub and dispose of debris along the alignment of underground services to *MITS 02A Clearing and grubbing* for the area of works shown on the drawings.

1.4.2.3 Temporary drainage during construction

Control of erosion and sedimentation: Conform to MITS 00C Control of erosion and sedimentation. Make adequate provision for runoff flows at works under construction.

Stabilisation of topsoil areas: Immediately following earthworks where required, stabilise the topsoil with hydroseed to *MITS 09 Landscape.*

1.4.3 Type A mats

1.4.3.1 Placement

Location: Conform to the following:

- Under embankments as shown on the drawings or as directed by the Authorised Person.
- Extending 2m beyond the toes of embankments.

1.4.3.2 Geotextile

General: Provide geotextile as follows:

- On the embankment foundation after the embankment foundation has been trimmed and any necessary trench drains installed.
- On top of and around the sides of the filter material after placement and compaction of the filter material to cover and enclose the sides of the drainage mat and filter material.

Geotextile under rock facing: Place an additional layer of geotextile on the drainage mat under the base of rock facing forming part of the embankment construction. Extend the additional layer of geotextile beyond the outside and inside faces of the bottom layer of rock.

Lap width: 500mm minimum at each join in the geotextile.

Protection of geotextile: Secure the geotextile to prevent movement by wind or by construction plant placing subsequent layers of filter material or earth filling over the drainage mat. Protect from damage during construction of the drainage mat and during placement of subsequent layers of filter material, earth filling or rock facing.

Damaged geotextile: Replace or repair damaged geotextile.

This is a **HOLD POINT (HP3K.1)**.

1.4.3.3 Filter material

Filter material type: In accordance with Clause 1.3.1.1.

Location: Compacted on the geotextile.

Compaction: Compact cohesionless material to a Density Index criteria as specified in the drawings determined by *AS 1289.5.6.1*, or as agreed otherwise by the Authorised Person.

Thickness: Conform to the following:

- Known expected consolidation of embankment: 300mm minimum plus allowance for the expected total consolidation of the embankment.
- Unknown expected total consolidation of the embankment foundation: 500mm minimum.
- Layers: Provide filter material in layers so that the thickness of each compacted layer is in accordance with the layer thickness requirements specified on the drawings, or as directed by the Authorised Person.

This is a **HOLD POINT (HP3K.2)**.

Protective layer: Cover the extension of the mat beyond the toe of the embankment with 300mm filter material immediately after completion of construction of each drainage mat.

This is a **WITNESS POINT (WP3K.1)**.

1.4.3.4 Discharge

Outlets: May be either of the following:

Surface outlets at the toes of embankments.

Piped outlets connected to other drainage systems conforming to *MITS 03I Subsurface drainage.*

This is a **WITNESS POINT (WP3K.2)**.

1.4.4 Type B mats

1.4.4.1 Placement

Location: In cuttings as shown on the drawings or as directed by the Authorised Person.

Width: The full width of cuttings and for the pavement width in other locations.

1.4.4.2 Geotextile

General: Provide geotextile as follows:

- On the subgrade after the subgrade material has been compacted and trimmed.
- On top of and around the sides of the filter material so that the filter material is completely enclosed after completion of placement and compaction of the filter material.
- Lap width: 500mm minimum at each join in the geotextile.

Protection of geotextile: Secure the geotextile to prevent movement by wind or by construction plant placing subsequent layers of filter material or earth filling over the drainage mat. Protect from damage during construction of the drainage mat and during placement of subsequent layers of filter material, earth filling or rock facing.

Damaged geotextile: Replace or repair damaged geotextile.

This is a **HOLD POINT (HP3K.3)**.

PVC-U pressure pipe: Lay thick walled unplasticised PVC-U pressure pipe on the geotextile at a distance of 200mm from and parallel to the longitudinal edges of the drainage mat as shown in the drawings.

1.4.4.3 Filter material

Filter material type: In accordance with Clause 1.3.1.1.

Compaction: Compact cohesionless material to a Density Index criteria as specified in the drawings determined by *AS 1289.5.6.1*, or as agreed otherwise by the Authorised Person.

Thickness: Conform to the following:

- As shown on the drawings or as directed by the Authorised Person.

Layers: Provide filter material in layers so that the thickness of each compacted layer is in accordance with the layer thickness requirements specified on the drawings, or as directed by the Authorised Person.

This is a **HOLD POINT (HP3K.4)**.

1.4.4.4 Discharge

Outlets: To *MITS 03I Subsurface drainage.*

This is a **WITNESS POINT (WP3K.3).**

1.4.4.5 Tolerance

Surface level: At the design level for the top of the drainage mat with a tolerance of + 0 and - 40mm.

1.5 Completion

1.5.1 Submissions

Work as Executed Records: To *MITS 00B Quality Requirements*.

2 MEASUREMENT AND PAYMENT

2.1 Measurement

2.1.1.1 General

Payments made to the Bill of Quantities: To *MITS 00A General requirements*, this Specification, the drawings and **Pay items.**

2.1.1.2 Methodology

The following methodology will be applied for measurement and payment:

- Allow for all work, materials, testing and quality assurance requirements in each Pay Item.
- Erosion and sedimentation control measures: To *MITS 02A Clearing and grubbing*.
- Filter material and liners for Ponds, Wetlands and Bioretention systems: To *MITS 16 WSUD Features.*
- Filter material and outlet structures are measured and paid to conform to *MITS 03I Subsurface drainage.*
- Thick walled unplasticised PVC-U pressure pipe is measured and paid to conform to this work section and not *MITS 03J Subsoil and foundation drains.*
- Removal of unsuitable material: To conform to *MITS 02C Stabilisation.*
- Miscellaneous minor concrete work not included in the pay items in this Specification: To conform to *MITS 10 Concrete works.*

2.1.2 Pay items

Table 3K-2 Pay items table

Item No	Pay items	Unit of measurement	Schedule of rates scope
3K.1	Drainage mats	m^2 of drainage mat constructed	All activities associated with the construction of drainage mats including detailed excavation in all types of material encountered including rock, shoring, additional excavation at structures, compaction of foundation and trimming in accordance with this specification.
3K.2	Geotextile liner for subsurface drainage	m^2 of liner material installed, not including overlaps required at joints	All activities associated with the construction of a Geotextile liner including the supply and installation of the nominated liner material to manufacturer specification except where amended by this specification. For Type A drainage mats, this pay item shall also include the additional layer of geotextile placed under rock facing.

Item No	Pay items	Unit of measurement	Schedule of rates scope
3K.3	Drainage mat outlet pipe	Linear metre of pipe installed measured along the centreline	All activities associated with construction of underdrainage pipes including excavation of trenches in all types of material encountered including rock, over excavation for bedding, shoring, supply and laying of pipes, additional excavation at structures, bedding, jointing, markers, fittings, capping of the trench, backfilling, compaction and flushing. This pay item shall also include pipe cutting and connection to existing or new pipes. Separate pay items shall be included in the Contract for each pipe material, class of pipe and pipe diameter.