Government of South Australia
Department for Infrastructure and Transport

Station Platforms – Train System

Engineering Standard

Rail Commissioner

AR-PW-PM-SPE-00129003 (D062)

DOCUMENT AMENDMENT RECORD

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1. Introduction

The Department of Infrastructure and Transport owns the Adelaide Metropolitan Passenger Rail Network) AMPRN) currently operated and maintained under the Rail Accreditation of third party. There are approximately 89 train stations serving the AMPRN.

2. Purpose

The purpose of this standard is to specify the requirements for new platforms at station precincts. This standard should be read in conjunction with the remainder of the DIT Station Standards for the Train System, as listed in DIT Master Specification Part RW-STS-D1 Stations.

3. Scope

This standard applies to all new and upgraded DIT train platforms on the AMPRN. Existing platforms may be rated against this standard.

4. Related Documents

DOCUMENT NAME	DOCUMENT NUMBER
Standard Drawing Marginal Platform Signage & Pavement Marking Layout	CS1-DRG-361813
Standard Drawing Island Platform Signage & Pavement Marking Layout	CS1-DRG-361814
Station Precinct Concept – End of Platform Signage Layout	S7071, sheet 10
Standard Drawing Signage Schedule Drawing Register	CS1-DRG-361816
Standard Drawing Station Platform General Layout	CS1-DRG-361819
Standard Drawing Standard Amenity Shelter for Marginal Platform General Layout	CS1-DRG-361820
Standard Drawing Standard Amenity Shelter for Island Platform General Layout	CS1-DRG-361821
Station Precinct Concept – Platform TGSIs & Pavement Marking Layout	S7071, sheet 21
Allowance for Track Gauge Standardisation	S7071, sheet 26
Platform Clearance 1 600 mm Gauge Track	301-A3-2010-2389
Standard Platform Details – Installation and Footing Details for Platform Mirror Poles	735-A3-10-164
Pit and Conduiting Standard for Signalling and Communication Cables	PTS-MS-10-SG-STD-00000094

5. References

- AS 1170 Structural Design Actions
- AS 1428 Design for Access and Mobility
- AS 2700 Colour Standards for General Purpose
- AS/NZS 3500.3 Plumbing and Drainage –Stormwater Drainage
- AS 3600 Concrete Structures
- AS 3996 Access Covers and Grates
- AS 4586 Slip Resistance Classification of New Pedestrian Surface Materials
- AS 4663 Slip Resistance Measurement of Existing Pedestrian Surfaces

- AS 5100 Bridge Design
- HB 198:2014 Guide to the specification and testing of slip resistance of pedestrian surfaces
- AUSTROADS Guide to Traffic Management
- AUSTROADS Guide to Road Design
- DIT Track and Civil Infrastructure Code of Practice

6. Acronyms

ACRONYM	FULL NAME
AMPRN	Adelaide Metropolitan Passenger Rail Network
DIT	Department of Infrastructure and Transport

7. General

7.1. Design Life

The platform shall have a design life of 50 years.

7.2. Platform Track

Track through platforms shall be straight without any vertical or horizontal curves.

7.3. Platform Types

There are five types of platform configurations currently in use on the Adelaide Metropolitan Passenger Rail Network:

1. marginal platform – single track;
2. marginal platforms – dual track;
3. island platform – single side loading only;
4. island platform – dual track; and
5. integrated bus/rail platform.

8. Dimensions

8.1. Platform Lengths

All new platforms shall be minimum 160m in length.

8.2. Platform Widths

Platforms consist of four zones:

1. loading zone – 600 mm strip where people board / alight the train, including the 100 mm wide yellow line;

2. TGSIs zone – 600 mm strip which provides blind or vision-impaired customers with warning information;

3. clear circulation zone (primary access path) – minimum 1 800 mm wide area free of obstructions which provides customers with an uninterrupted path of travel and access to station facilities. This zone includes the 100 mm ‘stand behind’ white line; and

4. physical structure zone – minimum 1 500 mm wide for marginal platforms and 1 800 mm wide for island platforms area which provides space for installation of station furniture and poles for lighting, security system and passenger information systems

infrastructure. Seats and lean rails located in the physical structure zone shall be a minimum of 500 mm away from the clear circulation zone (primary access path).

A 3 000 mm wide clear zone extending from the edge of the platform to back of the clear circulation zone (primary access path) shall be provided on all platforms.

Refer to CS1-DRG-361819 Standard Drawing Station Platform General Layout for platform zones and minimum width details.

8.3. Platform Height

The platform height at the front of all platforms adjacent AMPRN tracks shall be in accordance with drawing No. 301-A3-2010-2389 Platform Clearance – New or Reconstructed Platform.

Design of the platform edge shall be based on the track design provided by DIT.

8.4. Edge of platform to track clearance

8.4.1. Allowance for AMPRN Track

The platform edge shall be set back from the centre line of the adjacent AMPRN tracks in accordance with drawing No. 301-A3-2010-2389 Platform Clearance – New or Reconstructed Platform.

8.4.2. Allowance for ARTC Track

Refer to ARTC for clearance requirements adjacent to ARTC tracks.

8.4.3. Construction Tolerances

The tolerances of the edge of the platform alignment shall be in accordance with Table 1, and verified in accordance with Part PC-SI1 Site Survey.

Table 1 Construction Tolerances

PLANE	DESCRIPTION	TOLERANCES
Vertical	distance measured from top of rail to top of platform edge	+0/-10 mm
Horizontal	distance measured from vertical face of platform to gauge face of near side rail, where a negative value means an increase in the clearance dimension	+0/-10 mm

8.5 Vertical Head Clearances

Vertical head clearances on the platform shall be in accordance with AS 1428.2, and AR-PW-PM-SPE-00129005 Station Shelters, AR-PW-PM-SPE-00129004 Station Overpasses and AR-PW-PM-SPE-00129010 Station Signage and Pavement Marking.

8.6. Allowance for Track Gauge Standardisation for New Built Platforms

For stations where new platforms are being constructed, track gauge standardisation shall be allowed for accordance with Drawing No. S7071, sheet 26.

9. Design Requirements

9.1. Platform Slab

The platform shall be a suspended concrete slab or a concrete platform with engineered fill. Suspended concrete slab is preferred.

For a suspended concrete slab the platform face on all sides shall be enclosed to prevent debris and public access under the platform. Vandal resistant cladding shall be fixed to each bay of the structure, with fittings that allow for easy removal for maintenance purposes and access to services under the platform, whilst preventing unauthorised removal.

For an engineered fill platform, it is preferred that the slab is poured in-situ. Where precast elements are used, cavities where lifting lugs are located shall not be positioned so that the resulting patch is located on the surface of the platform.

The platform slab shall comply with all relevant Parts of DIT Master Specification Structures.

The platform slab shall be designed to withstand C5 crowd loading, and concentrated actions of up to 13kN to allow for category F maintenance vehicles in accordance with AS/NZS 1170.1.

Obstacles that abut an access path shall have a luminance contrast with a background of not less than 30%.

9.2. Drainage

9.2.1. General

All platforms shall be designed so that no water ponds on the platform.

Where platform drainage includes grates, these shall be securely fixed with tamper proof fixings. If gratings are located in a walking surface they shall comply with slip resistance R10/R11 in accordance with HB 198:2014, as well as general requirements of AS 1428.2 Clause 9 (c) and AS 3996.

9.2.2. Side Platforms

Side platforms shall drain towards the back of the platform away from the tracks. The storm water shall drain:

1. into a drainage system at the rear of the platform, in the form of a strip drain for the full length of the platform; and/or
2. over the rear platform edge onto a suitably designed landscape area.

9.2.3. Island Platforms

Island platforms shall drain towards the middle of the platform where water is collected and discharged into a drainage system in the form of a strip drain for the full length of the platform.

9.2.4. Integrated Bus/Rail Interchange (Marginal) Platforms

Integrated bus/rail interchange platforms where there is an at-grade, multi-use platform servicing both buses on one side and trains on the other, storm water shall drain away from the tracks. Storm water collected from shelter downpipes shall be discharged either in to a kerb and gutter on the road side of the platform or through a strip drain on the platform and into a drainage system. Storm water shall not be discharged onto walking surfaces.

9.3. Platform Surface

The platform surface shall:

1. be graded so that the cross fall is away from tracks and be graded between a minimum grade of 1:100 and a maximum grade of 1:40; and
2. have longitudinal fall that matches the adjacent AMPRN track grade, with minimum longitudinal fall of 1:200 for drainage and maximum longitudinal fall 1:100.

Refer to AR-PW-PM-SPE-00129006 Station Pedestrian Access for details on surfaces of platforms.

The colour of the concrete for platform surfaces (except the platform coping) shall be grey within the following colour range in accordance with AS 2700:

a) lightest tone – Dark Grey (N64); and

b) darkest tone – Graphite Grey (N65).

9.4. Platform Coping

The concrete between the tactile and the yellow line (platform coping) shall be natural grey colour concrete and shall provide 30% luminance contrast for visibility purposes.

9.5. Tactile Ground Surface Indicators

TGSIs shall be provided in accordance with AR-PW-PM-SPE-00129006 Station Pedestrian Access.

9.6. Lighting

All lighting on platforms shall be provided in accordance with CS5-DOC-003511 - Public Transport Standard: Electrical Infrastructure Engineering – Design.

9.7. Service Pits and Conduiting

The number of service pits on the platform shall be minimized to prevent trip hazards. Service Pits and Conduiting shall be in accordance with PTS-MS-10-SG-STD-00000094 Pit and Conduit Standard for Signalling and Communication Cables.

Pits shall:

1. be flush with the platform level;
2. not be placed within the clear zone, ramps or access paths; and
3. not be located under platform furniture.

Pit lids shall provide adequate slip resistance to categories “R10” or “R11” in accordance with Table 5 of AS 4586. This shall be read in conjunction with HB 197.

Where the platform is a concrete suspended slab, service conduits shall be fixed to the underside of the platform slab. Where the platform is earth filled, 2 x 100 mm power and 2 x 100 mm HD PVC conduits shall be installed along the length to provide additional capacity for future requirements.

All pit lids shall be securely fixed with tamper proof fixings. If pit lids are located in a walking surface they shall comply with AS 1428.2 Clause 9 (c) and AS 3996.

9.8. Platform Access

9.8.1. Public

The platform shall be accessible by either stairs, lifts, ramps or direct access (generally interchanges where the bus stop and platform are integrated and at grade). Refer to AR-PW-PM-SPE-00129004 Station Overpasses and CS1-DOC-002336 Lifts for Public Transport Infrastructure – Engineering Specification for information on stairs, lifts and ramps. Refer to AR-PW-PM-SPE-00129006 Station Pedestrian Access for all general access.

9.8.2. Vehicles

Public vehicular access to the platforms is prohibited. Removable bollards shall be installed in locations where authorised vehicle access may be required.

9.9. Train Driver's Platform Sighting Mirrors

Under instruction of DIT Rail Operations, mirrors shall be provided at island platforms and bi-directional platforms. The mirrors shall be designed, fitted and aligned by DIT.

All mirrors shall be installed in accordance with Drawing No. 735-A3-10-164 Standard Platform Details – Installation & Footing Details for Platform Mirror Poles. All mirrors shall be heated in accordance with CS5-DOC-003511 - Public Transport Standard: Electrical Infrastructure Engineering – Design.

The exact location of the mirror shall be determined by DIT Rail Operations.

9.10. Water Point

To facilitate cleaning, two metered water points shall be provided on the platform. Water points shall be located in the platform where possible, otherwise in an access box as close as practicable to the shelter structure.

The water point shall:

1. be located outside the access path, in a vandal resistant access box which shall be locked with an "M" Padlock; and
2. be installed in accordance with AR-PW-PM-SPE-00129002 Earthing and Bonding.

In addition, if the water point is set in the platform deck, the water point shall:

1. have the padlock recessed and covered by a flush fitting spring loaded cover plate; and
2. be positioned so that the top of the access box is flush with the platform.

The access box shall be large enough to allow easy operation of the tap, and easy cleaning and maintenance.

9.11. Vending Machines

No vending machines shall be provided on platform.

10. Materials and Finishes

Materials and finishes on the following components of the platform shall be in accordance with the table below.

Table 2: Materials and finishes

ELEMENT	MATERIAL	FINISH	NOTES
Drainage pipes within the platform	In accordance with CS1-DOC-001218 Drainage – Train System: Engineering Standard	N/A	PVC allowed on the condition that pipes are encased in concrete and CCTV inspection is undertaken after construction to ensure no damage to the pipes
Drainage grates on the platform	Stainless Steel or galvanized iron	Non-slip R10/R11 in accordance with HB 198:2014.	
Platform surface	Concrete	N64 Dark Grey - N65 Graphite Grey textured broom finish	Further details see AR-PW-PM-SPE-00129006 Station Pedestrian Access – Train System Engineering Standard
Platform coping	Concrete	Natural grey textured broom finish	Shall provide 30% luminance contrast with the TGSIs and the yellow line
Tactiles	Concrete	Terracotta	Ceramic may be used with approval from Unit Manager Track & Civil Engineering