



CONSTRUCTION OF FOOTPATHS AND CROSSOVERS

SPECIFICATIONS

PLACING CONCRETE IN BAD WEATHER CONDITIONS

Concrete to be placed when the ambient temperature is between 10 - 36 degrees in Celsius and when the weather is dry.

- The concrete is to be mixed, transported, placed and finished as rapidly as possible to avoid the risk of reworking the concrete during the curing period. The concrete surface is to be covered to prevent excessive dehydration and the resultant loss of strength of the crossover.

CONCRETE THICKNESS AND DIMENSION TOLERANCES

- The following dimensions and tolerances are required:
- The thickness of the finished concrete for residential footpaths and crossovers to be a minimum of 100 mm and for commercial crossovers to be a minimum of 150 mm.
- F82 steel mesh reinforcement to be used for commercial crossovers.
- Crossover surfaces deviation shall not exceed 10 mm in 3.0 meters.
- Surface consistency, including joining to authority services such as manholes, etc. will not exceed 5 mm.

EXCAVATION

- Excavation work shall:
- Be carried out to the levels, lines and grades set out on site.
- Be executed cleanly and efficiently to produce a sound base, free of depressions or soft spots or any deleterious materials to give the minimum required depth of concrete.
- Ensure the reticulation in proximity to the site is either removed or capped prior to construction, and reinstated prior to backfill operation.
- Ensure the excavated materials are removed from the site and the site is left in a clean and tidy condition.

COMPACTION

- All excavation shall be thoroughly compacted to produce a minimum Perth penetrometer reading of seven (7) blows per 300 mm

FORMWORK

- Formwork will be of such cross-section and strength, so secured to resist the pressure of the concrete when placed.
- The method of connection between sections will be such that the joints will not move in any direction.
- The maximum deviation of the top surface of the form will not exceed 4mm in 3 metres of the inside face and not more than 4 mm in 3 metres longitudinally.

SETTING FORMS

- When set, the form will be uniformly supported for its entire length at the specified elevation.
- All forms will be clean prior to use and treated such that when stripped, concrete will not adhere to the form.
- Forms are only to be removed from the concrete after a period of at least twelve (12) hours from time of placement.

CONCRETE

- Only commercial pre-mixed concrete that complies with Australian Standard AS1379 is to be used.
- Concrete must have a minimum compressive strength of 25 MPa at 28 days.
- The maximum aggregate size must be 20 mm.
- The slump at the point of delivery shall be 75 mm.

PLACING AND FINISHING

Placing:

- All work performed will be of the highest quality, uniform appearance and executed in a tradesman-like manner.
- Concrete is to be placed by shovelling, or alternative suitable placement methods to ensure maximum density.
- The concrete is to be placed evenly to the specified depth.
- The whole area being constructed in one continuous pour.

Finishing:

- The final finishing is not to be undertaken until the bleed water has disappeared from the surface
- Finish concrete surfaces to be obtained by screeding to correct levels and floating to provide a non-slip dense surface.
- The overall preferred final surface is to be a broom (scarification approximately 2mm deep) with a picture-framing finish. This is mandatory in the footpath alignment of the crossover.
- The final surface finish is to be free of depressions, float marks, air voids, dust and deleterious material.
- Care is to be taken to ensure that concrete slurry is not retained on manhole covers, utility boxes, the road and adjoining footpaths, etc.

EXPANSION / CONTRACTION JOINTS

- Once laid, concrete can expand or contract and control joints are required to make allowance for this movement. Cracking will eventually occur and the joints are placed to accommodate these.
- The required joints and their maximum spacing's should be every second panel.(7.5mts)
- When paths are repaired any existing joints are to be reinstated.
- Proprietary concrete edging and jointing tools are to be used on all joints and edges.

Expansion Joints:

- Constructed using “Meljoint” or similar materials that are commonly used for the construction of concrete footpaths and crossovers.
- Constructed at 12 mm wide for the full depth of concrete.
- Are required at the property boundary line between the inner driveway and the new crossover.
- Are to be installed at the junction of the crossover splay and the road side kerb.
- The joint material shall at no point protrude above the surface of the concrete.
- Constructed at right angles to the centre line of the footpath or crossover.

Contraction Joints:

- Shall be made in the form of straight-line dummy construction joints in the surface of the concrete

BACKFILL

- Clean gravel road base or similar product is to be used for backfill and uniformly compacted and levelled out to merge in with the existing verge.

KERBING

- Crossover splays / wings shall be formed to rise gradually to blend into the existing adjoining kerb.
- Existing kerbing in the alignment of the proposed concrete footpath/crossover is to be removed as part of the excavation works.
- The kerbs are to be cut at full depth using a concrete cutting saw prior to its removal.
- Existing pre-cast kerbing shall be removed in a manner not to cause damage to existing kerbs or road pavement

BITUMEN SPECIFICATIONS

- Bitumen (asphalt) is not permitted for residential crossover?
- Any existing bitumen crossovers should be redesigned and upgraded to either a concrete or paved crossover. Commercial bitumen crossovers shall be designed to meet the requirements of the specific traffic loads and vehicle access requirements.

SUB-BASE COURSE

- Consist of natural material compacted to the required 100 mm thickness.(only for crossovers and Asphalt paths)
- Density of laterite gravel to be at least 95% as determined in accordance with AS1289 “Method of testing Soils for engineering Purposes”.

BASE COURSE

- Consist of road base, compacted to give the minimum required 75 mm thickness.(crossovers and asphalt paths)
- Density of road base of at least 98% as determined in accordance with AS1289.
- Excavate to 130mm, level ,screed and compact clean sand to achieve a level surface for laying of Concrete paths.

ASPHALT

- Consist of 7 mm aggregate and minimum thickness of 25 mm.
- Only to be laid upon dry and clean base.
- No mixture shall be laid when the air temperature is below ten (10) degrees Celsius

PEDESTRIAN RAMPS

- Pedestrian Ramps All ramps will meet the relevant Australian Standard, currently AS/NZS1428.4.1 – 2021.
- Where practicable ramps are to be located perpendicular to the direction of travel.
- Finishes are to be in broom finished concrete.
- This provides the most suitable surface for a pedestrian ramp as it provides a firm, even, stable and slip resistant surface.
- Pedestrian Ramps shall match the width of the path except as required by the needs of the location.
- A minimum width of 1.5m should be provided at the back of the ramp.

Appendices

References Australian Standards

- Australian Standard AS1428.1: Design for access and mobility
- Australian Standard AS2890.1: Off-street parking (2004)
- Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling (AGRD06A-17)
- Austroads Guide to Road Design
- Austroads Guide to Road Design - Part 3: Geometric Design
- Crossover Guidelines and Specifications
- Guidelines for Placement of Power Poles within Road Reserves in Built-Up Areas (Western Power, 2006)
- IPWEA Local Government Guidelines for Subdivisional Development • Local Government (Uniform Local Provisions) Regulations 1996
- Path Asset Management Plan
- Planning and Designing for Pedestrians: Guidelines November 2011 from the WA Department of Transport.
- Road Traffic Code 2000 (WA)
- State Planning Policy 3.1 - Residential Design Codes (R-Codes)
- WALGA Shared Path Design- Technical Guidelines
- WAPC Liveable Neighbourhoods