

SECTION G

FOOTPATH CONSTRUCTION

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PART 1 - FOOTPATH CONSTRUCTION (CONCRETE)

G.1 GENERAL

The Contractor shall unless otherwise directed, construct concrete paving to the alignment, dimensions, and levels indicated on the plans. Typical dimensions are 1.40 metre wide and 75mm thick. The surface finish, colour and texture shall be completed in accordance with the plans and specifications.

Opposite existing vehicular private entrances and where directed, a gap will be left for vehicular crossovers to be constructed. (Refer Clause G.14).

G.2 EXCAVATION, FILLING AND COMPACTION

The Contractor shall excavate and/or fill and compact to levels as shown on plans or as directed.

The Contractor shall box out to a sufficient depth to allow for a 50 mm class 3 fine crushed rock under the full width of concrete paving.

The subgrade shall be watered where necessary and compacted with a vibrating footpath roller of equivalent weight equal to four tonnes.

G.3 DISPOSAL OF SURPLUS SOIL

Soil and spoil not required for the works in this contract shall be the property of the Contractor. The Contractor is responsible for the removal from the site and disposal of surplus soil and spoil.

G.4 CONCRETE - See Section H.

G.5 FORMWORK - (Also refer to Section H.5).

Timber or steel formwork may be used provided it is substantial and rigid so that the concrete can be properly compacted and the finished paving is true to line and level.

HP Formwork shall be placed for a minimum length of 30 metres and shall be inspected by the Superintendent before any concrete is cast.

Forms shall not be removed sooner than 24 hours after the placing of the last concrete in that section.

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G.6 EXPANSION JOINTS

An expansion joint using an approved jointing material in sheet form 10 mm thick shall be made at each side of vehicular crossovers and at intervals of not more than 12.00 metres.

Expansion joints shall also be placed at all junctions with existing concrete paving, vehicular crossings, kerb and channel, walls, around pits including service authority pits and the like.

In the case of poles a square shall be left in the concrete so that a minimum clearance of 75 mm to the pole is maintained. An expansion joint shall be provided around the perimeter of the square when placing concrete around the pole.

G.7 TOLERANCES ON LINE, LEVEL AND SHAPE

All surfaces shall be finished in conformity with the lines, grades, thicknesses and cross sections shown on the drawings or as specified, within the following limits:

Footpaths and surfacing shall be shaped to match existing fixtures, e.g. pit covers, edgings and driveways, within 5mm.

Section dimensions shall not differ from those shown on the drawings by more than 5 mm except that the overall width shall not exceed the specified width by 15 mm.

Unless otherwise specified or shown on the drawings, footpaths and surfacing shall be 75 mm thick except that median surfacing within 2 m of the ends of the medians shall be 150 mm thick and reinforced with SL72 steel fabric as shall adjacent bays of footpath to intersecting kerb and channel.

Where median surfacing is to be constructed between edge sections of substantially the same level, the paving shall be crowned to produce a crossfall towards the edges not exceeding 3 % or less than 1 %.

G.8 FINISHING

The wet concrete surface shall be spread with cement and stone dust in the ratio of 1:2 and steel floated to provide a smooth uniform surface.

The surface shall be a bass broomed finish.

Edge of slabs shall be finished with a suitable edging tool to provide a 40 mm-smooth border completely around each slab.

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G.9 COLOUR OF FINISHED CONCRETE

HP The colour of concrete for footpaths is to be confirmed with the Superintendent.

Colour shall be added to the concrete mix and thoroughly mixed in the mixer barrel for a suitable amount of time to ensure colour uniformity and intensity.

G.10 JOINTS

Transverse joints shall be at 1.40 metre intervals and at all stormwater outlets unless otherwise stipulated on the construction plans, and shall be grooved with a suitable marking tool to depth of not less than 12 mm and a width of not more than 3 mm.

Care shall be taken to adjust the joint intervals so that the stormwater outlet joint is in conformity.

Transverse joints shall be truly at right angles to the longitudinal line of the footpath and the Contractor shall use a square to check all joints.

G.11 PROTECTION OF CONCRETE

All concrete to be adequately protected from damage by pedestrians, animals, vehicles, rain or any other cause.

The Contractor shall advise the owner concerned in any private crossing that no motor vehicle will be permitted to cross over the concrete until at least four days after the completion of the laying of the concrete and, if such vehicle is over 1.5 tonnes in weight, until at least seven days after casting the concrete. The Contractor shall be held solely responsible for any damage done to any pavement during the period of this contract.

G.12 HOUSE DRAINS AND OUTLETS - (Also refer to Section D)

House drain outlets shall be provided by the use of 100 mm dia. U.P.V.C sewer grade pipes laid from 150 mm behind the building line and extended into the kerb outlet. The joint at the kerb outlet shall be carefully sealed with cement mortar. A joint shall be made in the finished paving immediately over the pipe outlet.

The Contractor shall replace all damaged or broken pipes.

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G.13 MATCHING EXISTING SECTIONS

Where it is necessary to match a footpath etc., to an existing section it shall be done so as to appear identical with the existing section. When replacing damaged sections of footpath or vehicular crossovers the damaged section must be removed completely to the nearest contraction joint and replaced with identical material to that existing.

G.14 CONSTRUCTION OF VEHICULAR CROSSOVERS

Vehicular crossovers shall be constructed in accordance with the Council's standard crossover detail and shall follow the requirements for the footpaving and the following:

Vehicle crossover includes all of the paved area between property boundary and back of kerb and channel and shall be constructed where directed at lanes, right-of-ways and private entrances.

Thickness private entrances - 150 mm concrete reinforced, laneways and commercials - 170 mm concrete reinforced. (Unless otherwise specified).

Widths of vehicular crossings in kerb and channel shall be 3 metres unless otherwise approved by the Superintendent.

Joints contraction joints shall be formed longitudinally and transversely at intervals of not more than three metres and along the line of the edge of the footpath.

Reinforcement shall be conforming to the requirements of AS No. 1304. The fabric used shall be No. SL72 unless otherwise approved by the Superintendent.

Chairs (75 mm) shall support the fabric at 900 mm centres.

Expansion Material (Malthoid or equivalent) shall be used between the vehicle crossover and the back of the existing kerb and channel.

Adjacent concrete bays of footpath to a vehicular crossover shall be constructed to the same specification as for the crossover.

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G.15 GENERAL

Excavation and/or filling and compaction of the subgrade and sub base shall be to a tolerance of ± 10 mm of final trim. The areas to be paved shall be prepared to the required profile with a maximum departure from grade of 20 mm under a 2 metre straight edge.

The Contractor shall be responsible for any final trimming of the prepared area and shall maintain a 10 metre lead of prepared base in front of the working edge.

The Contractor shall also be responsible for the retention and maintenance of access to adjoining properties.

HP Prior to spreading of the bedding sand and the commencement of laying the segmental paving units, the prepared base shall be inspected and approved by the Superintendent.

G.16 BEDDING COURSE

(a) Material

Bedding sand shall be supplied by the Contractor and comply with Gradings. Limits as follows: -

Sieve Size	9.52mm	4.75mm	2.36mm	1.18mm	600UM	300UM	150UM	75UM
% age Passing	100	95-100	80-100	50-95	25-60	10-30	5-15	0-10

Fatty sands (eg. bricklayer's sands), loams and packing sands, or sands containing deleterious soluble salts and other contaminants shall NOT be used.

(b) Thickness

The bedding sands shall be of a uniform moisture content at the time of spreading and shall be spread to provide a uniform thickness of 25 mm - 35 mm after compaction of pavers.

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G.16 BEDDING COURSE (cont'd)

(c) **Surcharge Testing**

The Contractor shall determine the precise depth of loose bedding sand to achieve the desired compacted thickness. On an area of prepared base adjacent to a fixed kerb, a test area of paving shall be laid on 30 mm of screeded bedding sand, and shall be compacted with three passes of the plate vibrator used to compact the finished pavement. The finished level of the pavement shall be 5 mm above the fixed kerb/edge to allow for settlement in service.

(d) **Screeding**

The placed bedding course shall be accurately screeded off to the finished level as determined above for laying the pavers. Screeded sand must be fully protected against accidental pre-compaction, and any such areas shall be removed and replaced to the previous standard.

Under no circumstances shall bedding sand be used for corrective levelling of the sub base, or extend in advance of the laying face beyond that which can be completed on that day.

G.17 PAVING UNITS

(a) **Delivery**

The Contractor shall unless otherwise advised, arrange for the supply, delivery and unloading of the paving units. If the units supplied by the manufacturer are from different manufactured batches, the Contractor shall work from several batches to ensure a blending of colours throughout the job.

(b) **Unit Types**

Types of Paving Units will be as specified on the plans and specifications and may be either:

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G.17 BEDDING COURSE (cont'd)

(i) **Concrete**

Interlocking/non interlocking pavers, shall be manufactured in accordance with MAZO "Interim Specification for Interlocking Concrete Paving Units" published by the Concrete Masonry Association of Australia. Unless otherwise specified, the units shall be manufactured to have a compressive strength of 35 MPA after 28 days.

The units shall also be of unitary construction with full colour distribution. The colour retention and durability of the units shall meet the standards as set by the Concrete Masonry Association of Australia.

(ii) **Clay**

Interlocking/non interlocking pavers, shall be manufactured in accordance with the Australian Standard Specifications for Clay Bricks As 1225 - 1984, Part 2 of Australian Methods of Sampling and

Testing Clay Building Bricks, As 1226.2 - 1984, Method of Measurement of Dimensions and Part 3 of this Code, AS 1226.3 - 1984, Method for Determining Transverse Strength.

(c) **Damaged/Imperfect Units**

Chipped, warped and other unsound or imperfect paving units or those not meeting the size tolerance shall be discarded.

G.18 DETERMINING PAVING WIDTH

Except where herringbone pattern interlocking pavers are specified, a header course of paving units shall be laid along the edges of the areas to be paved.

Where the paving width is not confined by fixed limits (eg. concrete kerb and channel, edge strips etc.), the widths as specified on the plans shall be read as implying to the nearest whole unit.

Header courses where used shall consist of paving units no less than 3/4 standard length.

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G.19 LAYING PAVING UNITS

Place paving units on the screeded sand bed in the nominated pattern taking care to maintain the specified bond throughout the job.

Lay all full size units first, and then cut to fit closures to perimeter areas and around intrusions. Where stretcher bond is used, the length of units shall be reduced as required to maintain a bond of at least one third of the unit length.

Interstices between paving units shall be 2 mm - 4 mm.

G.20 PAVING AROUND INTRUSIONS

Longitudinal and cross filler pieces shall have a minimum dimension of not less than 25 mm. Where a filler of a lesser dimension is required, approved appropriately coloured cement mortar shall be used.

G.21 CUTTING

All cutting of paving units shall be undertaken by the means of a diamond saw blade.

G.22 COMPACTION

As an area of paving units has been placed, or on completion of the day's laying, the new work shall be brought to design level and profile by no less than 2 passes of the vibrating plate compactor.

Prior to the above works, the area shall not be opened to pedestrian or other traffic.

Compaction should not be attempted within one metre of the working front.

Any units damaged during compaction shall be immediately removed and reinstated.

When compaction has eliminated all surface irregularity, edge haunching where required shall be constructed and the joint filling material shall be placed.

G.23 EDGE CONSTRAINTS

Where positive edge constraints (eg. concrete kerb and channel, concrete edge strip or building) do not exist, the Contractor shall construct a suitable concrete haunching, nominally 100 mm X 100 mm with 25MPA concrete to ensure that the paving units at the unsupported edge do not rotate under load.

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G.24 FILLING JOINTS

As soon as practical after completion, a layer of sand for joint filling shall be spread over the paving. Sand with gradings within the following limits is suitable:

Sieve Size	2.36mm	1.18mm	0.600mm	0.300mm	0.150mm	0.075mm
%age Passing	100	96 -100	83 - 98	40 - 85	7 - 35	0-10

Sands shall be free of all deleterious salts and other contaminants, which may stain or otherwise detract from the appearance of the paving surface.

The sand shall be lightly broomed to fill joints prior to a final pass with the vibrating plate compactor to compact the joint filling.

G.25 FINISHING TOLERANCE

All surfaces shall be finished in conformity with the lines, grades, thicknesses and cross sections shown on the drawings or specified within the following limits:

Paving shall be shaped to match the level of existing fixtures, (e.g. pit covers, edgings and driveways) to within 5mm. Elsewhere the deviation of the finished work from line or level shall not exceed 20mm at any point, and the rate of change of deviation from line or level shall not exceed 20mm in 10m or 2mm between adjacent blocks. Except on curves or in shaped areas, the deviation of the finished work from a 3 m straightedge shall not exceed 15mm at any point.

Unless otherwise specified all paving shall be shaped to shed surface water from the entire paved area in the direction of natural slope or towards constructed surface drains. The slope at any point on the paving except on a ridge shall be not less than 1%.

Where median or other surfacing is to be constructed between edge sections of substantially the same level, the paving shall be crowned to produce a crossfall towards the edges not exceeding 3% and not less than 1%.

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G.26 CLEANING UP

The Contractor shall leave the whole of the site of the works and storage areas clean and free from rubbish and debris of all kinds at the completion of his works, and shall remove and dispose of all such rubbish, debris and surplus materials at his own expense.

The Contractor shall also be required to sweep off and remove from the site all surplus joint filling sand from the surface of the completed segmentally paved areas.