CITY OF DURBAN

STANDARD ENGINEERING SPECIFICATION

PART "EG"

SIDEWALKS, FOOTPATHS AND MEDIAN AREAS

CONTENTS OF PART "EG" : SIDEWALKS, FOOTPATHS AND MEDIAN AREAS

PART EG : SIDEWALKS, FOOTPATHS AND MEDIAN AREAS

EG.1 SCOPE

This specification covers the construction of asphalt, precast concrete slabbed and brick sidewalks, footpaths and median areas, vehicular and pedestrian scoops and vehicular access hardening.

EG.2 INTERPRETATIONS

EG.2.1 Definitions

"Sidewalk" means that portion of a verge intended for the exclusive use of pedestrians;

"Footpath" means a pedestrian way remote from a roadway.

Other definitions for this specification are included in part "AB" : General Specifications.

EG.2.2 Supporting Specifications

The following standards are referred to in the specification:

S.A.B.S.110 of 1973	-	Sealing compounds for the building industry, two-component, polysulphide base
S.A.B.S 307 of 1972	-	Penetration grade bitumen
S.A.B.S 541 of 1971	-	Precast concrete paving slabs
S.A.B.S 1305 of 1980	-	Sealing compounds for the building industry, one-component, silicone - rubber base.
S.A.B.S 0145 of 1978	-	Concrete masonry construction

all as published in General Notice 463 dated 9 July 1982

S.A.B.S. 1077 of 1984	-	Sealing compounds for the building and construction industry, two component polyurethane - base

as published in General Notice 148 dated 1 February 1985

EG.3 MATERIALS

EG.3.1 Asphalt

Grading of the aggregates for asphalt shall be as shown in the table below.

Sieve size mm	9,5	4,75	2,36	1,18	0,60	0,30	0,15	0,075
% passing by mass	100	80±10%	50±10%	34±6%	23±5%	15±5%	9±3%	6±2%

EG.3 MATERIALS (CONT'D)

EG.3.1 Asphalt (Cont'd)

Coarse Aggregate: Course aggregate shall be freshly quarried stone complying with part “ED: clause ED.3.3.1.

Fine Aggregate: Fine aggregate shall comply with part “ED” clause ED. 3.4.1.

Bitumen Content: 5,7% ± 0,3% by mass of 40/50 pen. bitumen complying with S.A.B.S. 307

EG.3.2 Graded Crushed Stone

Graded crushed stone shall be as specified in part "EB" : Graded Crushed Stone.

EG.3.3 Precast Concrete Paving Slabs

Precast concrete paving slabs shall conform to S.A.B.S. 541 or be as specified in part "AA" : Project Specification.

EG.3.4 Expansion Joints in Precast Concrete Slabbed Footways

The sealer used in the expansion joints shall conform to one of the standards listed in clause EG.2.2

EG.3.5 Bricks

Bricks used shall be of nominal size 222 mm x 106 mm x 65 mm and shall be of the following types unless specified otherwise in part AA : Project Specification:

(i) common pavers - plain paver red serrated

(ii) face pavers
- solid wirecut face paver red
- solid wirecut face paver tan
- solid wirecut face paver plum
- solid wirecut face paver peach

The common pavers shall have a minimum compressive strength of 20 MPa and the face pavers 35 MPa.

EG.4 PLANT

Not applicable to this specification.

EG.5 CONSTRUCTION

For all types of construction the formation to be surfaced shall first be trimmed and compacted to the required tolerance and density.

EG.5 CONSTRUCTION (CONT'D)

EG.5.1 Asphalt Areas

These shall consist of a compacted 100 mm thick layer of graded crushed stone overlaid by a compacted 25 mm thick layer of asphalt.

After the crushed stone has been compacted and tested, a weed killer approved by the Director : Parks shall be applied in accordance with the manufacturer's instructions.

The asphalt shall be manufactured in an approved hot-mix plant and the maximum mixing temperature shall be 170˚C. The asphalt shall not be laid if its temperature falls below 130˚C in the supply trucks.

EG.5.2 Precast Concrete Slabbed Areas

Precast concrete slabs shall be laid on a 50 mm mat of 5 MPa cement mortar with a fall as indicated on the drawings with joints positioned to match those of the adjacent concrete kerbstones where applicable.

When the area to be paved is curved, the slabs shall be laid in the such a manner that the transverse joints shall be radial from the centre of the curve.

When applicable, suitable expansion joints 13 mm wide must be left at ± 18,0 m centres to coincide with expansion joints left in the kerbs. The joint shall consist of a compressible material and polysulphide filler.

When necessary the concrete slabs shall be cut to size and fitted neatly around existing surface boxes, guard rail posts, etc. Alternatively, for slabs other than exposed aggregate slabs and at the discretion of the Engineer, in-situ concrete, coloured to match adjacent paving slabs, may be used. Where directed by the Engineer the Contractor shall fill in narrow strips etc., not exceeding 100 mm in width, unless otherwise approved by the Engineer, with granolithic concrete 50 mm thick, which shall be compacted and trowelled smooth and flush with the adjoining slabs.

EG.5.2.1 Butt Jointed

Joints between the slabs shall not exceed 3 mm and shall be filled by brushing in a Class II mortar complying with S.A.B.S. 0145 as the work proceeds. All surplus mortar shall be carefully cleaned from the surface of paving, kerbs, etc., before it sets hard. The cement mortar shall be cured for a period of 3 days.

EG.5.2.2 Gap Jointed

Joints shall be neatly lined up in both directions and shall have a uniform width of 8 mm. When precast concrete slabs are laid in conjunction with brick paving to form an overall paving pattern, joints shall have a uniform width of 10 mm.

EG.5 CONSTRUCTION (CONT'D)

EG.5.2 Precast Concrete Slabbed Areas (Cont'd)

EG.5.2.2 Gap Jointed (Cont'd)

Grouting shall be by the wet grouting method. The slabs shall be saturated prior to the application of the grout. The wet sand/ cement grout (mortar class II complying with S.A.B.S. 0145) shall be placed into joints using a combination of brush and/or squeegee. A fine hose spray shall be used to remove the excess grout from the surface as the work proceeds. Grouted joints shall be finished to a depth of 2 mm to 5 mm below the paved surface. Each days production shall be grouted that same day unless approved otherwise by the Engineer.

EG.5.3 Brick Paved Areas

Pavers shall be laid to the pattern specified on a bedding of clean coarse sand of nominal compacted thickness 25 mm.

Cut edging for adjoining patterns and brick margins shall be achieved by overpaving and cutting back with a diamond saw to a neat line.

Brick margins shall be laid on a unreinforced grade 20/19 concrete foundation 220 mm x 100 mm. This foundation shall be laid prior to any placing of surface bed or paving to the interior of the margin.

EG.5.3.1 Butt Jointed

Pavers shall be laid as close together as possible with a maximum gap of 3 mm and shall be compacted into position using a flat plate vibrator before the gaps are sealed by brushing in clean coarse sand. Pavers shall be compacted again after the application of the sand and thereafter shall be treated with an approved weedkiller.

EG.5.3.2 Gap Jointed

The bedding shall be treated with an approved weedkiller before the laying of bricks. Pavers shall be laid with a uniform width of joint of between 8 mm and 10 mm in both directions. Grouting shall be by the wet grouting method. The bricks shall be wet prior to application of the wet grout in order to prevent cement absorption. The sand/cement grout (mortar class II complying with S.A.B.S. 0145) shall be placed into the joints using a combination of brush and/or squeegee. A fine hose spray shall be used to remove the excess grout from the brick paved surface as the work proceeds. Grouted joints shall be finished to a depth of 2 mm to 5 mm below the paved surface. Each days production shall be grouted that same day unless otherwise approved by the Engineer.

EG.5 CONSTRUCTION (CONT'D)

EG.5.4 Asphalt Access Hardening and Scoops

The specification shall comply with the requirements of clause EG.5.1 with the exception that the pavement layer shall be as follows:

(a) Pedestrian : Graded crushed stone 100 mm thick with an asphalt layer 25 mm thick.
(b) Residential : Graded crushed stone 150 mm thick with an asphalt layer 50 mm thick.
(c) Commercial : Graded crushed stone 150 mm thick with an asphalt layer 80 mm thick.
(d) Industrial : Graded crushed stone 150 mm thick.

EG.5.5 Concrete Access Hardening and Scoops

Concrete access hardening and scoops shall consist of cast insitu grade 20/13 concrete laid either directly onto the compacted subgrade or onto a graded crushed stone base.

The concrete mix, mixing, batching, transporting, placing compaction and curing shall comply with the requirements of part C Concrete Work.

The surface of the concrete shall have a wood float finish.

Pavement layer for the various scoop types shall be:

(a) Pedestrian and Residential : Concrete 100 mm thick.

(b) Commercial : Graded crushed stone 150 mm thick with concrete 100 mm thick.

(c) Industrial : Concrete 225 mm thick.

EG.6 TOLERANCES

In all cases formation levels shall be within ± 10 mm of the design levels.

EG.6.1 Asphalt Areas

The average thickness of graded crushed stone shall not be less than 100 mm with a tolerance for any single reading of ± 10 mm.

The average thickness of the asphalt shall not be less than 25 mm with a tolerance for any single reading of ± 5 mm.

The finished surface levels shall be within ± 7 mm of the design levels.

EG.6.2 Precast Concrete Slabbed Areas

The lateral dimensional tolerance of the precast concrete slabs shall be ± 5 mm, and the thickness tolerance ± 3 mm.

EG.6 TOLERANCES (CONT'D)

EG.6.2 Precast Concrete Slabbed Areas (Cont'd)

The average thickness of the lean mix mortar shall not be less than 50 mm with a tolerance for any single reading of ± 7 mm.

The finished surface levels shall be within ± 5 mm of the design levels, with a difference of level between adjacent slabs not exceeding 3 mm.

EG.6.3 Brick Paved Areas

Bricks shall have a length tolerance of ± 5 mm and a width and height tolerance of ± 3 mm.

The finished surface levels shall be within ± 5 mm of the design levels, with a difference of level between adjacent bricks not exceeding 2 mm.

EG.6.4 Asphalt Access Hardening and Scoops

The average thickness of graded crushed stone shall not be less than that specified with a tolerance for any single reading of ± 10 mm.

The average thickness of the asphalt shall not be less that specified with a tolerance for any single reading of ± 5 mm.

The finished surface levels shall be within ± 7 mm of the design levels.

EG.6.5 Concrete Access Hardening and Scoops

The average thickness of the concrete shall not be less than that specified with a tolerance for any single reading of ± 10 mm.

The finished surface levels shall be within ± 5 mm of the design levels.

EG.7 TESTING

The Contractor shall supply samples of the precast units, free of charge to the Physical Environment Service Unit, Materials Laboratory, Old Fort Road, Durban for testing.

The degree of compaction shall be not less that 95% Mod. A.A.S.H.T.O. for the formation, not less that 96% Mod. A.A.S.H.T.O. density for crusher run and not less that 96% of the Marshall density for asphalt.

EG.8 MEASUREMENT AND PAYMENT

EG.8.1 Asphalt Areas

The unit of measurement shall be square metres (m^2) of completed area and the rate shall cover formation preparation, all necessary compaction, supply and application of weed killer, graded crushed stone, protection of adjacent areas and asphalt laid and compacted.

EG.8 MEASUREMENT AND PAYMENT (CONT'D)

EG.8.2 Precast Concrete Areas

The unit of measurement shall be square metres (m^2) of completed area. The rate shall cover formation preparation, all necessary compaction, supplying and laying of the precast slabs on the cement mortar foundation, cutting slabs to size, filling joints with cement mortar and filling with granolithic concrete.

EG.8.3 Expansion Joints

Measurement shall be per metre (m) and shall cover the compressible filler and sealer.

EG.8.4 Brick Paved Areas

The unit of measurement shall be square metres (m^2) of completed area and metre (m) of header course. The rate shall cover formation preparation, all necessary compaction, supply and application of weed killer, supply and screeding of sand and supply and placing of bricks, supply and application of wet sand/cement grout. The Contractor must include for any cutting of bricks and for filling irregular areas.

EG.8.5 Asphalt Access Hardening and Scoops

The unit of measurement shall be square metres (m^2) of completed area and the rate shall cover formation preparation, all necessary compaction, supply and application of weed killer, graded crushed stone, protection of adjacent areas and asphalt laid and compacted.

EG.8.6 Concrete Access Hardening and Scoops

The unit of measurement shall be square metres (m^2) of the completed area. The rate shall cover formation preparation, all necessary compaction, supply and application of weed killer, supply, laying and compaction of grade 20/13 concrete, V-jointing where necessary and wood float finish.