

**CONSTRUCTION NOTES AND SPECIFICATION:**

- ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT DIT STANDARDS, SPECIFICATIONS AND PAVEMENT DESIGN/CONSTRUCTION REQUIREMENTS.
- ALL WORK TO BE CARRIED OUT BY SUITABLY EXPERIENCED AND QUALIFIED PERSONNEL.
- CONCRETE BASE AND KERB/GUTTER SHALL CONFORM TO AS3600.
- MATERIAL REQUIREMENTS (REFER TO DIT MASTER SPECIFICATION PART ST-SC-S7)
  - JOINTED REINFORCED CONCRETE PAVEMENT (JRCP) BASE MIX
    - MINIMUM 28-DAY CONCRETE COMPRESSIVE STRENGTH OF 40MPa
    - MINIMUM 28-DAY CONCRETE FLEXURAL STRENGTH OF 4.8MPa
    - CEMENT - TYPE SL TO AS 3972
    - SLUMP - MAXIMUM 80mm, MINIMUM 50mm
    - MAXIMUM AGGREGATE SIZE, 20mm
    - MAXIMUM CONCRETE SHRINKAGE AT 21 DAYS IS 600µm TO AS 1012.13
    - NO ADDITIVES SHALL BE USED IN THE CONCRETE, UNLESS OTHERWISE APPROVED BY THE CLIENT
  - STEEL FIBRE REINFORCE CONCRETE PAVEMENT (SFPC) BASE MIX
    - MINIMUM 28-DAY CONCRETE COMPRESSIVE STRENGTH OF 40MPa
    - MINIMUM 28-DAY CONCRETE FLEXURAL STRENGTH OF 5.5MPa
    - CEMENT - TYPE SL TO AS 3972
    - SLUMP - MAXIMUM 80mm, MINIMUM 50mm
    - MAXIMUM AGGREGATE SIZE, 20mm
    - MAXIMUM CONCRETE SHRINKAGE AT 21 DAYS IS 600µm TO AS 1012.13
    - NO ADDITIVES SHALL BE USED IN THE CONCRETE, UNLESS OTHERWISE APPROVED BY THE CLIENT.
    - STEEL FIBRES MUST COMPLY WITH THE FOLLOWING PROPERTIES IN ACCORDANCE WITH EN 14889-1:
      - ULTIMATE TENSILE STRENGTH EQUAL OR EXCEEDING 750 MPa
      - ASPECT RATIO (A) MUST BE GREATER THAN 30 AND LESS THAN 69
      - HARDNESS (GROUP II FIBRES ONLY) MUST BE GREATER THAN 84 HRB (HARDNESS ROCKWELL: B SCALE)
      - MAXIMUM LENGTH OF FIBRES IS 50mm
    - MINIMUM FIBRE DOSAGE RATE, 55 kg/m<sup>3</sup>
- REINFORCEMENT, DOWELS, AND TIE-BARS (REFER TO DIT MASTER SPECIFICATION PART ST-SC-S6)
  - SUPPLY AND FIX REINFORCEMENT TO AS/NZS 4671
  - ALL DOWELS TO MEET THE REQUIREMENTS OF AS/NZS 3679.1
  - ALL TIE-BARS TO MEET THE REQUIREMENTS OF AS/NZS 4671
  - ALL BAR CHAIRS USED TO SUPPORT REINFORCEMENT IS TO MEET THE REQUIREMENTS OF AS/NZS 2425
- JOINT SEALANT AND FILLER
  - FOSROC NITOSEAL SC820 OR APPROVED EQUIVALENT SEALANTS ARE PERMITTED FOR USE IN JOINTS.
  - ALL BACKER ROADS USED ARE TO BE CLOSED CELL POLYETHYLENE
  - ALL RELEVANT TEST RESULTS ENDORSED BY AN AS/NZS ISO 9001 CERTIFIED LABORATORY WHOSE QUALITY MANAGEMENT SYSTEM IS CERTIFIED BY A CONFORMITY ASSESSMENT BODY OR BY JAS-ANZ EXCEPT THAT JAS-ANZ CERTIFICATION IS NOT REQUIRED FOR TEST METHODS RMS T1192 AND T1193.
  - PROVIDE A FULL TECHNICAL DESCRIPTION, INCLUDING THE METHOD OF INSTALLATION RECOMMENDED BY THE MANUFACTURER.
  - PROPOSED SEALANT IS TO CONFORM TO THE FOLLOWING REQUIREMENTS.

| TEST METHOD                 | ATTRIBUTE              | REQUIREMENTS   |
|-----------------------------|------------------------|--|
| ASTM-D792 (METHOD A)        | SPECIFIC GRAVITY       | 1.1 - 1.55   |
| ASTM-C661 (STANDARD CURING) | DUROMETER HARDNESS     | MAX 25 AT -29°C, MAX 30 AT +23°C   |
| ASTM-C603                   | EXTRUSION RATE         | 90 - 250 G/MINUTE  |
| ASTM-C679                   | TACK FREE TIME         | TACK FREE AT 5 HOURS   |
| ASTM-C793                   | ACCELERATED WEATHERING | NO SURFACE CRAZING, HARDENING, CHALKING OR BOND LOSS AT 5000 HOURS   |
| ASTM-C794                   | ADHESION TO CONCRETE   | MINIMUM 35 N AVERAGE PEEL STRENGTH   |
| RMS T1193                   | ACCELERATE AGEING      | CONDITION OF SPECIMEN AFTER ONE AGING CYCLE  |
| RMS T1192                   | ADHESION TO CONCRETE   | CONDITION AS PER RMS T1193. EXTENSION TO 70%, COMPRESSION TO 50%, AFTER 500 CYCLES, NOT MORE THAN 10% FAILURE OVER THE CROSS-SECTIONAL AREA. |
|                             | COLOUR                 | GREY, COMPATIBLE WITH PAVEMENT CONCRETE  |

- FORMWORK (REFER TO DIT MASTER SPECIFICATION PART ST-SC-C6)
  - FORMWORK IS TO BE OF STEEL OR SUITABLE DRESSED SEASONED TIMBER PLANKS, FREE OF WARPS, BENDS OR KINKS. THE SURFACE ON WHICH THE FORMS ARE TO BE PLACED IS TO BE EVEN, CONTINUOUS AND FIRM, AND NO GAPS ARE ALLOWED UNDER THE FORM BOARDS.
  - FORMS ARE TO BE STAKED WITH NO LESS THAN 3 STAKES AND NOT MORE THAN 1.5m APART TO PREVENT UNSPECIFIED WARPS AND BENDS.
  - FORMS TO BE IN ONE PIECE FOR THE CONCRETE PAVEMENT THICKNESS SPECIFIED.
- PLACEMENT OF CONCRETE (REFER TO DIT MASTER SPECIFICATION PART ST-SC-C7)
  - CONCRETE IS TO BE DISCHARGED BY CHUTES AS CLOSE AS POSSIBLE TO THE FINAL PLACEMENT OF CONCRETE. CONCRETE PUMPING IS NOT PERMITTED.
  - VIBRATION NEAR UNSUPPORTED EDGES OF CONCRETE OR WHEN THE CONCRETE IS MOVING IS NOT INCLUDED AS PART OF THE COMPACTION TIME OR EFFORT. THE NUMBER OF VIBRATORS USED FOR THE WORK MUST BE AT LEAST ONE FOR EVERY 10m<sup>3</sup> OR PART THEREOF OF CONCRETE PLACED PER HOUR. THERE MUST BE AT LEAST ONE OPERATIONAL VIBRATOR UNIT ON STAND-BY AT THE SITE.
  - THE CONCRETE MUST FINALLY BE COMPACTED AND FINISHED BY AT LEAST TWO PASSES OF A HAND-GUIDED VIBRATORY SCREED TRAVERSING THE FULL WIDTH OF THE SLAB ON EACH PASS. A SUITABLE VOLUME OF FRESH CONCRETE IS TO BE MAINTAINED IN FRONT OF THE SCREED OVER ITS WHOLE LENGTH TO ENSURE THE UNIFORM TRANSMISSION OF VIBRATION INTO THE CONCRETE.
  - THE SURFACE IS TO BE SCREED OFF TO FALLS AND FINISH WITH A STEEL HAND TROWEL UNLESS NOTED ON THE DRAWINGS.
  - NO ADDITIONAL WATER IS TO BE ADDED TO THE TRANSIT MIXER BETWEEN LEAVING THE PREMIX CONCRETE SITE AND DISCHARGE. WATER IS NOT PERMITTED TO BE SPRAYED ONTO CONCRETE DISCHARGED ONTO THE GROUND BEFORE OR AFTER VIBRATION HAS COMPLETED.
- CURING (REFER TO DIT MASTER SPECIFICATION PART ST-SC-C7)
  - ALL CONCRETE SHALL BE KEPT CONTINUOUSLY DAMP FOR AT LEAST 7 DAYS OR UNTIL THOROUGHLY CURED. IN HOT, DRY OR WINDY CONDITIONS, THE EXPOSED CONCRETE SHALL BE COVERED AND SEALED WITH A PVC MEMBRANE OR SIMILAR APPROVED MATERIAL, SUCH THAT ADEQUATE MOISTURE IS RETAINED FOR PROPER CURING.
  - EVAPORATION RETARDERS ARE NOT PERMITTED FOR USE BEFORE AND AFTER COMPACTION OF THE CONCRETE IN THE FORMS.
  - THE CURING COMPOUND IS TO BE APPLIED AFTER THE SURFACE APPLICATION HAS BEEN COMPLETED.
  - APPLY THE CURING COMPOUND IN TWO APPLICATIONS TO FORM A CONTINUOUS AND UNBROKEN FILM IN ACCORDANCE WITH THE FOLLOWING CONDITIONS:
    - THE FIRST APPLICATION WITHIN 15 MINUTES OF THE SURFACE REACHING THE LOW-SHEEN BLEED WATER CONDITION;
    - THE SECOND APPLICATION BETWEEN 10 MINUTES AND 30 MINUTES LATER OR AS RECOMMENDED BY THE MANUFACTURER;
  - SPRAY THE FIRST APPLICATION WITHIN 30 MINUTES OF STRIPPING OF FORMS AND THE SECOND BETWEEN 10 MINUTES TO 30 MINUTES AFTER THE FIRST APPLICATION. AT THE TIME OF THE FIRST APPLICATION, THE CONCRETE MUST BE IN A DAMP CONDITION.
  - WET CURING WHERE THE CONCRETE SURFACE IS MAINTAINED IN A WET CONDITION IS NOT PERMITTED.

- THE CURING METHOD MUST BE EITHER A POLYETHYLENE SHEETING OR APPROVED SPRAYED CURING COMPOUND APPLIED USING A HAND LANCE WITH TWO APPLICATIONS AS DESCRIBED ABOVE.
- FINISH (REFER TO DIT MASTER SPECIFICATION PART ST-SC-C7)
  - ALL CONCRETE SURFACES SHALL BE BROOM FINISHED, DENSE WITH NO CRACKING VISIBLE. ALL CRACKED AND/OR HONEYCOMBED PORTIONS SHALL BE CUT OUT AND REPLACED TO THE SATISFACTION OF THE CLIENT IMMEDIATELY AFTER THE FORM WORK HAS BEEN STRUCK.
- SURFACE APPLICATION
  - SURFACE SEALANT IS TO BE APPLIED AFTER CURING AND TEXTURING OF THE CONCRETE HAS BEEN COMPLETED AND NOT WITHIN 7 DAYS OF CONCRETE PLACEMENT.
- CONSTRUCTION OF JOINTS
  - SAW-CUTTING IS TO BE COMPLETED USING A WET SAWING METHOD. DRY OR EARLY ENTRY SAWING IS NOT PERMITTED.
  - JOINT SEALANTS MAY ONLY BE APPLIED IF THE JOINT IS CLEAN AND DRY, AND NOT WITHIN 7 DAYS OF CONCRETE PLACEMENT.
  - PROVIDE A 10mm ISOLATION JOINT IN PAVING AT FIXED EDGES INCLUDING, STRUCTURAL ELEMENTS, SERVICE LIDS, DRAINAGE PITS, ROAD FURNITURE AND FITTINGS. REFER TO DETAIL ON DRAWING 95271 SHEET 3 FOR JOINT DETAIL.
- TESTING AND CONFORMANCE OF CONCRETE BASE: (REFER TO DIT MASTER SPECIFICATION PART ST-SC-S7)
  - ALL TESTING ASSOCIATED WITH SURVEILLANCE AND AUDITS WILL BE CONDUCTED BY A LABORATORY WITH NATA ACCREDITATION FOR THE TEST METHODS SPECIFIED. THE RESULTS OF SUCH TESTING WILL BE RECORDED ON NATA ENDORSED TEST REPORTS. IF NATA HAS NOT ACCREDITED A LABORATORY FOR A TEST, THE TEST MUST BE CARRIED OUT AT A LABORATORY APPROVED BY THE CLIENT.
  - BASE THICKNESS - ±20mm, -5mm.
  - ALL TEST RESULTS TO BE SUBMITTED WITHIN 7 DAYS OF TESTING BEING CONDUCTED.
  - CONCRETE CORING MAY BE REQUIRED IF THE CYLINDER STRENGTHS OR THICKNESS IS NON-CONFORMING.
  - CRACKING: DRYING AND PLASTIC SHRINKAGE CRACKING IS NOT PERMITTED IN THE CONCRETE BASE.
- KERBS
  - JOINTS IN KERBS (ETC) MUST BE LOCATED TO COINCIDE WITH JOINTS IN THE ADJOINING BASE.
  - WHERE THE KERB IS PLACED ON TOP OF OR INTEGRAL WITH BASE PAVEMENT, THE KERB JOINT MUST BE ALIGNED WITH THE BASE JOINT. OTHERWISE KERB JOINTS MUST BE ALIGNED AT 90°±2° TO THE KERB LINE.
  - UNLESS OTHERWISE ALLOWED, KERB MUST HAVE A CONCRETE STRENGTH GRADE OF MINIMUM 32MPa AND MUST NOT BE EXTRUDED.
- SERVICES
  - ANY INTRUSIVE SERVICES WHICH ARE LOCATED WITHIN THE RIGID PAVEMENT AREA ARE TO BE LINED UP TO MATCH WITH TRANSVERSE JOINT LOCATIONS AND ISOLATED AROUND ALL EDGES, WITH A MINIMUM OF 1.5m OF CONCRETE COVER TO THE NEAREST JOINT. PROJECT SPECIFIC DETAILS ARE TO BE DESIGNED AND SUBMITTED FOR REVIEW/APPROVAL PRIOR TO CONSTRUCTION. REFER TO DETAILS D1 AND D2 ON DRAWING 95271 SHEET 2 FOR EXAMPLE.

**TABLE 1: JOINT TYPE NUMBERS AND DESCRIPTIONS**

| TYPE | DESCRIPTION                     |
|------|---------------------------------|
| P8   | TRANSVERSE CONTRACTION: SAWN    |
| P7   | TRANSVERSE CONSTRUCTION: TIED   |
| P4b  | LONGITUDINAL: UNTIED AND FORMED |

**TABLE 2: SYMBOLS**

| SYMBOL | DESCRIPTION                          |
|--------|--------------------------------------|
|        | JOINT TYPE: 'P8'                     |
|        | TIEBAR SPACING BETWEEN JOINTS IN mm. |

**TABLE 3: SLAB DIMENSIONAL LIMITS**

| MIN CORNER ANGLES             |       | 84° |
|-------------------------------|-------|-----|
| SLAB LENGTH L (a)<br>(METRES) | L MAX | 3.0 |
|                               | L MIN | 1.0 |

**TABLE 4: JOINT CORRUGATION DESIGN**

| TYPE F: CORRUGATIONS LINKED BY FLATS |                        |                               |  |                          |                              |
|--------------------------------------|------------------------|-------------------------------|--|--------------------------|------------------------------|
| BASE THICKNESS 'D'<br>(mm)           | NUMBER OF CORRUGATIONS | CORRUGATION DEPTH 'd'<br>(mm) | MINIMUM CORRUGATION HEIGHT 'h'<br>(mm) | MINIMUM FLAT 'G'<br>(MM) | MINIMUM VERTICAL 'V'<br>(mm) |
| 200                                  | 3                      | 9 ± 3                         | 20                                     | 10                       | 45                           |

NOTES: THE TOP AND BOTTOM CORRUGATIONS MUST BE CONCAVE IN THE FIRST-PLACED FACE (THAT IS, CONVEX ON THE FORM).

**TABLE 7: REINFORCEMENT NOTATION**

| SHAPE                     | BAR    | MESH |
|---------------------------|--------|------|
| STRENGTH (MPa)            | 500    | 500  |
| DUCTILITY CLASS           | NORMAL | LOW  |
| NOTATION USED IN DRAWINGS | N12    | SL82 |

**TABLE 8: REINFORCEMENT SCHEDULE AND BAR SPACING**

| MARK | DIA  | SHAPE | LOCATION / DESCRIPTION | LENGTH (mm)            | SPACING (mm) |
|------|------|-------|------------------------|------------------------|--------------|
| M1   | SL82 | -     | JRCP GENERAL (SL82)    | TO SUIT SLAB DIMENSION | -            |

**TABLE 9: BAR REINFORCEMENT SHAPES**

| SHAPE 1 | SHAPE 2 | SHAPE 3 |
|---------|---------|---------|
|         |         |         |

**PAVEMENT WORK SCHEDULE FOR : RP1 (TYPICAL ANNULUS DESIGN)**

| DESIGN LEVEL OF UPPER SURFACE OF COURSE IN RELATION TO FINISHED DESIGN LEVELS (mm) | TOP OF LAYER LEVEL TOLERANCE (mm) | NOMINAL COMPACTED THICKNESS (mm) | LAYER                  | MATERIAL  | APPLICATION RATES AND ADDITIONAL REQUIREMENTS TO MASTER SPECIFICATION - DIVISION 2 ROADWORKS  |
|--|-----------------------------------|----------------------------------|------------------------|---|---|
| 0  | +5, -0                            | -                                | BASE SURFACE TREATMENT | TRANSVERSE BROOM FINISH (SURFACE TEXTURE RANGE BETWEEN 0.3 TO 0.5mm)  | AS PER DIT TECHNICAL NOTE 25, ROAD SURFACE TEXTURE MEASUREMENT RECOMMENDED INVESTIGATORY LEVELS   |
| -200   | ±15                               | 200                              | BASE COURSE            | 40 MPa PLAIN CONCRETE PAVEMENT REINFORCED WITH SL82 MESH  | REFER TO NOTE 3.1 MATERIAL REQUIREMENTS   |
| -450   | +0, -40                           | 150                              | SUBBASE                | PM2/20 (PAVEMENT MATERIAL)  | AS PER DIT MASTER SPECIFICATION PARTS RD-PV-S1 AND RD-PV-C2 COMPACTED TO 98% MMDD   |
|  |                                   |                                  | SUBGRADE               | REFER TO SITE SPECIFIC GEOTECHNICAL INVESTIGATION REPORT AND PROJECT SPECIFIC EARTHWORK/SUBGRADE REQUIREMENTS | AS PER DIT MASTER SPECIFICATION PART RD-EV-C1 AS PER TABLE 3.3, MINIMUM SUPPORT REQUIREMENTS FOR HEAVY DUTY PAVEMENTS, DIT MASTER SPECIFICATION PART RD-PV-D1 |

**TABLE 5: MESH REINFORCEMENT**

| TYPICAL CONCRETE BASE |                         |
|-----------------------|-------------------------|
|                       | FOR COVER REFER TABLE 6 |

**TABLE 6: COVER TO MESH M1 & TIEBARS**

| BASE DEPTH D<br>(mm) | MINIMUM COVERS (mm)  |                    |                         |                    |
|----------------------|----------------------|--------------------|-------------------------|--------------------|
|                      | MESH<br>TOP COVER MT | BOTTOM<br>COVER MB | TIEBARS<br>TOP COVER TT | BOTTOM<br>COVER TB |
| 200                  | 80                   | 120                | 90                      | 110                |

NOTES: MESH M1 CAN BE PLACED WITH LONGITUDINAL BARS EITHER ABOVE OR BELOW THE TRANSVERSE BARS, UNLESS THE ROTATION IS DICTATED BY OTHER FACTORS SUCH AS LAPPING REQUIREMENTS.

INDEX SHEET REFERENCE: N/A SHEET N/A



PROJECT No.: FILE No.:  
DESIGN No.: SURVEY No.:  
PROJECT START ROAD RUNNING DISTANCE:  
PROJECT END ROAD RUNNING DISTANCE:

**STANDARD DRAWING  
CONCRETE ANNULUS  
TYPICAL NOTES & TABLES**

SHEET 3 OF 3

| No. | AMENDMENT DESCRIPTION | BY  | CHECK | ACCEPTANCE     | DATE       |
|-----|-----------------------|-----|-------|----------------|------------|
| 0   | ISSUED FOR USE        | SJA | MA    | MITCHELL ALLEN | 03.10.2025 |

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IN ACCORDANCE WITH DP013 SHEET LATITUDE SHEET LONGITUDE