

TEST REQUIREMENTS

| Construction Activity | Verification Requirement | | Minimum Test Frequency | Specification Requirement | Minimum No. of Tests |
|---|--------------------------|---------------|--|---------------------------|----------------------|
| | Description | Test Required | | | |
| SEWER MAIN CONSTRUCTION | | | | | |
| Embedment | Compaction | | WSA02-2014 19 | | |
| Trench Fill | Compaction | | WSA02-2014 20.1 | | |
| Gravity Pipes | Air Pressure and Vacuum | | Table S6.2, Operational Works Specification S6 "Sewerage Reticulation", WRC Development Manual | | |
| | Deflection | | WSA02-2014 20.1.4 | | |
| | CCTV Inspection | | WSA02-2014 22.7 | | |
| Manholes | Vacuum or Hydrostatic | | Clause S6.26, Operational Works Specification S6 "Sewerage Reticulation", WRC Development Manual | | |
| SEWER PUMP STATION CONSTRUCTION | | | | | |
| Embedment | Compaction | | WSA04-2005 36.3 | | |
| Backfilling | Compaction | | WSA04-2005 36.3 | | |
| Switchboards | Electrical Testing | | WSA04-2005 36.9 | | |
| WATER MAIN CONSTRUCTION | | | | | |
| Embedment | Compaction | | WSA03-2011 16 | | |
| Trench Fill | Compaction | | WSA03-2011 17.1 | | |
| Pipes | Pressure | | Clause S5.28, Operational Works Specification S5 "Water Reticulation", WRC Development Manual | | |
| Disinfection | Bacteriological | | WSA03-2011 20 | | |
| STORMWATER DRAINAGE CONSTRUCTION | | | | | |
| Excavation | Compaction | RDD | Q111A/B/C or | 1/50m ² | 95% SRDD |
| | | | AS 1289.5.4.1 or | | |
| | | AS 1289.5.7.1 | 1/RDD | n/a | |
| | | Q110A or | | | |
| MDD | AS 1289.5.1.1 or | | | | |
| | AS 1289.5.7.1 | | | | |

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| | Description | Test Required | | | | | |
| STORMWATER DRAINAGE CONSTRUCTION (cont'd) | | | | | | | |
| Bedding/Haunch (RCP, RCBC or similar) | Material Quality | Grading | Q103A or AS 1289.3.6.1 | 1/material type | Table 19.2.6, MTRS04 | n/a | |
| | | Linear Shrinkage | Q106 or AS 1289.3.4.1 | | | | |
| | Compaction (Cohesive) | RDD | Q111A/B/C or AS 1289.5.4.1 | Under trafficable area 1/side/50m Elsewhere 1/side/100m | Table S4.1, Operational Works Specification S4 "Stormwater Drainage", WRC Development Manual | 2 | |
| | | | MDD | Q110A or Q132A | | | 1/material type |
| | Compaction (Cohesionless) | Density Index | Q132B or AS 1289.5.6.1 | Under trafficable area 1/side/50m Elsewhere 1/side/100m | | 2 | |
| | | | Min/Max Dry Density | AS 1289.5.1.1 or AS 1289.5.5.1 | | 1/material type | n/a |
| | Backfill (RCP, RCBC or similar) | Material Quality | Grading | Q103A or AS 1289.3.6.1 | 1/material type | Table 19.2.3, MRTS04 | n/a |
| | | | Linear Shrinkage | Q106 or AS 1289.3.4.1 | | | |
| Compaction (Design Trench Width ≤ 4m) | | RDD | Q111A/B/C or AS 1289.5.4.1 or | Under trafficable area 1/300mm lift/50m | Table S4.1, Operational Works Specification S4 "Stormwater Drainage", | 1 (between structures) | |
| | | | | | | | |

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| | Description | Test Required | | | | |
| | | MDD | AS 1289.5.7.1 Q110A or AS 1289.5.1.1 or AS 1289.5.7.1 | Elsewhere 1/900mm lift/100m 1/material type 1/RDD | WRC Development Manual n/a | |
| STORMWATER DRAINAGE CONSTRUCTION (cont'd) | | | | | | |
| Backfill (RCP, RCBC or similar) (cont'd) | Compaction (Design Trench Width > 4m) | RDD | Q111A/B/C or | Under trafficable area 1/300mm lift/200m ² Elsewhere 1/900mm lift/400m ² | 1 (between structures) | |
| | | | AS 1289.5.4.1 or | | | |
| | | | AS 1289.5.7.1 | | | |
| | | MDD | Q110A or AS 1289.5.1.1 or AS 1289.5.7.1 | 1/material type 1/RDD | n/a | |
| Backfill (In-Place Structures other than RCP, RCBC or similar) | Material Quality | Grading | Q103A or | 1/material type | 100% < 50mm | |
| | | | AS 1289.3.6.1 | | | |
| | | Plasticity index | Q105 or | | 2 ≤ IP ≤ 12 | |
| | AS 1289.3.3.1 | | | | | |
| | Compaction | RDD | Q111A/B/C or | 2/500mm lift | Table S4.1, Operational Works Specification S4 "Stormwater Drainage", WRC Development Manual | 2 |
| | | | AS 1289.5.4.1 or AS 1289.5.7.1 | | | |
| MDD | | Q110A or | 1/material type | n/a | | |
| | AS 1289.5.1.1 or AS 1289.5.7.1 | 1/RDD | | | | |
| Backfill (Stabilised Sand) | Material Quality | Stabilised sand shall comprise sand meeting the requirements of Table 19 MRS11.04 in an intimate mixture of 12 parts sand and 1 part of either Type GP or GB cement | | Table 19.2.5, MRTS04 | | n/a |

| Bedding/Haunch/Backfill/Overlay (Buried Metal Corrugated Structures) | Material Quality | All materials shall be in accordance with the manufacturer's recommendations. Evidence of these recommendations and subsequent compliance shall be incorporated with the Contractor's quality records. | | As per manufacturer's recommendations. | | |
|---|--------------------------|--|--|--|---|---|
| | Installation | Installation shall be in accordance with the manufacturer's recommendations. Evidence of these recommendations and subsequent compliance shall be incorporated with the Contractor's quality records. | | As per manufacturer's recommendations. | | |
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| STORMWATER DRAINAGE CONSTRUCTION (cont'd) | | | | | | |
| Stormwater Drainage System | CCTV Inspection | | Appendix A, Operational Works Specification S4 "Stormwater Drainage", WRC Development Manual | | | |
| ROAD CONSTRUCTION | | | | | | |
| Ground Surface Treatment | Compaction | RDD | Q111A/B/C or AS 1289.5.4.1 or AS 1289.5.7.1 | 1/2500m ² | >0.3m below pavement subgrade - 95% SRDD | 3 |
| | | | MDD | | | |
| Embankment (Road) | Compaction | RDD | Q111A/B/C or AS 1289.5.4.1 or AS 1289.5.7.1 | 1/200mm lift/2500m ² or 1/500m ³ | >0.3m below pavement subgrade - 95% SRDD | 3 |
| | | | MDD | | | |
| Embankment (Concentrated Operations – | Compaction | RDD | Q111A/B/C or AS 1289.5.4.1 or | 1/200mm lift/500m ² or | >0.3m below pavement subgrade - 95% SRDD | 3 |

| | | | | | | |
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| Gullies etc) | | | AS 1289.5.7.1 | 1/100m ³ | <0.3m below pavement subgrade - 97% SRDD | n/a |
| | | MDD | Q110A or | 1/RDD | | |
| | | | AS 1289.5.1.1 or AS 1289.5.7.1 | | | |

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| | Description | Test Required | | | | |
| ROAD CONSTRUCTION (cont'd) | | | | | | |
| Subgrade (General) | Material Quality | CBR | Q113C (soaked) | Representative each material and 1 test per 500m carriageway or part thereof | 97% MDD 100% OMC | n/a |
| | Compaction | RDD | Q111A/B/C or | 1/1000m ² | 97% SRDD | 3 |
| | | | AS 1289.5.4.1 or AS 1289.5.7.1 | | | |
| | | MDD | Q110A or AS 1289.5.1.1 or AS 1289.5.7.1 | 1/RDD | | n/a |
| | Subgrade (Turnouts and Entrances) | Compaction | RDD | Q111A/B/C or | 1/100m ² | 97% SRDD |
| AS 1289.5.4.1 or AS 1289.5.7.1 | | | | | | |
| MDD | | | Q110A or AS 1289.5.1.1 or AS 1289.5.7.1 | 1/RDD | n/a | |
| Pavement Layers (General) | | Material Quality | All materials shall be sourced from a Quality Assured material supplier and the results of the manufacturer's testing to assure quality of the product shall be incorporated with the Contractor's quality records | | MRTS05 Section 7.2 "Type 2 Unbound Material" | |
| Compaction | RDD | Q111A/B/C or | 1/500m ² | 100% SRDD | 4 | |
| | | Q112 or | 2/500m ² | | 8 | |

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| | | | AS 1289.5.4.1 | 1/500m ² (2/500m ² if using AS1289.5.8.1) | | 4 (8) |
| | | MDD | Q110A or | 1/material type/5000m ² as required | | n/a |
| | | | AS 1289.5.1.1 or | | | |
| | | | AS 1289.5.4.2 | | | |

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| ROAD CONSTRUCTION (cont'd) | | | | | | |
| Pavement Layers (Turnouts and Entrances) | Compaction | RDD | Q111A/B/C or | 1/100m ² | 100% SRDD | 1 |
| | | | Q112 or | 2/100m ² | | |
| | | | AS 1289.5.4.1 | 1/100m ² (2/100m ² if using AS1289.5.8.1) | | |
| | | MDD | Q110A or | 1/material type | | n/a |
| | | | AS 1289.5.1.1 or | as required | | |
| Structural Concrete | Compressive Strength | | AS 1012.1 | 1 sample of 2 cylinders for each 15m ³ or part thereof placed in an essentially continuous manner | Table S7.1, "Concrete Classes", WRC Development Manual | 1 sample per casting day |
| | | | AS 1012.3.1 | | | |
| | | | AS 1012.8.1 | | | |
| | | | AS 1012.9 | | | |
| | | | AS 1012.12.1 | | | |