

TOWNSHIP OF LANGLEY MATERIALS TESTING REQUIREMENTS

All testing must be performed by a CSA or CCIL certified laboratory in accordance with MMCD and the Township of Langley's Subdivision and Development Servicing Bylaw, as amended.

DENSITY TESTING

All density tests shall be submitted in order by stationing and street and associated with the stationing on the approved construction drawings otherwise a key plan shall be submitted which clearly illustrates the proximity of each test location. Test results submitted that are out of order and locations are unclear will be returned as incomplete.

Trench Backfill

- Frequency of density testing shall be a minimum of one test per 30 lineal metres of trench per metre of depth. A minimum two tests per trench are required for mains.
- A minimum of one density test per metre of depth shall be provided for each service connection trench.
- Pipe zone densities are required on force mains as indicated above.
- Trench backfill in easements and boulevards are to be compacted to a minimum of 90% as indicated in the MMCD.
- Sieve and proctor test results for trench materials (pipe bedding and backfill) used are to be submitted with the density test results.
- Pipe bedding and surround material shall be Type 1 and installed in accordance with MMCD G5 unless otherwise authorized by the municipal Engineer.

Sub-Grade Fill

- Frequency of density testing shall be one test per 300 m².
- Sieve and proctor test results for sub-grade fill materials used are to be submitted with the density testing for each street.

Granular Subbase

- Frequency of testing shall be a minimum of every 30 lineal meters staggered right and left of centreline.

Granular Base

- Frequency of testing shall be a minimum of every 30 lineal meters staggered right and left of centreline.
- Benkleman beam testing is required on the granular base materials of all newly constructed roads as per the Subdivision and Development Servicing Bylaw. Testing is not permitted on the base asphalt.

- Testing frequency for the Benkleman Beam tests shall be a minimum of one test every 10 m on alternating wheel paths for each lane.
- Benkleman Beam test results are to be accompanied with a certified summary report which outlines the testing procedures, summarizes the testing data and compares the MRSP results to the TOL design criteria for each road segment. The engineer shall provide his recommendations to the Township of Langley.
- Sieve and proctor test results for base and sub-base materials used for each street are to be submitted with the road base materials test results.
- Density testing on road shoulders shall be submitted at 30 metre intervals.

Curb & Gutter Base

- Frequency of density testing for curb base shall be a minimum of one test per 30 lineal metres.

Sidewalk Base

- Frequency of density testing for sidewalk base shall be a minimum of one test per 30 lineal metres.

WATER MAIN

- New mains will be tied into existing mains by Township of Langley forces after passing the pressure test, completion of the 24 hour chlorination period, flushing and receipt of the bacteriological testing as witnessed by the developer's engineer or independent testing agency.
- Any testing performed by the contractor's personnel shall be witnessed by the developer's engineer and the test result sheet must be signed and sealed by the engineer responsible for the project.
- Bacteria testing older than 30 days shall be considered invalid and therefore rejected.

STORM, SANITARY & THIRD PIPE SEWERS

- Testing of mains and service connections to the property line shall be done after road base construction and must be approved by the Project Engineer prior to asphalt paving.
- All new sanitary sewer lines to be tied into existing lines must be plugged until they are tested and flushed.
- Pressure test results shall be submitted for all sanitary mains and service connections as per MMCD Section 02731, Clause 3.14.
- All storm and sanitary mains and service connections shall be video inspected as per Township Bylaw 4861, Schedule C, Section 02721, Clause 3.12 and Section 02731,

Clause 3.18. Video inspections are to be submitted on DVD in WMV format complete with a hardcopy report.

- All video inspection reports are to be accompanied by a certified summary report that lists all outstanding or repaired deficiencies and must indicate that the storm/sanitary system has been flushed and meets MMCD and Township standards and includes the project engineer's recommendation of acceptance.
- Existing mains shall be videoed when two or more service connections are required between existing manholes.
- The entire system must be flushed immediately prior to the video inspection in order to identify ponding areas. All debris shall be removed from the system.
- Storm and sanitary sewers are to be videoed at the 11 month of the maintenance period.
- Force mains shall be flushed and pressure tested as per MMCD Section 02732.
- Smoke testing is required for third pipe storm systems. Results are to be submitted in DVD format complete with a hardcopy report.

CONCRETE TESTING

- Twenty eight day concrete strength tests for curb and sidewalks shall be submitted at minimum intervals of one every 150 lineal metres.
- Curb and gutter repairs are to be completed prior to installation of asphalt overlay. Crack sealing is permitted for one crack per panel; otherwise the curb section must be replaced. The Township permits crack sealing by Tykon or Bondtech only.

ASPHALT TESTING

- Core and density testing as per MMCD specifications shall be submitted for asphalt base and overlay installations at 50 metre intervals staggered on each side of the road centerline. A minimum of 2 tests per road segment are required.
- Asphalt Marshall testing and mix design reports shall be submitted for each type of asphalt placed, minimum of one per day.