.01 GENERAL

This specification covers mixed Portland cement concrete to be used for the construction of sidewalks, pavements, structures, appurtenances, sewers and watermains. Concrete shall be in accordance with OPSS.MUNI 1350 and the following:

.02 AGGREGATES

Concrete aggregates shall conform to OPSS 1001 and OPSS.MUNI 1002. Coarse aggregate shall have a nominal maximum size of 19mm, with corresponding gradation requirements as given in OPSS.MUNI 1002, Tables 3 and 4.

.03 COMPRESSIVE STRENGTH CLASS

The class of concrete specified for the various construction applications is outlined in Table 700-1.

.04 CHEMICAL ADMIXTURES

Chemical admixtures shall conform to the requirements of OPSS.MUNI 1303.

.05 HYDRAULIC CEMENTING MATERIALS

Hydraulic cementing materials shall conform to the requirements of OPSS 1301. Unless otherwise specified in the contract. Type GU general use Portland cement shall be used for all above grade concrete.

All below grade concrete shall be resistant to a "very severe" sulphate environment as defined CAN/CSA-A23.1, latest edition. This concrete mix shall incorporate Type HS high sulphate resistant cement, or slag cement and normal Portland cement in the proportions required to achieve a sulphate resistant concrete. The potential sulphate resistance of the slag and cement blend shall be determined by ASTM specification C 1012.

Type HS cement shall be used in all concrete for the construction of pre-cast and cast in place sections of manholes, valve chambers, thrust blocks and concrete pipe.

.06 CONCRETE CURING

Curing of concrete surfaces shall be undertaken by using one of three alternatives:

1) White waterproof paper, white opaque polyethylene film, or white burlap-polyethylene sheeting which conforms to OPSS 1305

2) Burlap as specified in OPSS 1306

3) White or green pigmented membrane curing compound as specified in OPSS 1315

.07 PLACEMENT BY SLIPFORM

The concrete slump for slipform placement shall be generally in accordance with OPSS.MUNI 1350. The mix slump, however, must be compatible with the type of placement equipment in order to eliminate honeycombing.

.08 FINISHING CONCRETE SIDEWALKS

Sidewalks control joints shall be saw-cut at 1.5m centres unless otherwise noted.

All edges shall be finished with an edging tool having a 13mm radius.

The concrete shall be struck off and floated to a true surface. Care shall be taken not to bring to the surface an excess of water and fine sand by overfinishing.

When required by the Project Manager or Inspector, the Contractor will be required to furnish wooden templates cut to the exact form and slope of the alleyway or sidewalk, for use by the inspector.

The top surface of the concrete shall be screeded to true grade and cross section using a straight edge and an oscillating motion.

The screeded surface shall be floated using a hardwood float so that the entire surface is tight and compact. Cement or sand shall not be added to the surface. Any surface imperfections shall be removed and replaced before the concrete has set. Patching shall not be done unless authorized by the Project Manager.

A coarse textured broom finish shall be applied on all exposed Concrete sidewalk unless otherwise directed by the Project Manager. The presence of footprints or other marks in the completed sidewalk shall require the removal and replacement of the complete bay of sidewalk. Separation of unacceptable from acceptable sidewalk shall be by sawcutting.

Table 700-1
Minimum Compressive Strength of Concrete

COMPRESSIVE STRENGTH CLASS OF CONCRETE	APPLICATION OR LOCATION OF CONCRETE
32 MPa	sidewalks, curbs, road base, manholes, valve chambers, catch basins and pole bases
15 MPa	concrete pipe bedding
as specified in the contract	structural concrete for bridges and culverts