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5.17 SUPPLY OF POLYVINYL CHLORIDE PIPE**5.17.1 GENERAL**

The Work consists of supplying Polyvinyl Chloride Pipe of the following types:

- Type PSM Polyvinyl Chloride Drainage Pipe
- Ribbed Polyvinyl Chloride Drainage Pipe
- Polyvinyl Chloride (PVC) Pipe for Culvert Liners

Nominal sizes include:

- 100, 150, 200, 250, 300, 375, 450, 525, 600, 675, 750 and 900 mm diameter.

5.17.2 APPLICABLE SPECIFICATIONS

All references to "Standards" or "Specifications" refer to the latest edition at the time of tender.

CSA B182.2	Large-diameter, Type PSM PVC Sewer Pipe and Fittings
CSA B182.4	Large-diameter, Ribbed PVC Sewer Pipe and Fittings
ASTM D883	Definition of Terms Relating to Plastics
ASTM D1784	Standard Specification for PVC and CPVC Compounds
ASTM D2122	Standard Method of Determining Dimensions of Thermoplastic Pipe and Fittings
ASTM D2152	Standard Test Method for Quality of Extruded PVC Pipe by Acetone Immersion
ASTM D2412	Test for External Loading Properties of Plastic Pipe by Parallel-Plate Loading
ASTM D2444	Standard Test Method for Impact Resistance of Thermo-plastic Pipe and Fittings by Means of a Tup (Falling Weight)
ASTM D3034	Standard Specification for Type PSM PVC Sewer Pipe and Fittings
ASTM D3212	Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM F412	Definition of Terms Relating to Plastic Piping Systems
ASTM F477	Standard Specification for Elastomeric Seals for Joining Plastic Pipe
ASTM F794	Standard Specification for PVC Large-diameter Ribbed Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter

5.17.3 MATERIALS

All pipe and fittings shall be made of virgin PVC plastic as defined in ASTM Standard D1784.

Elastomeric Seals (gaskets) shall conform to the requirements of ASTM Standard F477.

5.17.4 REQUIREMENTS**5.17.4.1 Length**

Standard pipe length shall be 4 m or as requested by the Consultant. A tolerance of ± 25 mm on the nominal laying length will be permitted.

5.17.4.2 Dimensions for Type PSM, PVC Drainage Pipe

Nominal Pipe Size (mm)	Average Inside Diameter (mm)	Average Outside Diameter (mm)	Minimum Wall Thickness (mm)
100	100.94	107.06	3.06
150	150.29	159.39	4.55
200	201.16	213.36	6.10
250	251.46	266.70	7.62
300	299.36	317.50	9.07
375	366.42	388.62	11.10
450	447.87	475.01	13.57
525	527.99	559.99	16.0
600	594.00	630.00	18.0
675	669.42	710.00	20.29
750	766.36	812.80	23.22
900	917.22	972.80	27.79

5.17.4.3 Dimensions for Ribbed PVC Drainage Pipe

Nominal Pipe Size (mm)	Average Inside Diameter (mm)	Average Outside Diameter (mm) (over RIBS)	Minimum Wall Thickness (mm)
200	200	224	2.03
250	251	280	2.16
300	298	333	2.54
375	374.40	399.80	3.05
450	448.31	448.44	3.05
525	527.05	570.73	3.65
600	596.90	648.20	4.34
675	673.10	728.98	4.8
750	749.30	811.28	5.35
900	901.70	976.90	6.38

5.17.5 JOINTS

All sizes of pipe shall be supplied with Elastomeric gasket joints providing a watertight seal meeting the requirements of the latest version of CSA B182.2 and ASTM F477. The joints shall be able to withstand

345 kPa hydrostatic pressure.

5.17.6 HYDRAULICS

The manufacturer will provide the tested Manning's "n" value that will be used to calculate pipe flow capacity.

5.17.7 MARKINGS

All pipe supplied shall be clearly marked with the following information at intervals of not more than 1.5 m with 5 mm or larger letters.

- Manufacturer's name or trademark
- Nominal diameter
- Material designation and cell class
- The applicable specification designation
- Date of manufacture and plant designation

5.17.8 INSPECTION, SAMPLING AND TESTING

All materials shall be subject to inspection, sampling and quality assurance testing by the Consultant and the Contractor shall provide safe, convenient access, acceptable to the Consultant, for inspection and sampling of the materials, and shall co-operate in the inspection and sampling process when requested to do so.

The Contractor shall contact the Consultant at least 72 hours prior to shipping the materials to coordinate any inspection, sampling or testing at the manufacturing location and the delivery site that the Consultant deems necessary.

Any material found unacceptable by the Consultant shall be replaced with acceptable material by the Contractor at his expense.

5.17.9 MEASUREMENT AND PAYMENT

No separate payment will be made for the supply of polyvinyl chloride pipe. The cost for the supply and delivery of all materials, including gaskets and appurtenances, to the job site will be included in the unit price bid for the applicable installation.