

Part 1 General

1.1 GENERAL

- .1 This specification shall be read in conjunction with the drawings and all other sections of the contract documents.

1.2 WORK INCLUDED

- .1 The work covered by this section shall include the supply and installation of sanitary sewers.

Part 2 Products

2.1 MATERIALS

Polyethylene Pipe: The sanitary sewer mains, Series 160 (1100 kPa) high density polyethylene pipe

All polyethylene pipe, fittings, stubends, etc. shall be of the same manufacturer's series, wall thickness, and the same grade of polyethylene. All gaskets will have the same internal diameter as the series pipe and all bolts and back up rings will be compatible to allow tightening without washers. Standard of acceptance shall be KWH Sclairpipe, Urecon UIP, or approved equal.

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Part 3 Execution

3.1 GENERAL

- .1 The contractor shall read and be governed by the General Conditions, General Instruction, Instructions to Tenderers, Addenda, Form of Tender, Articles of Agreement, Plans and Specifications for this project.

The complete work under each trade shall be governed by the dictates of good practice in all details of materials and methods even if not minutely specified. The complete work shall be properly co-ordinated with the work of other trades

3.2 DRAINAGE

- .1 The contractor shall keep all portions of the work properly and efficiently drained during construction and until completion. He shall be held responsible for all damage, which may be caused as the result of water backing up or flowing over, through, from, or along any part of the work or surrounding properties due to his operation.

All costs associated with providing drainage for the work as required, shall be included in the unit prices for the installation of each associated item.

3.3 SITE RESTRICTIONS

- .1 When planning the work, the contractor shall make due allowance for the presence of the existing structures, access, utilities and the operation of others on the site.

3.4 RELOCATION OF MAINS

- .1 The Engineer has the right to relocate the mains throughout the project and he will advise the contractor well in advance of the work if any such move is contemplated.

3.5 INSPECTION

- .1 All material is subject to inspection and testing for soundness and suitability at the discretion of the Engineer.
- .2 All works shall be undertaken in strict adherence to the manufacturer's instructions, which are considered as being part of these Specifications. As each section of the work is completed, it shall be tested in the manner specified, and in the presence of, and as approved by, the Engineer.
- .3 All material found, during the progress of the work, to have cracks, flaws, or other defects, or to be of doubtful quality will be rejected by the Engineer. All rejected materials shall be promptly removed from the site of the work by the contractor and all costs associated with the removal and replacement of rejected material shall be borne by the contractor.

3.6 HANDLING OF MATERIAL

- .1 All material shall be delivered and distributed at the site by the contractor. All pipe and accessories shall be loaded and unloaded by lifting manually or with hoists so as to avoid shock or damage. Under no circumstances shall such materials be dropped.

In distributing the polyethylene pipe at the site of the work, each piece shall be unloaded opposite or near the place where it is to be installed.

- .2 Pipe shall be handled so the exterior and interior surfaces, prefabricated joints., will not be damaged. If, however, any part of any surface is damaged, the repair shall be made by the contractor at his own expense, in a manner satisfactory to the Engineer.

3.7 ALIGNMENT AND GRADE

- .1 All pipe sections shall be laid and maintained to the required lines and grades, with fittings, at the proper locations and grade with joints centred.

No deviation from authorized lines and grades shall be made without the written approval of the Engineer. If, in the opinion of the Engineer, the contractor's method of setting grades is inaccurate or insufficient, the Engineer may direct that more suitable equipment and methods be used to insure that proper grades are established.

3.8 PIPE JOINTS

- .1 Thermal butt-fusion of polyethylene pipe shall be carried out as recommended by the supplier, but only by a certified butt-fusion technician.

When joining the sections of pipe, it is the fusion equipment that must be moved from joint to joint.

- .2 Should it become necessary, and only upon authorization by the Engineer, polyethylene spacer blocks, properly machined, and of the same material as the main, may be used when required to connect the mains to the access vaults. The spacer blocks shall be installed between the flanges. Only one spacer block is permitted for each connection.

Back up flanges for flange connections shall be ductile iron. Bolts shall be galvanized or cadmium plated. All required bolts and gaskets shall be provided by the contractor.

3.9 FLUSHING

- .1 Sewer mains to be flushed with a minimum flow of 1.5m/s with in the pipe for a duration of 10 minutes or until all foreign materials have been removed and flushed water is clear.
- .2 Flushing operations shall be performed under the direction of the Engineer. Provide 48 hours notice prior to start of flushing operations.

3.10 JOINT TESTING

- .1 The owner reserves the right to visually inspect and test fusion joints using nondestructive methods and visual inspection.

END OF SECTION