shall immediately inform the Engineer of any omission, variations and detractions from the approved handling and installation specification.

F. Install bedding, surround and backfill as specified in Section 02223 of the specification and as per Manufacturer's recommendation.

G. Obtain satisfactory initial deflection test results for sections of pipeline laid between chambers prior to commencement of pipe laying in further sections.

H. When cut pipe is required, ensure that the cutting is done by a machine, leaving a smooth cut at right angles to the axis of the pipe.

I. Ensure that all pipes and fittings are sound and clean before laying. When pipe laying is not in progress, ensure that the pipe ends are at all times fitted with watertight plugs or caps. The plugs or caps shall only be removed for the purposes of making a connection of the pipe end or testing the pipeline. The plugs or cap shall be replaced immediately on completion of the test.

J. Protect bolted connections by an approved heat shrunk PVC sheath. Wrap the PVC sheath with a protective wrapping tape prior to backfilling in accordance with the specification.

20.3.2 Electro-Fusion Jointing

A. Manufacturer recommendations shall be taken in to consideration.

B. Only barcode labeled electro-fusion fittings incorporating fusion indicators and complying with the requirements of ISO4427, Part 3 shall be used.

C. The equipment used for electro-fusion jointing of pipes and fittings shall comply with the requirements of ISO 12176 Part 2. Calibration certificate of the equipment shall be submitted to Engineer. It shall incorporate an automatic control unit with data input through the use of a bar code reader pen and a data retrieval facility to allow historical fusion data to be read on the unit's screen and to be exported to an external computer or memory stick.

D. The electro-fusion control box shall deliver the correct fusion parameters to the electro-fusion fitting. The power generator shall provide the power requirements of the control box, taking into account the electrical characteristics of the control box.

E. Positioning tools including suitable alignment clamps shall at all times be used to minimize misalignment and prevent movement during the fusion and cooling