29 DRAINAGE NETWORK REHABILITATION (SECTION 02840)

29.1 PART 1 GENERAL

29.1.1 Scope and General Requirements

A. This section of the specification gives the requirements for the materials, equipment and methods to be adopted for the rehabilitation of drains using lining techniques and the rehabilitation of manholes. All required parameters of rehabilitation works in pressure pipes to be included to the approval if DMAT.

B. A wide variety of lining techniques have been developed world-wide. The main Contractor is not constrained on the type of lining method he puts forward, but the Contractor will have to demonstrate, through previous project documentation, that the proposed method has a proven track record and that it is fully applicable to the conditions to be found in Abu Dhabi.

C. The acceptable systems for the rehabilitation of drains are considered to be:

i. Cured in place pipe liner.

ii. Deformed and reformed high density polyethylene (HDPE) pipe liner.

iii. Spiral wound pipe liner with stainless steel reinforcement. Only for drains of 250mm diameter and greater.

iv. Slip lining.

D. The Contractor shall design the liner to support all combinations of imposed loads including earth, traffic, hydrostatic etc and have a minimum service life of 50 years. For the purposes of calculations it shall be assumed that the ground water table is at ground level. Host pipes shall be considered to be fully deteriorated. The liner shall have a minimum allowable long term stiffness of 2500N/m and be designed to have a factor of safety of 2.

E. The normal requirement will be that the liner shall provide the least possible thickness or decrease in diameter to meet the requirements of this section and consequently shall be of the close fit type.

F. Liner shall be of a light colour to enhance Closed Circuit Television (CCTV) clarity for inspection purposes.

G. Liner stiffness to be equal to the stiffness of the pipe as it was manufactured which means that it should be 5000 N/m2 or 10000 N/m2.