

- Attenuation of the fiber matches the factory test results, shipped with each reel of cable.

If a defect is found during the pre-installation testing, replacement shall be initiated immediately.

Pre-installation testing can be performed with a fiber optic flashlight, a light source and power meter or an optical time domain reflectometer (OTDR).

A fiber optic cable on a spool or reel shall be ordered wound so that both ends of the cable are accessible for testing.

To use a light source and power meter, connectors, reusable mechanical splices, or bare fiber adapters shall be installed on each end of every fiber strand. The measurement results using bare fiber adapters are less accurate than when employing standard connectors, but are adequate for this purpose.

Pre-installation testing utilising an OTDR requires access to only one end of the cable. Typically, a pigtail is temporarily spliced to each fiber strand. A pigtail is a length of fiber which has a connector on one end and no connector on the other end. The pigtail is connected to the OTDR and measurements taken. An OTDR can measure the following:

- End-to-end attenuation. This should be compared to the test report on the reel and any differences reported.
- Distance to a point of high attenuation. This could be a defect in the fiber strand or it could be the end of the cable. An example of the need for this form of testing would be to identify the location where a forklift damaged a cable during shipment. The OTDR will show the distance from the beginning of the reel to the damaged area in either feet or meters. The footage markers on the cable sheath can be used to assist in locating the damaged section.

### 6.3.2 Fiber Optic Cable Installation

All work shall be carried out in accordance with the highest standards of craftsmanship in the communication industry.

The project site shall be surveyed to establish the exact cable routing and cutting lengths prior to the commencement of any work or commitment of any materials.

When ordering fiber optic cable, extreme caution to be exercised to ensure that no additional splicing will be required. Splicing is allowed for the programmed connection of reels only.

All work areas shall be made clean and orderly at the completion of work and at times required by Purchaser during process of work.



Client	ADWEA
Project:	STANDARD SPECIFICATIONS FOR WATER WORKS
Title:	SPECIFICATION FOR INSTRUMENTATION & CONTROL SYSTEMS INSTALLATIONS