

dc INSTALLATION TESTING:

Purpose: Installation testing is important in that it provides assurance that no damage has occurred during installation or in handling after leaving the factory. If the cable is installed by a contractor, the test can serve as an acceptance test and assure the owner that the cable has not been damaged and should perform satisfactorily.

Test Voltages: The most common method of testing utilizes a high-voltage dc power supply and equipment for measuring the leakage current of the cable. The use of direct current to detect incipient failures avoids the harmful heating, corona effects and sever burning usually associated with ac testing. Because of the low currents involved in dc testing, the equipment for energizing long lengths of cable is relatively small and portable enough for field testing. Recommended voltages for testing of Crosslinked Polyethylene and Ethylene Propylene Rubber insulated cables are given in the following table:

Recommended dc Test Voltages (15 Minutes Maximum)				
CROSSLINKED POLYETHYLENE AND ETHYLENE PROPYLENE RUBBER				
Rated Circuit Voltage	Insulation Thickness (Mils)		dc Installation Test Voltages (kV)	
	100%	133%	100%	133%
2001 - 5000	90	90	25	25
5001 - 8000	115	140	35	35
8001 - 15000	175	220	55	65
15001 - 25000	260	345	80	100
25001 - 28000	280	—	85	—
28001 - 35000	345	—	100	—

The test voltages are taken from Part 6 of the ICEA Pub. For XLP or EPR.

Interpretation of Results: Interpretation of current-time curves during testing can provide an experienced person with considerable information regarding overall cable performance. The initial current is high, and gradually seeks a steady, lower value for a good cable. If the current does not decrease, or falls and then rises, failure or weakness in the system is indicated.

