1700 MISCELLANEOUS MATERIALS

1701.0 Lay of Conductors

1701.1 Scope

A. This test establishes a method for determining the length of lay for electrical assemblies with two or more conductors.

1701.2 Apparatus

A. A length-measuring device accurate to 0.05 in.

1701.3 Preparation

A. Minimum length needed is determined by multiplying the number of complete revolutions to be measured by the maximum lay, plus 2 in.

B. The outer jacket is to be stripped, while maintaining any shield or wrap from unwinding from the specimen.

1. Visually inspect the wrap/shield to determine if any unwinding has occurred.
    a. If unwinding has occurred before the wrap/shield is removed use alternative method 1701.3.C.
2. Continue with 1701.4.

C. Alternative Method: (To be used when removal of jacket causes conductors to unwind).

1. Cut window to the minimum length described in 1701.3.A, while leaving the jacket on each end intact.
2. Width of the window should be no more than half of the circumference of the cable.
3. Measure in accordance to 1701.4.B.

1701.4 Measurement

A. Remove wrap/shield

1. Note orientation and "tightness" of the conductors. If loosening occurs, apply a gentle twist to the conductors to return them to original condition.

B. Mark a position at a predetermined orientation on a conductor and follow the conductor until the original orientation has been reached again. Measured point to point reading is the length of lay.

1. Preferably two or more rotations of the conductor will be measured, whereby the length measurement would be divided by the number of rotations of the conductor.

    Length of lay is the distance from a fixed point on a conductor in a cable assembly to a point further down the cable assembly where the conductor has been rotated 360 degrees within the cable assembly.

    a) Measure at least two different conductors and record the greater of the measured length of lays.