OKO-LITEFLEX AERIAL DROP WIRE
DESCRIPTION, INSTALLATION AND MAINTENANCE

CONTENTS PAGE

1. GENERAL

1.01 This practice describes the Oko-Liteflex Aerial Drop Wire, its application, installation and maintenance. The same clearance requirements that apply to telephone wires and other current carrying wires must be observed when installing or maintaining Oko-Liteflex Aerial Drop Wire.

1.02 Whenever this section is reissued the reason(s) for the reissue will be listed in this paragraph.

1.03 Oko Liteflex is installed using the same procedures the present types of drop wire use.

1.04 Polarity of the Oko-Liteflex Aerial Drop Wire is provided with a longitudinal ridge along one side of the wire assembly or configuration that identifies that conductor as the ring conductor. The other conductor being the tip conductor (see Figure 1).

2. DESCRIPTION

2.01 Oko-Liteflex Aerial Drop Wire consists of three distinct components. They are: The conductors, the support member, and the overall cover.

2.02 The conductors are 22 AWG, copper. The support member consists of five strands of fiber glass. The outer covering is PVC.

2.03 Figure 1 illustrates the dimensional cross section of the Oko-Liteflex Aerial Drop Wire.

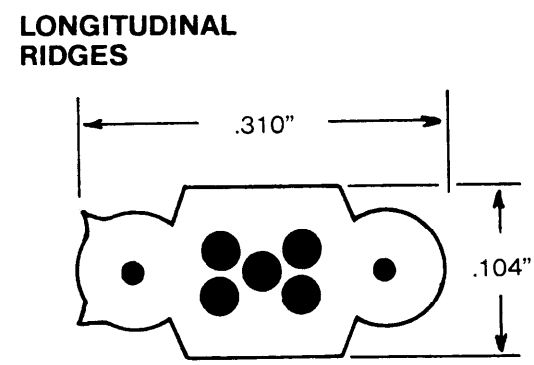

Figure 1
Dimensions of Oko-Liteflex Aerial Drop Wire

2.04 Table 1 sets forth the maximum span lengths that can be used with the Oko-Liteflex Aerial Drop Wire.

TABLE 1

MAXIMUM SPAN LENGTHS FOR OKO-LITEFLEX AERIAL DROP WIRE	
Loading Area	Maximum Span Length
H	250
M	300
L	325

2.05 The breaking strength of the Oko-Liteflex Aerial Drop Wire is rated at 600 pounds. PVC, copper-steel aerial drop wire is rated at 300-470 pounds.

2.06 Oko-Liteflex Aerial Drop Wire is available in 1000 foot coils and 1500 foot flexpacks. Each Flexpack weighs 37 pounds. The wire itself, weighs 24 pounds per thousand feet.

3. INSTALLATION

3.01 Oko-Liteflex Aerial Drop Wire is installed the same way as current aerial wire products. It uses standard clamps, "E" clips, "D" clips (see Figure 2) for support purposes. It uses "Scotchlok" as well as "Nicopress" connectors for splicing purposes, when necessary.

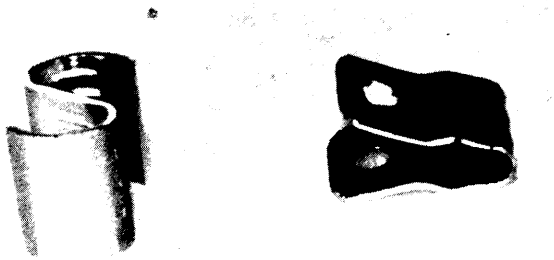

Figure 2
Standard Drop Wire Hardware

3.02 Prepare end of wire for terminating by slitting the webbing between the conductors (see Figure 3), and support member back approximately one-half inch. Do not nick conductors. Grasp support member and one of the insulated conductors and pull apart approximately two inches back from the end. Repeat this procedure with the other conductor. Remove one and one-half inches from the support member by bending the portion that has had the conductors separated from it. Clip the support member with your splicing scissors.

Figure 3
Preparing Drop Wire for Termination

3.03 Remove approximately one-half inch of insulation from the ends of the conductors. Make sure the copper conductors are clean and not nicked. Make connection to terminal block as shown in Figure 4.

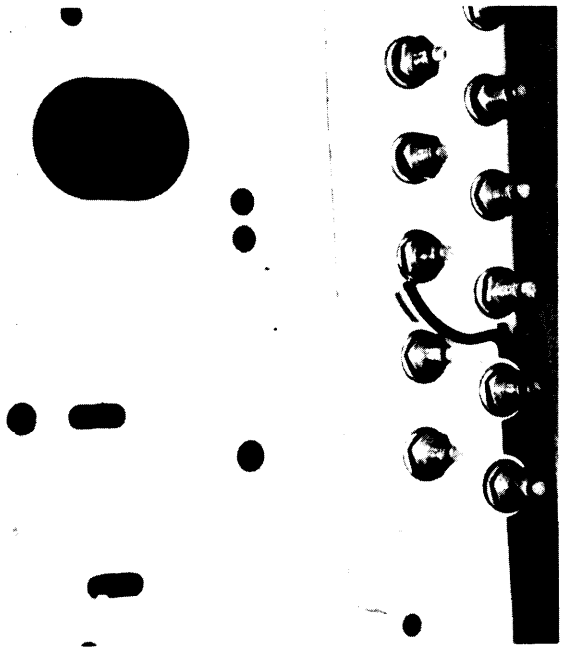

Figure 4
Terminating to a Terminal Block

AERIAL INSTALLATIONS

3.04 Figure 5 illustrates the recommended method of attaching to a pole. This can be the same technique for pole to pole applications or pole to building installations.

Figure 5
Drop Wire Attachment to Pole

*NOTE: All safety precautions required when placing present types of aerial drop wire must be followed with Oko-Liteflex Aerial Drop Wire with the exception of it's handling characteristics. Oko-Liteflex Aerial Drop Wire does not contain the springy copper-steel conductors that have caused field complaints about the danger of handling the existing PVC parallel drop wires.

3.05 Placing the drop clamp in the proper position on the wire governs the proper amount of sag that will be obtained in the span when the wire is finally in position. Oko-Liteflex Aerial Drop Wire should be installed with the temperature, tension and span length considerations shown in Table 2.

TABLE 2

STRINGING TENSIONS AND SAG TABLE 60°F (15.6°C)		
Span Length (Ft.)	Stringing Tension (Lbs.)	Sag (In.)
50 or Less	30	3
100	30	12
150	30	28
200	30	50
250	30	79

TABLE 3

FINAL UNLOADED SAG CONSIDERATIONS 32°F (0°C)		
Span Length (Ft.)	Final Unloaded Sag (In.)	
	Light & Medium Loading	Heavy
50 or Less	3	5
100	11	19
150	22	43
200	40	78
250	68	123

3.06 The initial procedure for installing Oko-Liteflex is to determine the origination and termination of the drop wire run.

3.07 When surveying the route over which the wire will be placed, be sure to determine where the hazards or clearance problems exist and plan to take steps to avoid them.

3.08 Prior to installing the wire, install all hardware attachments, making sure that allowance is made for ground clearances and power separations.

3.09 Begin the installation by locating the drop reel near the originating location, where enough wire can be drawn out of the box to make the proper installation.

3.10 Pull enough wire from the reel to make the initial aerial attachment, plus 110 percent of the length needed to go from the point of attachment to the point of connection with the originating facility. The extra 10 percent of length allows for any measuring or routing errors.

3.11 Attach Oko-Liteflex to poles and buildings in the same manner as your present procedures require.

3.12 Attach Oko-Liteflex to mounting surface with the appropriate clips. Use drip loops where required by local practices. Make aerial attachments by attaching a drop clamp to the Oko-Liteflex, so that all of the slack has been removed between the last clip and the first point of attachment, except for what is to be used for a drip loop.

3.13 Attach the bail of the drop clamp to the drive hook as shown in Figure 5.

3.14 Lay the Oko-Liteflex on the ground along the route that has been selected until the next attachment is to be made. Make sure that there are no hazards present before pulling the wire up to it's initial sag and tension. Mark the approximate location of the next drop clamp. Release some of the tension on the wire and install the clamp before fully wedging the wire in it's clamp. Pull the wire up to it's proper sag and tension for the temperature. Position the clamp on the wire and fully seat the wire in the clamp.

3.15 Proceed to make the remaining attachments in the same manner, remembering to leave drip or slack loops wherever required by local practice.

4. MAINTENANCE

4.01 When it is necessary to splice Oko-Liteflex Aerial Drop Wire, leave a two to three inch slack loop and cut both wire ends square.

4.02 Follow the same procedure outlined in Paragraph 3.02, for both ends of the wires that are to be spliced together.

NICOPRESS SLEEVE (NO. 1.025)

4.03 Remove approximately one-half inch of insulation from the end of each conductor. Make sure copper conductors are clean and not nicked.

4.04 Insert tip conductors from each wire end into opposite ends of a Nicopress Sleeve No. 1-025A (see Figure 6) and while making sure that both wires are fully seated in the sleeve (check the insulation distance on the conductor from the sleeve), use the "A" (smallest) groove on a Nicopress No. 17-BA tool to crimp the sleeve (see Figure 7).

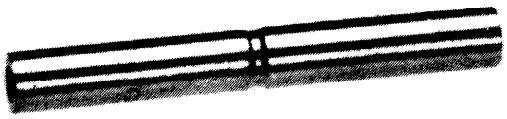

Figure 6
Nicopress Sleeve No. 1-025A

4.05 Begin crimping at the inner end of the sleeve and using the "A" groove, squeeze the sleeve as shown in Figure 7. It is necessary to squeeze each conductor near the center of the sleeve to insure that the conductor is properly seated and restrained before making the crimps toward the end of the sleeve.

4.06 Repeat the procedure for the ring conductor.

4.07 Each conductor splice should be parallel to each other. Remove the strength member from between the conductors splices by clipping it with your splicer's scissors.

Figure 7
Tool No. 17-BA and a Crimped Sleeve

4.08 Insert the No. 3456 Nicopress Splice Separator between the two conductor splices.

4.09 Wrap "Scotchfil" Insulating Putty or Plymouth No. 2006 Splicing Compound around the splice bundle and back onto the unprepared ends of the Oko-Liteflex. To prevent moisture from migrating along the grooves of the wire into the splice bundle and causing corrosion and noise, squeeze compounds into a homogeneous mass and shape for taping.

4.10 To complete the splice, it must be taped beginning approximately one and one-half inches back from the sealing compound at one end of the splice. Maintaining firm tension on the tape, apply the 3/4 inch vinyl mastic tape in a helical wrap, with a 70 percent overlap. Make one complete pass over the splice bundle to a point approximately one-half inches beyond the splice bundle. Reverse the direction of wrapping to where the taping began, then reverse once more to complete the taping at the center of the splice bundle (see Figure 8).

4.11 Roll the taped splice bundle in your hands to smooth and round off the splice.

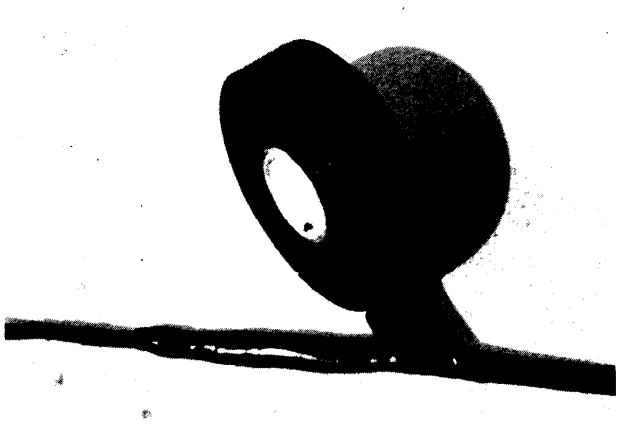

Figure 8
Wrapping Splice Bundle with Vinyl Mastic Tape

4.12 Place two clamps back to back by looping the bail of one clamp through the bail and over the wedge of the second clamp. Place the clamps approximately three to four inches back from each side of the completed splice. This will allow a two to three inch slack loop for the splice (see Figure 9).

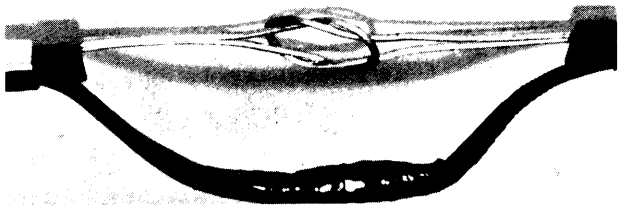

Figure 9
Completed Mid-Span Splice

3M SPLICE (U1R)

4.13 After completing the procedure described in Paragraph 3.02, take a 3M U1R connector and an E-9B connector crimping tool and prepare to join the two wires together (see Figure 10).

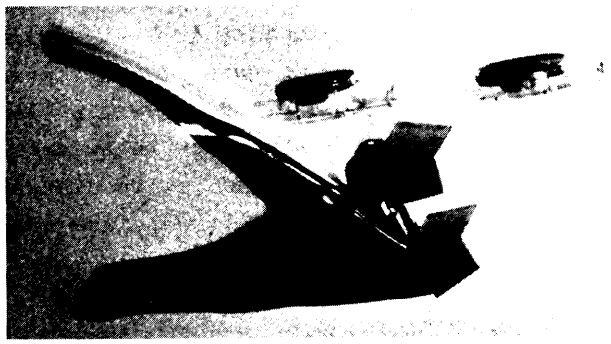

Figure 10
U1R Connector and E-9B Tool

4.14 The separation of the insulated conductors from the support member is the only action required to prepare the conductors for insertion into the U1R connector. Both tips and both rings (insulated conductors) must be inserted and fully seated in the connector. View through the clear styrene back to verify. When satisfied that the insulated conductors are seated properly, squeeze the red oblong button into the body of the connector with the proper jaw spacing on the E-9B tool. This action will cause a reliable low resistance connection to be established (see Figure 11).

Figure 11
Pressing the U1R Connector
for a Dependable Splice

4.15 Complete splice as described in Paragraphs 4.10, 4.11, and 4.12. Use only the V-M tape to cover the U1R connector.

4.16 Replace span on aerial supports and adjust sag.