



## Notes for Tree Lightning Protection Systems



IPC offers a full line of lightning protection equipment, some of which is designed specifically for trees. Lightning protection systems for trees has been in existence since the early 1900's. Trees located on golf courses, historic points of interest, parks, municipalities and large estates are several places to consider providing the service.

Please see the following notations about providing this type of service to your clients.

### Notes on Tree Lightning Protection Systems

Tree lightning protection systems are designed using standards that have been adopted by the National Arborist Association. The American National Standards Institute (ANSI) Accredited Standards Committee (ASC) A300, published the ANSI A300 (part 4) 2002 Lightning Protection Systems in the fall of 2002. As a service to our dealers, IPC references the old NAA Standards and the new ANSI Standards in our tree material estimates. Please see the enclosed chart that shows the differences between the two standards.

Aluminum cable or accessories should not be used in tree systems. Only materials made of copper should be installed. Reference the ANSI Standard of Practice for lightning protection systems, ANSI A300 (part 4) - 2002, adopted by NAA.

One of the services IPC provides to our Arborist dealers, is our free estimate program on trees. The program provides the arborist with the estimated material requirements necessary to make an installation. Our estimate will show the arborist with side by side comparisons of both the former and the ANSI Standards of installation.

Our estimate is normally provided by fax within the hour after receiving your inquiry. In order to provide an estimate, the following information is required:

- Type of tree
- Overall height of tree
- Overall spread or drip-line of tree
- DBH (diameter at breast height) in inches
- Number of bracing cables or guy wires
- Any nearby metallic pipes, i.e. water, gas, etc. for common bonding.

Please feel free to request the IPC tree kit, a folder of information, including magazine reprints, price lists and other helpful information in providing this service.



**Independent Protection Co., Inc.**

**P.O. Box 537**

**Goshen, IN 46527-0537**

**Ph: 574.533.4116 or 800.860.8388**

**Email: [info@ipclp.com](mailto:info@ipclp.com)**

**Website: [www.ipclp.com](http://www.ipclp.com)**

**Fax: 574.534.3719**



# Notes for Tree Lightning Protection Systems



## Highlights of the New ANSI A300 (Part 4) Standard for Lightning Protection Systems for Trees

Lightning protection systems and standards for tree lightning protection have been in existence since the early 1900's. Up until recently, the National Arborist Association has published their own standard for system installation. Their most recent standard has been in effect since 1987 and was based on standards issued by the Lightning Protection Institute and the National Fire Protection Association.

NAA has recently adopted the American National Standards Institute (ANSI) A300 standard (Part 4). A complete copy of the standard is available for purchase by contacting the NAA office at 800-733-2622.

Following are some of the major differences between the former standard of NAA and the newly adopted ANSI A300 standard.

Former NAA Standards Based on LPI/NFPA Standards		New NAA Adoption ANSI A300 Standards	
	IPC Part #		IPC Part #
<b>Cable for Main Runs</b> Minimum of 32 Strands of 17 Gauge	32S	<b>Cable for Main Runs</b> Minimum of 14 Strands of 17 Gauge	22
<b>Secondary Runs</b> Minimum of 14 Strands of 17 Gauge	22	<b>Secondary Runs</b> Minimum of 14 Strands of 17 Gauge	22
<b>Cable Fasteners</b> Minimum of one every 3 feet	190/190A	<b>Cable Fasteners</b> Minimum of one every 6 feet	190A
<b>Canopy Coverage</b> Minimum on 3 or more main branches to 7 or 8 on larger trees		<b>Canopy Coverage</b> So that no aerial portion of the tree is farther than 35 feet from a conductor	
<b>Grounding</b> <ul style="list-style-type: none"> <li><b>Trees Under 36' dbh</b> <ul style="list-style-type: none"> <li>Minimum of one main downlead cable and one ground rod</li> </ul> </li> <li><b>Trees Over 36" dbh</b> <ul style="list-style-type: none"> <li>Minimum of two main downlead cables and two ground rods</li> </ul> </li> </ul>		<b>Grounding</b> <ul style="list-style-type: none"> <li><b>Trees Under or over 36' dbh</b> <ul style="list-style-type: none"> <li>Minimum of one main downlead cable and one ground rod</li> </ul> </li> </ul>	
<b>Ground Rod Locations</b> Outside the drip line of the tree		<b>Ground Rod Locations</b> Minimum of 10 feet from the trunk	
<b>Common Grounding to Metallic Pipes</b> Within 25' of metallic pipes including water service, well casings, gas lines, etc.		<b>Common Grounding to Metallic Pipes</b> No Requirements	



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# Tree Equipment



**#22 - Copper Cable.** 14 Strands of 17 gauge smooth twist conductor cable. 1/4" dia. miniature no. 6 size. Wt. 90 lbs. per 1,000 feet. ★



**#32S- Copper Cable.** 32 strands of 17 gauge smooth twist conductor cable. 15/32" dia. standard no. 2 size. Wt. 215 lbs. per 1,000 feet. ★



**#194 - Air Terminal Point** for standard #32S conductor cable. Furnished with no. 143 copper nails for attachment. Wt. .38 lb. ea. ★

**#195 - Air Terminal Point** for miniature #22 conductor cable. Wt. .28 lb. ea. ★



**#194D - Drive Type Air Terminal** for standard #32S conductor cable. Wt. .44 lb. ea. ★

**#195D - Drive Type Air Terminal** for miniature #22 conductor cable. Wt. .34 lb. ea. ★



**#190 - Tree Drive Fastener** for standard #32S conductor cable. Wt. .10 lb. ea. ★

**#190A - Tree Drive Fastener** for miniature #22 conductor cable. Wt. .08 lb. ea. ★

★ Denotes normally stocked item available for shipment within 48 hours. Items not stocked are available within 14 days.



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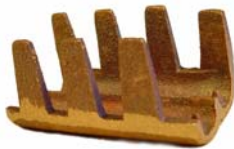
# Tree Equipment



**#3X - Straight Splicer** for miniature #22 conductor cable. Wt. .06 lb. ea. ★



**#33L- End to End Straight Splicer** made of pressed copper. 3/4 in length for standard #32S cable. Wt. .10 lb. ea. ★



**#193A - Side by Side Splicer** made of cast copper/bronze for two standard #32S cables. 2" in length. Wt. .22 lb. ea. ★



**#193X - Side by Side Splicer** made of cast copper/bronze for one standard #32S cable and one miniature #22 cable or for two miniature #22 cables. Wt. .06 lb. ea. ★



**#198 - Fork Type Ground Connector.** "Y" type connector is made of cast copper/bronze. Wt. .38 lb. ea. ★



**#25G - Bronze Small 1" All Purpose Connector** with bolt, nut and washer for connecting two cables through 1/2" dia. Adjusts to various size cables. Wt. .28 lb. ea. ★



**#297A - Bronze Large Many Purpose Clamp** heavy duty, for clamping two standard cables through 1/2" and/or 1/2" and 5/8" rods. 2" long. Wt. .38 lb. ea. ★

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# Tree Equipment



**#306 - Bronze Perfection Pipe Clamp.** Clamp type cable fastener, fits all standard cables through 2/0 and provides 1 1/2" contact with water pipes, rods television masts, etc. Fits 1/2", 3/4" and 1" iron water pipes, also 1/4", 1/2", 5/8", 3/4" and 1" copper water pipes. Wt. .48 lb. ea. ★

**#306X - Bronze Medium Perfection Pipe Clamp,** similar to above clamp, Fits 1 1/4" and 1 1/2" iron water pipes. (Max 2" O.D.). Wt. .82 lb. ea. ★



**#306A - Bronze Large Perfection Pipe Clamp** with clamp type cable fastener that swivels 360°. Fits 1 1/2" and 2" iron water pipes. (Max. 2 1/2" O.D.). Lower casting may be inverted to fit smaller diameter pipes and rods. Tinned to prevent corrosion. Wt. 1.04 lb. ea. ★



**#50 - Standard Ground Rod Clamp** made of copper bronze 1/2" clamp. Fits standard cable through 2/0. Wt. .24 lb. ea. ★

**#51 - Standard Ground Rod Clamp** made of copper bronze 5/8" clamp. Fits standard cable through 2/0. Wt. .30 lb. ea. ★



**#137A - Ground Rod** 1/2" x 9' copper clad ground rod. Wt. 6.30 lb. ea. ★

**#139 - Ground Rod** 5/8" x 8' copper clad ground rod. Wt. 6.68 lb. ea. ★



**#589 - Copper Sheet Ground Plate** made of 20 gauge copper sheet stock. 18" x 18". Wt. 3.125 lb. ea. ★

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