

Technical Data

CCA Treated Poles

- Wolmanized® Poles
- Wolmanized® ET® Poles
- Wolmanized® Extra® Poles

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The Wolmanized® Family of CCA-Treated Wood Poles

All of the choices within the Wolmanized wood family combine CCA preservative and wood. This combination produces a package of pole benefits that has yet to be matched.

It starts with wood. Nature devised an amazing material when it created wood. Wood is strong, durable, resilient, able to withstand considerable handling abuse, easy to frame, and easy to modify on site. You don't need special hardware to climb wood poles. They have a natural appearance that harmonizes with many settings. Wood has a low thermal expansion coefficient and low electrical conductivity.

Combine this with pressure treatment and you get a proven product that lasts for decades, yet is the most economical choice available. Plus, production is quick in emergency situations.

And, on top of all of this, are its environmental qualities. Wood is a renewable resource, it stores carbon which reduces greenhouse gases, wood products require less energy to manufacture than alternative materials, and wood poles are easier to make safe for raptors.

Wolmanized® Poles

Wolmanized poles are pressure-treated with CCA preservative. Use of these poles has grown because they are clean to the touch, odor-free, and highly leach resistant. The preservative is fixed in the wood, so remedial treatment is not necessary for aging poles and there is no need to rotate poles in storage. They make good neighbors.

Wolmanized® ET® Poles

After treatment with CCA, ET poles undergo a second-step in their processing. A refined hydrocarbon oil emulsion is injected into the outer layer of the pole, serving as a lubricant and making the pole easier to climb. However, the emulsion does not hamper handling, nor does it diminish the effectiveness of the preservative. The ET additive provides long-lasting climbing enhancement.

Climbing Trials Show Value of ET® Poles

Numbers shown below represent the mean scores for climbability, as given by linemen following climbing trials. Scores are based on a 1-10 scale. (10 being easiest to climb).

	9-Year Trial 1997	14-Year Trial A 2002	14-Year Trial B 2002
CCA	4.8	5.5	4.6
CCA ET	7.6	7.3	6.8
penta	7.2	7.0	-

All poles were installed in 1988. The 9-year evaluation was done by climbers from Carolina Power & Light; the 14-year evaluations by climbers from Georgia Power Company.

Wolmanized® Extra® Poles

Extra poles are an economical choice where climbing enhancement is desired for a limited time, usually during installation or for the first three years. In the treatment process, a water repellent wax additive is driven into the pole along with the CCA. It is a one-step operation. The wax reduces the effects of weathering on the wood by slowing down the absorption and release of moisture. This slow release results in greater pliability of the pole shell, making it easier to climb.

Model Specification for Wolmanized® CCA Poles

1. SCOPE

1.1

This specification applies to material purchased by _____

1.2

This specification covers the materials and processes to be used in the Wolman® pressure treatment of pine poles with chromated copper arsenate (CCA).

1.3

The length and class of poles shall be stated in the purchase order or releases.

1.4

The procedures and requirements of AWPA (latest edition) and ANSI 05.1 (latest revision), except as modified herein or in purchase orders shall apply.

2. MATERIAL REQUIREMENTS

2.1 Species

This specification covers pines as listed in ANSI 05.1, and AWPA (latest editions). All poles shall be cut from live dense trees.

2.2 Standards and Procedures

All poles shall conform to the requirements of ANSI 05.1 and AWPA (latest editions) unless noted on the individual purchase order or release.

2.2.1 Framing

The framing shall be in accordance with the purchase order requirements.

2.2.2 Marking

Poles shall be marked per purchase order requirements.

2.2.3 Size

When poles are sized prior to seasoning, a reasonable shrinkage rate should be anticipated (2%) to assure that minimum circumference requirements will be met when the pole reaches its equilibrium moisture content.

2.3 Storage

2.3.1 Untreated material

All untreated material should be processed in an expedient manner to avoid decay and insect attack. Material should be date controlled during processing to assure an appropriate rotation of stock to avoid unnecessary exposure to decay and/or insects. Materials may be sprayed with a fungicide that will not effect treatability. The fungicide shall contain a coloring agent to indicate that the pole has been sprayed.

2.3.2 Treated Material

Treated material should be stacked to avoid changes in shape. The material should be date processed and rotated to assure a first-in/first-out inventory system. The material should be stored in a manner to assure compliance to all applicable environmental regulations.

2.4 Preservative System

The preservative used shall be “Wolman®” chromated copper arsenate (CCA) type C oxide formulation and shall meet the criteria of AWPA Standard P5 (latest edition).

Testing to establish conformity shall be in accordance with AWPA Standards A2 (latest edition).

2.5 Conditioning

All poles are to kiln dried in accordance with ANSI 05.1 (latest edition) standard. The drying process is to be sufficient to assure that moisture is removed for proper treatment and that sterilization of the wood poles occurs. Care should be taken to include only like size poles in a charge to assure that adequate drying as well as sterilization occurs.

2.5.1 Moisture Content

The moisture content of poles shall be 28% or less as measured in the sapwood zone, two to three inches from the surface.

2.5.2 Moisture Content Determination

Cores shall be taken from 20 randomly selected poles within a kiln charge. The sampling zone is the third inch of the pole’s sapwood, taken at a point one foot above the ANSI 05.1 ground line. Samples with heartwood shall have it removed before being included in the composite sample. The moisture content shall be determined by an oven dry method such as those in ASTM D4442 (latest edition).

3.0 TREATMENT

Only material that has been inspected, accepted and marked conforming on their tips shall be preservative treated.

3.1 Preservative

All poles shall be treated with Wolman® CCA in accordance with AWPA Standard C1 and C4 (latest edition), except as modified or supplemented in the purchase order.

4.0 RESULTS OF TREATMENT

4.1 Preservative System Retention

The retention of Wolman® CCA shall be in accordance with AWPA Standard A2 or A9 (latest edition). The required retention is 0.60 lbs. per cubic foot in the assay zone. This assay will be based on 20 cores taken within one foot of the butt from different poles within one cylinder charge.

4.2 Preservative System Penetration

The penetration of CCA shall be in accordance with AWPA C1 and C4.

5.0 FINAL ACCEPTANCE

Poles meeting the above treating requirements shall be hammer marked in the butt to acknowledge their acceptance by the approved quality assurance system. Upon receipt, all poles are to be observed for conformance to purchase order requirements and attention should be paid to the presence of a quality assurance mark in the tip and butt of each pole.

Model Specification for Wolmanized® ET® Poles

1. SCOPE

1.1

This specification applies to material purchased by_____

1.2

This specification covers the materials and processes to be used in the Wolman® pressure treatment of pine poles with chromated copper arsenate (CCA) and the proprietary emulsified oil treatment, ET®.

1.3

The length and class of poles shall be stated in the purchase order or releases.

1.4

The procedures and requirements of AWPA (latest edition) and ANSI 05.1 (latest revision), except as modified herein or in purchase orders shall apply.

1.5

Timber Products Inspection (TP) or an agency authorized by Arch shall perform the inspection of the ET® pole additive system.

2. MATERIAL REQUIREMENTS

2.1 Species

This specification covers pines as listed in ANSI 05.1, and AWPA (latest editions). All poles shall be cut from live dense trees.

2.2 Standards and Procedures

All poles shall conform to the requirements of ANSI 05.1 and AWPA (latest editions) unless noted on the individual purchase order or release.

2.2.1 Framing

The framing shall be in accordance with the purchase order requirements.

2.2.2 Marking

Poles shall be marked per purchase order requirements. The letters “ET” are to be included in the brand in conjunction with the preservative retention mark.

2.2.3 Size

When poles are sized prior to seasoning, a reasonable shrinkage rate should be anticipated (2%) to assure that minimum circumference requirements will be met when the pole reaches its equilibrium moisture content.

2.3 Storage

2.3.1 Untreated material

All untreated material should be processed in an expedient manner to avoid decay and insect attack. Material should be date controlled during processing to assure an appropriate rotation of stock to avoid unnecessary exposure to decay and/or insects. Materials may be sprayed with a fungicide that will not effect treatability. The fungicide shall contain a coloring agent to indicate that the pole has been sprayed.

2.3.2 Treated Material

Treated material should be stacked to avoid changes in shape. The material should be date processed and rotated to assure a first-in/first-out inventory system. The material should be stored in a manner to assure compliance to all applicable environmental regulations.

2.4 Preservative System

The preservative used shall be “Wolman®” chromated copper arsenate (CCA) type C oxide formulation and shall meet the criteria of AWPA Standard P5 (latest edition). Testing to establish conformity shall be in accordance with AWPA Standards A2 (latest edition).

2.5 Climability Additive Systems

The ET® working solution shall be analyzed at least once every 10 charges or as a minimum at least once per month in accordance with the procedures described in the “Wolman® ET® Additive Manual of Recommended Practice.”

2.6 Conditioning

All poles are to kiln dried in accordance with ANSI 05.1 (latest edition) standard. The drying process is to be sufficient to assure that moisture is removed for proper treatment and that sterilization of the wood poles occurs. Care should be taken to include only like size poles in a charge to assure that adequate drying as well as sterilization occurs.

2.6.1 Moisture Content

The moisture content of poles shall be 28% or less as measured in the sapwood zone, two to three inches from the surface.

2.6.2 Moisture Content Determination

Cores shall be taken from 20 randomly selected poles within a kiln charge. The sampling zone is the third inch of the pole's sapwood, taken at a point one foot above the ANSI 05.1 ground line. Samples with heart wood shall have it removed before being included in the composite sample. The moisture content shall be determined by an oven dry method such as those in ASTM D4442 (latest edition).

3.0 TREATMENT

Only material that has been inspected, accepted and marked conforming on their tips shall be preservative treated.

3.1 Preservative

All poles shall be treated with Wolman® CCA in accordance with AWPAs Standard C1 and C4 (latest edition), except as modified or supplemented in the purchase order.

3.2 Additive Enhancement

Only poles found conforming to section 3.1 for Wolman® CCA above shall be treated the Wolman® ET® additive. Treatment is to be in accordance with the "Wolman® ET® Additive Manual of Recommended Practice."

4.0 RESULTS OF TREATMENT

4.1 Preservative System Retention

The retention of Wolman® CCA shall be in accordance with AWPAs Standard A2 or A9 (latest edition). The required retention is 0.60 lbs. per cubic foot in the assay zone. This assay will be based on 20 cores taken within one foot of the butt from different poles within one cylinder charge.

4.2 Additive System Retention

The retention of Wolman® ET® will be in accordance with the "Wolman® ET® Additive Manual of Recommended Practice." The required retention is 1.0 lb. per cubic foot in the 0.0 inch to 0.5 inch assay zone. This assay will be based on a 20 core sample taken from individual poles within an individual cylinder charge. The cores shall be taken with a 9/16 inch bit and minimum of 30 grams of wet shavings (approximately 15 grams of dry shavings) for analysis.

4.3 Preservative System Penetration

The penetration of CCA shall be in accordance with AWPAs C1 and C4.

4.4 Additive System Penetration

The penetration of Wolman® ET® will be in accordance with the "Wolman® ET® Additive Manual of Recommended Practice." The penetration shall be to a depth of one inch measured at least 6 feet from the tip or butt of the pole. A minimum of 16 of the 20 cores taken shall meet this requirement to pass these penetration requirements.

5.0 FINAL ACCEPTANCE

Poles meeting the above treating requirements shall be hammer marked in the butt to acknowledge their acceptance by the approved quality assurance system. Upon receipt, all poles are to be observed for conformance to purchase order requirements and attention should be paid to the presence of a quality assurance mark in the tip and butt of each pole.

Model Specification for Wolmanized® Extra® Poles

1. SCOPE

1.1

This specification applies to material purchased by _____

1.2

This specification covers the materials and processes to be used in the Wolman® pressure treatment of pine poles with chromated copper arsenate (CCA) and the proprietary emulsified paraffin water repellent additive, Extra®.

1.3

The length and class of poles shall be stated in the purchase order or releases.

1.4

The procedures and requirements of AWPA (latest edition) and ANSI 05.1 (latest revision), except as modified herein or in purchase orders shall apply.

1.5

Timber Products Inspection (TP) or an agency authorized by Arch shall perform the inspection of the Extra® pole additive system.

2. MATERIAL REQUIREMENTS

2.1 Species

This specification covers pines as listed in ANSI 05.1, and AWPA (latest editions). All poles shall be cut from live dense trees.

2.2 Standards and Procedures

All poles shall conform to the requirements of ANSI 05.1 and AWPA (latest editions) unless noted on the individual purchase order or release.

2.2.1 Framing

The framing shall be in accordance with the purchase order requirements.

2.2.2 Marking

Poles shall be marked per purchase order requirements. The letters “EP” are to be included in the brand of those poles treated with the Wolman® Extra® treating solution.

2.2.3 Size

When poles are sized prior to seasoning, a reasonable shrinkage rate should be anticipated (2%) to assure that minimum circumference requirements will be met when the pole reaches its equilibrium moisture content.

2.3 Storage

2.3.1 Untreated material

All untreated material should be processed in an expedient manner to avoid decay and insect attack. Material should be date controlled during processing to assure an appropriate rotation of stock to avoid unnecessary exposure to decay and/or insects. Materials may be sprayed with a fungicide that will not effect treatability. The fungicide shall contain a coloring agent to indicate that the pole has been sprayed.

2.3.2 Treated Material

Treated material should be stacked to avoid changes in shape. The material should be date processed and rotated to assure a first-in/first-out inventory system. The material should be stored in a manner to assure compliance to all applicable environmental regulations.

2.4 Preservative System

The preservative used shall be “Wolman®” chromated copper arsenate (CCA) type C oxide formulation and shall meet the criteria of AWPA Standard P5 (latest edition). Testing to establish conformity shall be in accordance with AWPA Standards A2 (latest edition).

2.5 Climability Additive Systems

The Wolman® Extra® working solution shall meet the minimums and be analyzed at least twice per month as established in the “Manual of Recommended Practice for Wolman® Extra® Additive.”

2.6 Conditioning

All poles are to kiln dried in accordance with ANSI 05.1 (latest edition) standard. The drying process is to be sufficient to assure that moisture is removed for proper treatment and that sterilization of the wood poles occurs. Care should be taken to include only like size poles in a charge to assure that adequate drying as well as sterilization occurs.

2.6.1 Moisture Content

The moisture content of poles shall be 28% or less as measured in the sapwood zone, two to three inches from the surface.

2.6.2 Moisture Content Determination

Cores shall be taken from 20 randomly selected poles within a kiln charge. The sampling zone is the third inch of the pole’s sapwood, taken at a point one foot above the ANSI 05.1 ground line. Samples with heartwood shall have it removed before being included in the composite sample. The moisture content shall be determined by an oven dry method such as those in ASTM D4442 (latest edition).

3.0 TREATMENT

Only material that has been inspected, accepted and marked conforming on their tips shall be preservative treated.

3.1 Preservative

All poles shall be treated with Wolman® Extra® solution in accordance with AWPA Standard C1 and C4 (latest edition), except as modified or supplemented in the purchase order.

4.0 RESULTS OF TREATMENT

4.1 Preservative System Retention

The retention of Wolman® CCA shall be in accordance with AWPA Standard A2 or A9 (latest edition). The required retention is 0.60 lbs. per cubic foot in the assay zone. This assay will be based on 20 cores taken within one foot of the butt from different poles within one cylinder charge.

4.2 Preservative System Penetration

The penetration of CCA shall be in accordance with AWPA C1 and C4.

5.0 FINAL ACCEPTANCE

Poles meeting the above treating requirements shall be hammer marked in the butt to acknowledge their acceptance by the approved quality assurance system. Upon receipt, all poles are to be observed for conformance to purchase order requirements and attention should be paid to the presence of a quality assurance mark in the tip and butt of each pole.

The CCA Pole Dimension Table

Class	H-4	H-3	H-2	H-1	1	2	3	4	5	6	7	9	10	
Minimum Circumference at Top (inches)	35	33	31	29	27	25	23	21	19	17	15	15	12	
	Length of Pole (ft.)				Minimum Circumference at 6 feet from butt (inches)									
Southern Pine	20	—	—	—	—	31.0	29.0	27.0	25.0	23.0	21.0	19.5	17.5	14.0
	25	—	—	—	—	33.5	31.5	29.5	27.5	25.5	23.0	21.5	19.5	15.0
	30	—	—	—	—	36.5	34.0	32.0	29.5	27.5	25.0	23.5	20.5	—
	35	—	—	43.5	41.5	39.0	36.5	34.0	31.5	29.0	27.0	25.0	—	—
	40	51.0	48.5	46.0	43.5	41.0	38.5	36.0	33.5	31.0	28.5	—	—	—
	45	53.5	51.0	48.5	45.5	43.0	40.5	37.5	35.0	32.5	30.0	—	—	—
	50	55.5	53.0	50.5	47.5	45.0	42.0	39.0	36.5	34.0	—	—	—	—
	55	58.0	55.0	52.0	49.5	46.5	43.5	40.5	38.0	—	—	—	—	—
	60	59.5	57.0	54.0	51.0	48.0	45.0	42.0	39.0	—	—	—	—	—
	65	61.5	58.5	55.5	52.5	49.5	46.5	43.5	40.5	—	—	—	—	—
	70	63.5	60.5	57.0	54.0	51.0	48.0	45.0	41.5	—	—	—	—	—
	75	65.0	62.0	59.0	55.5	52.5	49.0	46.0	—	—	—	—	—	—
	80	66.5	63.5	60.0	57.0	54.0	50.5	47.0	—	—	—	—	—	—
	85	68.0	65.0	61.5	58.5	55.0	51.5	48.0	—	—	—	—	—	—
	90	69.5	66.5	63.0	59.5	56.0	53.0	49.0	—	—	—	—	—	—
95	71.0	67.5	64.5	61.0	57.0	54.0	—	—	—	—	—	—	—	
100	72.5	69.0	65.5	62.0	58.5	55.0	—	—	—	—	—	—	—	
105	74.0	70.5	67.0	63.0	59.5	56.0	—	—	—	—	—	—	—	
110	75.0	71.5	68.0	64.5	60.5	57.0	—	—	—	—	—	—	—	
115	76.5	72.5	69.0	65.5	61.5	58.0	—	—	—	—	—	—	—	
120	77.5	74.0	70.0	66.5	62.5	59.0	—	—	—	—	—	—	—	
125	78.5	75.0	71.0	67.5	63.5	59.5	—	—	—	—	—	—	—	
Jack Pine, Red Pine, Lodgepole Pine	20	—	—	—	—	32.5	30.5	28.5	26.5	24.5	22.5	21.0	18.0	14.5
	25	—	—	—	—	36.0	33.5	31.0	29.0	27.0	25.0	23.0	20.0	15.5
	30	—	—	—	—	39.0	36.5	34.0	31.5	29.0	27.0	25.0	21.0	—
	35	—	—	—	—	41.5	38.5	36.0	33.5	31.0	28.5	26.5	—	—
	40	—	—	—	—	44.0	41.0	38.0	35.5	33.0	30.5	—	—	—
	45	—	—	—	—	46.0	43.0	40.0	37.0	34.5	32.0	—	—	—
	50	—	—	—	—	48.0	45.0	42.0	39.0	36.0	—	—	—	—
	55	—	—	—	—	49.5	46.5	43.5	40.5	—	—	—	—	—
	60	—	—	—	—	51.5	48.0	45.0	42.0	—	—	—	—	—
	65	—	—	—	—	53.0	49.5	46.0	43.0	—	—	—	—	—
	70	—	—	—	—	54.5	51.0	47.5	44.5	—	—	—	—	—
	75	—	—	—	—	56.0	52.5	49.0	—	—	—	—	—	—
	80	—	—	—	—	57.5	54.0	50.5	—	—	—	—	—	—
	85	—	—	—	—	58.5	55.0	51.5	—	—	—	—	—	—
	90	—	—	—	—	60.0	56.5	52.5	—	—	—	—	—	—
Ponderosa Pine & Western Red Cedar*	20	—	—	—	—	33.5	31.5	29.5	27.0	25.0	23.0	21.5	18.5	15.0
	25	—	—	—	—	37.0	34.5	32.5	30.0	28.0	25.5	24.0	20.5	16.5
	30	—	—	—	—	40.0	37.5	35.0	32.5	30.0	28.0	26.0	22.0	—
	35	—	—	48.0	45.5	42.5	40.0	37.5	34.5	32.0	30.0	27.5	—	—
	40	56.5	53.5	51.0	48.0	45.0	42.5	39.5	36.5	34.0	31.5	—	—	—
	45	59.0	56.0	53.5	50.5	47.5	44.5	41.5	38.5	36.0	33.0	—	—	—
	50	61.5	58.5	55.5	52.5	49.5	46.5	43.5	40.0	37.5	—	—	—	—
	55	64.0	61.0	57.5	54.5	51.5	48.5	45.0	42.0	—	—	—	—	—
	60	66.0	63.0	59.5	56.5	53.5	50.0	46.5	43.5	—	—	—	—	—
	65	68.0	65.0	61.5	58.5	55.0	51.5	48.0	45.0	—	—	—	—	—
	70	70.0	67.0	63.5	60.0	56.5	53.0	49.5	46.0	—	—	—	—	—
	75	72.0	68.5	65.0	61.5	58.0	54.5	51.0	—	—	—	—	—	—
	80	74.0	70.5	67.0	63.0	59.5	56.0	52.0	—	—	—	—	—	—
	85	75.5	72.0	68.5	64.5	61.0	57.0	53.5	—	—	—	—	—	—
	90	77.0	73.5	70.0	66.0	62.5	58.5	54.5	—	—	—	—	—	—
95	79.0	75.0	71.5	67.5	63.5	59.5	—	—	—	—	—	—	—	
100	80.5	76.5	72.5	69.0	65.0	61.0	—	—	—	—	—	—	—	
105	82.0	78.0	74.0	70.0	66.0	62.0	—	—	—	—	—	—	—	
110	83.5	79.5	75.5	71.5	67.5	63.0	—	—	—	—	—	—	—	
115	84.5	80.5	76.5	72.5	68.5	64.0	—	—	—	—	—	—	—	
120	86.0	82.0	78.0	74.0	69.5	65.0	—	—	—	—	—	—	—	
125	87.5	83.0	79.0	75.0	70.5	66.0	—	—	—	—	—	—	—	

*Dimensions of H Classes are applicable for western red cedar only.
ANSI 05.1



Weight of Southern Pine Poles

(weight in pounds immediately after treatment with CCA-C)

Length (ft.)	Class						
	1	2	3	4	5	6	7
25	933	805	702	610	525	439	390
30	1244	1086	939	811	708	616	525
35	1598	1391	1202	1043	903	781	677
40	1989	1720	1495	1293	1122	970	—
45	2428	2080	1800	1562	1354	1177	—
50	2843	2464	2135	1854	1604	—	—
55	3312	2873	2489	2159	—	—	—
60	3818	3306	2867	2482	—	—	—
65	4337	3757	3257	2842	—	—	—
70	4886	4239	3672	3184	—	—	—
75	5459	4739	4105	—	—	—	—

Estimating weight reduction from drying

Summer drying conditions

subtract 2 percent per week for up to 12 weeks

Winter drying conditions

subtract 1 percent per week for up to 24 weeks when above freezing

Volume of Southern Pine Poles

(cubic feet)

Length (ft.)	Class						
	1	2	3	4	5	6	7
25	15.3	13.2	11.5	10.0	8.6	7.5	6.4
30	20.4	17.8	15.4	13.3	11.6	10.1	8.6
35	26.2	22.8	19.7	17.1	14.8	12.8	11.1
40	32.6	28.2	24.5	21.2	18.4	15.9	—
45	39.3	34.1	29.5	25.6	22.2	19.3	—
50	46.6	40.4	35.0	30.4	26.3	—	—
55	54.3	47.1	40.8	35.4	—	—	—
60	62.6	54.2	47.0	40.7	—	—	—
65	71.1	61.6	53.4	46.4	—	—	—
70	80.1	69.5	60.2	52.2	—	—	—
75	89.5	77.7	67.3	—	—	—	—

50-Year Wolmanized® Wood Pole Warranty

The following warranty is available as an option for Wolmanized, Wolmanized ET, and Wolmanized Extra poles. Contact a licensed producer for details

This Agreement is made the _____ day of _____ year, by and between Arch Wood Protection (“Arch”), whose address is 1955 Lake Park Drive, Suite 250, Smyrna, GA 30080, and (“Purchaser”), whose address is:

WHEREAS, Arch manufactures the wood additive utilized by its licensed treaters to produce Wolmanized® CCA, Wolmanized® ET® and Wolmanized® Extra® pressure treated Southern Pine, Red Pine or Western Red Cedar wood poles and stubs (individually, a “Wolmanized® Wood Pole” and collectively, the “Wolmanized® Wood Poles”); and

WHEREAS, Arch desires to encourage the purchase of Wolmanized® Wood Poles by offering to extend the warranty provided for in this Agreement in consideration for the fees established in this Agreement; and

WHEREAS, Purchaser desires to purchase Wolmanized® Wood Poles that are warranted by Arch in accordance with this Agreement and is willing to pay the fees established in this Agreement in consideration of such warranty;

NOW, THEREFORE, for and in consideration of the premises, the mutual covenants hereinafter set forth and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. **Warranty.** Subject to the terms and conditions of this Agreement, Arch warrants that each Wolmanized® Wood Pole purchased during the term of this Agreement, by Purchaser from an Arch licensed treater, will not be structurally unfit for its original specified use (as defined by the National Electric Safety Code for the year of manufacture) due to damage by termite attack or fungal decay.

2. **Duration and Transferability.** This warranty is good for a period of fifty (50) years after the date of treatment of the applicable Wolmanized® Wood Pole. This warranty is transferable, and covers the original and all subsequent owners of the warranted Wolmanized® Wood Pole.

3. **What this Warranty Covers.** In the event of a valid warranty claim with respect to termite attack or fungal damage, Arch will reimburse all labor and material costs reasonably incurred in removing and replacing the damaged pole up to a maximum reimbursement of \$1,200 U.S. Dollars for each pole that is 50 feet or less in length, and up to a maximum reimbursement of \$2,000 U.S. Dollars for each pole that is more than 50 feet in length.

4. **What this Warranty Does Not Cover.** Arch’s warranty does not cover and Arch shall not be liable for:

- (a) any damage to a Wolmanized® Wood Pole placed in service outside of North America;
- (b) any damage to a Wolmanized® Wood Pole that does not bear each of the following marks: (i) a brand mark of the treater which incorporates the mark of Wood Quality Control, Inc., and (ii) the mark of an inspection agency accredited by the Wood Quality Control, Inc. for supervisory and lot inspection of pressure-treated poles and stubs;
- (c) any damage to a Wolmanized® Wood Pole whose identification has been altered, effaced or removed;
- (d) any fungal decay or termite damage resulting from causes beyond the control of Arch, including: fire, woodpecker damage, improper storage or installation, tampering, modification, negligence, wrongful acts or omissions, abuse or poor design; an accident caused in transit or resulting from sudden occurrences of natural forces including but not limited to, flood, lightning, windstorm, or frozen precipitation; alteration from ordered specifications;
- (e) the natural characteristic of wood to suffer surface weathering and erosion;
- (f) any punitive, exemplary or aggravated damages; any damage for failure to realize expected savings, loss of use or lack of availability; or any direct, indirect, incidental, consequential or special damages, in each case whether based in contract, in tort or otherwise.

Nor, in any event, shall Arch or any of its officers, directors, employees and agents be liable for any damage whatsoever where Section 5 has not been strictly complied with.

5. **How to Make Claims.** All warranty claims must be made in writing to Arch prior to the lapse of the warranty period and within thirty (30) days after discovery of a pole failure. Each claim will be supplemented with such supporting documentation as Arch may reasonably request. At Arch’s request, Arch and its representatives and agents must be permitted to inspect and test the damaged pole to verify the warranty claim.

6. **No Implied Warranties.** THIS AGREEMENT SETS FORTH ARCH’S SOLE AND EXCLUSIVE WARRANTY FOR WOLMANIZED® WOOD POLES AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. PURCHASER’S RIGHTS ARE LIMITED TO THOSE SET FORTH IN THIS AGREEMENT. ARCH DISCLAIMS ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

7. **Term and Termination.** This Agreement shall continue until terminated, with or without cause, by either party upon not less than thirty (30) days’ prior written notice to the other. In the event this Agreement is terminated, Arch will continue to honor valid claims under this Agreement with respect to Wolmanized® Wood Poles purchased by Purchaser prior to termination.

8. **Fees.** In consideration of the warranty extended by Arch pursuant to this Agreement, Purchaser shall pay to Arch a fee of \$.06 per linear foot for each Wolmanized® Wood Pole purchased during the term of this Agreement (the “Warranty Fee”). The Warranty Fee will be invoiced by and paid to the Arch-authorized treater from whom Purchaser acquires the Wolmanized® Wood Pole. The Warranty Fee shall be due at the same time as payment is due for the purchase of the Wolmanized® Wood Pole. Arch reserves the right to adjust the Warranty Fee or the manner in which such fee is invoiced and paid, at any time and from time to time; provided, however, that no such adjustment or change in billing or payment procedures will be implemented without Purchaser’s consent unless Arch gives Purchaser at least thirty (30) days’ prior written notice. Any adjustment in the Warranty Fee or the manner in which such fee is invoiced or paid shall not affect purchase orders submitted by Purchaser prior to the effective date of such adjustment or change in billing or payment procedures.

9. **Notice.** All notices or other communications required or permitted under this Agreement shall be in writing and personally delivered, or mailed by registered or certified mail, return receipt requested, postage prepaid, to the addresses designated in the preamble of this Agreement or to such other address or addresses as may hereafter be furnished by one party to the other party in compliance with the terms of this Section 9. All such notices and communications shall be deemed to be given for purposes of this Agreement on the day such writing is received by the intended recipient thereof.

10. **Applicable Law.** This Agreement shall be governed by the laws of the State of Georgia, USA, without regard to principles of conflicts of laws. In all matters, proceedings and suits arising under or in connection with this Agreement, jurisdiction shall lie exclusively with the federal and state courts located in the State of Georgia, the parties irrevocably consenting to such exclusive jurisdiction.

11. **Entire Agreement.** This Agreement includes the complete and exclusive agreement between Purchaser and Arch with respect to the subject matter hereof and supersedes any and all prior oral or written representations or agreements made by or between them. This Agreement may not be amended except by a written amendment signed by authorized officers of each party.

Glow Control in CCA Poles

CCA poles are typically more difficult to ignite than poles preserved with other treatments, but they are also more difficult to extinguish. There has been concern over the “glowing” characteristics of these poles when they are involved in hot fires. After a fire is externally extinguished, the outside of the CCA pole is charred at the base like other treated poles, but the CCA preservative in the pole can remain hot enough to cause a slow burn or “glow” of the interior wood.

It is believed that checks and resin in the heartwood may contribute to the condition. The term “glow” is used because there are no actual flames inside the pole, but the wood contains hot embers that continue to destroy the wood, much like a cigarette or charcoal. The char on the outside of the pole can act as an insulator holding in the heat, while checks can help to provide oxygen by forming “chimneys.” If the conditions are right and the pole is not attended to, the pole can become completely consumed by the slow-burning fire.

Testing has indicated that in outdoor fires, smoke exposure from CCA treated wood is no more hazardous than the smoke from untreated wood. However, as with untreated wood, the inhalation of the smoke should be avoided.

If a CCA pole has been in a fire it is important to take precautions to prevent additional damage to the pole:

1. Drench the burned portion of the pole with large amounts of water or coat the area completely with a fire extinguishing medium. Be sure to inject it into the checks, at and above the burn area.
2. Scrape and remove any loose or charred wood from the burnt portions of the pole.
3. Again drench the pole, mindful that the water or extinguishing material needs to be applied into any openings of the pole surface to reach the hot interior areas.
4. Re-inspect the pole the next day to assure that wood is not hot and that no further charring of the wood has occurred. Evaluate the amount of wood loss, since this could effect the remaining strength of the pole according to the National Electric Safety Code for remaining in service.
5. Soak the pole again on the surface and within the checks.

If it is necessary to remove extinguished poles from service, discard them in accordance with state and local regulations. When these steps are followed, CCA poles should present no special problems after a fire.

Disposal of CCA-Treated Poles

Following removal from service, treated wood poles should be disposed of in accordance with federal and state requirements.

Used CCA poles are not classified as a hazardous waste and can be taken to landfills that accept material of such type and size. (Refer to 40 Code of Federal Regulations sections 261.4 exclusions.)

Used poles can be burned but only in commercial or industrial incinerators or boilers in compliance with government regulations.

If used poles are sold or made available to interested parties at no charge, a copy of the Consumer Safety Information Sheet, describing proper use and handling, should be given to anyone accepting poles. Many utilities also require recipients to sign a release form that indemnifies the utility against future liability, costs, and judgments.

Consumer Safety Information Sheet

*For additional information,
call toll-free at 1-800-282-0600
or visit www.ccasafetyinfo.com.*

Inorganic Arsenical Pressure-Treated Wood (including CCA, ACA, and ACZA)

Consumer Information

This wood has been preserved by pressure-treatment with an EPA-registered pesticide containing inorganic arsenic to protect it from termite attack and decay. Wood treated with inorganic arsenic should be used only where such protection is important.

Inorganic arsenic penetrates deeply into and remains in the pressure-treated wood for a long time. However, some chemical may migrate from treated wood into surrounding soil over time and may also be dislodged from the wood surface upon contact with skin. Exposure to inorganic arsenic may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use and dispose of the treated wood.

Use Site Precautions

All sawdust and construction debris should be cleaned up and disposed of after construction.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be use of mulch from recycled arsenic-treated wood, cutting boards, counter tops, animal bedding, and structures or containers for storing animal feed or human food.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with honey.

Treated wood should not be used where it may come into direct or indirect contact with drinking water, except for uses involving incidental contact such as docks or bridges.

Handling Precautions

Dispose of treated wood by ordinary trash collection. Treated wood should not be burned in open fires or in stoves, fireplaces or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing, sanding, and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations or airborne sawdust from treated wood.

When power-sawing and machining, wear goggles to protect eyes from flying particles.

Wear gloves when working with the wood. After working with the wood, and before eating, drinking, toileting, and use of tobacco products, wash exposed areas thoroughly.

Because preservatives or sawdust may accumulate on clothes, they should be laundered before reuse. Wash work clothes separately from other household clothing.

Measurement of sweep and short crook in poles from ANSI 05.1-2002

Diagram 1 — Measurement of sweep in one plane and one direction

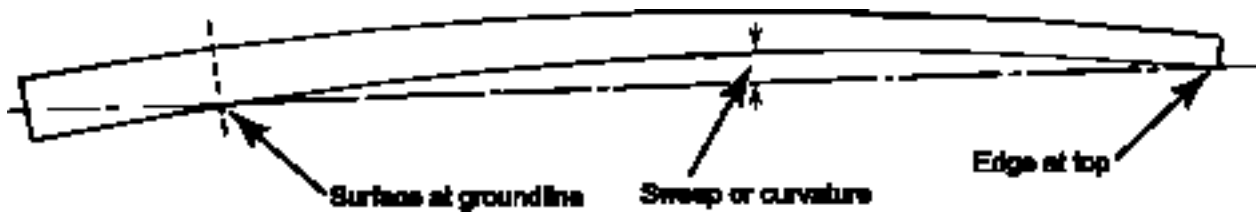


Diagram 2 — Measurement of sweep in two planes (double sweep) or in two directions in one plane (reverse sweep)

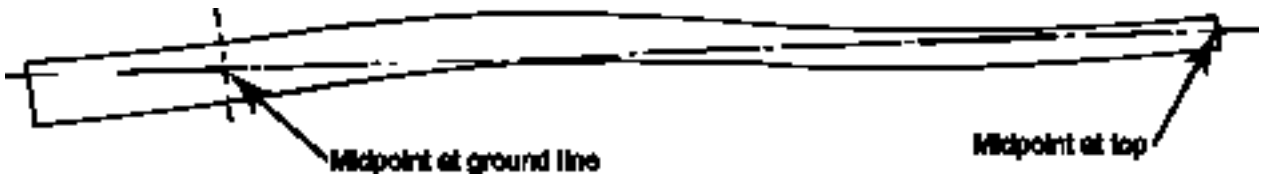
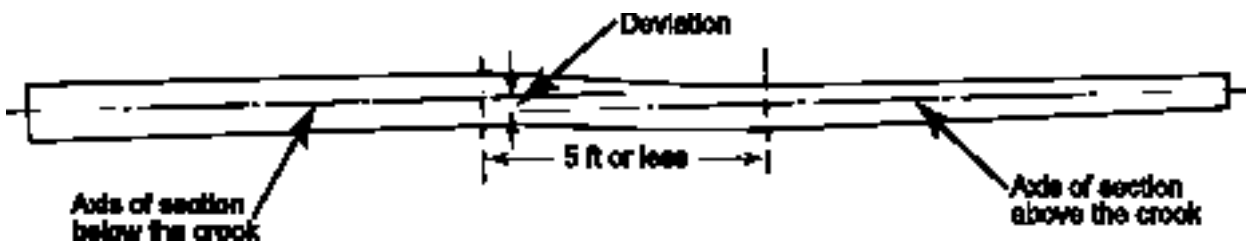
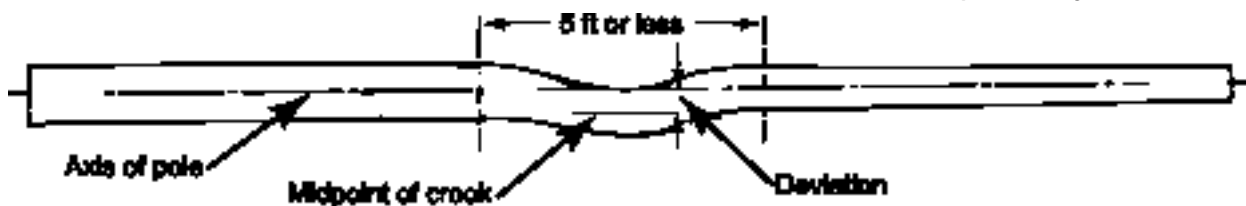


Diagram 3 — Measurement of short crook (three cases shown)

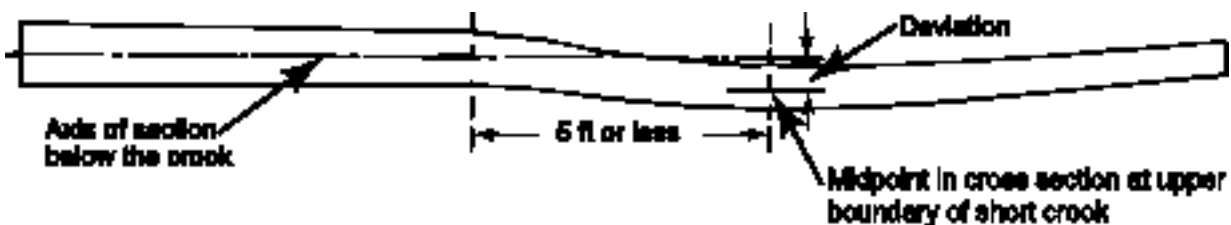
Case 1 — Where the reference axes are approximately parallel



Case 2 — Where axes of sections above and below the crook coincide or are practically coincident



Case 3 — Where axis of section above short crook is not parallel or coincident with axis below the crook



Fiber stress of typical pole species¹

		psi
Cedar, western red	Thuja plicata	6000
Pine, jack	Pinus banksiana	6600
Pine, lodgepole	Pinus contorta	6600
Pine, ponderosa	Pinus ponderosa	6000
Pine, red	Pinus resinosa	6600
Pine, Scots	Pinus sylvestris	8000
Pine, southern		
Loblolly	Pinus taeda	8000
Longleaf	Pinus palustris	8000
Shortleaf	Pinus echinata	8000
Slash	Pinus elliottii	8000

¹per ANSI 05.1 - 2002 based on kiln drying

Sources of More Information

American National Standard Institute

11 West 42nd Street
New York, NY 10036
212-642-4900
www.ansi.org

American Wood Preservers Institute

2750 Prosperity Avenue, Suite 550
Fairfax, VA 22031-4312
703-240-0500
www.preservedwood.com

American Society for Testing & Materials

100 Bar Harbor Drive
West Coshohocken, PA 19428
610-832-9500
www.astm.org

Canadian Standards Association

178 Rexdale Boulevard
Etobicoke, Ontario M9W 1R3
416-747-4044
www.csa.ca

American Wood-Preservers' Association

PO Box 5690
Granbury, TX 76049
817-326-6300
www.awpa.com

Rural Utility Services (formerly REA)

1400 Independence Avenue SW
Washington, DC 20250
Mailstop 1569
Distribution: 202-720-5082
Transmission: 202-720-0486
www.usda.gov/rus

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Smyrna, GA 30080
770-801-6600
www.wolmanizedwood.com