



Technical Data



CCA & ACZA Treated Poles

- Wolmanized® Poles
- Wolmanized® ET® Poles
- Chemonite® Poles



Table of Contents

Wolmanized® Family of Products	3
Model Specifications:	
CCA Poles	4
ET® Poles	6
ACZA Poles	8
Pole Dimensions	10
Weights and Volumes	11
Warranty	12
Glow Control	13
Disposal	13
Consumer Safety Information Sheet	14
ANSI Requirements	15
Fiber Stress of Typical Species	16

The Family of 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.

A respected environmental consulting firm, Gradient Corporation, conducted a human health risk assessment on children who play near CCA poles and workers with exposure to these poles. The assessment found less intake of inorganic arsenic from poles than from normal intake of food and drinking tap water. The report is available in printed and electronic formats.

Wolmanized® CCA 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 lasting value of ET® Poles

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

	9-Year Trial 1997	14-Year Trial A 2002	14-Year Trial B 2002	20-Year Trial 2008
CCA	4.8	5.5	4.6	5.6
Penta	7.2	7.0	—	7.6
CCA ET	7.6	7.3	6.8	7.6

All poles were installed in 1988. The 9-year evaluation was done by climbers from Carolina Power & Light; the 14-year evaluation by climbers from Georgia Power Company; 20-year evaluations by climbers from Snapping Shoals EMC, Mid-Carolina Cooperative, and EnergyUnited.

Chemonite® Poles

Chemonite® is the registered trade name for wood protected by ACZA, ammoniacal copper zinc arsenate, against termites and fungal decay. The treatment was originally developed, and remains today, as a waterborne system which can consistently meet recognized standards of penetration and retention in otherwise difficult-to-treat wood such as coastal Douglas fir.

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 O5.1 (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 O5.1, 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 O5.1 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 O5.1 (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.

Wolmanized® CCA Poles

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 O5.1 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 AWWA Standard U1, Commodity Specification D (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 AWWA 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 AWWA U1, Commodity Specification D.

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.

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 O5.1 (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 O5.1, 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 O5.1 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).

Wolmanized® ET® Poles

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 O5.1 (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 O5.1 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 AWP Standard U1, Commodity Specification D (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 AWP 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 brand 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 AWP U1, Commodity Specification D.

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.

Chemonite® ACZA 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 pressure treatment of poles with ammoniacal copper zinc arsenate (ACZA).

1.3

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

1.4

The procedures and requirements of applicable AWPA Standards (latest edition) and ANSI O5.1 (latest revision), except as modified herein or in purchase orders shall apply.

2. MATERIAL REQUIREMENTS

2.1 Untreated Poles

Only those species listed in the T1-09 Section D or later edition of the AWPA Standards will be acceptable for poles to be treated under this specification.

2.1.1 Species

This specification covers species listed in ANSI O5.1 and AWPA (latest editions) treatable with ACZA. All poles shall be cut from live dense trees.

2.1.2 Standards and Procedures

All poles shall conform to the requirements of ANSI O5.1 and AWPA (latest editions) unless noted on the individual purchase order or release.

2.1.3 Framing

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

2.1.4 Marking

Poles shall be marked per purchase order requirements.

2.1.5 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.

2.1.6 Conformance

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

2.2 Preservative System

The preservative used shall be Chemonite® ammoniacal copper zinc arsenate (ACZA) formulation and shall meet the criteria of AWPA Standard P22-08 (latest edition). Testing to establish conformity shall be in accordance with appropriate AWPA Standard Methods found in A2, A9, or A21 (latest edition) as determined and agreed upon to be acceptable.

2.3 Penetration Improvement

Many Western US pole species have limited treatable sapwood and may be required to have incising, radial drilling or through-boring to meet penetration criteria in the pole. This mechanical processing is to be conducted as a part of the framing process prior to drying or treating. The penetration improvement method (PIM) is to be specified by the purchaser.

Chemonite® ACZA Poles

3. STORAGE

3.1 Untreated material

All untreated material should be processed in an expedient manner to avoid decay and insect attack. Material shall 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 affect treatability. The fungicide shall contain a coloring agent to indicate that the pole has been sprayed.

3.2 Treated Material

Treated material should be stacked to avoid changes in shape. The material shall 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.

4. Conditioning

All poles are to be kiln dried or steam conditioned in accordance with ANSI O5.1 (latest edition) and AWWA T1-09 D2 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.

4.1 Moisture Content

The moisture content of poles shall be 28% or less as measured in the last full inch of sapwood away from the surface.

4.2 Moisture Content Determination

Cores shall be taken from 20 randomly selected poles within a kiln charge. The sampling zone is the last full inch of the pole's sapwood, taken at a point one foot above the ANSI O5.1 ground line. No heartwood shall be included in the composite sample. The moisture content shall be determined by an oven dry method such as those in ASTM D 4442 (latest edition).

5. TREATMENT

5.1 Preservative

All poles shall be treated with Chemonite® ACZA in accordance with AWWA Standard U1, Commodity Specification D (latest edition), except as modified or supplemented in the purchase order.

5.2 Process

Poles shall be treated in accordance with AWWA Standard T1, Sections 1 - 8 D.

6. RESULTS OF TREATMENT

6.1 Miscellaneous Standards

AWWA Standards M1, M2 and M3 as applicable to the purchaser and producer of the treated materials will be considered a part of this specification.

6.2 Preservative Retention

The required retention in wood is 0.60 lbs. per cubic foot of ACZA in the assay zone. This assay will be based on 20 cores taken within one foot of the brand from different poles within one cylinder charge. The retention shall be determined in accordance with AWWA Standard A2, A9 or A21 (latest edition).

6.3 Preservative Penetration

The penetration of ACZA shall be in accordance with AWWA U1, Commodity Specification D.

7. FINAL ACCEPTANCE

Poles meeting the above treating requirements shall be hammer-marked on the tip and 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 any pole not showing the presence of a quality assurance mark on the tip and butt of each pole will not be accepted in the order.

Pole Dimension Table (ANSI O5.1)

Class	H-4	H-3	H-2	H-1	1	2	3	4	5	6	7	9	10	
Minimum Circumference at Top (in.)	35	33	31	29	27	25	23	21	19	17	15	15	12	
	Length of Pole (ft.)	Minimum Circumference at 6 ft. from butt (in.)												
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	40.5	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.

Weight & Volume of Southern Pine Poles

Weight of Southern Pine Poles (approximate 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 Limited Treated Wood Pole Warranty

The following warranty is available as an option for poles. Contact licensed producer for details.

This warranty extends ONLY to the owner of the Wolmanized® CCA-treated pole or crossarm, and is good for fifty (50) years from the date of first purchase. Subject to the terms, conditions and limitations contained in this Warranty, Arch Wood Protection, Inc. (“Warrantor”) warrants to the owner of a Wolmanized® CCA-treated wood pole or crossarm that for a period of 50 years following the date of original purchase such pole or crossarm will not suffer damage caused by termites or fungal decay that makes the pole or crossarm structurally unfit for the application for which it was intended (as defined by the National Electric Safety Code for the year of manufacture). In the event of a valid warranty claim, the owner of the pole or crossarm will be entitled, as the sole and exclusive remedy, to reimbursement of the original price paid for the non-conforming Wolmanized® wood pole or crossarm. To obtain approval for reimbursement under the warranty, the owner must send, within 30 days of discovery of the damage covered hereunder, the original purchase invoice, or other proof showing that the Wolmanized pole or crossarm was purchased from Warrantor’s licensee or its authorized supplier, to the Warrantor at:

Wolmanized® CCA-Treated Wood Poles
Warranty Claim Administrator
Arch Wood Protection, Inc.
5660 New Northside Drive NW, Ste 1100
Atlanta, GA 30328

Before approving any warranty claim, Warrantor may require owner to send photographs and pieces of damaged wood. In addition, at the Warrantor’s request, the Warrantor and its representatives and agents must be permitted to inspect and test the damaged structure to determine the validity of the warranty claim.

Notwithstanding any provision hereof to the contrary, Warrantor shall NOT be liable hereunder for any of the following: (a) damage to any Wolmanized pole or crossarm resulting from any cause other than termites or fungal decay; (b) damage to any Wolmanized pole or crossarm that has been used in a non-utility structure or a structure outside of North America or used for an application or in a way that is not consistent with its intended end use (as defined by the National Electric Safety Code for the year of manufacture); (c) damage to any Wolmanized pole or crossarm that was not pressure-treated in accordance with the American Wood

Protection Association (AWPA) Standard U1; or (d) damage to any Wolmanized pole or crossarm that does not bear (i) a brand or tag that incorporates the name of the Wolmanized wood pole or crossarm producer including month/year of production with quality assurance program marks (if applicable) and (ii) the mark(s) of a quality assurance program or an independent inspection agency showing acceptance to AWPA Standard U1.

The warranty does not cover, and Warrantor shall not be responsible for, installation, repair, construction, labor or similar costs, or for any costs or damage which may be associated with the natural characteristic of some wood to split, crack, warp, twist, weather or erode.

BY PURCHASING OR ACCEPTING OWNERSHIP OF A WOLMANIZED WOOD POLE OR CROSSARM, OWNER ACCEPTS AND ACKNOWLEDGES, AND WARRANTOR HEREBY STATES, THAT THIS WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY AND REPLACES ALL OTHER REPRESENTATIONS, WARRANTIES, GUARANTEES, TERMS, COVENANTS, AGREEMENTS, PROMISES, COMMITMENTS, DUTIES OF CARE OR CONDITIONS, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH WARRANTOR HEREBY SPECIFICALLY DISCLAIMS, AND THERE ARE NO OTHER REPRESENTATIONS WHATSOEVER WITH RESPECT TO WOLMANIZED WOOD POLES OR CROSSARMS EXCEPT THE LIMITED WARRANTY GIVEN HEREUNDER. ONLY THE WARRANTOR IS LIABLE UNDER THIS LIMITED WARRANTY AND ITS DIRECTORS, OFFICERS, EMPLOYEES AND AGENTS SHALL HAVE NO LIABILITY OF ANY KIND WITH RESPECT TO THE PURCHASE OR USE OF WOLMANIZED WOOD POLES OR CROSSARMS.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL WARRANTOR BE RESPONSIBLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER, HOWSOEVER CAUSED AND WHETHER OR NOT DUE TO ANY DEFICIENCY OR NEGLIGENCE IN MANUFACTURING, AND WHETHER OR NOT RELATING TO LOSS, DAMAGE, DEATH OR INJURY ARISING OUT OF OR RELATING TO THE PURCHASE OR USE OF WOLMANIZED WOOD POLES OR CROSSARMS.

This warranty shall be governed by the laws of the State of Georgia, without regard to its conflict of laws rules.

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.

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 O5.1-2002

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

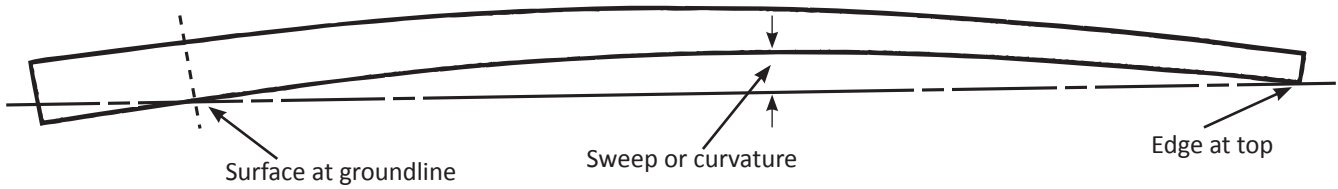
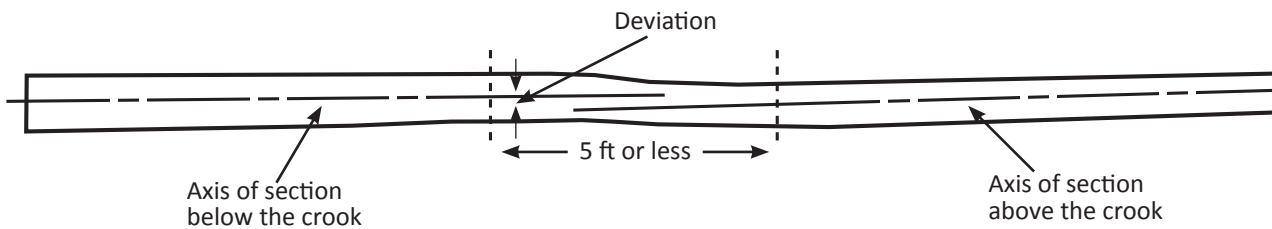


Diagram 2 — Measurement of sweep in two planes (double sweep) or in two directions in one plane (reverse sweep)

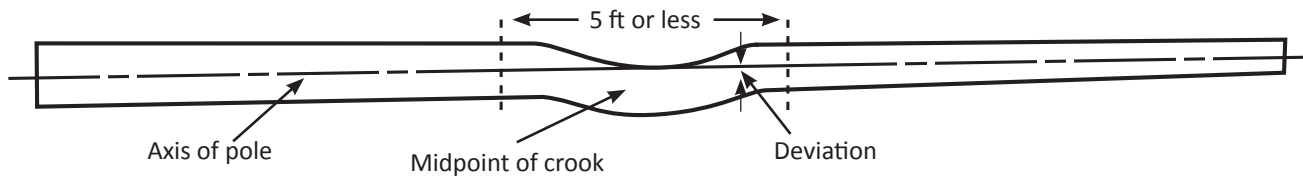


Diagram 3 — Measurement of short crook (three cases shown)

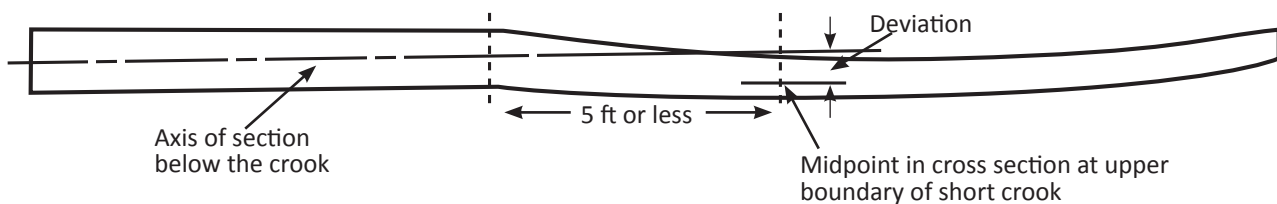
Case 1 — Where the reference axes are approximately parallel



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
Fir, Douglas	Pseudotsuga menziesii	8000
Pine, jack	Pinus banksiana	6600
Pine, lodgepole	Pinus contorta	6600
Pine, ponderosa	Pinus ponderosa	6600
Pine, red	Pinus resinosa	6000
Pine, Scots	Pinus sylvestris	8000
Pine, southern		
Loblolly	Pinus taeda	8000
Longleaf	Pinus palustris	8000
Shortleaf	Pinus echinata	8000
Slash	Pinus elliotii	8000

¹per ANSI O5.1 — based on kiln drying

Sources of More Information

American National Standard Institute

www.ansi.org

American Society for Testing & Materials

www.astm.org

American Wood Protection Association

www.awpa.com

Canadian Standards Association

www.csa.ca

Rural Utility Services (formerly REA)

www.usda.gov/rus

Arch Wood Protection, Inc.

www.WolmanizedWoodHD.com/poles