

GUIDE SPECIFICATIONS

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SECTION 07311

ASPHALT SHINGLES

Welcome to Elk=s Guide Specification System! Elk has prepared this guide specification in printed and electronic media, as an aid to specifiers in preparing written construction documents for asphalt shingles and accessories, including roll roofing for eave and valley flashing, underlayment, and roof accessory paint.

Edit entire master to suit project requirements. **Modify or add items as necessary. Delete items which are not applicable.** Words and sentences within brackets [] reflect a choice to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance, proprietary, and descriptive type specifications. Edit to avoid conflicting requirements. Editor notes to guide the specifier are included between lines of asterisks to assist in choices to be made. **They should be removed before the section is printed for use.**

This guide specification is based on the Construction Specifications Institute (CSI), Section Format standards. References to section names and numbers are based on MasterFormat 95.

For additional information contact an Elk representative at locations listed below:

REGIONAL OFFICES:

Elk Southwest Regional Office
Suite 1000
14643 Dallas Parkway
Dallas, TX 75254
888-355-5882

Elk Northern Regional Office
Post Office Box 228
Myerstown, PA 21031
800-944-4344

Elk Midwest Regional Office
Suite 300
401 Pennsylvania Pkwy
Indianapolis, IN 46280
800-226-6111

Elk Southeast Regional Office
Building 12, Suite 101
4227 Pleasant Hill Road
Duluth, GA 30096
800-655-8090

Elk Western Regional Office
Suite 120
4600 South Mill Avenue
Tempe, AZ 85282
800-791-8545

Elk Northwest Regional Office
Suite 203
1611 116th Avenue NE
Bellevue, WA 98004
877-840-7635 (toll free)

PLANT LOCATIONS:

Elk Corporation of Texas

341 King Street
Post Office Box 228
Myerstown, PA 17067
800-944-4344

Elk Corporation of Texas,
California Division
6200 Zerker Road
Post Office Box 472
Shafter, CA 83263
800-355-4968 – Tech Dept

Elk Corporation of Alabama
of Texas

4600 Stillman Boulevard
Tuscaloosa, AL 35401
800-945-5545

Elk Corporation

202 Cedar Road
Post Office Box 500
Ennis, TX 75120
800-288-6789
866-355-8324 – Tech Dept

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PART 1 GENERAL

1.1 SUMMARY

- A. Related Documents: Provisions established within General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.
- B. Section Includes: Granule-surfaced asphalt roofing shingles.

Edit the Related Sections paragraph below to suit project requirements; delete sections that will not be used.

- C. Related Sections:
 - 1. Section 07600 [] - Flashing and Sheet Metal: Flashings and roof accessories.
 - 2. Section 09900 [] - Paints and Coatings: Painting of roof accessories.
- D. Alternates:

If work of this section will affect alternate bids, retain the following subparagraph.

- 1. Refer to Section 01230 for alternatives involving work of this Section.

1.2 REFERENCES

List reference standards below that are included within the text of this section. Edit the following as required for project conditions. Dade County, Florida acceptance applies only to Prestique7 II MD, and Capstone7.

- A. American Society for Testing and Materials (ASTM)

1. D 224 Standard Specification for Smooth-Surfaced Asphalt Roll Roofing (Organic Felt).
2. D 226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
3. D 3018 Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
4. D 3161 Standard Test Method for Wind-Resistance of Asphalt Shingles.

 Products meeting ASTM D 3462 are available. Refer to individual products listed under Article 2.2. Retain the following subparagraph if a product is selected and retained for the specific project. Otherwise, delete the following paragraph.

5. [D 3462 Standard Specification for Asphalt Shingles from Glass Felt and Surfaced with Mineral Granules]
6. D 4869 Standard Specification for Asphalt-Saturated Organic Felt Shingle Underlayment Used in Roofing
7. D 3909 Asphalt Roll Roofing (Glass Mat) Surfaced with Mineral Granules.
8. E 108 Standard Test Methods for Fire Tests of Roof Coverings.

 Retain the following paragraph if the specific project requires this rating, but is not using Capstone shingles. Otherwise, delete the following paragraph.

- B. [For Prestique Gallery Collection - Dade County, Florida Acceptance No. 01-523.02.][For Prestique Plus 40 - Dade County, Florida Acceptance No. 01-0411.09.][For Prestique I 35 - Dade County, Florida Acceptance No. 01-0411.12.][For Prestique 30 - Dade County, Florida Acceptance No. 01-0411.11.][For Prestique 25 - Dade County, Florida Acceptance No. 01-0516.08.]

 Retain the following paragraph if the specific project requires this rating and is using Capstone shingles. Otherwise, delete the following paragraph.

- B. [Dade County, Florida Acceptance No. 01-0523.01.]
 C. International Congress of Building Officials (ICBO)
 1. ACI 127 Asphalt Shingles Made with Glass Felt
 2. ICBO Evaluation Report #ER-5414
 D. Underwriters Laboratories (UL)
 1. 790 Test for Fire Resistance of Roof Covering Materials.
 2. 997 Wind Resistance of Prepared Roof Covering Materials.
 E. Canadian Standards Database (CSA A123.5)

 Retain the following subparagraph for Prestique shingles.

1. A123.5-98 Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules

 Retain the following subparagraph for Capstone shingles.

1. A123.5-M90 Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules

1.3 SUBMITTALS

 Include submittal requirements below which are consistent with the scope of the project and extent of work of this section. Only request submittals which are necessary for review of design intent. Do not request submittals if drawings sufficiently describe the products of this section or if proprietary specifying

techniques are used. The review of submittals increases the possibility of unintended variations to drawings.

Insert the appropriate reference to the Division 1 section.

- A. Submit under provisions of Section 01300 [_____].
- B. Product Data: Indicate material characteristics, performance criteria, general construction, dimensions of individual components, profiles, fastening methods and locations, and installation details.
- C. Submit manufacturer's installation instructions under provisions of Section 01300 [_____].
- D. Samples: Submit 2 samples of each shingle color indicating color range and finish texture/pattern, for color selection.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

Include quality assurance requirements below which are consistent with the size and scope of the project and extent of work of this section. Only request qualification statements you intend to review, and which are necessary to establish qualifications of the product, manufacturer, or installer.

- A. Installer Qualifications: Minimum of [3] [____] years documented experience in similar sized roofing installations.
- B. Industry Standards:
 - 1. Work of this section to conform to Asphalt Roofing Manufacturers Association (ARMA) Residential Asphalt Roofing Manual.
- C. Regulatory Requirements
 - 1. Conform to applicable building code for roof assembly fire hazard requirements utilizing UL Design No. [____] for [____] hourly rating as listed in Fire Resistance Directory.]
 - 2. Fire Hazard Classification of Top Surface: UL Class A.
 - 3. Conform to building code for minimum wind uplift resistance.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with Section 01600 [_____].
- B. Packaging: Clearly mark manufacturer's name, style, type, and color of product and area of roof surface covered by package. Include manufacturer's installation instructions.
- C. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- D. Store products in weather protected environment, clear of ground and moisture. Do not double stack. Do not store near sources of heat or in direct sunlight. Systematically rotate stock so that the material that has been stored the longest will be used first.
- E. Stand roll materials on end.

1.6 PROJECT CONDITIONS

- A. Proceed with shingle installation only when existing and forecasted weather will allow work to be performed according to manufacturer's recommendations and warranty requirements, and when deck is completely dry.

1.7 WARRANTY

The following article extends the warranty period beyond the one year correction period. Verify warranty is applicable to specified product.

The limited warranty from Elk is transferable upon specified terms and conditions. Consult with Elk on how to transfer.

Select the appropriate warranty based on the selected shingle for the specific project and edit the following paragraphs accordingly.

An enhanced 110 MPH limited wind warranty is available for Prestique Plus shingles, Gallery Collection, and Capstone.
.....

Elk Starter Strip is required for enhanced 110 MPH limited wind warranty for Prestique Plus shingles. Contractor's option for inverted strip shingle is not allowed for enhanced 110 MPH limited wind warranty.

- Prestique Plus *High Definition*: 40 year Limited Warranty including 5 year Non-Prorated Umbrella Coverage and including 5 year Limited Wind Warranty at [80 MPH] [110 MPH (6 nails only with starter strip)] maximum wind velocity; including Elk hip and ridge shingles used in conjunction with Elk shingles.
- Prestique Gallery Collection: 40 year Limited Warranty including 5 year Non-Prorated Umbrella Coverage and including 5 year Limited Wind Warranty at [80 MPH] [110 MPH (6 nails only with starter strip)] maximum wind velocity; including Elk hip and ridge shingles used in conjunction with Elk shingles.
- Prestique I 35 *High Definition*: 35 year Limited Warranty including 5 year Non-Prorated Umbrella Coverage and including 5 year Limited Wind Warranty at 80 mph maximum wind velocity; including Elk hip and ridge shingles used in conjunction with Elk shingles.
- Prestique 30 *High Definition*: 30 year Limited Warranty including 5 year Non-Prorated Umbrella Coverage and including 5 year Limited Wind Warranty at 60 mph maximum wind velocity; including Elk hip and ridge shingles used in conjunction with Elk shingles.
- Prestique 25 *Raised Profile*: 25 year Limited Warranty including 5 year Non-Prorated Umbrella Coverage and including 5 year Limited Wind Warranty at 60 mph maximum wind velocity; including Elk hip and ridge shingles used in conjunction with Elk shingles.

- Capstone: 40 year Limited Warranty including 10 year Non-Prorated Umbrella Coverage and including 5 year Limited Wind Warranty at [80 MPH] [110 MPH (6 nails only with starter strip)] maximum wind velocity; including Elk hip and ridge shingles used in conjunction with Elk shingles.

- *****
- A. Submit in accordance with Section 01700 [_____].
 - B. Submit a [40] [35] [30] [25] year written limited warranty signed or printed by manufacturer agreeing to refund or replace, on a prorated basis that includes materials and application labor, asphalt shingles that fail in materials or manufacturing workmanship within the specified warranty period and [5] [10] year non-prorated Umbrella Coverage.
 - C. Submit a 5 year written limited warranty signed or printed by manufacturer agreeing to replace or, if applicable, hand seal asphalt shingles that fail due to wind blow-offs for winds up to a maximum of [110] [80] [60] miles per hour. All reasonable costs for labor and material will be covered during this period without proration.
- *****

StainGuard7 warranty and product is only available in the following states: Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Florida, Louisiana, Tennessee. Sablewood is not available with StainGuard.

In Texas, Oklahoma, Arkansas and Kentucky, StainGuard must be specified.

- [D. Submit a 10 year written limited warranty signed or printed by manufacturer agreeing to replace or clean asphalt shingles manufactured with StainGuard treatment.]

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Elk Corporation of Texas, Post Office Box 500, Ennis, Texas 75120; 800-288-6789.
- B. Elk Corporation of Alabama, 4600 Stillman Boulevard, Tuscaloosa, Alabama 35401; 800-945-5545.
- C. Elk Corporation of Texas, California Division, 6200 Zerker Road, Post Office Box 472, Shafter, California 93263; 800-355-4968.
- D. Elk Corporation of Texas, 341 King Street, Post Office Box 228, Myerstown, PA 17067; 800-944-4344.

2.2 MATERIALS

Select one paragraph A. below. Confirm availability of StainGuard products for location of project.

In Texas, Oklahoma, Arkansas and Kentucky, StainGuard must be specified.

Shingle Colors (Availability):

Prestique Shingles:

Tuscaloosa, Alabama, Plant: Antique Slate, Weatheredwood, Shakewood, Sablewood, Hickory, Barkwood**, Forest Green, Wedgewood**, Birchwood**, Sandalwood.

Ennis, Texas, Plant: Antique Slate, Weatheredwood, Shakewood, Sablewood, Hickory, Barkwood, Forest Green, Wedgewood**, Birchwood**.

Shafter, California, Plant: Antique Slate, Weatheredwood, Shakewood, Sablewood, Hickory, Barkwood, Forest Green, Aspen White.

Myerstown, Pennsylvania, Plant: Antique Slate, Weatheredwood, Shakewood, Sablewood, Hickory, Barkwood, Forest Green, Wedgewood**, Birchwood**.

Prestique Gallery Collection:

Balsam Forest, Weathered Sage, Sienna Sunset.

Capstone Shingles:

Moss Rose, Fossil Grey, Granite, and Village Green.

Check for product availability with StainGuard.

**Check for availability.

- A. Asphalt Shingles:

1. Prestique Plus *High Definition* manufactured by Elk.
2. Fiberglass base, mineral granule-surfaced type, two-ply laminated.
3. ASTM D 3018, Class A with Type I self-sealing.
4. 13-1/4 inches by 39-3/8 inches.
5. [Stain inhibitor: StainGuard by Elk.]
6. [Color: As selected by Architect from manufacturer's standard colors.]
7. Product meets requirements of ASTM D 3462.
8. [Product meets criteria for AC127, ICBO #ER-5414.]
9. [Product meets Canadian CSA A123.5.]

A. Asphalt Shingles:

1. Prestique Gallery Collection manufactured by Elk.
2. Fiberglass base, mineral granule-surfaced type, two-ply laminated.
3. ASTM D 3018, Class A with Type I self-sealing.
4. Meets requirements of Dade County, Florida Acceptance No. 01-0523.02
4. 13-1/4 inches by 39-3/8 inches.
5. [Stain inhibitor: StainGuard by Elk.]
6. [Color: As selected by Architect from manufacturer's standard colors.]
7. Product meets requirements of ASTM D 3462.
8. [Product meets criteria for AC127, ICBO #ER-5414.]
9. [Product meets Canadian CSA A123.5.]

A. Asphalt Shingles:

1. Prestique I 35 *High Definition* manufactured by Elk.
2. Fiberglass base, mineral granule-surfaced type, two-ply laminated.
3. ASTM D 3018, Class A with Type I self-sealing.
4. Meets requirements of Dade County, Florida Acceptance No. 01-0411.12.
5. 13-1/4 inches by 39-3/8 inches.
6. [Stain inhibitor: StainGuard by Elk.]
7. [Color: As selected by Architect from manufacturer's standard colors.]
8. Product meets requirements of ASTM D 3462.
9. [Product meets criteria for AC127, ICBO #ER-5414.]
10. [Product meets Canadian CSA A123.5.]

A. Asphalt Shingles:

1. Prestique 30 *High Definition* manufactured by Elk.
2. Fiberglass base, mineral granule-surfaced type, two-ply laminated.
3. ASTM D 3018, Class A with Type I self-sealing.
4. Meets requirements of Dade County, Florida Acceptance No. 01-0411.11.
5. 13-1/4 inches by 38-3/4 inches.
6. [Stain inhibitor: StainGuard by Elk.]
7. [Color: As selected by Architect from manufacturer's standard colors.]
8. [Product meets requirements of ASTM D 3462.]
9. [Product meets criteria for AC127, ICBO #ER-5414.]
10. [Product meets Canadian CSA A123.5.]

A. Asphalt Shingles:

1. Prestique 25 Raised Profile manufactured by Elk.
2. Fiberglass base, mineral granule-surfaced type, two-ply laminated.
3. ASTM D 3018, Class A with Type I self-sealing.
4. Meets requirements of Dade County, Florida Acceptance No. 01-0516.08.
5. 13-1/4 inches by 38-3/4 inches.
6. [Color: As selected by Architect from manufacturer's standard colors.]

A. Asphalt Shingles:

1. Capstone manufactured by Elk.
2. Fiberglass base, mineral granule-surfaced type, two-ply laminated.
3. ASTM D 3018, Class A with Type I self-sealing.
1. ASTM D 3462.
2. ASTM D 3161, Type-1.
3. ASTM E 108.
4. Meets requirements of Dade County, Florida Acceptance No. 01-0523.01.
5. 13-1/4 inches by 39-3/8 inches.
6. [Color: As selected by Architect from manufacturer's standard colors.]
7. [Product meets Canadian CSA A123.5-M90.]

 Availability of the hip and ridge shingles is:

Seal-a-Ridge7 with <i>FLXJ</i>	RidgeCrest] vented and non-vented	Z7-Ridge
All states in the US	Alberta British Columbia Alaska Arizona California Colorado Hawaii Idaho Nevada Michigan Minnesota Montana Oregon Texas Utah Washington	Alberta British Columbia All states in the US <u>except:</u> Alabama Florida Georgia Mississippi North Carolina South Carolina Tennessee

- *****
- A. Hip and Ridge Shingle: [Z -ridge] [Seal-a-Ridge with *FLX*] [Seal-a-Ridge with *FLX* with StainGuard] [RidgeCrest vented] [Ridge Crest non-vented].
 - B. Starter Strip (for application at eave and at rake edge): Elk Starter Strip.
 - D. Paint: Prestique *High Definition* [Capstone] Roof Accessory Paint.
- *****

Asphalt impregnated underlayment is required on new construction and on complete roof tear-offs, and is recommended for re-roofing over existing roofs.

ASTM D 226, Type I - commonly called No. 15 asphalt felt.
 ASTM D 226, Type II - commonly called No. 30 asphalt felt.

The Asphalt Roofing Manufacturer=s Association=s Residential Asphalt Roofing Manual also suggests use of felts conforming to ASTM D 4869 or D 1970 as acceptable alternatives to D 226.

ASTM D 4869:
 Type I - Shingle Underlayment
 Type II - Heavy Duty Shingle Underlayment

- *****
- E. Underlayment: ASTM D 4869, Type [I] [II], non-perforated asphalt-saturated organic felts.
 - F. Mineral Surfaced Roll Roofing: ASTM D 3909; 90 pound mineral surfaced; granules to match adjacent shingles.
 - G. Smooth Surfaced Roll Roofing: ASTM D 224; 50 pound smooth surfaced roll roofing.
- *****

Verify which type of fasteners below are acceptable. Elk recommends nails, but does not prohibit the use of staples, except staples are not acceptable for the enhanced 110 MPH limited wind warranty.

- H. Fasteners:
 - 1. Nails: Galvanized 3/8 inch head, minimum 12 gage roofing nails. Minimum 3/4 inch penetration in deck. 1-1/4 inch nail recommended for new construction and 1-1/2 inch nail recommended for re-roofing. Nails should be long enough to sink into and hold in a sound nailing base.
 - 1. [Staples: Galvanized, 16 gage minimum, 15/16 inch minimum width crown; 3/4 inch minimum penetration in deck.]
 - 2. Fasteners shall be long enough to achieve 3/4 inch deck penetration or to penetrate through deck, whichever is less.
 - I. Plastic Cement: Cutback asphaltic type with mineral fiber components, as recommended for sealing and coating flashings in buildings; free of toxic solvents; capable of setting within 24 hours at temperatures of approximately 75 degrees F and 50 percent RH.
 - J. Lap Cement: Fibrated cutback asphaltic type, as recommended for use as an adhesive in the cold application of asphalt roofing or underlayment; free of toxic solvents.
- *****

Elastomeric underlayment can be used in lieu of asphalt impregnated felt for ridge, valley, and eave flashing, especially where there is a potential for ice dams to occur where eaves overhang exterior walls. Consult Elk for recommendations as to where this enhanced flashing should be used.

- K. Elastomeric Underlayment: Rubberized asphaltic sheet laminated to a polypropylene film meeting the requirements of ASTM D 1970, 40 mil minimum total thickness, 36 inch width, manufacturer approved by shingle manufacturer. Provide with appropriate primers as recommended by manufacturer.

2.3 FLASHING AND ACCESSORIES

Verify if metal flashings are to be galvanized steel or aluminum and if thickness of flashing is appropriate for intended use.

Verify finish on flashing as either:

- Field painting with Elk Roof Accessory Paint (ensures color matching to Elk Shingles).
- Prefinished paint on aluminum flashing.
- Field applied paint on galvanized sheet metal.

Select one of the two following paragraphs and edit the retained paragraph accordingly.

- A. [Sheet Metal Flashings: Galvanized steel, meeting ASTM A 525, G90 coating, hot dipped galvanized, both sides flattened, chemically treated, [26] [] gage.]
 - A. [Sheet Metal Flashings: Sheet aluminum, meeting ASTM B 209, [] thickness, with 20 year fluoropolymer paint in accordance with NAAMM Finishes Handbook, Publication No. 605.]
- *****

Verify in the following paragraph if sheet metal is to be used for valley flashing. In lieu of this, valleys can be constructed of open construction with a metal valley, by interweaving shingles, or by closing the valley (commonly referred to as a "closed cut valley").

- B. Provide sheet flashing for use in the following locations:
 - 1. [Valley flashing.]

- 2. Drip edge.
- 3. Step flashing at masonry wall.

 Verify in the following paragraph if penetration flashings are to be constructed of sheet lead or rubber boot.

- C. Penetration Flashings: [Sheet lead, 4 lb./s.f. minimum weight] [Rubber boots], with appropriate pipe diameter for penetrations encountered.
- D. Bituminous Paint: Acid and alkali resistant type; black color.
- E. Nails: Standard round wire roofing type of hot-dipped zinc-coated steel; minimum 19/64 inch head diameter and 0.104 inch shank diameter; of sufficient length to penetrate through roof sheathing.
- F. Staples: Galvanized finish, of type and quality approved by Architect.

2.4 FLASHING FABRICATION

- A. Form flashings to profiles indicated on Drawings and to protect roof assembly and shed water. Form sections square, true, and accurate to profile, in maximum possible lengths, free from distortion and other defects detrimental to appearance or performance.
- B. Hem exposed edges of flashings minimum 1/4 inch on underside.
- C. Apply bituminous paint on concealed surfaces of flashings if required to prevent electrolysis.

PART 3 EXECUTION

3.1 EXAMINATION

 Roof decks should be dry, well seasoned 1 inch by 6 inch thick boards or solid sheathing conforming to APA, The Engineered Wood Association (exposure 1 or 2) minimum 3/8 inch plywood or minimum 7/16 inch OSB. Comply with APA/EWA recommendations for minimum thicknesses for spans encountered. This specification is based on new construction. Consult Elk representative for recommendations on overlays using Elk products.

Most Fire Retardant Plywood decking is NOT an approved substrate for ELK shingles. Please check with ELK for those products that are approved substrates.

- A. Verify deck surfaces are dry, free of ridges, warps, or voids.
- B. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.
- C. Verify that roof openings are correctly framed.

3.2 PREPARATION

 Select the appropriate sentence in the following paragraph.

- A. [Fill knot holes and surface cracks with latex filler at areas of bonded eave protection.] [Cover knot holes with sheet metal.]

3.3 INSTALLATION - GENERAL

- A. Install asphalt shingle roofing in accordance with manufacturer's instructions over dry surfaces, free of ridges, warps, and voids. Install asphalt shingle roofing in accordance with local codes if code requirements are more strict than manufacturer's requirements.
- B. Coordinate installation of roof mounted components or work projecting through roof. Verify roof openings are appropriately framed, sized, and located prior to installing work of this Section.
- C. Completed installation to provide weathertight service.

3.4 PROTECTIVE UNDERLAYMENT INSTALLATION

Underlayment is required in new construction, on complete tear-offs, and is recommended for re-roofing.

STANDARD SLOPE - 4/12 up to 21/12: Use 1 layer of underlayment (first Paragraph A. below).

LOW SLOPE - 2/12 up to 4/12: Use 2 layers of underlayment (second Paragraph A. below).

- A. [Completely cover deck with one ply of asphalt shingle underlayment. Succeeding courses should overlap existing courses a minimum of 2 inches. Continue laying underlayment parallel to eaves. Begin by fastening a full 36 inch wide sheet along eaves. Make end laps minimum 4 inches and space end laps in succeeding courses a minimum 6 feet apart. Lap asphalt shingle underlayment 6 inches from both sides over hip and ridges, unless ridge vents are required. Secure felt with only enough nails to hold in place.]
- A. [Completely cover deck with 2 plies of underlayment overlapping preceding courses a minimum of 19 inches. Begin by fastening a 19 inch wide strip of underlayment placed along the eaves. Place a full 36 inch wide sheet over the starter horizontally placed along the eaves and completely overlapping the starter strip.]
- B. Install protective underlayment perpendicular to slope of roof.
- C. Weather lap underlayment minimum 4 inches over eaves membrane.
- D. Weather lap and seal items projecting through or mounted on roof with plastic cement.

3.5 EAVES FLASHING (ICE DAMS)

In localities where leaks may be caused by water backing up roof above ice dams that may form along eaves, eave flashing MUST be installed.

STANDARD SLOPE - 4/12 up to 21/12. Use either first paragraph A or paragraph B.

LOW SLOPE - 2/12 up to 4/12. Use either second paragraph A or paragraph B.

- A. [Starting from eave edge, lay 36 inch wide strip of smooth coated roll roofing over the underlayment to produce a 1 ply membrane. Weather lap plies minimum 19 inches and nail in place. Lap ends minimum 2 inches and cement horizontal joint. Stagger end joints of each consecutive ply. Extend from the eave edge to a point at least 12 inches beyond the inside wall and cement to underlayment.]
- A. [Begin by fastening a 19 inch wide strip of asphalt shingle underlayment placed along eaves. Next, apply a full 36 inch wide sheet, also along the eaves, completely overlapping starter roll. Place succeeding courses of 36 inch wide sheets positioned to overlap preceding course by 19 inches. Make end laps 12 inches wide minimum. Cement laps in underlayment courses from eaves to a point at least 24 inches beyond interior wall line of building.

If following paragraph B. is retained, select "12" inches option for standard slope (4/12 up to 21/12).
Select "24" inches option for low slope (2/12 up to 4/12).

- A. [Place a layer of elastomeric underlayment in accordance with manufacturer's recommendations. Extend from the eave edge to a point at least [12] [24] inches beyond the inside wall. Begin application of shingle underlayment by overlapping the elastomeric material a minimum of 2 inches.]

Retain following paragraph C. for low slope (2/12 up to 4/12).

- B. [Apply continuous layer of asphalt plastic cement between the two plies of underlayment from eave edge up roof to point at least 24 inches beyond interior wall line of building.]

3.6 METAL DRIP EDGES

Metal drip edges are recommended along rake and eave edges of all decks. At eaves, drip edge is applied below the underlayment which assures that water drains completely off the roof. At rakes, drip edge is applied over the underlayment to prevent wind-blown rain from working its way onto the deck between the drip edge and underlayment.

- A. Place metal drip edge tight with fascia boards at all rake and eave edges and extend 3 inches back from roof edge bend downward over the fascia boards. Weather lap joints 2 inches. Fasten in place with nails spaced 8 to 10 inches apart.
- B. At eaves, place drip edge directly onto deck below underlayment. At rakes, place drip edge over underlayment.

3.7 VALLEY PROTECTION INSTALLATION

Open, woven and closed cut valleys are acceptable when applied by ARMA recommended procedures. When using ELK product, only sheet metal may be used for open valleys. Select appropriate material/installation paragraph below.

For metal, open valleys, use 36 inch wide vertical underlayment prior to applying 18 inch metal flashing. Roll roofing valleys may be used in woven or closed designs.

- A. [Valleys - Roll Roofing: Place 1 ply of minimum 50 pound valley flashing, minimum 36 inches wide, centered over valleys. Weather lap joints minimum 2 inches. Place with mineral surface side up. Nail in place minimum 18 inches on center, 1 inch from edges, no nails within 6 inches of centerline.
 - 1. [Open: Comply with ARMA recommendations and ELK application instructions. Prior to applying 18 inch metal flashing apply a 4 inch wide strip of lap cement along each edge of first ply and embed ply of roll roofing 36 inches wide, centered. Place with mineral surface side up. Press into cement to encourage bond and nail in place minimum 18 inches on center, 1 inch from edges; no nails within 6 inches of centerline.]
 - 2. [Woven: Comply with ARMA recommendations. Extend shingles on both slopes across valley in a weave pattern and fasten. Extend shingles a minimum of 12 inches beyond valley centerline to achieve woven valley, concealing the valley protection.]
 - 3. [Closed Cut: Comply with ARMA recommendations. Extend shingles on 1 slope across valley and fasten. Trim shingles from other slope 2 inches from valley center line to achieve closed cut valley, concealing the valley protection.]
- A. [Valleys - Sheet Metal: Place 36 inch wide vertical underlayment. Place 1 layer of sheet metal flashings, minimum 18 inches wide over the underlayment, centered over open valley and crimped to guide water. Weather lap joints 12 inches minimum and cement joints. Nail in place 18 inches on center minimum, 1 inch from edges, no nails within 6 inches of centerline.
 - 1. [Open: Comply with ARMA recommendations. Install a second felt underlayment shingle lapped at least 12 inches and sealed with plastic asphalt cement. Install a metal valley shingle lapped at least 9 inches and sealed with plastic asphalt cement.]

3.8 FLASHING INSTALLATION

- A. Weather lap joints minimum 12 inches in weathertight manner. Secure in place with nails, spaced at manufacturer's recommended intervals. Conceal fastenings.
- B. Flash and seal work projecting through roofing with plastic cement. Provide weathertight installation.

3.9 ASPHALT SHINGLES INSTALLATION

In high wind areas, for the enhanced 110 MPH limited wind warranty, shingles must be applied with 6 properly placed nails per shingle. Also, Elk Starter Strip shingles must be applied at the eaves and rake

edges. For slopes greater than 21/12, use 6 fasteners per shingle rather than 4. Use 5-5/8 inch weather exposure for all products except Capstone, which uses the 5 inch exposure.

- A. Place asphalt shingles in straight coursing pattern with [5-5/8] [5] inch weather exposure to produce a double thickness over entire roof area. Do not use sealant dots for shingle alignment.
- B. Install a starter course at eaves with starter strip. Project first course of shingles minimum 1/2 inch to maximum 3/4 inch beyond face of eave fascia boards.
- C. Extend shingles minimum 1/2 to 3/4 inch beyond face of rake edge fascia boards.

In the following paragraph, select "and" for Capstone shingles. Select "or" for other shingles.

- D. Nail shingles in place through double thickness area designated by fastener line, [and] [or] between and in line with sealant dots if no fastener line, and in accordance with manufacturer's instructions for slope and anticipated wind conditions.
- E. Cap hips and ridges with [Z -ridge] [Seal-A-Ridge with *FLX*] [Seal-A-Ridge with *FLX* with StainGuard] [RidgeCrest vented] [Ridge Crest non-vented] shingles, maintaining [5-5/8] [6-2/3] [9-1/4] inch weather exposure. Place to avoid exposed nails.

3.10 FIELD PAINTING ROOF ACCESSORIES

Verify which items below are to be painted, and if they are to be painted according to this section or section 09900.

Edit the following paragraphs accordingly.

- A. Prepare metal surfaces in accordance with coating manufacturer's recommendations to leave in proper condition to accept field applied coatings.
- B. Field paint [flues] [vent stacks] [eave flashings] [drip edges] [stepped flashings] [valley flashings] using [ELK Prestique *High Definition* Roof Accessory Paint] [in accordance with Section 09900].

END OF SECTION