**Specifier Note**: The purpose of this guide specification is to assist the specifier in correctly specifying glass-fiber-reinforced asphalt shingle products for sloped roofing applications. The specifier needs to edit these guide specifications to fit the needs of each specific project. Contact a PABCO® Roofing Products Representative to assist in appropriate product selections. Throughout the guide specification, there are Specifier Notes to assist in the editing of the file. The term Architect is used throughout these guide specifications and may be revised to read “Design Professional”, “Engineer”, “Owner”, or other appropriate designation as required for specific projects.

References have been made within the text of the specification to MasterFormat 2004 Section numbers and titles, specifier needs to coordinate these numbers and titles with sections included for the specific project. Brackets [ ]; “AND/OR”; and “OR” have been used to indicate when a selection is required.

This guide is for residential and commercial roofing applications using a laminated, multi-ply overlay construction, fiberglass reinforced, mineral granule surfaced, self-sealing asphalt shingle assembly.

**SECTION 07 31 13 ASPHALT SHINGLES**

PABCO® Roofing Products

**Specifier Note**: This Section is applicable for Paramount Advantage® Signature Cut Shingles, Paramount® Signature Cut Shingles, or Cascade™ Signature Cut Shingles.

1. **GENERAL**
	* + 1. **SECTION INCLUDES**
				1. Asphalt shingles.
				2. Felt underlayment.
				3. Self-adhering sheet underlayment.
			2. **REFERENCES**
				1. ASTM International:

ASTM D 226; Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing

ASTM D 1970; Standard specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection

ASTM D 3161; Standard Test Method for Wind Resistance of Asphalt Shingles (Fan Induced Method)

ASTM D 3462; Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules

ASTM D 4586; Standard Specification for Asphalt Roof Cement, Asbestos-Free

ASTM D 4869; Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steel Slope Roofing

ASTM D 6757; Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing

ASTM D 7158; Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method)

ASTM F 1667; Standard Specification for Driven Fasteners; Nails, Spikes, and Staples.

* + - * 1. Underwriters Laboratories, Inc.:

UL 790 – Tests for Fire Resistance of Roof Covering Materials

CAN/ULC (Underwriters Laboratories of Canada)-S107 – Methods of Fire Tests of Roof Coverings

* + - * 1. National Roofing Contractors Association:

The NRCA Roofing Manual: Steep-slope Roofing Systems – 2009

* + - 1. **SUBMITTALS**

**Specifier Note**: When project is being submitted for USGBC LEEDTM certification, contact PABCO® Product Representative for assistance in determining how the use of PABCO® Roofing Products can assist in obtaining points for recycled content and/or local material supplier.

* + - * 1. Refer to Section [01 33 00 Submittal Procedures] [insert section number and title].
				2. Product Data: Submit manufacturer current technical literature for each component.
				3. [LEED Submittal:

Product Data for Credit MR 4.1[and Credit MR 4.2]: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating costs for each product having recycled content.]

* + - * 1. Samples for Initial Selection: For each type of asphalt shingle, [ridge and hip cap shingles] [and] [ridge vent] product indicated.

Include similar Samples of exposed trim and accessories involving color selection.

**Specifier Note:** Delete paragraph and subparagraph above if colors and other characteristics are preselected and specified or scheduled. Retain first paragraph and subparagraph below with or without above if products have been pre-selected.

* + - * 1. Samples for Verification: For the following products, of sizes indicated and to verify color selected:

Asphalt Shingle: Full-size asphalt shingle strip.

Ridge and Hip Cap Shingles: Full-size ridge and hip cap asphalt shingle.

Self-Adhering Underlayment: 12-inches square.

* + - * 1. Maintenance data: For asphalt shingles to include in maintenance manuals.
				2. Warranties: Sample of special warranties specified in this Section.
				3. Closeout Submittals:

Refer to Section [01 78 00 Closeout Submittals] [insert Section number and title].

* + - 1. **QUALITY ASSURANCE**
				1. Qualifications:

Installer shall have successful installation experience with installation of PABCO® Roofing Products under similar conditions.

Installation shall be in accordance with asphalt shingle manufacturer’s installation guidelines and recommendations.

* + - * 1. Source Limitations: Provide ridge and hip cap shingles [felt underlayment] [and] [self-adhering sheet underlayment] through one source as recommended by the asphalt shingle manufacturer.
				2. Fire-Test Response Characteristics:

Exterior Fire Test Exposure: Class A; UL 790 and CAN/ULC S-107 for application and roof slopes indicated. Identify materials with appropriate markings of applicable testing and inspecting agency.

* + - * 1. Mock-up:

Install mock-up using approved asphalt shingle assembly including related accessories per manufacturer’s current printed instructions and recommendations.

Mock-up size: [10-feet by 10-feet] [insert size].

Mock-up may [not] remain as part of the work.

Contact manufacturer’s designated representative prior to asphalt shingle assembly installation, to perform required mock-up visual inspection and analysis as required for warranty.

* + - * 1. Pre-installation Meeting:

Refer to Section [01 31 00 Project Management and Coordination] [insert section number and title].

Hold a pre-installation conference, prior to start of asphalt shingle installation at Project site to review all related project requirements and submittals, status of substrate work and preparation, areas of potential conflict and interface, availability of asphalt shingle assembly materials and components, installer’s training requirements, equipment, facilities and scaffolding, and coordinate methods, procedures and sequencing requirements for full and proper installation, integration and protection.

Attendees shall include Contractor, Architect, installer, Owner’s Representative, and asphalt shingle manufacturer’s designated representative.

* + - 1. **DELIVERY, STORAGE AND HANDLING**
				1. Refer to Section [01 60 00 Product Requirements] [insert section number and title].
				2. Deliver asphalt shingle materials and components in manufacturer’s original, unopened, undamaged packages with identification labels intact.
				3. Store asphalt shingle materials as recommended by asphalt shingle manufacturer.

**Specifier Note:** The PABCO® Limited Shingle Warranty has different provisions for installation on a single-family residence and for installation on all other structures.

* + - 1. **WARRANTY**
				1. Refer to Section [01 78 36 Warranties] [insert section number and title].
				2. Provide PABCO® Limited Shingle Warranty: PABCO® warrants that shingles are free from manufacturing defects that adversely affect their performance.

**Specifier Note:** Algae Defender Algae Resistant Roofing System does not apply to all products and is not available in all markets.

* + - * 1. Algae Resistance:

Algae Defender® Algae Resistant Roofing System warrants that shingles will remain algae resistant for 20 years.

1. **PRODUCTS**
	* + 1. **GLASS FIBER REINFORCED ASPHALT SHINGLES**
				1. Laminated Asphalt Shingles: ASTM D 3462, laminated, multi-ply construction, glass fiber reinforced, mineral granule surfaced, and self-sealing.
				2. Wind Resistance: ASTM D3161 Class F.
				3. Wind Resistance: ASTM D7158 Class H.
			2. **MANUFACTURER**
				1. Basis of Design Manufacturer: Subject to compliance with requirements, the design for glass-fiber-reinforced asphalt shingles is based on PABCO® Roofing Products, Tacoma, WA 98421; Phone: (253) 272.0374; [www.pabcoroofing.com](http://www.pabcoroofing.com).
				2. Basis of Design Product: The design for glass-fiber-reinforced asphalt shingles is based on [Paramount Advantage®] [Paramount®] [Cascade™] as follows:

Paramount Advantage®:

Heavy Weight Signature Cut Shingles

**Specifier Note:** Algae Defender® Algae Resistant Roofing System is not available in all markets.

[Algae Resistance.]

Warranty Available:

Single Family Residence: [Limited Lifetime Warranty (Original Homeowner), 50-year Fully Transferrable Warranty (Subsequent Homeowners) and 110/130 mph Wind Resistance.]

All Other Structures: [50-year Limited Warranty/1-time transfer Limited and 110 mph/130 mph Wind Resistance Warranty.]

Color: [Antique Black] [Oakwood] [Pewter Gray] [Weathered Wood].

Performance Characteristics:

Size: 15-1/2 inches by 40-inches.

Exposure: 4-1/2 inches.

Offset: 5-3/4 inches.

Approx. Lbs. per Square: 495.

Paramount®:

Signature Cut Shingles:

**Specifier Note:** Algae Defender® Algae Resistant Roofing System is not available in all markets.

 [Algae Resistance].

Warranty Available:

Single Family Residence: [Limited Lifetime Warranty (Original Homeowner), 50-year Fully Transferrable Warranty (Subsequent Homeowners) and 110/130 mph Wind Resistance.]

All Other Structures: [50-years Limited Warranty/1-time transfer Limited and 110 mph/130 mph Wind Resistance Warranty.]

Color: [Antique Black] [Barkwood] [Oakwood] [Pewter Gray] [Rocky Beach] [Weathered Wood].

Performance Characteristics:

Size: 15-1/2 inches by 40-inches.

Exposure: 4-1/2 inches.

Offset: 5-3/4 inches repeating.

Approx. Lbs. per Square: 355.

Cascade™:

Signature Cut Diamond Shape Shingles.

**Specifier Note:** Algae Defender® Algae Resistant Roofing System is not available in all markets.

[Algae Resistance].

Warranty Available:

Single Family Residence: [Limited Lifetime Warranty (Original Homeowner), 50-year Fully Transferrable Warranty (Subsequent Homeowners) and 110/130 mph Wind Resistance.]

All Other Structures: [50-years Limited Warranty/1-time transfer Limited and 110 mph/130 mph Wind Resistance Warranty.]

Color: [Antique Black] [Cambrian Slate] [Oakwood] [Pewter Gray].

Performance Characteristics:

Size: 15-1/2 inches by 40-inches.

Exposure: 4-1/2 inches.

Offset: 5-inches repeating.

Approx. Lbs. per Square: 255.

Hip and Ridge Shingles: Manufacturer’s standard units to match asphalt shingles.

**Specifier Note**: PABCO® does not recommend site fabrication of hip and ridge shingles.

Shadow Cap to match asphalt shingles.

**Specifier Note**: PABCO® SHINGLES SHOULD NEVER BE APPLIED TO ANY OTHER DECK without first obtaining written approval from PABCO® Roofing Products. Requests for approval must be accompanied by the deck manufacturer's recommended application procedure for asphalt shingles. APPLICATION DIRECTLY OVER POLYURETHANE OR POLYSTYRENE SURFACES WILL NOT BE APPROVED.

* + - 1. **ROOF DECK REQUIREMENTS FOR NEW CONSTRUCTION**
				1. Plywood decks must be at least 3/8-inch thick plywood or 7/16-inch OSB type structural sheets conforming to the exposure standards and specifications of the APA - The Engineered Wood Association and the building code, or wood board decks must be well-seasoned, minimum nominal thickness 1-inch, not over 6-inches in width.
			2. **ACCESSORIES**
				1. Starter Strip:

Paramount Starter:

Size: 13-1/4 inches by 40-inches.

Coverage: 73.3 linear feet.

Universal Starter:

Size: 13-1/4 inches by 40 inches.

Coverage: 73.3 linear feet.

* + - * 1. Shadow Cap

Size: 13-1/4 inches by 39-3/8 inches, perforated into 4 pieces.

Coverage: 41-1/4 linear feet.

**Specifier Note**: Felt shall be 3rd party listed as prepared roofing accessory or complying with ASTM D 226, ASTM D 4869, or ASTM D 6757, applied per manufacturer’s instructions.

* + - * 1. Felt Underlayment: Felt underlayment to comply with local building code.

**Specifier Note:** Self-adhering underlayment shall be 3rd party certified complying with ASTM D1970, applied per manufacturer’s instructions.

* + - * 1. Self-Adhering Sheet Underlayment: ASTM D 1970.
				2. Asphalt Roofing Cement: ASTM D 4586, asbestos free.
				3. Fasteners:

Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- diameter, [barbed] [smooth] shank, sharp-pointed, with a minimum 3/8-inch diameter flat head and of sufficient length to penetrate 3/4-inch into solid wood decking or through OSB or plywood sheathing.

Where nails are in contact with metal flashing, use nails made from same metal as flashing.

* + - * 1. METAL FLASHING AND TRIM

Sheet Metal Flashing and Trim: [Comply with requirements in Section 07 62 00 - Sheet Metal Flashing and Trim.] [Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item.]

Drip Edges: Fabricate in lengths not exceeding [10-feet] [Insert length] with a minimum 2-inch roof deck flange and a minimum 1-1/2 inch fascia flange with 3/8-inch drip at lower edge.

1. **EXECUTION**
	* + 1. **EXAMINATION**
				1. Verify substrate and surface conditions are in accordance with asphalt shingle manufacturer recommended tolerances prior to installation of asphalt shingle and accessories.
			2. **GENERAL INSTALLATION OF SHINGLES**
				1. General: Install in accordance with PABCO® Roofing Products’ written instructions and in compliance with local authorities having jurisdiction. To qualify for warranty protection and to obtain stated coverage, manufacturer’s written instructions must be followed.

[Local roofing practices that do not materially deviate from PABCO® Roofing Products’ installation instructions may be considered but should be submitted to the design professional and to PABCO® for review prior to installation.]

**Specifier Note:** PABCO® shingles are not approved for use on roof slopes less than 2:12.

* + - * 1. Manufacturer’s standard application instructions apply to slope/inclines between 4-inches per foot and 20-inches per foot. Refer to manufacturer’s additional requirements for use on slopes between 2:12 and 4:12, or greater than 20:12.
				2. From shingle course to shingle course upwards on roof deck, end joints must be maintained with the specified horizontal offset of [5-3/4 inches for Paramount Advantage® and Paramount®.] [5-inches for Cascade™.] Installer must assure end joints are covered; uncovered end joints may result in leaks, which are not covered by the PABCO® Limited Shingle Warranty.
				3. Ventilation: Provide minimum of 1 square feet of total net free ventilating area for each 150 square feet of ceiling area, or 1 square foot for each 300 square feet of ceiling area if either a vapor barrier is installed on warm side of ceiling area or if approximately one-half the ventilation is provided near roof ridge.
			1. **UNDERLAYMENT**
				1. Roof decks with pitch of 4-inches per foot or greater, for new construction or when old roofing has been removed, apply a single layer of felt underlayment complying with ASTM D 226, D 4869 or D 6757 and local building code.

**Specifier Note**: For slopes at least 4-inches per foot, PABCO® recommends single layer felt underlayment.

[Single Layer Felt Underlayment: Apply underlayment with 2-inch wide top laps and 4-inch wide end laps. Lap felt underlayment a minimum of 6-inches from both sides over all hips, ridges and valleys.]

* + - * 1. On slopes between 2 inches and 4 inches per foot, PABCO® recommends self-adhering underlayment or double layer felt underlayment.

[Self-Adhering Underlayment: Apply self-adhering underlayment according to underlayment manufacturer’s written instructions and in compliance with local building code.]

[Double-Layer Felt Underlayment: Apply underlayment with 19-inch wide top laps and 12-inch wide end laps. Over this, apply a full 36-inches wide sheet. Continue 36-inches wide sheets, lapping each 19-inches over the preceding course.]

* + - 1. **EAVE FLASHING**
				1. Install self-adhering underlayment as an eave flashing for ice dam protection in areas of winter temperatures averaging 30°F or less, applied parallel to the eave. Eave flashing overhangs drip edge 1/4-inch to 3/8-inch and extends up the roof to at least 24-inches inside the interior wall line. Horizontal (top) overlaps (when needed), should be located over the overhang area. Top laps are at least 4-inches, end laps are at least 6-inches.
				2. Eave Drip Edges: Install eave drip edge flashings below underlayment and fasten to roof sheathing.
			2. **NAILING INSTRUCTIONS**
				1. Use five nails per shingle for normal application, positioned in the nail zone as recommended by shingle manufacturer. Nails shall be at least 1-1/4 inches long for Paramount Advantage®; 1-inch long for Paramount® or Cascade™, aluminum or galvanized, 3/8-inch head, 11- or 12-gauge roofing nails. Nails must be driven flush with shingle surface. NAILS MUST NOT BE OVERDRIVEN TO CUT INTO SHINGLES.

**Specifier Note:** See the PABCO® [Paramount Advantage®] [Paramount®] [Cascade™] Application Details – Nailing Instructions for more information and details at [www.pabcoroofing.com](http://www.pabcoroofing.com).

* + - * 1. Special Applications:

For areas where local knowledge indicates exposure to high winds may occur, shingles must be applied with 6 nails and sealed to qualify for wind damage warranty coverage.

Steep Slope Application: On slopes greater than 20-inches per foot (Mansard type roofs), 6 nails are required, spaced according to shingle manufacturer’s written instructions. These shingles are to be hand sealed at the time of application with asphalt roof cement, by applying 4 spots about the size of a quarter, each centered under a tooth, 1-inch up from the bottom edge of that covering tooth.

* + - 1. **VALLEYS**

**Specifier Note:** See the PABCO® [Paramount Advantage®] [Paramount®] [Cascade™] Application Details – Valley Application at [www.pabcoroofing.com](http://www.pabcoroofing.com) for more information and details. Open metal valleys are recommended by PABCO®; closed cut valleys are also accepted.

* + - * 1. Open Valleys: Valley starts with 36-inches self-adhered, bottom layer underlayment centered down the valley. Extend felt underlayment over this and trim overlap 6-inches. A second layer of felt is applied over this, centered down the valley. Apply metal valley flashing, minimum 26-gauge galvanized metal or an equally corrosion resistant metal; minimum 24-inches wide, formed with a "W" shape and center rib and avoid puncturing. Center metal flashing in valley over second layer of felt underlayment, extending beyond drip edge 1/4-inch to 3/8-inch. If more than one piece of flashing metal is needed, the lower piece is nailed at the top. The upper piece laps over the lower piece nails by at least 8-inches and the lap is cemented together with asphalt roof cement complying with ASTM D 4586.
				2. Snap two chalk lines down valley, starting 3-inches on either side of valley center line, at top of valley and diverging from each other 1/8-inch per foot down valley. Apply shingles into valley in the typical sequence of application on balance of roof. Trim shingles to the chalk line; avoid pieces less than 12-inches wide. If necessary, trim the preceding shingle on the course. Apply the shingles into the valley so that no nails pass through the valley metal. Clip the upper shingle corner (in the valley) 1-inch at 45°. Embed each shingle end in a 3-inches wide strip of asphalt roof cement.
			1. **APPLICATION DIAGONAL OFFSET PATTERN**

**Specifier Note:** Paramount Advantage® and Paramount® use a 5-3/4 inche horizontal offset; for Cascade™ use a 5-inch offset. See the PABCO® [Paramount Advantage®] [Paramount®] [Cascade™] Application Instructions - Directions For Application at [www.pabcoroofing.com](http://www.pabcoroofing.com) for more information and details.

* + - * 1. First Starter Course: Use PABCO® Universal Starter or a self sealing three-tab shingle with the tabs cut off and the adhesive at the eave. Remove 7-½ inches from the end of the first piece and apply it at the lower left hand corner of the roof, overhanging the drip edge 1/4-inch to 3/8-inch. Nail in place with 4 nails about 2-inches up from the eave, spaced evenly across the shingle. Continue the Universal Starter across the deck with full shingles.
				2. Second Starter Course: Use Paramount*®* Starter to assure matching shingle colors. Cut 5-¾ inches off the length of the first slab of Starter and apply at the lower left-hand corner of the roof. This Paramount® Starter is applied, flush with the first starter course at the rake and eave drip edge. Continue the Paramount® Starter across the deck with full shingles. See the [Paramount Advantage®] [Paramount®] [Cascade™] Application Detail *-* Getting Started at [www.pabcoroofing.com](http://www.pabcoroofing.com) for more information and details.
				3. Base and Cap (Counter) Flashing:

Install the metal base flashing for the front of a chimney, skylight, vent or adjoining wall, over the headlap of the last course of shingles below the chimney and extending up the chimney. Set both the roof and chimney overlaps in asphalt roof cement. Where the roof abuts the chimney or vertical wall, the shingles must be flashed with metal flashing shingles applied over the end of each course of shingles. The flashing shingles are 8-inches by 6-1/2 inches, bent to extend 4-inches out over the shingles on the roof deck and 4-inches up the vertical surface. Each flashing shingle is placed so that its bottom edge is just back from the exposed edge of the shingle which will overlap it. It is secured to the deck with one nail near the top corner. The base flashing must be flashed with cap flashing of sheet metal. The cap flashing must extend at least 1-inch into the masonry mortar joints and be caulked with asphalt roof cement to insure a water-tight connection. Base flashing should be cut to cover the entire cricket and extend 6-inches up the brickwork on the chimney. See ARMA Residential Asphalt Roofing Manual for additional details.

* + - * 1. Hips and Ridges:

Trim shingles to be even with the ridge and cap with PABCO® Shadow Cap shingles exposed 5-5/8 inches to the weather. Nail 6-5/8 inches back from the exposed edge and 1-inch up from the bottom edge with galvanized roofing nails long enough to penetrate deck 3/4-inch. Applying PABCO® Shadow Cap as a double layer piece is recommended to accent the hip and ridge lines.

In cold weather (40°F or below) store shingles for hip & ridge in heated location 24 hours prior to application.

**DISCLAIMER:** PABCO® Roofing Products Guide Specifications have been written as an aid to the professionally qualified specifier and design professional. The use of this information requires the professional judgment and expertise of the qualified specifier and design professional to adapt the information to the specific needs of the building Owner and the project; to coordinate with the design professional's construction document process, and to meet the applicable building codes, regulations and laws. PABCO® Roofing Products disclaims any warranty, expressed or implied, including the warranty of fitness for a particular purpose of the product for a project.

END OF SECTION 07 31 13