

SECTION 1 — GETTING READY FOR THE JOB

- 1.1 **Tools and Materials**
- 1.2 **Storing Shingles**
- 1.3 **Safety Considerations**
- 1.4 **Caring for Your New Roof**

SECTION 2 - PREPARATION, PROTECTION OF VULNERABLE AREAS & VENTILATION

- 2.1 Slope
- 2.2 Deck
- 2.3 **Drip & Rake Edge**
- 2.4 Ventilation

SECTION 3 — GENERAL INSTRUCTIONS

- 3.1 **General Directions**
 - A Nail Requirements
 - **B** Asphalt Plastic Cement
 - **C** Protective Tape
 - D Application on slopes ≥ 15/12
 - E High Wind Warranty
 - F Cold Weather Application
 - **G** Installing Over Existing Layer of Shingles
 - **H** Ventilation
- 3.2 **Eave Protection & Underlayment**
- 3.3 **Underlayments for Low Slope Shingle Application**
- **Underlayments for Standard Slope Application (≥ 4/12)** 3.4
- 3.5 **Valley Preparation & Installation**
- 3.6 Flashing
- 3.7 **Hip and Ridge**

SECTION 4 - THREE-TAB SHINGLES

4.0 Mirage GS, Yukon SB, Dakota

SECTION 5 – LAMINATE SHINGLES

- Weather-Tite™: Sealant Bands / Release Tapes 5.0
- 5.1 Everest 42, Mystique 42 East
- 5.2 Harmony 42 / Mystique 42 West
- 5.3 Manoir



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1.1 - TOOLS AND MATERIALS

A - Tools:

- Tape measure ;
- Chalk line;
- Carpenter's square;
- Hammer (roofer's hatchet or pneumatic nailer);
- Utility knife to cut roll roofing and felts;
- Tin snips to cut metal flashing and shingles;
- Caulking gun;
- Notched trowel;
- Work gloves and nail apron;
- Circular saw and chisel to repair or replace damaged decking;
- Square-mouth shovel for removing old shingles;
- Pry-bar for lifting hard-to-reach shingles and flashings;
- 8 mm or 10 mm ($^{5}/_{16}$ " or $^{7}/_{16}$ ") nylon or polypropylene rope to secure the ladder and use as a safety line;
- Safety harness;
- A strong, safe ladder or scaffolding;
- Cutting board to prevent accidentally cutting through the shingle into the roof below;
- Waste receptacle and broom for cleaning up afterwards.

B - Materials:

- BP Shingles;
- Galvanized roofing nails of proper length;
- Asphalt Plastic Cement;
- Eave protection (GRIPGARD, BP Smooth or Slate Surface Roll Roofing);
- Underlayment (BP's n°15 CSA Pro Felt, n°15 Asphalt Felt Plain, Standard Asphalt Sheathing, Shingle Base Underlayment, GRIPGARD or DECKGARD);
- BP Slate Surface Roll Roofing, GRIPGARD for valley treatment or flashings;
- · Roof ventilators.

1.2 - STORING SHINGLES

From the time of delivery to the time of their installation, the roofing materials may have to be stored. To protect your investment and ensure optimal results, bear in mind these few recommendations:

- Store shingles on a flat surface;
- Don't store shingles in the hot sun or leave them exposed to bad weather; If the shingles must be stored outdoors, protect them with a tarpaulin or plastic sheet; Be sure to make a few holes in the sheets to allow for air circulation;
- Don't store shingles in extreme cold, especially prior to cutting or bending;



- Don't store the bundles directly on the ground; place them on a raised platform;
- Never stack shingle bundles more than 1.2 m (4') high.

1.3 - SAFETY CONSIDERATIONS

These instructions do not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

The roof can be a dangerous place to work, so read the following section carefully and take the necessary precautions to avoid any risk of accident.

The primary, and most obvious, danger is that of falling. If you have difficulty walking on the roof, it is probably too steep for you to work on safely.

First and foremost, make sure that you are fastened safely. A safety harness with a large snap hook can be obtained from your local tool rental center for this purpose. Fasten the harness around your waist and clip it to a nylon or polypropylene rope 8 mm to 10 mm (5/16" to 7/16") in diameter. The other end of the rope should be tied to a solid, immovable object on the other side of the roof. A strong tree or a $5 \text{ cm} \times 10 \text{ cm} (2" \times 4")$ board placed across the inside of a window frame provide reliable anchors for this purpose, but don't tie the rope to your car, TV antenna or chimney. Make a series of non-slip loops, at 1.2 m to 1.8 m (4' to 6') intervals between your harness and the ridge. As your work progresses across the roof you can attach the safety harness to these loops. Use short lengths of hose or rubber to protect the rope from friction where it rubs against the ridge and eaves.

TO AVOID ELECTROCUTION

• Keep ladders and other metal objects away from electrical wires and make sure you don't come into contact with the wires yourself;

• Don't try to remove a TV antenna by yourself. Most antenna distributing companies will handle this for you, but if not, arrange to have somebody else help you and exercise extreme caution. Above all, keep the antenna away from electrical wires.

WHEN WORKING WITH A LADDER

- Use a sturdy ladder of appropriate length;
- Make sure it extends at least 61 cm to 91 cm (2' to 3') above the roof level so that you can hold on to the rails while climbing on and off the roof;
- Secure both sides of the ladder at the top and at the bottom;
- Don't lean too far away from the ladder to reach the next section of roof. It is safer to move the ladder.

GENERAL SAFETY GUIDELINES

- Try not to work alone on the roof. If it is necessary to do so, at least let someone know;
- Make sure that no one is standing under the roof where they could be hurt by falling objects;
- Avoid wearing loose-fitting clothing. Do wear rubbersoled shoes and protective glasses;
- Don't work on a wet roof. Ideally, the weather should be mild, dry and calm;
- Make sure your ladder or scaffolding is set on a firm level base that is neither too muddy nor too dry;
- If you are working on a steep roof (slopes equal or greater than 6/12), it may be necessary to build footholds. This can be easily accomplished using a flat board held in place with steel straps. On slopes greater than or equal to 15/12, a 4 cm \times 9 cm (1 $^{1}/_{2}$ " \times 3 $^{1}/_{2}$ ") wood wedge can be placed under the board to provide a level foothold. The board can be moved around the roof as you work;
- · Make sure that tools and materials placed on the roof

3



cannot slide off. Don't place heavy piles of shingles in one spot - spread the material around the roof to evenly distribute the weight;

• Don't take any unnecessary risks.

1.4 - CARING FOR YOUR NEW ROOF

If you follow all the necessary steps, using high-quality premium materials and doing a professional job, you will be proud of your new roof. After the job is done, you will be able to relax knowing that your new dream roof will enhance the value and appearance of your home. Here are a few tips to ensure you get the best possible long-term performance from your new BP roof:

 Clean out the eaves troughs from time to time, especially if there are trees nearby. Don't let dead leaves, seeds, petals, pine needles and other debris clutter the eaves troughs;

- Don't let rainwater from downpipes spill directly into a shingle roof as water erosion may damage the surface of the shingles. Connect downpipes from upper roofs to an eaves troughs or to a lower downpipe;
- Avoid walking on the roof, especially in cold and hot weather conditions. If it is necessary to do so, protect the shingles by wearing soft-sole shoes or by walking on boards or other appropriate materials;
- If it is necessary to clear accumulations of snow or ice from the roof, avoid damaging the shingles when removing the snow and ice. Always leave a few inches covering the shingles and remember, a roof is dangerous, even more so in the winter. Always take necessary precautions for safety or have a roof specialist do the work.

NOTE: For further information refer to the Roofing Specification manual of the Canadian Roofing Contractor's Association (CRCA) or the National Roofing Contractor's Association (NRCA)

For more information concerning the installation of Asphalt Shingles, please refer to CSA A123.51/52

Building Products of Canada Corp.

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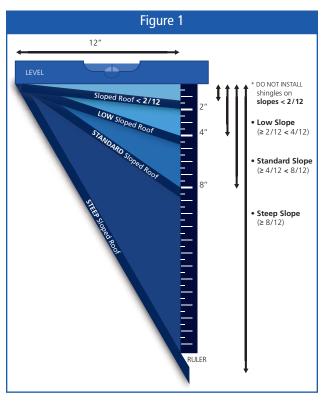
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SECTION 2 – PREPARATION, PROTECTION OF VULNERABLE AREAS & VENTILATION

- 2.1 Slope
- 2.2 Deck
- 2.3 Drip & Rake Edge
- 2.4 Ventilation

2.1 - **SLOPE**



* Conversion : $15/12 = [>50^{\circ} - 15 \text{ in/ft, } 15:12 (1:0.8)] = 125 \text{ cm/m}$

Figure 1 illustrates how to determine the slope of your roof. First, place a ruler perpendicular to a well balanced level on the 12" mark. The measurement reading on your ruler corresponds to the slope of your roof.

For slopes equal or greater than 2/12 to under 4/12, when using BP top-of-the-line 3-tab shingles MIRAGE GS, YUKON SB and DAKOTA follow the special application instructions outlined in **Section 3.3**.

For slopes equal or greater than 3/12 to under 4/12, **Building Products of Canada** (BP) laminate shingles MANOIR, EVEREST 42, MYSTIQUE 42 and

HARMONY 42 / MYSTIQUE 42 may be installed using special application instructions outlined in **Section 3.3**.

For slopes equal or greater than 4/12, all BP shingles can be installed.

Asphalt Shingles can not be installed on roof slopes below 2/12.

Please refer to Table 2 found in Section 3.2.

2.2 - **DECK**

The deck must be in good condition. It must be dry, clean, flat, smooth and securely nailed. Plywood decking is recommended. For required thickness please refer to applicable National or Local Building Codes.

Failure to use proper decking materials can result in deck movement, which will distort or damage the overlying roofing materials. Distortion of roofing resulting from deck movement is not a manufacturing defect of the roofing product and is not covered by the warranty. Decks that are warped should be replaced as the shape will be transferred over the shingles. This is not a shingle manufacturing defect and is not covered by the warranty.

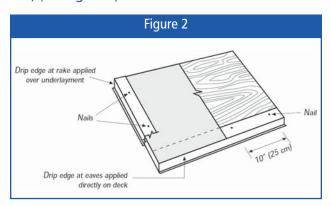
Due to the natural movement of wood caused by moisture content, varying degrees of buckling in the shingles may occur. If, however, leaking, due to buckling, occurs it is not the fault of the shingles but the roof deck itself. It is therefore recommended that plywood sheathing be applied over shiplap decks prior to installation of this shingles. Problems due to the deck will render the warranty void.

Shingles must not be nailed over insulation.



2.3 - DRIP & RAKE EDGE

Apply a drip edge of metal (galvanized steel, sheet copper) on the eaves and rake edges. Apply the drip edge at the eaves directly to the wood deck and at the rake over the underlayment. Nail every 20 cm to 25 cm (8" to 10") (see Figure 2).



2.4 - VENTILATION

All roof structures must be provided with through ventilation to prevent entrapment of moisture-laden air beneath the deck. Minimum requirements are unobstructed vent areas of 1/300 ft² of the total insulated ceiling area for conventional roofs, some jurisdictions as well as low slopes equal or greater than 2/12 to under 4/12 or cathedral ceilings require 1/150 ft². Vent holes should be distributed as follows: 55% as the base of the roof (soffits) for air inflow and 45% at the ridge for air outflow.

The shingle warranty will only be valid if all structures are provided with proper through ventilation.

Ventilation is defined as the net free area. Consult your vent manufacturer to determine the net free area of your ventilator and how to position your ventilators on the roof, in a way that one does not impede the effectiveness of the others.

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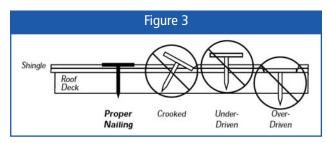
SECTION 3 — GENERAL INSTRUCTIONS

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- 3.2 Eave Protection & Underlayment
- 3.3 Underlayments for Low Slope Shingle Application
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3.1 - GENERAL DIRECTIONS

A - Nail Requirements:

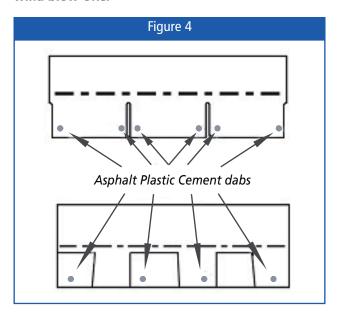
Use 10 to 12 gauge galvanized nails with a minimum 9 mm (3/8") head for all types of shingles. Nails must be long enough to penetrate a minimum of 19 mm (3/4") into solid wood deck or just through the plywood deck. **Do not use staples to fasten shingles**. Raised nails can result in shingle distortion and may prevent sealing. Drive nails until they are flush with the surface; do not overdrive nails. Do not nail in the adhesive strip: this may prevent shingles from sticking together (see **Figure 3**).



B – Asphalt Plastic Cement:

Use an Asphalt Plastic Cement which conforms to CAN/CGSB 37.5-M89 and/or ASTM D-4586. Asphalt Plastic Cement must be applied with a comb or notched trowel in a thin (less than 2 mm or 1/16" thick) even coating. Overuse of Asphalt Plastic Cement can damage the shingles.

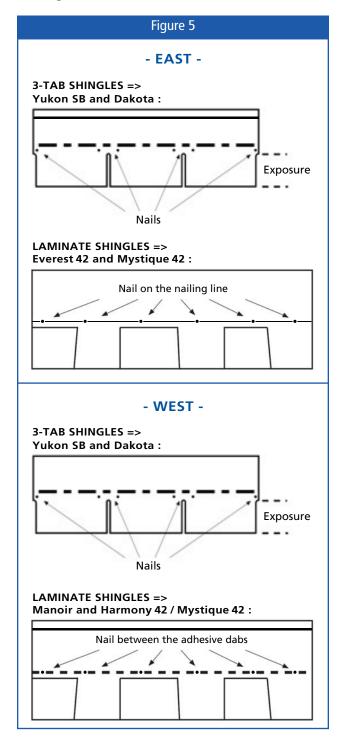
IMPORTANT: Shingles have a factory applied adhesive that is activated thermally. Certain conditions will hinder the effectiveness by which the adhesive keeps the shingles down to prevent wind blow-offs.





SEAL DOWN SHINGLES IF INSTALLED:

• In high wind areas;



- On slopes greater than or equal to 15/12. Please refer to **Section 3.1-D** and see **Figure 4**;
- At a temperature that will not activate the self-seal adhesive, refer to **Section 3.1-F** (BP recommends that hand sealing should be done from September 21st to March 21st);
- In areas subject to high dust conditions.

When cementing shingles, apply a small dab of Asphalt Plastic Cement, the size and thickness of a $25 \, \text{¢} - \text{or}$ a 16 mm ($^{5}/_{8}$ ") bead, 1.5 mm ($^{1}/_{16}$ "thick) – located 2.5 cm (1") and 30 cm (12") in from each end.

Shingles must be pressed firmly into Asphalt Plastic Cement (see Figure 4).

C – Protective Tape:

Do not remove parting strip of protective tape from the shingle underside. Its purpose is to prevent the shingles from sticking together while in the bundle. It does not affect the application or the effectiveness of the product.

D – Application on roofs with slopes greater than or equal to 15/12:

On such slopes, use six (6) nails per shingle instead of four. For nailing positions refer to **Section 4** for 3-tabs and **Section 5** for Laminates. See also **Figure 5**. After nailing, apply a small dab of Asphalt Plastic Cement (refer to **Section 3.1-B**). Excess application of Asphalt Plastic Cement can cause blistering. For Laminate shingles, apply Asphalt Plastic Cement 2.5 cm (1") and 30 cm (12") in from each end for a total of four dabs. Shingles must be pressed firmly into Asphalt Plastic Cement (see **Figure 4** and 5).

E – High Wind Warranty Installation:

To qualify for High Wind Warranty, which warrants against wind damage or shingle displacement for winds between 200 km/h (125mph) and 220 km/h (135 mph), shingles must be fastened using 6 nails and all shingles located at the roof edges must be cemented together with a 10 cm (4") wide layer of Asphalt Plastic Cement. If above special application instructions are not followed, shingles will be warranted for winds up to 180 km/h (110 mph). See Table 1a - EAST and Table 1b - WEST for wind speed warranty .



Table 1a - EAST				
Shingles	Standard Wind Warranty	High Wind Warranty		
• Manoir • Everest 42 • Mystique 42	180 km/h (110 mph)	220 km/h (135 mph)		
• Yukon SB • Dakota	180km/h (110 mph)	200 km/h (125mph)		
• Mirage GS	115 km/h (70 mph)	130 km/h (80 mph)		

Table 1b - WEST			
Shingles	Standard Wind Warranty	High Wind Warranty	
• Manoir	180 km/h	220 km/h	
• Harmony 42 / Mystique 42	(110 mph)	(135 mph)	
• Yukon SB	115 km/h	130 km/h	
• Dakota	(70 mph)	(80 mph)	

F - Cold Weather Application:

Shingles have a factory applied adhesive which is thermally activated. The self-seal adhesive must be subjected to sufficient heat to activate the bond. When the shingles are installed in environmental conditions that will not produce such a temperature or in very windy areas, the shingles should be sealed down with spots of Asphalt Plastic Cement under each tab as specified in CSA A123.51-M85. BP recommends that hand sealing should be done from September 21 to March 21. Please refer to Section 3.1-B and see Figure 4 for proper cementing method.

G – Installing Over Existing Layer of Shingles:

Old roofs must be dry and provide a smooth surface. Replace all damaged, curled, broken, buckled or loose shingles. To ensure a smooth even surface, sweep the old roofing prior to the installation. Nails must be long enough to penetrate a minimum of 19 mm (3/4") into solid wood deck or just through the plywood deck. Apply new shingles using butt-edge (nesting) application method where the top of the new shingle is nested against the bottom of the exposed portion of the old roofing shingle.

Multiple layers installation must be done in accordance with local bylaws and building code requirements; load restrictions must be considered when applying more than one layer of roofing material.

When trying to decide whether you should apply asphalt shingles over old shingles, use the following checklist to ensure you meet the requirements for multiple layer installation:

- Make sure the deck can support an additional layer of shingles. Check your local building code as some local ordinances forbid re-roofing over two or more layers of shingles because of the danger of overloading the supporting structure;
- Verify the underside of the deck for boards that are warped or rotten and must be replaced;
- Check that the old roof system does not have moisture retention problems and will meet minimum ventilation requirements;
- Check the condition of the old shingles. Remove or drive in any protruding nails. Defects in the old layer of shingles may telegraph through the new layer. BP will not be responsible for appearance problems related to multiple layer installation, such problems being typical of this type of installation;
- Remember if adding a second layer, you will need longer nails to ensure that you nail into the roof deck;
- The hip & ridge shingles of an existing roof on which new shingles are to be installed must be removed before application of new shingles.

H - Ventilation:

All roof structures must be provided with through ventilation to prevent entrapment of moisture-laden air beneath the deck. Ventilation provisions must meet or exceed current National Building Code requirements. In the U.S.A., check local building codes for minimum requirements. In general, as specified in most building codes, every roof space or attic above an insulated ceiling must be ventilated with openings to the exterior to provide an unobstructed vent area of not less than 1/300 ft² of the total insulated ceiling area. This ratio



does not apply for all roofs. A low slope roof or one with cathedral ceilings requires twice $(2\times)$ the ventilation or a ratio of $1/150 \, \text{ft}^2$. The vents used may be roof-type vents, eave-type vents, gable-end type vents or any combination, and should be uniformly distributed so as to not impede each other from ventilating each roof space. When calculating the net free area (unobstructed open area), be sure to factor in any obstacle to free air circulation such as screens, grids, louvers, blades, etc.

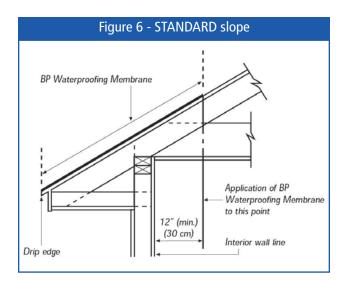
There must be at least 5 cm (2") of space between the insulation in the attic and the deck. If insulation was added to the deck without leaving space for air flow, the ventilated soffit might not be able to do the job it was intended to do.

The shingle warranty will only be valid if all roof structures are provided with proper through ventilation.

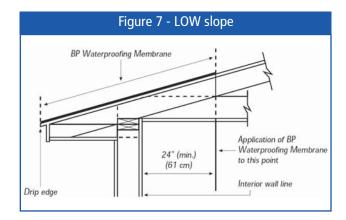
3.2 – EAVE PROTECTION & UNDERLAYMENT

A - Eave Protection:

Apply a non-corroding metal drip edge at the eaves (see **Section 2.3**). Next, install the eave protector; GRIPGARD or BP Slate or Smooth Surface Roll Roofing starting at the drip edge.



Starting at the low point of the roof, work upward. Apply the eave protection membrane by laying the roll horizontally and extending up the roof, from the eaves, to a point at least 30.5 cm (12") beyond the interior wall line (see Figure 6). On low slopes equal or greater than 2/12 to under 4/12 the eave protection membrane must be extended a minimum of 61 cm (24") beyond the inside surface of the exterior wall (see Figure 7). This requirement may vary depending on location. Check your local building code for minimum requirements. Be sure to:



- 1] Cut the eave protection membrane into lengths of 3 m to 4.5 m (10' to 15').
- 2] Align this material along the edge of the roof and re-roll.

For self-adhering membranes:

- 3a] Peel back about 30.5 cm (12") of release film backing and adhere the peeled area. Re-roll to the adhered portion.
- 3b] Pull on the release film backing to unroll the eave protection membrane and press the material into place to ensure tight bond. If the membrane deviates from the roof line, cut and start as above mentioned procedure.
- 3c] End laps must be a minimum of 15.2 cm (6"), side laps a minimum of 7.6 cm (3"). For GRIPGARD, the end laps must be sealed down with a 10 cm (4") wide, thin and uniform layer of Asphalt Plastic Cement.





Table 2 - RECOMMENDATIONS and REQUIREMENTS for BP Shingles							
Slope	Shingles	Eave Pro	Eave Protection U		yment	Documentation	
Зюре	Jilligles	Minimum	Products	Minimum	Products	ВР	Other
< 2/12	Shingles cannot be installed	n/a	n/a	n/a	n/a	n/a	n/a
* ≥ 2/12 < 4/12 Low Slope	Dakota Yukon SB Mirage GS	REQUIRED :		REQUIRED : 2 Plies n°15 Plain		Application Instructions: Sections [R5] 3.2; [R5] 3.3	National Building Code: Sections 9.26.5; 9.26.6; 9.26.8 NBC sec 9.26 CSA A123.5 CSA A123.51/52
* ≥ 3/12 < 4/12 Low Slope	 Manoir Everest 42 Mystique 42 Harmony 42 / Mystique 42	24" past inner face of exterior wall		Felt over entire roof surface		Application Instructions: Sections [R5] 3.3;	
≥ 4/12 < 6/12		DECUMPED.	Gripgard Smooth Surface		Gripgardn°15 CSA Pro	[R5] 5	CSA A123.2 CSA A123.3 CSA A123.22
Standard Slope		REQUIRED : 12" past inner face of exterior wall	• Slate Surface	RECOMMENDED :	Plain n°15Deckgard**		National Building Code: Sections 9.26.5; 9.26.6;
≥ 6/12 < 8/12 Standard Slope	All BP Shingles			1 Ply n°15 Plain Felt over entire	, i	Application Instructions: Sections [R5] 3;	9.26.7 NBC sec 9.26
≤ 8/12		RECOMMENDED : 12" past inner face		the roof surface		[R5] 4 ; [R5] 5	CSA A123.5 CSA A123.51/52
Steep Slope		of exterior wall					CSA A123.2 CSA A123.3 CSA A123.22

^{*} Special application required for low sloped roofs.

^{**} Slopes equal or greater than 3/12 only.



For Slate or Smooth surface roll roofing:

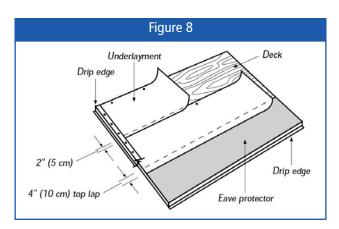
4a] Along the eave edge, the roll roofing must be sealed down with a 10 cm (4") wide, thin and uniform layer of Asphalt Plastic Cement.

4b] End laps must be a minimum of 15.2 cm (6"), side laps a minimum of 7.6 cm (3"). For Slate or Smooth Surface Roll Roofing, the end laps must be sealed down with a 10 cm (4") wide, thin and uniform layer of Asphalt Plastic Cement.

B - Underlayment:

Refer to **Table 2** for underlayment requirements for BP Shingles. If you want to meet fire-resistant ratings, the use of underlayment is mandatory under BP shingles.

The purpose of shingles is to shed water as well as to protect against rain which can periodically be driven under shingles. Thus, even when an underlayment is optional, its use over the entire roof deck is strongly recommended. An underlayment consists of BP's GRIPGARD n°15 CSA Pro Felt, n°15 Asphalt Felt Plain or DECKGARD laid horizontally over the deck and must be applied over the entire roof deck.



The underlayment should be installed over the entire deck surface, with the length parallel to the eave. Use BP's GRIPGARD, n°15 CSA Pro Felt, n°15 Asphalt Felt Plain or DECKGARD. Overlap horizontally sheets of GRIPGARD and on 7.6 cm (3"), of DECKGARD on 10 cm (4"), of asphalt felts (Plain n°15, n°15 CSA Pro and CSA Classic) on 2" and 15.2 cm (6") vertically (see **Figure 8**). Nail sufficiently to hold the underlayment in place until the shingles are applied.

Install shingles as soon as possible after installation of the underlayment. Building Products of Canada Corp. recommends installing the shingles the same day as the underlayment, to keep it from being wet or wrinkled. If underlayment is used to waterproof over a long period of time, it should be visually inspected to ensure it is not wet, wrinkled or otherwise damaged. If it is, it should be discarded and replaced by a new approved underlayment.

3.3 – UNDERLAYMENTS FOR LOW SLOPE SHINGLE APPLICATION

The following application instructions must be followed when MIRAGE GS, YUKON SB or DAKOTA are installed on slopes equal or greater than 2/12 to under 4/12 or when MANOIR, EVEREST 42, HARMONY 42 / MYSTIQUE 42 or MYSTIQUE 42 shingles are installed on slopes equal or greater than 3/12 to under 4/12. Please refer to **Section 2.1**.

Method 1:

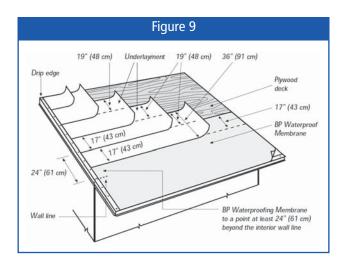
As described for normal slopes, for optimum protection against water penetration, use a single ply of GRIPGARD over the entire wood deck. They are strong, self-adhesive, roofing membranes that are applied by peeling off the release / film paper backing as it is unrolled.

Starting at the low point of the roof, apply GRIPGARD by laying the roll horizontally. End laps must be a minimum of 15 cm (6"). For GRIPGARD, the end laps must be sealed down with a 10 cm (4") wide, thin and uniform layer of Asphalt Plastic Cement. Each succeeding course should be lapped over the preceding, lower course by at least 7.6 cm (3") for GRIPGARD. Felt underlayment is not required when GRIPGARD is installed over the whole roof.

Method 2:

Eave protection consists of a single ply of GRIPGARD laid horizontally and extending up the roof, from the eaves to a point at least 61 cm (24") beyond the interior wall line. End laps must be a minimum of 15 cm (6"). If more than one width is required, overlap the second course 7.6 cm (3") over the first for GRIPGARD (see Figure 9).





Next, install the underlayment. This calls for a double layer of BP's n°15 CSA Pro Felt, n°15 Asphalt Felt Plain, for all low slope applications or DECKGARD for all slopes equal or greater than 3/12. Lay horizontally over the rest of the roof. Underlayment must be applied over the entire roof deck. Start with a 91cm (36") wide sheet overlapping GRIPGARD 43 cm (17"). The first layer should also completely cover the Eave Protection in order to facilitate the application of shingles. Apply a second 91cm (36") sheet, overlapping the first one 48 cm (19"), leaving 43 cm (17") exposed. Thereafter, 91cm (36") sheets are laid, each to overlap the upper 48 cm (19") of the preceding course, until the rest of the roof deck has been covered. Each course of felt is nailed towards its upper edge with only enough nails to hold it in place until the shingles are applied (see Figure 9).

3.4 – UNDERLAYMENTS FOR STANDARD SLOPE APPLICATION (≥ 4/12)

For slopes equal or greater than 4/12, best protection consists of one ply of n°15 Asphalt Felt Plain. End laps must be a minimum of 15 cm (6"). Overlap the subsequent course 7.6 cm (3") over the previous course.

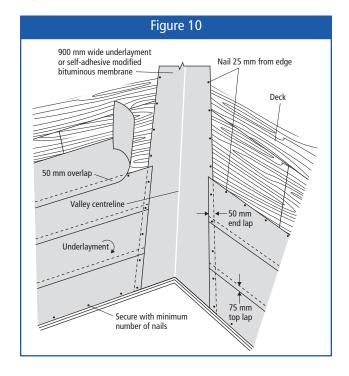
3.5 - VALLEY PREPARATION & INSTALLATION

A - Valley Preparation:

Valleys may be open, closed, or woven (Laminate

shingles are not recommended for closed-cut or woven valleys). Regardless of the type of valley selected, the valley flashing must be in place before shingle application has begun. The metal flashing must be corrosion-resistant. For proper water flow start shingle application on the roof plane with the lower slope or height.

After installing eave protection and prior to installing the underlayment, apply valley flashing by first installing along the valley centre a minimum 900 mm (35.4") wide strip of GRIPGARD or underlayment and secure with enough nails to hold in place. Trim horizontal courses of underlayment to overlap valley strip by a minimum 150 mm (5.9") where applicable. Where valley flashing joints occur, overlap a minimum of 300 mm (11.8") in the flow direction and if the valley flashing is underlayment, embed the overlap in asphalt roofing cement (see Figure 10).

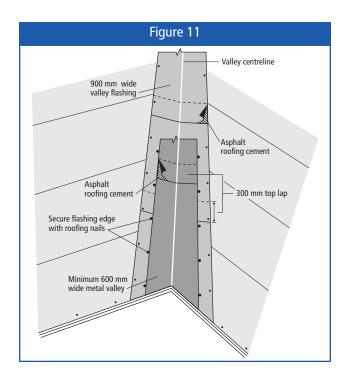


B – Valley Installation:

• Open Valley - Metal:

Metal valley sections should not be less than 600 mm (23,6") wide with a maximum length of 3 m (118"). Valleys shall consist of one thickness of metal, formed so as to guide water away from the shingles.





With valley flashing already in place, centre the sheet metal in the valley. Secure metal flashing by nailing on 300 mm (11.8") - 450 mm (17.7") centres without puncturing the metal (see **Figure 11**). This can be achieved by nailing so that nail shanks are adjacent

Valley flashing self-adhered shingle underlayment

Chalk lines diverge 3 mm per 300 mm

Asphalt roofing cement

Line and set in 75 mm width of cement

Valley centreline

Valley centreline

Valley centreline

Valley centreline

Underlayment

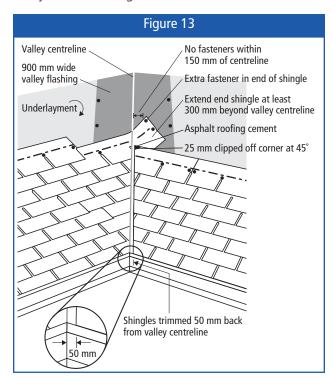
Valley centreline

to the metal edge with the nail heads overlapping and securing the flashing in place. If more than one piece of metal flashing is required, overlap in the flow direction by 300 mm (11.8") and embed in asphalt roofing cement (see Figure 11).

Before installing shingles, snap two chalk lines, each 75 mm (2.9") from the centreline of the valley at the top diverging down the valley to the lower end from the centreline at the rate of 10 mm/m to a maximum of 200 mm (7.9") apart. As the field shingles are applied toward the valley, trim the last shingle in each course to fit to the chalk line. Do not use a shingle less than 300 mm (11.8") in size to finish a course running into a valley. Clip 25 mm (0.98") from the upper corner from each shingle at a 45 degree angle to direct water into the valley and prevent water ingress between courses. Cement the shingle to the valley flashing with a 75 mm (2.9") width of asphalt roofing cement. There should be no exposed nails along the valley flashing (see Figure 12).

• Closed Cut Valleys:

Closed-cut valleys are preferred where the slopes are steeper and where specifications call for valley protection using shingles. In these valleys, shingles on the adjacent valleys are butted together.



APPLICATION INSTRUCTIONS

ASPHALT SHINGLES



With valley flashing already in place, apply the first shingle course along the eaves of one roof plane and across the valley. Extend the end shingle a minimum 300 mm (11.8") onto adjoining roof plane. Apply succeeding courses in a similar fashion. Press shingles tightly into valley. Nail normally, except ensure that no nail is within 150 mm (5.9") of valley centreline. Secure the end of the shingle crossing the valley with two nails.

Before installing shingles on the adjoining roof, snap a chalk line 50 mm (1.97") from the valley joint on the adjoining roof.

Apply shingles on the adjoining roof plane. Start along the eaves and cross the valley onto the previously applied shingles. Trim the shingles being applied to the chalk line back from the valley centreline. Clip 25 mm (0.98") from the upper corner of each end shingle to direct water flow into the valley. Nail the shingles to the roof , but keep all nails at least 25 cm (9.8") outside the chalk line. Embed each end shingle in a 75 mm (2.9") wide strip of asphalt roofing cement (see Figure 13).

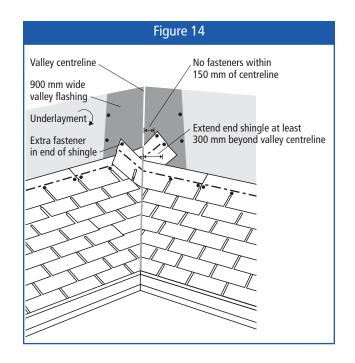
Woven Valleys:

With flashing already in place, begin shingling simultaneously from both roof planes. Apply a chalk down each side of the valley 150 mm (5.9") from the valley joint. Apply shingles along eaves of one roof area and across valley extending the end shingle a minimum of 300 mm (11.8") onto the intersecting roof plane Apply courses alternately from adjoining roof areas, weaving the shingles together. Press each shingle tightly into the valley and nail as for closed valleys. Nail the shingles down, but keep all nails at least 25 mm (0.98") from the chalk line (see **Figure 14**).

• Valley at dormer roof:

Open valley flashings at a dormer roof are done in exactly the same manner as any open valley flashing except that GRIPGARD is brought down over the first course of shingles of the main roof to the top of the cut outs and out on to the dormer roof. Do not install valley flashing until the shingle application reaches a point just above the lower end of the valley (see Figure 15).

Installing a layer of GRIPGARD in the valley, instead of Slate Surface roll, will ensure maximum protection.

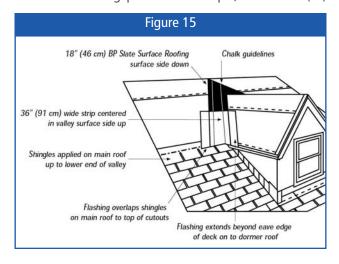


3.6 - FLASHING

Flashing details shall follow Building Code requirements. As required, corrosion resistant metal drip and rake edge shall be installed at eaves and rake. Chimneys, vents, etc. should be flashed in an approved manner, using approved material such as galvanized steel or sheet copper.

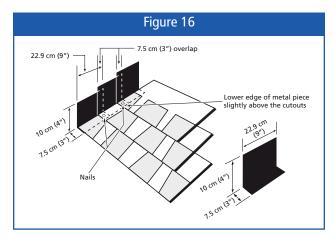
A - Vertical Wall Flashing:

Each piece of metal flashing must be provided with a 7.6 cm (3") side lap. This dimension and the amount of the shingle exposure will determine the width of the metal flashing piece. For example, a 15.2 cm (6")





exposure will require a piece of metal flashing 22.9 cm (9") wide. Each strip is placed on top of the shingle, with the lower edge just slightly above the exposure part of the shingle (see **Figure 16**).



Each metal flashing piece should be long enough to extend 10 cm (4") up the vertical wall, and 7.5 cm (3") onto the roof deck. For the above-mentioned example, taken together, the width and length dimensions require that each metal flashing piece measure $17.5 \text{ cm} \times 22.9 \text{ cm}$ (7" \times 9").

To install step flashing, place the first flashing piece over the end of the starter strip and position is so that the tab of the end shingle in the first course covers it completely. Secure the horizontal flange to the roof with two nails. Do not nail flashing to the wall as settling of the roof could damage the seal.

Complete the first course of shingles along the roof eave, and secure the end of the last shingle to the metal flashing piece with Asphalt Plastic Cement. Do not nail through the shingle and metal flashing.

Apply the second metal flashing piece to the vertical wall sheathing and the roof deck using the same method described for the first one. Provide at least a 7.6 cm (3") side lap, but do not allow its edge to extend into the exposure for the first shingle course. On the roof deck, the metal flashing pieces must be completely hidden from view by the shingles (see **Figure 16**). Siding serves as cap flashing over step flashing on the vertical wall.

In re-roofing (application over an existing layer of shingles), ensure that the old shingles butting the wall

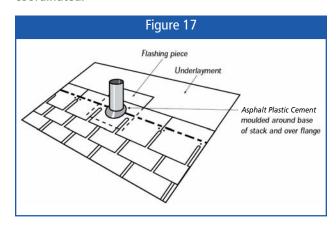
are in good condition. Apply a strip of BP Smooth Surface Roll Roofing, GRIPGARD 20 cm (8") wide over the shingles along the wall. Nail 10 cm (4") apart along each edge of the strip. Cover with Asphalt Plastic Cement and embed the new shingles. Use a caulking gun and draw a bead of Asphalt Plastic Cement between the ends of the shingles and the siding.

Flashings should always be neatly done and color coordinated.

B - Soil Stack Flashing:

Use either GRIPGARD, BP Smooth Surface Roll Roofing or a metal flange to flash a soil stack and lay around the soil stack before shingles are laid. Cut a piece of flashing material with a hole in it to fit just over the pipe and large enough to extend 10 cm (4") below, 20 cm (8") above and 15 cm (6") to each side of the pipe. Slip this flange over the pipe and lay it flat on the roof. Form a collar of Asphalt Plastic Cement around the pipe to plug the gap and work it in properly to obtain good adhesion of the Asphalt Plastic Cement to the pipe. Continue laying shingles and cement in all areas that overlap the flange (see Figure 17).

Flashings should always be neatly done and color coordinated.



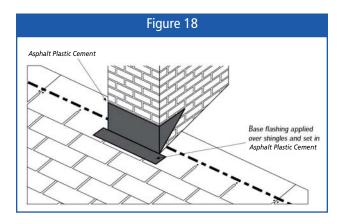
C - Chimney Flashing:

Chimneys are built on a separate foundation than the building to avoid uneven settling. This necessitates the construction of base flashings secured to the deck and covered by cap flashings secured to the chimney to permit movement, without damage to the water seal.



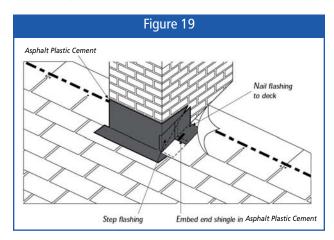
Before flashing, shingles are applied up to the lower face of the chimney. A cricket or saddle is built on the upper side of the chimney to prevent the accumulation of water or ice.

Start on the low side of the chimney and apply a strip of Smooth Surface Roll Roofing, Slate Surface Roll Roofing, GRIPGARD, cutting the edges to permit folding up the sides of the chimney. Extend 25 cm (10") up the chimney and onto the roof to the top of the cut-outs of the last shingle course. Secure this strip to the shingles with Asphalt Plastic Cement.

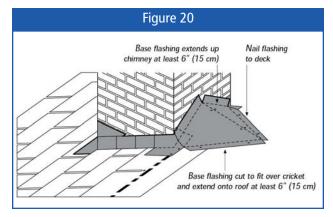


Apply the metal base flashing, starting with the front of the chimney. Bend the base flashing so that the lower section extends at least 10 cm (4") over the shingles and the upper section extends at least 30 cm (12") up the vertical face of the chimney (see **Figure 18**). Secure the metal flashing to the roll roofing using Asphalt Plastic Cement . Shingle around and / or over the base flashing.

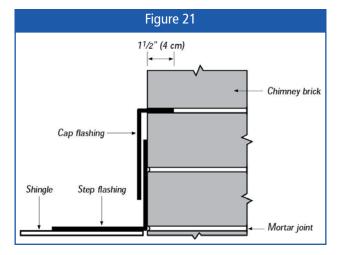
Use metal step flashing for the sides of the chimney, positioning the units in the same manner as flashing a



vertical wall. Cut, bend and apply the step flashing as shown in **Figure 19** and as described in **Section 3.6-A**. Secure each flashing unit to the deck with nails. Embed the end shingles in each course that overlaps the flashing in Asphalt Plastic Cement.

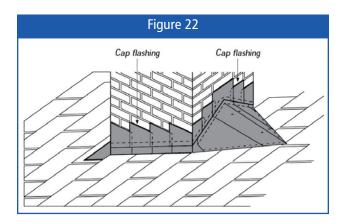


Next, cut and bend the metal base flashing to cover the cricket and extend onto the roof surface at least 15 cm (6"). It should also extend at least 15 cm (6") up the brickwork and far enough laterally to lap the step flashing on the sides (see **Figure 20**). Shingle around and/or over the base flashing.



Cap flashings must now be placed over all base flashings for positive exclusion of water from the joint. Begin by setting the metal cap flashing into the brickwork as shown in **Figure 21**. This is done by raking out a mortar joint to a depth of 4 cm (1 $^{1}/_{2}$ ") and inserting the bent edge of the flashing into the cleared joint. Refill the joint with mortar or Asphalt Plastic Cement. Finally, bend the flashing down to cover the base flashing and





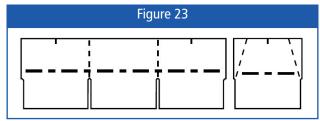
to lie snugly against the masonry. Don't fasten through the base flashing, as the two must be allowed to move independently.

Use one continuous piece of cap flashing on the front of the chimney. On the sides and back of the chimney, use several pieces of similar-sized flashing, trimming each to fit the particular location of brick joint and roof pitch (see **Figure 22**). Start the side units at the lowest point and overlap each at least 7.5 cm (3"). Remember that flashings should always be neatly done and color coordinated.

3.7 - HIP AND RIDGE

A - Hip and Ridge Installation:

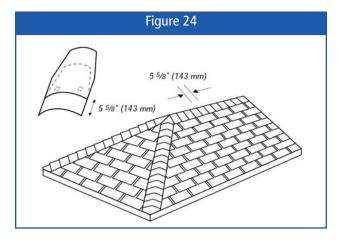
The last course of shingles applied must have the exposed granular surface to within 14.3 cm (5 5I_8 ") of the ridge. The headlap of the shingle is turned over the ridge and nailed on the opposite slope. When both slopes have been completed in this fashion, the ridge capping can be applied. Cut full-size shingles into 3 equal parts to make capping. Cut off both corners of each section at an angle (see **Figure 23**).



B - Apply Hip and Ridge caps as follows:

- 1] Bend the cap down the center so as to have equal exposure of the granules on each side of the ridge. In cold weather, warm the cap before bending.
- 2] Begin at bottom of a hip or at end of ridge opposite to the prevailing wind and apply caps, overlapping to give a 14.3 cm ($5^{5}/8$ ") exposure (see **Figure 24**).

Nail cap with one nail on each side 15.2 cm (6") from the exposed end and 2.5 cm (1") from each side.



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SECTION 4 — THREE-TAB SHINGLES

4.0 Mirage GS, Yukon SB, Dakota

4.0 - THREE-TAB SHINGLE - Mirage GS, Yukon SB, Dakota

Before proceeding with the installation, please refer to the following sections in this Application Instructions:

Section 1 - Getting Ready For The Job ;

Section 2 - Preparation, Protection of vulnerable area & Ventilation ;

Section 3 - General Instructions.

NOTE: Compliance with all local safety regulations is the responsibility of the applicator. Compliance with current building code requirements is the responsibility of the applicator and the homeowner. Self-sealing shingles contain self-sealing adhesive strips that must be exposed to sufficient surface temperatures before full thermal sealing can occur. Shingles installed in the fall or winter may not seal until they are exposed to such periods of sufficient surface temperatures (see Section 3.1-F). In addition, contamination of the sealant by dust or foreign matter may prevent the sealing band from achieving full thermal seal. Prior to sealing, shingles are more vulnerable to being blown-off or incurring wind damage.

Building Products of Canada Corp. reserves the right to modify the following application instructions at any time. To obtain the latest and complete version of the application instructions, please visit www.bpcan.com.

GENERAL DIRECTIONS:

- Roof Deck
 See Section 2.2
- Asphalt Plastic Cement See Section 3.1-B
- Installing Over Existing Layer of Shingles
 See Section 3.1-G
- Eave Protection
 See Section 3.2-A
- Underlayment
 See Section 3.2-B
- Low Slope Application
 See Section 3.3
- Valley Preparation
 See Section 3.5
- Flashing
 See Section 3.6



APPLICATION OF SHINGLES:

Nailing:

Improper nailing will render the warranty null and void. The head of the nails must be driven flush to the top of the shingle surface. Raised nails can result in shingle distortion and may prevent sealing due to lack of contact with the sealant. **Do not use staples to fasten shingles**. A minimum of four (4) nails per shingle is required for all slopes. Nail at 2.5 cm (1") of the shingle ends, with the other nails approximately 1.27 cm to 2.5 cm (1½" to 1") above the cut-outs. For slopes greater than or equal to 15/12, a minimum of six (6) nails is required. For installation with six (6) nails, place a nail at 2.5 cm (1") from each edge, a nail at 30.2 cm (11 ½") from each edge and another nail at 32.7 cm (12 ½") of each edge. Do not nail on the adhesive strip. For detailed nailing instructions, please refer to **Section 3.1 (A, D, E, G)**.

Starter Course:

- 1] On the deck chalk a horizontal line at 18.8 cm (7 $^{3}/_{8}$ ") from the lower edge of the drip;
- 2] Use BP Starter Strip Shingle or cut away and discard the lower tab portion of the 3-tab shingle;
- 3] In order to off-set seams, cut $16.7 \text{ cm} (6\,^9/_{16}")$ off the left end of the first starter shingle and install with the factory applied adhesive adjacent to the eaves. Starting at the rake edge, align top edge of this piece with the chalk line. If the shingles do not overhang the eaves by $6 \text{ mm} (^1/_4")$, adjust your horizontal chalk line accordingly;
- 4] Continue across the roof with full length starter shingles. Nail with four nails equally spaced across the shingle, at 7.6 cm (3") up from the eaves.

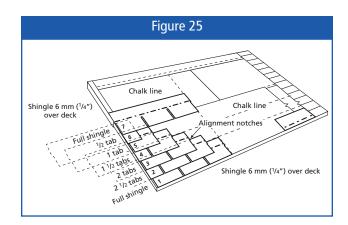
5] Asphalt Plastic Cement may be used underneath the starter shingles and along the rake edge. It should be used sparingly, as excessive amounts may damage shingles.

First Course:

Start the first course with a full shingle.

Succeeding Courses:

Offset each shingle row by half a tab. At the 7th row, go back to the vertical line and repeat the sequence. For optimum alignment, draw reference vertical lines every 2 m (78 ³/₄") to check and adjust your tab vertical alignment. Draw a horizontal line every 28.5 cm (11 ¹/₄") in order to check and adjust your horizontal alignment (see **Figure 25**).



Shingles In Valley:

Refer to Section 3.5.

Hip and Ridge Installation:

Refer to Section 3.7.

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SECTION 5 - LAMINATE SHINGLES

- 5.0 Weather-Tite™: Sealant Bands / Release Tapes
- 5.1 Everest 42 and Mystique 42
- 5.2 Harmony 42 / Mystique 42
- 5.3 Manoir

5.0 - Weather-Tite™: Sealant Bands / Release Tapes

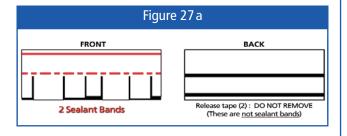
NOTE: Laminate Shingles are now backed with BP's innovative Weather-Tite™ Technology. These Shingles now include 2 Sealant Bands which provide superior protection in the toughest weather (see Table 3).

Table 3			
Shingles	Standard Wind Warranty	High Wind Warranty	
• Manoir • Everest 42 • Harmony 42 / Mystique 42 • Mystique 42	180 km/h (110 mph)	220 km/h (135 mph)	

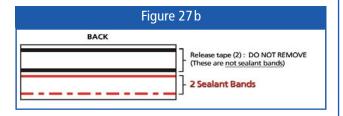
In order to make the distinction between the application of shingles offered in the West verses those offered in the East (see Figure 26).



HARMONY 42 / MYSTIQUE 42 and MANOIR laminate shingles have 2 sealant bands located on the front of the shingle as well as 2 release tapes (to prevent sticking during stacking) on the back which SHOULD NOT BE REMOVED (see Figure 27a).



MYSTIQUE 42 and EVEREST 42 laminate shingles have 2 sealant bands as well as 2 release tapes (to prevent sticking during stacking) on the back which SHOULD NOT BE REMOVED (see Figure 27b).



- *Manufactured in the West. Sealant Bands are located on the Top / Front of each Shingle (also see Figure 27a).
- **Manufactured in the East. Sealant Bands are located on the Bottom / Back of each Shingle (also see Figure 27 b).



Before proceeding with the installation, please refer to the following sections in this Application Instructions:

Section 1 - Getting Ready For The Job;

Section 2 - Preparation, Protection of vulnerable area & Ventilation ;

Section 3 - General Instructions.

NOTE: Compliance with all local safety regulations is the responsibility of the applicator. Compliance with current building code requirements is the responsibility of the applicator and the homeowner. Self-sealing hip and ridge shingles contain self-sealing adhesive strips that must be exposed to sufficient surface temperatures before full thermal sealing can occur. Shingles installed in the fall or winter may not seal until they are exposed to such periods of sufficient surface temperatures (see Section 3.1-F). In addition, contamination of the sealant by dust or foreign matter may prevent the sealing strip from achieving full thermal seal. Prior to sealing, shingles are more vulnerable to being blown-off or incurring wind damage.

Building Products of Canada Corp. reserves the right to modify the following application instructions at any time. To obtain the latest and complete version of the application instructions, please visit www.bpcan.com.

GENERAL DIRECTIONS:

- Roof Deck
 See Section 2.2
- Asphalt Plastic Cement See Section 3.1-B
- Installing Over Existing Layer of Shingles
 See Section 3.1-G
- Eave Protection
 See Section 3.2-A
- Underlayment
 See Section 3.2-B
- Low Slope Application
 See Section 3.3
- Valley Preparation
 See Section 3.5
- Flashing
 See Section 3.6

APPLICATION INSTRUCTIONS

ASPHALT SHINGLES

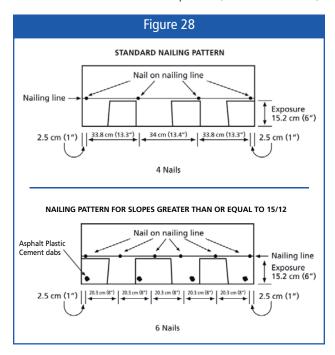


5.1 - LAMINATE SHINGLES - Everest 42 and Mystique 42 East

APPLICATION OF SHINGLES:

Nailing:

Improper nailing will render the warranty null and void (see Section 3.1-A). Nail as per Figure 28. The head of the nails must be driven flush to the top of the shingle surface. Raised nails can result in shingle distortion and may prevent sealing due to lack of contact with the sealant. Do not use staples to fasten shingles. A minimum of four nails per shingle is required for all slopes. On slopes greater than or equal to 15/12, a minimum of six nails is required (see Section 3.1-D).



Everest 42 and **Mystique 42** shingles <u>must be nailed</u> on the <u>nailing line</u> to allow penetration through the double-ply area just above the tops of the laminated tabs. Nails must be long enough to penetrate a minimum of 19 mm (¾") into solid wood deck or just through the plywood deck.

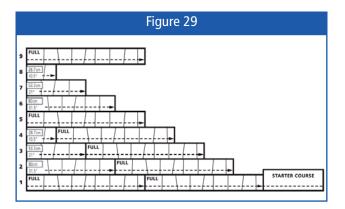
Place one nail 2.5 cm (1") back from each end and one 33.8 cm (13.3") back from each end of the shingle for a total of four nails, or place one nail 2.5 cm (1") back from each end and equally space four more nails every 20.3 cm (8"), for a total of six nails (see Figure 28).

Starter Course:

- 1] On the deck chalk a horizontal line at 18.8 cm (7 $^{3}/_{8}$ ") from the lower edge of the drip;
- 2] Use BP Starter Strip Shingle or cut away and discard the lower tab portion of the 3-tab shingle;
- 3] In order to off-set seams, cut 15,2 cm (6") off the left end of the first starter shingle and install with the factory applied adhesive adjacent to the eaves. Starting at the rake edge, align top edge of this piece with the chalk line. If the shingles do not overhang the eaves by 6 mm ($^{1}/_{4}$ "), adjust your horizontal chalk line accordingly;
- 4] Continue across the roof with full length starter shingles. Nail with four nails equally spaced across the shingle, at 7.6 cm (3") up from the eaves.
- 5] Asphalt Plastic Cement may be used underneath the starter shingles and along the rake edge. It should be used sparingly, as excessive amounts may damage shingles.

Application:

Always assure there is a minimum of 15.2 cm (6") offset between the ends of shingles from row to row. Start the first course with a full shingle. For the second course, cut 26.7 cm (10.5") from left end of shingle, and apply the long section over the headlap of the first course shingle, exposing 15.2 cm (6") of it. For the third course, cut 53.3 cm (21") from the left end of the shingle and apply





the long section over the headlap of the second course. Begin the fourth course with a partial shingle measuring 26.7 cm (10.5") establishing the overall diagonal method. Start the fifth course with a full shingle, repeating the process beginning with a full shingle and starting each succeeding course as described above. Continue to make your way across the roof, ensuring a 15.2 cm (6") exposure throughout the roof (see Figure 29).

NOTE: When working with cut piece, ensure that there is a minimum of 15.2 cm (6") offset between the ends of pieces from row to row. Always leave a space of 1" minimum between the nail heads and the shingle edges.

Shingles In Valley:

Refer to Section 3.5.

Hip and Ridge Treatment:

Use appropriate BP three-tab shingle of same colour (see **Table 4**). Ensure shingles are sufficiently warm and flexible to prevent cracking in cold climates. For details see **Section 3.7**.

Table 4		
Laminate Shingles	Hip and Ridge	
Manoir		
Everest 42	Yukon SB	
Harmony 42 / Mystique 42		
Mystique 42	• Dakota	

5.2 - LAMINATE SHINGLES - Harmony 42 / Mystique 42 West

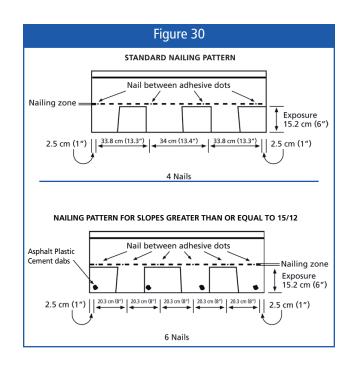
APPLICATION OF SHINGLES:

Nailing:

Improper nailing will render the warranty null and void (see Section 3.1-A). Nail as per Figure 30. The head of the nails must be driven flush to the top of the shingle surface. Raised nails can result in shingle distortion and may prevent sealing due to lack of contact with the sealant. Do not use staples to fasten shingles. A minimum of four nails per shingle is required for all slopes. On slopes greater than or equal to 15/12, a minimum of six nails is required (see Section 3.1-D).

Harmony 42 / Mystique 42 shingles must be nailed between the adhesive dabs of the patterned sealant band (nailing line) to allow penetration through the double-ply area just above the tops of the laminated tabs. Nails must be long enough to penetrate a minimum of 19 mm (¾") into solid wood deck or just through the plywood deck.

Place one nail 2.5 cm (1") back from each end and one 33.8 cm (13.3") back from each end of the shingle for



APPLICATION INSTRUCTIONS

ASPHALT SHINGLES



a total of four nails, or place one nail 2.5 cm (1") back from each end and equally space four more nails every 20.3 cm (8") for a total of six nails (see Figure 30).

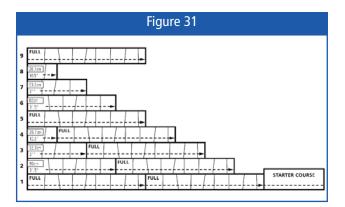
It is not necessary to remove the cellophane tape from the back of the shingles.

Starter Course:

- 1] On the deck chalk a horizontal line at 18.8 cm (7 $^3/_8$ ") from the lower edge of the drip;
- 2] Use BP Starter Strip Shingle or cut away and discard the lower tab portion of the 3-tab shingle;
- 3] In order to off-set seams, cut 15,2 cm (6") off the left end of the first starter shingle and install with the factory applied adhesive adjacent to the eaves. Starting at the rake edge, align top edge of this piece with the chalk line. If the shingles do not overhang the eaves by 6 mm ($^{1}/_{4}$ "), adjust your horizontal chalk line accordingly;
- 4] Continue across the roof with full length starter shingles. Nail with four nails equally spaced across the shingle, at 7.6 cm (3") up from the eaves.
- 5] Asphalt Plastic Cement may be used underneath the starter shingles and along the rake edge. It should be used sparingly, as excessive amounts may damage shingles.

Application:

Always assure there is a minimum of 15.2 cm (6") offset between the ends of shingles from row to row. Start the first course with a full shingle. For the second course, cut 26.7 cm (10.5") from left end of shingle, and apply the long section over the headlap of the first course shingle,



exposing 15.2 cm (6") of it. For the third course, cut 53.3 cm (21") from the left end of the shingle and apply the long section over the headlap of the second course. Begin the fourth course with a partial shingle measuring 26.7 cm (10.5") establishing the overall diagonal method. Start the fifth course with a full shingle, repeating the process beginning with a full shingle and starting each succeeding course as described above. Continue to make your way across the roof, ensuring a 15.2 cm (6") exposure throughout the roof (see **Figure 31**).

NOTE: When working with cut piece, ensure that there is a minimum of 15.2 cm (6") offset between the ends of pieces from row to row. Always leave a space of 1" minimum between the nail heads and the shingle edges.

Shingles In Valley:

Refer to Section 3.5.

Hip and Ridge Treatment:

Use appropriate 3-tab shingles of equivalent colour (see **Table 4**) in **Section 5.1**. Ensure shingles are sufficiently warm and flexible to prevent cracking in cold climates.

25



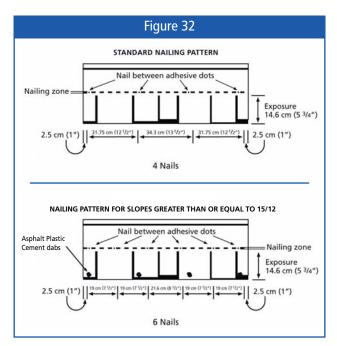
5.3 - LAMINATE SHINGLES - Manoir

APPLICATION OF SHINGLES:

Nailing:

Improper nailing will render the warranty null and void (see Section 3.1-A). Nail as per Figure 32. The head of the nails must be driven flush to the top of the shingle surface. Raised nails can result in shingle distortion and may prevent sealing due to lack of contact with the sealant. Do not use staples to fasten shingles. A minimum of four nails per shingle is required for all slopes. On slopes greater than or equal to 15/12, a minimum of six nails is required (see Section 3.1-D). To allow penetration through the double-ply area just above the tops of the laminated tabs, MANOIR shingles must always be nailed between the adhesive dabs of the patterned sealant band. Nails must be long enough to penetrate a minimum of 19 mm (¾") into solid wood deck or just through the plywood deck.

Place one nail 2.5 cm (1") back from each end and one 31.75 cm ($12^{1}/2$ ") back from each end of the shingle for a total of four nails, or place one nail 2.5 cm (1") back from each end and equally space four more nails every 19 cm ($7^{1}/2$ ") for a total of six nails (see **Figure 32**).



It is not necessary to remove the cellophane tape from the back of the shingles.

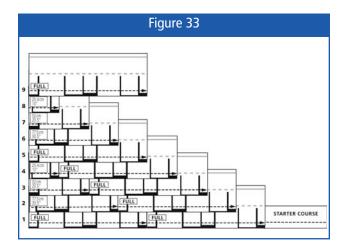
Starter Course:

- 1] On the deck chalk a horizontal line at 18.8 cm (7 $^{3}/_{8}$ ") from the lower edge of the drip;
- 2] Use BP Starter Strip Shingle or cut away and discard the lower tab portion of the 3-tab shingle;
- 3] In order to off-set seams, cut 15,2 cm (6") off the left end of the first starter shingle and install with the factory applied adhesive adjacent to the eaves. Starting at the rake edge, align top edge of this piece with the chalk line. If the shingles do not overhang the eaves by 6 mm (1/4"), adjust your horizontal chalk line accordingly;
- 4] Continue across the roof with full length starter shingles. Nail with four nails equally spaced across the shingle, at 7.6 cm (3") up from the eaves.
- 5] Asphalt Plastic Cement may be used underneath the starter shingles and along the rake edge. It should be used sparingly, as excessive amounts may damage shingles.

Application:

Start the first course with a full shingle. For the second course, cut 25.4 cm (10") from left end of shingle, and apply the long section over the headlap of the first course shingle, exposing 14.6 cm ($5^{-3}/_4$ ") of it. For the third course, cut 50.8 cm (20") from the left end of the shingle and apply the long section over the headlap of the second course. Begin the fourth course with the remaining partial shingle from row 2 establishing the overall diagonal method. Start the fifth course with a full shingle, repeating the process beginning with a full shingle and starting each succeeding course as described above. Continue to make your way across the roof, ensuring a 14.6 cm ($5^{-3}/_4$ ") exposure throughout the roof (see **Figure 33**).





NOTE: When working with cut piece, ensure that there is a minimum of 15.2 cm (6") offset between the ends of pieces from row to row. Always leave a space of 1" minimum between the nail heads and the shingle edges.

Shingles In Valley: Refer to Section 3.5.

Hip and Ridge Treatment :

Use appropriate 3-tab shingles of equivalent colour (see **Table 4**) in **Section 5.1**. Ensure shingles are sufficiently warm and flexible to prevent cracking in cold climates.

Building Products of Canada Corp.

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If this application instructions differ from the instructions on the packaging, this document is to be considered current. Please make sure to download the most up to date version of this document from the Building Products of Canada Corp. website www.bpcan.com. Please refer to local building codes for addition installation requirements.