

STEEP-SLOPE ROOFING

SECTION 5 - CEDAR SHAKE & CEDAR SHINGLE ROOFING

5.1 DECKS

5.1.1 General

- .1 Cedar shakes and shingles shall be applied to a continuous wood decking, spaced sheathing is not permitted.
- .2 For new construction recommended decking thickness is 11 mm (7/16") O.S.B. or 13 mm (1/2") inch thick exterior grade plywood roof sheathing.
- .3 For reroofing minimum deck thickness shall be 10 mm (3/8") exterior grade sheathing.

5.1.2 Strength

- .1 The roof framing and decking shall be designed of sufficient strength so that they will support the anticipated load such as construction loads. Roof decks shall be free of damaged, deteriorated or decayed wood.

5.1.3 Surface

- .1 The surface of all roof decks to which a roofing system is to be applied shall be sufficiently clean and dry so that proper attachment may take place.
- .2 Roofing over existing roofing materials is not permitted, tear off old materials to expose the decking.
- .3 Repair damaged or deteriorated decking with similar material prior to reroofing.

5.1.4 Slope and Exposures

- .1 For issuance of the Warranty Certificate the following slope and exposure requirements apply:

Cedar Shingles

- | | | |
|----|--------------------------|---|
| .1 | 3:12 (1:4) to 4:12 (1:3) | Use standard shingle application
(See Table 1 for exposure) |
| .2 | Greater than 4:12 (1:3) | Use standard shingle application
(See Table 1 for exposure) |
| .3 | Less than 3:12 (1:4) | Not warranted. (See ARCA Manual, Division 1
Slope Chart for system type acceptance.) |

5.1.4.2 Cedar Shakes

- .1 4:12 (1:3) and Greater Use standard shake application
- .2 Less than 4:12 (1:3) Not warranted. (See ARCA Manual, Division 1 Slope Chart for system type acceptance.)

5.1.4.3 Table 1 – Cedar Shakes & Shingle Exposures

Maximum Weather Exposures					
TYPE	LENGTH		ROOF SLOPE		
			3:12 TO 4:12		4:12 & STEEPER
SHINGLES	406 mm	(16")	95 mm	(3-3/4")	127 mm (5")
	457 mm	(18")	108 mm	(4-1/4")	140 mm (5-1/2")
	610 mm	(24")	146 mm	(5-3/4")	190 mm (7-1/2")
SHAKES	457 mm	(18")	N/a		190 mm (7-1/2")
	610 mm	(24")	N/A		254 mm (10")

5.2 ROOFING MATERIALS

5.2.1 General

- .1 Cedar shakes shall be No. 1 grade, mediums or better meeting the requirement of CSA 0118.1-97.
- .2 Cedar shingles shall be No. 1 grade meeting the requirements of CSA 0118.1-97.
- .3 To record material grade and mill name a label taken from the site material shall be submitted to ARCA for each project.
- .4 Materials shall be adequately labeled so that proper identification of the materials can be made.

5.2.2 Protection and Storage

- .1 Rolls of felt shall be stored on end, covered and out of danger of water penetration.

5.2.3 Application Limitations

- .1 No roofing material shall be applied when the weather or the condition of its substrate is such that the required installation procedures could not be followed or which would jeopardize the performance of the roofing system.

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5.2.4 Nails

- .1 Nails used for roofing shall be corrosion-resistant roofing or box nails conforming to CSA B111, "Wire Nails, Spikes and Staples". The nails shall be stainless steel or hot dipped galvanized.
- .2 Nails shall have sufficient length to penetrate through sheathing, or a minimum of 25 mm (1") into lumber roof decking.
- .3 Nails shall have a head diameter of not less than 4.8 mm (3/16") and a shank thickness of not less than 2.0 mm (.083")

5.2.5 Staples

- .1 The attachment of cedar shakes and shingles with staples is not permitted.

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5.3 FLASHING AT INTERSECTIONS

5.3.1 Materials

- .1 Sheet metal flashing shall consist of not less than:
 - a) 15 kg/m² (3 P.S.F.) thick sheet lead,
 - b) 0.41 mm (30 ga.) Z275 thick galvanized steel,
 - c) 0.56 mm (16 oz.) thick copper,
 - d) 0.60 mm (22 ga.) thick aluminum
 - e) or approved alternates.

5.3.2 Valley Flashing

- .1 Open valleys shall be used for cedar shake and shingle roofing.
- .2 Where sloping surfaces of roofs intersect to form a valley, the valley shall be flashed with minimum one (1) ply of self adhering S.B.S. modified bituminous membrane plus one layer of sheet metal valley flashing.
- .3 Centre minimum 914 mm (36") wide sections of S.B.S. membrane over valley centre line and uniformly adhere to a clean and dry deck surface. Overlap and seal membrane end laps a minimum distance of 150 mm (6").
- .4 Centre minimum 600 mm (24") wide sections of sheet metal valley flashing over the S.B.S. membrane and fasten in place. Where adjoining roof areas differ in pitch, the metal flashing shall incorporate a minimum 25 mm (1") high central Λ - break upstand to control water run off.
- .5 Mark water channel width by snapping chalk lines on the metal flashing starting at the ridge a minimum distance of 50 mm (2") on either side of the valley centre line. Taper channel width from the ridge to the eaves at the approximate rate of 13 mm (1/2") for every 2440 mm (8') of valley length. Cut units at chalk lines and fasten each with two (2) nails placed no closer than 150 mm (6") from either side of valley centre line.

5.3.3 Intersection of Shake & Shingle Roofs and Walls

- .1 The intersection of shake and shingle roofs at walls or chimneys shall be protected with flashing in accordance with the Alberta Building Code.

5.3.4 Chimney Saddles

- .1 Chimney saddles shall be installed where the upper side of a chimney of a sloping roof is more than 750 mm (30") wide. For details see the Alberta Building Code.
- .2 For chimneys less than 750 mm (30") wide a chimney saddle need not be installed if the intersection between the chimney and roof is protected by one ply of self adhering modified bituminous membrane and a sheet metal flashing that extends up the chimney to a height equal to not less than one sixth the width of the chimney, but not less than 150 mm (6"), and shall extend up the roof slope to a point equal in height to the flashing on the chimney, but not less than 1.5 times the shake exposure.

5.4 EAVE PROTECTION AND ANGLE FLASHING

5.4.1 Eave Protection

- .1 Eave protection shall extend from the roof edge a minimum distance of 900 mm (3') up the roof slope to a line not less than 300 mm (1') inside the inner face of the exterior wall. (See ARCA Technical Bulletin on Ice Dam protection.)
- .2 Eave protection is not required
 - (a) over unheated garages, carports and porches
 - (b) where the roof overhang exceeds 900 mm (3 ft) measured along the roof slope from the edge of the roof to the inner face of the exterior wall
 - (c) on roofs with slopes of 8:12 (1:1.5) or greater.

5.4.2 Materials

- .1 Eave protection shall be laid beneath the starter strip and shall consist of one of the following:
 - (a) No. 15 asphalt-saturated felt laid in two plies lapped 480 mm (19") and cemented together with lap cement.
 - (b) No. 25 glass fiber coated base sheet
 - (c) Self adhering S.B.S. modified bituminous membranes.

5.4.3 Drip Edge Flashing

- .1 The installation shall include prefinished or galvanized sheet metal rake and eaves drip edge flashings. The drip edge flashing deck flange shall extend a minimum distance of 75 mm (3") onto the roof decking and shall be nailed at maximum 400 mm (16") centres prior to the application of the eave protection or shingles. Space vertical flange 6 mm (1/4") from fascia.
- .2 All exposed flashing edges shall be hemmed.

5.5 SHAKE INTERLAY FELTS

5.5.1 Materials

- .1 Minimum one (1) ply No. 15 shake felt interlay shall be provided beneath each course of cedar roof shakes.

5.5.2 Installation

- .1 Interlay shall be laid in strips not less than 450 mm (18") wide between each course of shakes with the bottom edge of the underlay positioned above the butt line, a distance equal to double the exposure of the shakes.

5.6 SHINGLE UNDERLAYMENT

- .1 Minimum one (1) ply No. 25 plain felt or two (2) plies No. 15 felt underlay shall be provided beneath cedar shingles.
- .2 Underlay shall be laid as a strip not less than 900 mm (3') wide along eaves and 300 mm (1') wide along hips and ridges with minimum 50 mm (2") side laps.
- .3 Apply underlayment felts in courses laid perpendicular to roof slope to cover entire field of roof decking not covered by eave protection. Underlayment shall lap eave protection a minimum distance of 100 mm (4"). Fasten underlayment with sufficient nails to hold in place.

5.7 VENTILATION

- .1 Every roof space or attic above an insulated ceiling shall be ventilated with openings to the exterior to provide unobstructed vent area of not less than 1/150 of the insulated ceiling area. Vents may be roof type, eave type, soffit type, gable-end type or any combination thereof, and shall be uniformly distributed on opposite sides of the building. Roof vents shall be equally distributed so that approximately 50 percent of the required vent area is located near the lower part of the roof and approximately 50 percent of the required vent area is near the ridge. For exceptions see Alberta Building Code Section 9.19.1, Venting.

5.8 CEDAR SHAKES

5.8.1 Size of Shakes

- .1 Shakes shall be not less than 450 mm (18") long, not less than 100 mm (4") nor more than 350 mm (13-3/4") wide with a butt dimension of not less than 13 mm (1/2").

5.8.2 Spacing

- .1 Joints shall be spaced a minimum of 10 mm (3/8") and a maximum of 15 mm (9/16") between adjacent shakes and offset a minimum of 40 mm (1-1/2") at the joints so that joints in alternate courses are staggered.

5.8.3 Fastening of Shakes

- .1 Shakes shall be fastened with a minimum of two (2) nails located approximately 19 mm (3/4") from the sides of the shakes and 40 mm (1-1/2") above the exposure line.

5.8.4 Application of Shakes

- .1 The starter course shall be minimum one course of minimum No. 2 cedar shakes or shingles overlaid with the specified grade of cedar shakes.
- .2 Butts of first course shakes shall project 40 mm (1-1/2") beyond the fascia.
- .3 A 450 mm (18") wide strip of No. 15 interlay felt shall be laid over the top 100 mm (4") of the shakes and extend on to the sheathing 355 mm (14"). The bottom edge of the felt shall be positioned above the butt of the shake at a distance equal to twice the weather exposure.
- .4 Straight-split shakes shall be laid with the froe-end (the end from which the shake has been split and which is smoother) towards the ridge.

5.8.5 Hips and Ridges

- .1 Intersecting roof surfaces shall be capped to ensure a watertight joint.
- .2 Weather exposure for capping shall be the same as the field of the roof.
- .3 Prior to the application of the capping cover the shakes on either side of the ridge or hip with a strip of minimum No. 15 felt extending a minimum distance of 100 mm (4") on either side of the hip or ridge centre lines.
- .4 Nails shall be longer than those in the field of the roof and of sufficient length to penetrate 25 mm (1") into lumber roof decking or completely through the sheathing

5.9 CEDAR SHINGLES

5.9.1 Size of Shingles

- .1 Shingles shall not be less than 400 mm (16") long, not less than 100 mm (4") wide with butt dimension of not less than 10 mm (3/8").

5.9.2 Spacing

- .1 Joints shall be spaced a minimum of 6 mm (1/4") and a maximum of 10 mm (3/8") between adjacent shingles and offset a minimum of 40 mm (1-1/2") at the joints so that joints in alternate courses are staggered.

5.9.3 Fastening of Shingles

- .1 Shingles shall be fastened with a minimum of two (2) nails located approximately 19 mm (3/4") from the sides of the shingles and 40 mm (1-1/2") above the exposure line.

5.9.4 Application of Cedar Shingles

- .1 The starter course shall be minimum one course of cedar shingles of the same material as the field shingles overlaid with the specified grade of cedar shingles.
- .2 Butts of the first course shall project 40 mm (1-1/2") beyond the fascia.
- .3 Succeeding courses of shingles shall be fastened ensuring that alternate course joints do not align and in any three (3) courses, no two (2) joints shall be in direct alignment.

5.9.5 Hips and Ridges

- .1 Intersecting roof surfaces shall be capped to ensure a watertight joint.
- .2 Weather exposure shall be the same as the field of the roof.
- .3 Prior to the application of the capping cover the shingles on either side of the ridge or hip with a strip of minimum No. 15 felt extending a minimum distance of 100 mm (4") on either side of the hip or ridge centre lines.
- .4 Nails shall be longer than those in the field of the roof and of sufficient length to penetrate 25 mm (1") into lumber roof decking or completely through the sheathing.