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## **ASPHALT SHINGLES ROOF COVERINGS AND REROOFING CODE REQUIREMENTS**

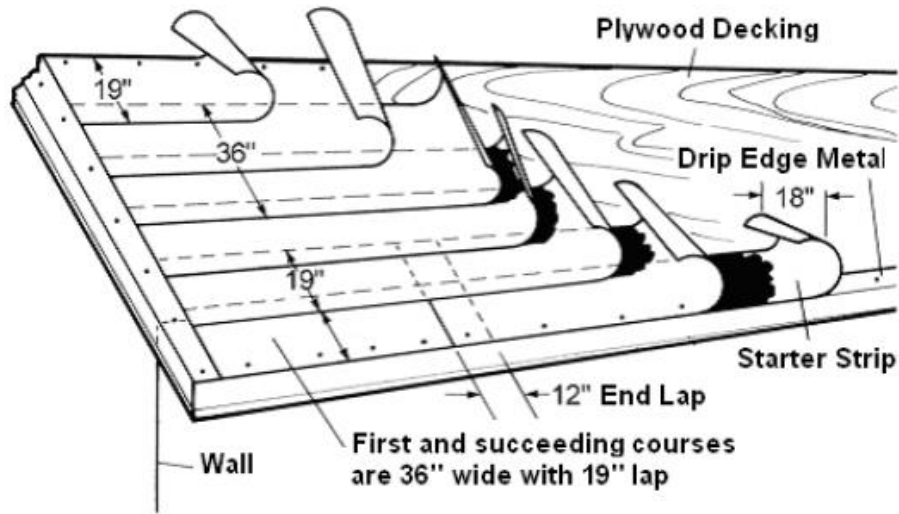
### **CODE REFERENCE:**

2013 California Building Code (CBC) Section §1507  
2013 California Residential Code (CRC) Section §R905

### **ROOF COVERINGS**

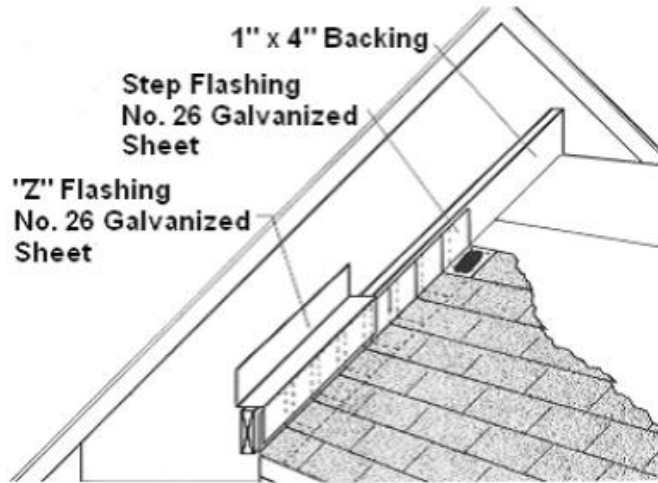
- **Deck Requirements** – Asphalt shingles shall be fastened to solidly sheathed decks. (CBC §1507.2.1 & CRC §R905.2.1)
- **Slope** – Asphalt shingles shall only be used on roof slopes of 2 units vertical in 12 units horizontal (17% slope) or greater. For roof slopes from 2 units vertical in 12 units horizontal (17% slope) up to 4 units vertical in 12 units horizontal (33% slope), double underlayment application is required in accordance with CBC §1507.2.8. (CBC §1507.2.2 & CRC §R905.2.2)
- **Underlayment** – Unless otherwise noted, required underlayment shall conform to ASTM D 226, Type I, ASTM D 4869, Type I, or ASTM D 6757. (CBC §1507.2.3 & CRC §R905.2.3)
- **Asphalt Shingles** – Asphalt shingles shall have self-seal strips or be interlocking and comply with ASTM D 225 or ASTM D 3462. Asphalt shingle packaging shall bear labeling indicating compliance with ASTM D 3161 or a listing by an approved testing agency. (CBC §1507.2.5 & CRC §R905.2.4)
- **Fasteners** – Fasteners for asphalt shingles shall be galvanized, stainless steel, aluminum or copper roofing nails, minimum 12 gage shank with a minimum 0.375 inch-diameter head, of a length to penetrate through the roofing materials and a minimum of 0.75 inch into the roof sheathing. Where the roof sheathing is less than 0.75 inch thick, the nails shall penetrate through the sheathing. Fasteners shall comply with ASTM F 1667. (CBC §1507.2.6 & CRC §R905.2.5)
- **Attachment** – Asphalt shingles shall have the minimum number of fasteners required by the manufacturer and CBC Section 1504.1. Asphalt shingles shall be secured to the roof with not less than 4 fasteners per strip shingle or 2 fasteners per individual shingles. Where the roof slope exceeds 20 units vertical in 12 units horizontal (166% slope), asphalt shingles shall be installed in accordance with the manufacturer's printed installation instructions for steep-slope roof applications. (CBC §1507.2.7 & CRC §R905.2.6)
- **Underlayment Application** – For roof slopes from 2 units vertical in 12 units horizontal (17% slope) and up to 4 units vertical in 12 units horizontal (33% slope), underlayment shall be 2 layers applied in the following manner. Apply a minimum 19-inch-wide strip of underlayment felt parallel with and starting at the eaves, fastened sufficiently to hold in place. Starting at the eave, apply 36-inch-wide sheets of underlayment overlapping successive sheets 19 inches, by fastened sufficiently to hold in place. Distortions in the underlayment shall not interfere with

the ability of the shingles to seal. For roof slopes of 4 units vertical in 12 units horizontal (33% slope) or greater, underlayment shall be one layer applied in the following manner. Underlayment shall be applied shingle fashion, parallel to and starting from the eave and lapped 2 inches, fastened sufficiently to hold in place. Distortions in the underlayment shall not interfere with the ability of the shingles to seal. (CBC §1507.2.8 & CRC §R905.2.7)



Double Underlayment for Slopes From 2 in 12 to Slopes of 4 in 12.

FIGURE 1



Wall to Roof Intersection/Step Flashing  
CBC Section 1503.2.1

FIGURE 2

- **Valleys** – Valley linings shall be installed in accordance with the manufacturer’s instructions before applying shingles. Valley linings of the following types shall be permitted: (CBC §1507.2.9.2 & CRC §R905.2.8.2)
  - For open valleys (valley lining exposed) lined with metal, the valley lining shall be at least 24 inches (610 mm) wide and of any of the corrosion-resistant metals in CBC Table 1507.2.9.2 & CRC Table R905.2.8.2.
  - For open valleys, valley lining of 2 plies of mineral-surfaced roll roofing complying with ASTM D 3909 or ASTM D 6380 shall be permitted. The bottom layer shall be 18 inches (457 mm) and the top layer a minimum of 36 inches (914 mm) wide.
  - For closed valleys (valleys covered with shingles), valley lining of one ply of smooth roll roofing complying with ASTM D 6380, Class S Type III, Class M Type II or ASTM D 3909 and at least 36 inches (914 mm) wide or types as described in Items 1 and 2 above shall be permitted. Specialty underlayment shall comply with ASTM D 1970.

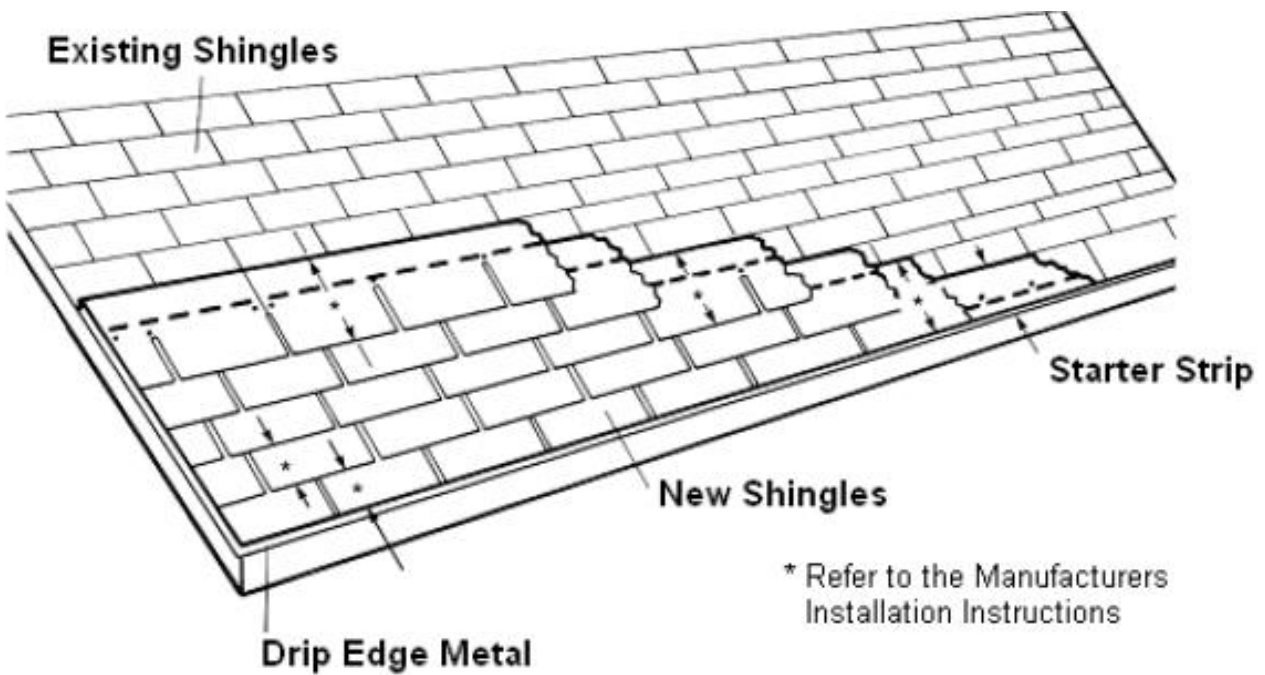
<b>CBC Table 1507.29.2 &amp; CRC Table R905.2.8.2 Valley Lining Material</b>			
<b>Material</b>	<b>Min. Thickness</b>	<b>Gage</b>	<b>Weight</b>
Aluminum	0.024 in.	-	-
Cold-rolled Copper	0.0216 in.	-	ASTM B 370, 16oz. per sq. ft.
Copper	-	-	16 oz.
Galvanized Steel	0.0179 in.	26 (zinc-coated G90)	-
High-yield copper	0.0162 in.	-	ASTM B 370, 12oz per sq. ft.
Lead	-	-	2.5 pounds
Lead-coated copper	0.0216 in.	-	ASTM B 101, 16oz. per sq. ft.
Lead-coated High-Yield Copper	0.0162 in.	-	ASTM B 101, 12oz. per sq. ft.
Painted terne	-	-	20 pounds
Stainless Steel	-	28	-
Zinc Alloy	0.027 in.	-	-

- **Drip edge** – Provide drip edge at eaves and gables of shingle roofs. Overlap to be a minimum of 2 inches (51 mm). Eave drip edges shall extend 0.25 inch below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be mechanically fastened a maximum of 12 inches (305 mm) o.c. (CBC §1507.2.9.3 & CRC §R905.2.8.5)
- **Cricket and saddles** – A cricket or saddle shall be installed on the ridge side of any chimney or penetration greater than 30 inches wide as measured perpendicular to the slope. Cricket or saddle covering shall be sheet metal or of the same material as the roof covering. (CBC §1507.2.9.4)

## **REROOFING**

Material and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of the 2013 CBC §1510. Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.

- **Recovering versus replacement** – New roof coverings shall not be installed without first removing all existing layers of roof coverings where any of the following conditions occur: (CBC §1510.3 & CRC §R907.3)
  - Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
  - Where the existing roof covering is wood shake, slate, clay, cement, or asbestos-cement tile.
  - Where the existing roof has 2 or more applications of any type of roof covering.



**Reroof over Composition Shingle**

**FIGURE 3**