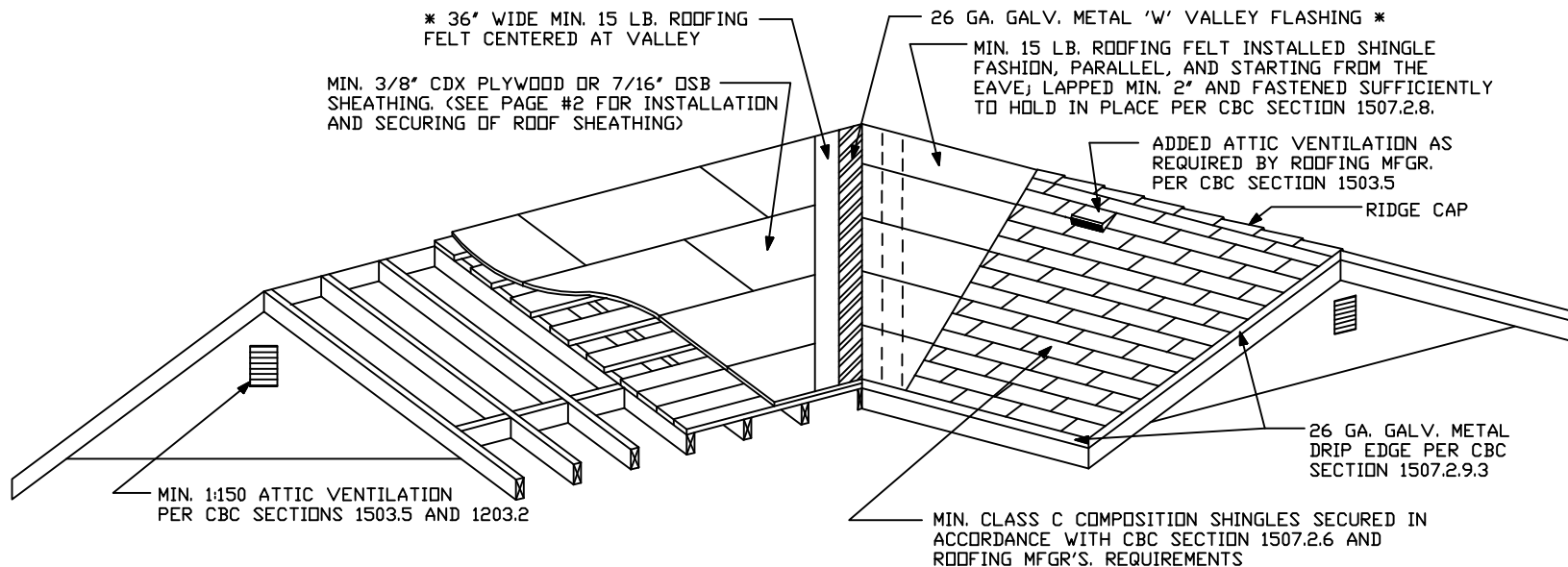


RESIDENTIAL REROOF REQUIREMENTS USING COMPOSITION SHINGLES

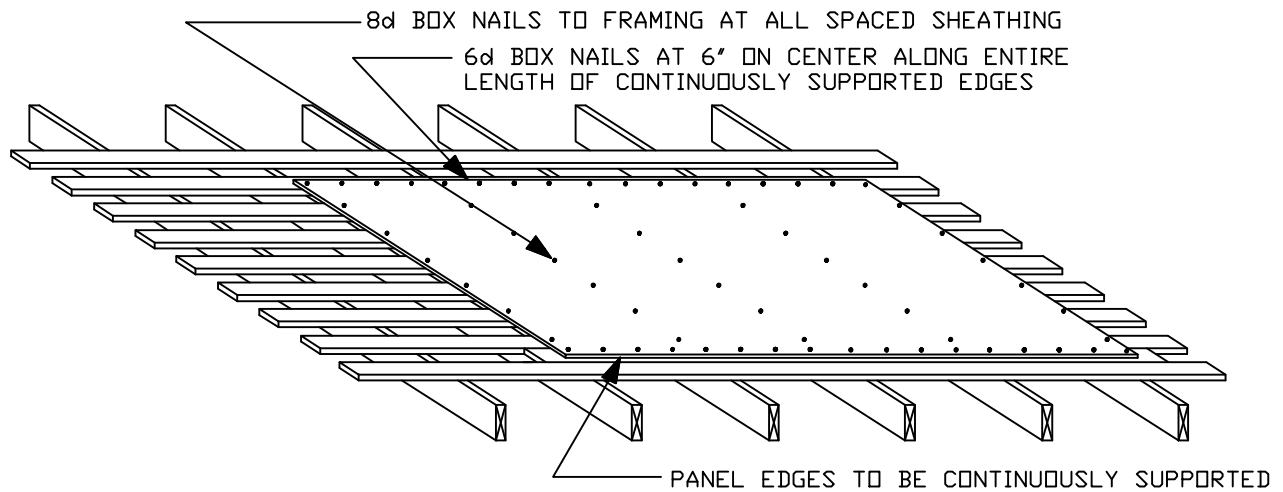
THIS DETAIL IS FOR AN INSTALLATION OVER SKIP SHEATHING WITH PLYWOOD OR OSB OVERLAY
BASED UPON THE 2007 CALIFORNIA BUILDING CODE SECTIONS 1507 AND 1510



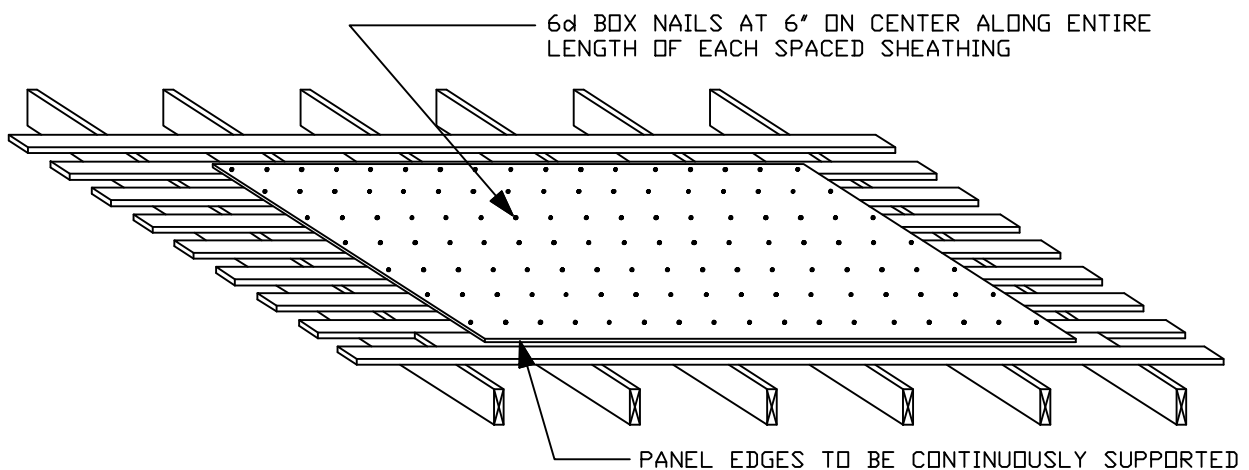
* CLOSED-CUT OR WOVEN VALLEY MAY BE SUBSTITUTED AS ALLOWED AND INSTALLED PER MFGR'S. INSTALLATION REQUIREMENTS AND CBC SECTION 1507.2.9.2.

- NOTES: 1. PER CBC SECTION 1507.2.2, FOR ROOF SLOPES FROM 2:12 UP TO 4:12, THE UNDERLAYMENT SHALL BE 2 LAYERS MIN. 15 LB. ROOFING FELT INSTALLED IN ACCORDANCE WITH CBC SECTION 1507.2.8.
2. FOR SLOPES LESS THAN 2:12, PROVIDE MATERIAL APPROVED FOR THE APPLICATION.
3. A CRICKET OR SADDLE SHALL BE INSTALLED ON THE RIDGE SIDE OF ANY CHIMNEY OR PENETRATION GREATER THAN 30" WIDE AS MEASURED PERPENDICULAR TO THE SLOPE. CRICKET OR SADDLE COVERINGS SHALL BE METAL OR OF THE SAME MATERIAL AS THE ROOF COVERING PER CBC SECTION 1507.2.9.4

THE FOLLOWING INFORMATION IS BASED UPON THE APA GUIDELINES
 PANELS ATTACHED TO ROOF FRAMING (THROUGH SPACED SHEATHING)



PANELS ATTACHED DIRECTLY TO SPACED SHEATHING



THE FOLLOWING REQUIREMENTS ARE PURSUANT TO THE 2007 CALIFORNIA BUILDING CODE CHAPTER 15

1. 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 PER SECTION 1510.2
2. NEW ROOF COVERINGS SHALL NOT BE INSTALLED WITHOUT FIRST REMOVING ALL EXISTING LAYERS OF ROOF COVERINGS WHERE ANY OF THE FOLLOWING CONDITIONS OCCUR PER SECTION 1510.3:
 1. 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.
 2. WHERE THE EXISTING ROOF COVERING IS WOOD SHAKE, SLATE, CLAY, CEMENT OR ASBESTOS-CEMENT TILE.
 3. WHERE THE EXISTING ROOF HAS TWO OR MORE APPLICATIONS OF ANY TYPE OF ROOF COVERING.
 EXCEPTIONS:
 1. COMPLETE AND SEPARATE ROOFING SYSTEMS, SUCH AS STANDING-SEAM METAL ROOF SYSTEMS, THAT ARE DESIGNED TO TRANSMIT THE ROOF LOADS DIRECTLY TO THE BUILDING'S STRUCTURAL SYSTEM AND THAT DO NOT RELY ON EXISTING ROOFS AND ROOF COVERINGS FOR SUPPORT, SHALL NOT REQUIRE THE REMOVAL OF EXISTING ROOF COVERINGS.
 2. METAL PANEL, METAL SHINGLE AND CONCRETE AND CLAY TILE ROOF COVERINGS SHALL BE PERMITTED TO BE INSTALLED OVER EXISTING WOOD SHAKE ROOFS WHEN APPLIED IN ACCORDANCE WITH SECTION 1510.4.
 3. THE APPLICATION OF A NEW PROTECTIVE COATING OVER AN EXISTING SPRAY POLYURETHANE FOAM ROOFING SYSTEM SHALL BE PERMITTED WITHOUT TEAR-OFF OF EXISTING ROOF COVERINGS.
3. WHERE THE APPLICATION OF A NEW ROOF COVERING OVER WOOD SHINGLE OR SHAKE ROOFS CREATES A COMBUSTIBLE CONCEALED SPACE, THE ENTIRE EXISTING SURFACE SHALL BE COVERED WITH GYPSUM BOARD, MINERAL FIBER, GLASS FIBER OR OTHER APPROVED MATERIALS SECURELY FASTENED IN PLACE PER SECTION 1510.4.
4. EXISTING SLATE, CLAY OR CEMENT TILE SHALL BE PERMITTED FOR REINSTALLATION, EXCEPT THAT DAMAGED, CRACKED OR BROKEN SLATE OR TILE SHALL NOT BE REINSTALLED. EXISTING VENT FLASHINGS, METAL EDGINGS, DRAIN OUTLETS, COLLARS AND METAL COUNTERFLASHINGS SHALL NOT BE REINSTALLED WHERE RUSTED, DAMAGED OR DETERIORATED. AGGREGATE SURFACING MATERIALS SHALL NOT BE REINSTALLED PER SECTION 1510.5
5. FLASHINGS SHALL BE RECONSTRUCTED IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTALLATION INSTRUCTIONS. METAL FLASHING TO WHICH BITUMINOUS MATERIALS ARE TO BE ADHERED SHALL BE PRIMED PRIOR TO INSTALLATION PER SECTION 1510.6.



**2008 BUILDING ENERGY EFFICIENCY STANDARDS
EFFECTIVE JANUARY 1, 2010**

PRESCRIPTIVE RESIDENTIAL REROOF REQUIREMENTS FOR ROOF SLOPES OVER 2/12

- **Cool Roofs** are required for habitable space and requirements are triggered when either more than 50% of the roof area or more than 1,000 ft², whichever is less, is replaced.
- **Cool Roofs** shall be tested and labeled by the Cool Roof Rating Council (CRRC).
- The roofing product's manufacturer shall have its roofing product listed in the CRRC's Rated Product Directory (www.coolroofs.org).
- Prescriptive requirements for roofing materials:
 1. Less than 5 lb/ft² (asphalt shingles and metal roofs), requires minimum Aged Reflectance/Emittance (AR/E) values of 0.20/0.75 or a minimum Solar Reflectance Index (SRI) of 16 (Building Permit Application must specify the weight, manufacturer, brand, model, color, AR/E, and SRI of the product being used).
 2. 5 lb/ft² or more (tile roofs), requires minimum Aged Reflectance/Emittance values of 0.15/0.75 or a minimum SRI of 10 (Building Permit Application must specify the weight, manufacturer, brand, model, color, AR/E, and SRI of the product being used).
 3. Any **one** of the options listed below can be used as an equivalent to the reflectance, emittance, and SRI requirements listed in No. 1 and No. 2 above:
 - ◆ No ducts in attic.
 - ◆ Ducts sealed and tested. "HERS Rater" documentation must be submitted with Building Permit Application.
 - ◆ Minimum R-30 ceiling insulation.
 - ◆ R-0.85 or greater thermal resistance insulation added over the roof deck or at least a 3/4" air-space is added to the roof.
 - ◆ Radiant barrier.
 - ◆ 1 ft² of attic ventilation per 150 ft² of attic area and where at least 30% of the free ventilation area is within two feet of the ridge. Calculations must be submitted with Building Permit Application.
 - ◆ The building shows compliance using the *Performance Method*.
- Overlay of existing roofs are **NOT** exempt from **Cool Roof** requirements (see attached document).

BLUEPRINT

Energy Efficiency Standards e-News Blast

CALIFORNIA ENERGY COMMISSION

Roof Overlays for Low-Rise Residential Buildings

Question

When an overlay is installed on top of an existing residential roof, does the new roof have to comply with the Title 24 "cool roof" requirements?

Answer

Yes. The Standards treat an overlay as a roof replacement (since the new overlay replaces the old roof as the layer expose to the outside), and therefore compliance with the cool roof Standards is required. Provided below are the criteria for roof replacements and their alternatives. (Section 152(b)1H of the 2008 Building Energy Efficiency Standards):

- H. Replacements of the exterior surface of existing roofs shall meet the requirements of Section 118 and the applicable requirements of subsections i through iii where more than 50 percent of the roof or more than 1,000 square feet of roof, whichever is less, is being replaced:
- i. For Steep-sloped roofs, roofing products with a density of less than 5 pounds per square foot in climate zones 10 through 15 shall have a minimum aged solar reflectance of 0.20 and a minimum thermal emittance of 0.75, or a minimum SRI of 16.
 - ii. For steep-sloped roofs, roofing products with a density of 5 pounds per square foot or more in climate zones 1 through 16 shall have a minimum aged solar reflectance of 0.15 and a minimum thermal emittance of 0.75, or a minimum SRI of 10.

ALTERNATIVE TO SECTION 152(b)1Hi and ii: The following shall be considered equivalent to Subsection i and ii:

- a. Insulation with a thermal resistance of at least $0.85 \text{ hr}\cdot\text{ft}^2\cdot^\circ\text{F}/\text{Btu}$ or at least a 3/4 inch air-space is added to the roof deck over an attic; or
- b. Existing ducts in the attic are insulated and sealed according to Section 151(f)10; or
- c. In climate zones 10, 12 and 13, with 1 ft^2 of free ventilation area of attic ventilation for every 150 ft^2 of attic floor area, and where at least 30 percent of the free ventilation area is within 2 feet vertical distance of the roof ridge; or
- d. Buildings with at least R-30 ceiling insulation; or
- e. Buildings with a radiant barrier in the attic meeting the requirements of Section 151(f)2; or
- f. Buildings that have no ducts in the attic; or

- g. In climate zones 10, 11, 13 and 14, R-3 or greater roof deck insulation above vented attic.
- iii. Low-sloped roofs in climate zones 13 and 15 shall have a 3-year aged solar reflectance equal or greater than 0.55 and a thermal emittance equal or greater than 0.75, or a minimum SRI of 64.

EXCEPTION to Section 152(b)1Hiii: Buildings with no ducts in the attic.

Section 101 of the 2008 Building Energy Efficiency Standards defines the Roof and the Roofing Products as follows:

ROOF is the outside cover of a building or structure including the structural supports, decking, and top layer that is exposed to the outside with a slope less than 60 degrees from the horizontal.

ROOFING PRODUCT is the top layer(s) of the roof that is exposed to the outside, which has properties including but not limited to reflectance, emittance, and mass.

You can download a copy of the 2008 Building Energy Efficiency Standards along with all associated documents at <http://www.energy.ca.gov/title24/2008standards/index.html>.