



City of Santa Monica Building and Safety Division

New Roof Nailing Guide

This list is to be used as a general guide.
It is not inclusive of all code requirements and inspection criteria.

**According to the California Building Code (CBC)
and California Plumbing Code (CPC)**

California Codes Available at www.bsc.ca.gov

- Structural sheathing with strength axis (which is the long direction of the panel unless otherwise marked) of the sheathing to be perpendicular to rafters. Plywood grade stamp visible and as per plan. Five ply minimum unless noted otherwise. CBC table 2304.7(5)
- Roof sheathing to be nailed with common nails. Heads of nails to be flush with face of sheathing. No shiners and no over-penetration of nails. Shiners are to be pushed back and re-nailed. CPC 2304.9.2
- Hardware and straps in place per plan.
- Attic ventilation in place with 1/8" corrosion resistant mesh over openings, not less than 1/150 of area ventilated. Fifty-percent reduction if half of ventilation is higher than three feet above required eave or cornice venting. CBC 1203.2
- Roof drainage per CBC 1503.4 Overflow drain to be same size as roof drain and have completely separate drain line to approved location. All overflow drains to be two inches higher than primary drain. TEST REQUIRED for roof drain piping per CPC 1109
- If overflow scupper is used, opening is to be minimum 4" see CBC 1503.4.2
- Eaves less than 5 feet from fire separation distance must be non-combustible construction, one-hour fire rated construction or fire treated lumber. CBC 705.2
- Trusses are not to be field modified and must be installed per manufacturer's specifications. CBC 2303.4.5 and 2303.4.2
- Rafters & Ceiling Joists
 - Roof structures less than 3/12: Ridge board, hips and valley joists to be designed as beams. CBC 2308.10
 - Rafters shall be framed directly opposite each other at the ridge and a minimum 1X ridge not less than the depth of the cut end of rafter. Hips and valleys require 2X minimum size of rafter stand. CBC 2308.10.4
 - Framing around openings per CBC 2305.1.12308.10.4.3 (doubled rafters with blocks and strapping if opening > 4')
 - Notching at the ends of rafters or ceiling joists shall not exceed 1/4 of the depth. Notches in the top or bottom of the rafter or ceiling joists shall not exceed 1/6 of the depth and shall not be located in the middle 1/3 of the span. Holes bored in rafters or ceiling joists shall not be within 2" of the top and bottom and their diameter shall not exceed 1/3 of depth. CBC 2308.10.4.2
- Cricket or saddle required for penetrations over 30" wide. CBC 1503.6
- No cutting or notching of engineered lumber without written permission from Structural Engineer Of Record CBC 2308.10.7
- Rafter ties required where there are no joists parallel to rafters. Ties must be spaced not more than 4' O.C (or structural ridge). CBC 2308.10.4.1



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- Purlins shall not be smaller than the supported rafter, 2X4 shall be maximum 4'span, 2X6 shall be maximum span 6 feet and shall be supported by struts to bearing walls. CBC 2308.10.5
- Struts 2X4 or larger from bearing wall to purlin, un-braced length of struts not to exceed 8' and the minimum slope of the struts shall not be less than 45 degrees
- Shear transfer- roof plywood to freeze block with boundary nailing, boundary nails along gable rafter and collector lines. All shear transfer hardware complete and per approved plans.
- All penetrations including vents, flues, and exhaust ducts through sheathing and secured before inspection.
- Roof height requires survey on city form by State licensed surveyor. (Santa Monica Municipal Code)
- Electrical service conductors over roofs:
 - Roof pitches from flat to 4/12 slope require 8'clear.
 - Clearance from roof with a slope of 4/12 or greater requires 3' clear.
- Roof crickets shall not be placed until after roof nailing inspection.
- Plywood panels with a dimension less than 24" or 8 square feet require blocking and boundary nailing at all edges of the undersize sheet. CBC 2306.2 & ASD/LFRD 4.2.7.1
- Provide cross ventilation at enclosed rafter bays. CBC 1203.2
- Check special inspection requirements on approved plans CBC 1707.3
- All shear walls complete and approved (structural observation typical)

Other important considerations

- Zero lot line Parapets:
 1. Require non-combustible faces for at least 18" measured from the top down on roof side
 2. Parapet wall construction same fire rating as wall below
- Two layers of underlayment for roofs under 3/12
- Corrosion resistant fasteners required for tile roofs CBC 1507