Building Science

Roofs

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Step 1
• Remove strip of OSB from each side of ridge

Step 2
• Create air seal with strip of vapor open membrane (tape seams)
• Vapor open membrane sheet sealed to OSB with acrylic caulk sealant
• Hold vapor open membrane sheet in place with metal strapping

Step 3
• Construct wood ridge vent with 2x2 furring

Remove 12" of OSB from each side of ridge

Vapor open membrane sheet sealed to OSB with acrylic caulk sealant

Metal strap nailed over top of vapor open membrane sheet (acting as pressure bar)

Continuous bead of sealant between OSB and vapor open membrane sheet

5/8" OSB

2x2 furring @ 16" o.c.
Sweating Ducts
Sweating Ducts
Light Colored Roofs
Cool Roofs
Radiant Barriers
ACCA Manual J, S and D
Ductwork Attic Dehumidification System
Burying Ducts
Cold Climates
– Diffusion vent at ridge vs. no diffusion vent
– Fiberglass vs. cellulose
– Vapor retarder: variable perm vs. fixed perm
– “Control” comparison
  R806.4 spray foam + fibrous
Code Change
R806.5 Unvented attic and unvented attic enclosed rafter assemblies.

- vapor diffusion port
- port area 1:600 of the ceiling area
- vapor permeance greater than 20 perms
- roof slope greater than 3:12
- air supply 50 cfm/1000 ft² ceiling area
- insulation installed directly under the roof deck
- Climate Zones 1, 2 and 3
Vapor Diffusion Port: A passageway for conveying water vapor from an unvented attic to the atmosphere.
New roof deck
New crown molding
New fascia
New soffit
New dentil molding
New second frieze board
Original dentil molding removed
Original frieze board remains
Siding
California
Netted cellulose or netted fiberglass or adhesively-sprayed fiberglass

Kraft-faced or foil-faced fiberglass batts

Top chord extension
Low density spray foam insulation

Asphalt shingles

Roofing paper (1 perm or lower vapor retarder as tested by the wet-cup procedure required in some climates)

Roof sheathing

Raised heel truss

Rigid foam, or comparable, as backdamp

Fiber cement siding soffit

Roof underlayment sealed to drip edge

Non-occupiable space

Gypsum board with latex paint (acts as thermal barrier separating occupiable space from non-occupiable space)
Netted cellulose; netted fiberglass; unfaced fiberglass batts; kraft-faced fiberglass batts; foil-faced fiberglass batts; adhesively-sprayed fiberglass

Tile roof

Purlins

Roofing paper (Class III vapor retarder)

Roof sheathing

Drip edge

Fascia

Soffit

Rigid draftstop/blocking

Cladding

Building paper

Sheathing

Continuous air seal

Interior gypsum board

Cavity insulation