2. Side and top openings shall provide one or more of the following:
   2.1. Gaps not greater than 1/8 inch (3.2 mm) between the door and the door opening.
   2.2. Gaps covered or blocked with weather-stripping products constructed of materials that comply with both of the following:
      2.2.1. The tensile strength of the material shall be tested in accordance with ASTM D638 before and after light exposure in accordance with ASTM G155 for a period of 2,000 hours, and the maximum allowable difference in tensile strength values between exposed and nonexposed samples shall not exceed 10 percent.
      2.2.2. The material shall be tested in accordance with UL 94 and have a flammability rating of V-2 or better.
   2.3. Gaps covered or blocked with metal flashing.

504.10 Ventilation openings. Where provided, ventilation openings of enclosed attics or enclosed rafter spaces in accordance with Section 1202.2 of the *International Building Code* or Section R806 of the *International Residential Code*, or of underfloor areas in accordance with Section 1202.4 of the *International Building Code* or Section R408.2 of the *International Residential Code*, shall be in accordance with Section 504.10.1 or Section 504.10.2.

504.10.1 Performance requirements. Ventilation openings shall be fully covered with listed vents, tested in accordance with ASTM E2886, to demonstrate compliance with all the following requirements:

1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

Gaps around such vents shall be sealed in accordance with vent manufacturer installation instructions to avoid flame intrusion through the gaps.

504.10.2 Prescriptive requirements. Ventilation openings shall be fully covered with noncombustible corrosion-resistant mesh with openings not exceeding 1/8 inch (3.2 mm) or with vents designed and approved to prevent flame and ember penetration into the structure. Additionally, vents protecting ventilation openings into attics and enclosed rafter spaces shall be constructed entirely of noncombustible, corrosion-resistant material.

504.10.3 Vent locations. Gable-end and dormer vents shall be located not less than 10 feet (3048 mm) from lot lines. Underfloor ventilation openings shall be located as close to grade as practical.

504.11 Detached accessory structures. Detached *accessory structures* located less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed in accordance with Section 504.5, underfloor areas constructed in accordance with Section 504.6, *roof assemblies* constructed in accordance with Section 504.2, gutters and downspouts constructed in accordance with Section 504.4 and vents constructed in accordance with Section 504.10. Where detached *accessory structures* are located less than 20 feet (6096 mm) from a building containing habitable space, exterior glazing and exterior doors in the detached *accessory structure* shall not be located in walls that face the building containing habitable space.

Exceptions: Exterior glazing complying Section 504.8 and exterior doors complying Section 504.9.

SECTION 505—CLASS 2 WUI CONSTRUCTION



505.1 General. Class 2 WUI construction shall be in accordance with Sections 505.2 through 505.11.

505.2 Roof assembly. Roofs shall have a *roof assembly* classified as Class A when tested in accordance with ASTM E108 or UL 790, or an *approved noncombustible roof covering*.

505.2.1 Roof valley flashings. Where provided, valley flashings shall be not less than 0.019-inch (0.48 mm) (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide (914 mm) underlayment consisting of one layer of cap sheet complying with ASTM D3909 running the full length of the valley.

505.2.2 Flame and ember protection at eaves. For *roof assemblies* where the profile allows a space between the *roof covering* and *roof deck*, the space at the eave ends shall resist flames and embers by one or more of the following methods:

1. Fireblocking of the space between the *roof covering* and the *roof deck*.
2. Installation of one layer of cap sheet complying with ASTM D3909 over the combustible *roof deck*.

505.2.3 Skylights. Skylights, including tubular daylighting devices and sloped glazing, shall comply with Section 505.8.

505.3 Protection of eaves. Combustible eaves, fascias and soffits shall be enclosed with solid materials with a minimum thickness of 3/4 inch (19 mm). Exposed rafter tails shall not be permitted unless constructed of heavy timber materials.

505.4 Gutters and downspouts. Gutters and downspouts shall be constructed of *noncombustible* material. Gutters shall be provided with an *approved* means to prevent the accumulation of leaves and debris in the gutter.

505.5 Exterior walls. Exterior walls of buildings or structures shall be constructed with one of the following methods:

1. Materials approved for not less than 1-hour *fire-resistance-rated construction* on the exterior side.
2. *Approved noncombustible* materials.
3. Heavy timber or *log wall construction*.

4. Ignition-resistant building materials complying with Section 503.2 on the exterior side.

Such material shall extend from the top of the foundation to the underside of the roof sheathing.

505.5.1 Flashing. A minimum of 6 inches (152 mm) of noncombustible material or metal flashing extending vertically is required on the exterior of the wall at the ground, decking and roof intersections. Flashing provided in accordance with this section shall be lapped with flashing, counterflashing or water-resistive barriers as required by the *International Building Code* or *International Residential Code*.

505.6 Underfloor enclosure. Underfloor areas of buildings and structures shall be enclosed to the ground, with exterior walls in accordance with Section 505.5.

Exception: Complete enclosure shall not be required where not less than 6 inches (152 mm) of noncombustible material or metal flashing extending vertically from grade is required on the exterior of columns and walls, and where the underside of exposed floors and exposed structural columns, beams and supporting walls are constructed with one of the following:

1. Exterior 1-hour fire-resistance-rated construction.
2. Noncombustible material.
3. Heavy timber or *log wall construction*.
4. *Ignition-resistant building materials* complying with Section 503.2 on the exterior surface.

505.7 Attachments. *Unenclosed accessory structures* attached to buildings with habitable spaces and projections, such as decks, shall be constructed with one of the following methods, except that coated materials shall not be used as the walking surface of decks:

1. Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side.
2. *Approved noncombustible* materials.
3. Heavy timber or *log wall construction*.
4. *Ignition-resistant building materials* complying with Section 503.2 on the exterior side.

505.7.1 Underfloor areas. Unenclosed *accessory structures* and projections attached to buildings with habitable spaces shall have underfloor areas enclosed to the ground with one of the following methods:

1. Materials permitted for exterior wall construction in accordance with Section 505.5.
2. Noncombustible corrosion-resistant mesh with openings not to exceed 1/8 inch (3.2 mm).

Exception: Complete enclosure shall not be required where the underside of exposed floors and exposed structural members and walls are constructed in accordance with Section 505.7. The exposed structural members and walls shall be constructed or protected with not less than 6 inches (152 mm) of noncombustible material or metal flashing extending vertically from grade.

505.8 Exterior glazing. Exterior windows, window walls, *glazed doors*, windows within exterior doors, and skylights shall be one of the following:

1. Multilayered glazed panels containing at least one tempered pane.
2. Glass block units.
3. A fire door or fire window with a fire protection rating of not less than 20 minutes when tested without the hose stream test in accordance with NFPA 252, UL 10B, or UL 10C, or in accordance with NFPA 257 or UL 9, as appropriate.

505.9 Exterior doors. Exterior doors shall be *approved noncombustible* construction, solid core wood not less than 1 3/4 inches thick (44 mm), or have a fire protection rating of not less than 20 minutes. Windows within doors and *glazed doors* shall be in accordance with Section 505.8.

Exception: Vehicle access doors.

505.9.1 Exterior underfloor access doors. Exterior underfloor access doors shall be constructed of noncombustible material or with not less than 6 inches (152 mm) of noncombustible material that extends vertically from the ground.

505.10 Ventilation openings. Where provided, ventilation openings of enclosed attics or enclosed rafter spaces in accordance with Section 1202.2 of the *International Building Code* or Section R806 of the *International Residential Code*, or of underfloor areas in accordance with Section 1202.4 of the *International Building Code* or Section R408.2 of the *International Residential Code*, shall be in accordance with Section 505.10.1 or Section 505.10.2 of this code.

505.10.1 Performance requirements. Ventilation openings shall be fully covered with listed vents, tested in accordance with ASTM E2886, to demonstrate compliance with all the following requirements:

1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

Gaps around such vents shall be sealed in accordance with vent manufacturer installation instructions to avoid flame intrusion through the gaps.

505.10.2 Prescriptive requirements. Ventilation openings shall be fully covered with noncombustible corrosion-resistant mesh with openings not exceeding 1/8 inch (3.2 mm) or with vents designed and approved to prevent flame and ember penetration

into the structure. Additionally, vents protecting ventilation openings into attics and enclosed rafter spaces shall be constructed entirely of noncombustible, corrosion-resistant material.

505.10.3 Vent locations. Gable-end and dormer vents shall be located not less than 10 feet (3048 mm) from lot lines. Underfloor ventilation openings shall be located as close to grade as practical.

505.11 Detached accessory structures. Detached *accessory structures* located less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed in accordance with Section 505.5, underfloor areas constructed in accordance with Section 505.6, *roof assemblies* constructed in accordance with Section 505.2, gutters and downspouts constructed in accordance with Section 505.4 and vents constructed in accordance with Section 505.10. Where detached *accessory structures* are located less than 20 feet (6096 mm) from a building containing habitable space, exterior glazing and exterior doors in the detached *accessory structure* shall not be located in walls that face the building containing habitable space.

Exception: Exterior glazing complying Section 505.8 and exterior doors complying Section 505.9.

SECTION 506—CLASS 3 WUI CONSTRUCTION

Scan For Changes
ICC
a3fc190

506.1 General. Class 3 WUI construction shall be in accordance with Sections 506.2 through 506.9.

506.2 Roof assembly. Roofs shall have a *roof assembly* classified as not less than Class A when tested in accordance with ASTM E108 or UL 790, or an *approved noncombustible roof covering.*

506.2.1 Roof valley flashings. Where provided, valley flashings shall be not less than 0.019-inch (0.48 mm) (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide (914 mm) underlayment consisting of one layer of cap sheet complying with ASTM D3909 running the full length of the valley.

506.2.2 Flame and ember protection at eaves. For *roof assemblies* where the profile allows a space between the *roof covering* and the *roof deck*, the space at the eave ends shall resist flames and embers by one or more of the following methods:

1. Fireblocking of the space between the *roof covering* and the *roof deck.*
2. Installation of one layer of cap sheet complying with ASTM D3909 over the combustible *roof deck.*

506.2.3 Skylights. Skylights, including tubular daylighting devices and sloped glazing, shall comply with Section 506.7.

506.3 Exterior walls. Not less than 6 inches (152 mm) of noncombustible material or metal flashing extending vertically is required on the exterior of the wall at the ground, decking and roof intersections. Flashing provided in accordance with this section shall be lapped with flashing, counterflashing or water-resistive barriers as required by the *International Building Code* or *International Residential Code.*

506.4 Underfloor enclosure. Underfloor areas of buildings and structures shall be enclosed to the ground with exterior walls in accordance with Section 506.3.

Exception: Complete enclosure shall not be required where not less than 6 inches (152 mm) of noncombustible material or metal flashing extending vertically from grade is required on the exterior of columns and walls, and where the underside of exposed floors and exposed structural columns, beams and supporting walls are constructed with one of the following:

1. Exterior 1-hour fire-resistance-rated construction.
2. Noncombustible material.
3. Heavy timber or *log wall construction.*
4. *Ignition-resistant building materials* complying with Section 503.2 on the exterior side.

506.5 Gutters and downspouts. Gutters and downspouts shall be constructed of *noncombustible* material. Gutters shall be provided with an *approved* means to prevent the accumulation of leaves and debris in the gutter.

506.6 Attachments. The underfloor areas of unenclosed *accessory structures* and projections, such as decks, balconies, porches and stairs attached to buildings with habitable spaces, shall be constructed in accordance with Section 506.6.1.

506.6.1 Underfloor areas. Unenclosed *accessory structures* and projections attached to buildings with habitable spaces shall have underfloor areas enclosed to the ground with one of the following methods:

1. Materials permitted for exterior wall construction in accordance with Section 506.3.
2. Noncombustible corrosion-resistant mesh with openings not to exceed 1/8 inch (3.2 mm).

Exception: Complete enclosure shall not be required where the underside of exposed floors and exposed structural members and walls are constructed or protected with a minimum of 6 inches (152 mm) of noncombustible material or metal flashing extending vertically from grade.

506.7 Exterior glazing. Exterior windows, window walls, *glazed doors*, windows within exterior doors, and skylights shall comply with one of the following:

1. *Multilayered glazed panels* containing at least one tempered pane.
2. Glass block units.
3. A fire door or fire window with a fire protection rating of not less than 20 minutes when tested without the hose stream test in accordance with NFPA 252, UL 10B or UL 10C, or in accordance with NFPA 257 or UL 9, as appropriate.

506.8 Ventilation openings. Where provided, ventilation openings of enclosed attics or enclosed rafter spaces in accordance with Section 1202.2 of the *International Building Code* or Section R806 of the *International Residential Code*, or of underfloor areas in accordance with Section 1202.4 of the *International Building Code* or Section R408.2 of the *International Residential Code*, shall be fully covered with noncombustible corrosion-resistant mesh with openings not exceeding 1/8 inch (3.2 mm) or with vents designed and approved to prevent flame and ember penetration into the structure. Additionally, vents protecting ventilation openings into attics and enclosed rafter spaces shall be constructed entirely of noncombustible, corrosion-resistant material.

506.9 Exterior underfloor access doors. Exterior underfloor access doors shall be constructed of noncombustible material or not less than 6 inches (152 mm) of noncombustible material that extends vertically from the ground.

SECTION 507—REPLACEMENT OR REPAIR OF ROOF COVERINGS



507.1 General. The *roof covering* on buildings or structures in existence prior to the adoption of this code that are replaced or have 25 percent or more replaced in a 12-month period shall be replaced with a *roof covering* required for new construction based on the WUI construction class specified in accordance with Section 503. All repairs or maintenance of a *roof assembly* with a Class A fire classification shall be accomplished to maintain the Class A fire classification.