

Proposed Revisions to the Acceptance Criteria for Metal Roof Coverings

AC166-0221-R1

EVALUATION COMMITTEE HEARINGS

2.2.21

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AC166 – Acceptance Criteria for Metal Roof Coverings

...establishes the requirements for recognition of metal roof coverings

- ▶ Metal roof shingles
- ▶ Metal roof panels

Current definition of “Metal Roof Shingle”

- ▶ 1.3.3 Metal Roof Shingle: Interlocking sections of metal sheet having an installed weather exposure of less than 3 square feet.

Current test & performance requirements for metal roof shingles

- ▶ Minimum thickness
- ▶ Weathering
- ▶ Underlayment
- ▶ Wind resistance
- ▶ Gravity load capability
- ▶ Impact resistance
- ▶ Fire classification

Proposed Change

- ▶ Enlarge the scope and content of the Acceptance Criteria to include a metal roof shingle with factory-applied adhesive (in lieu of interlocking the shingles)

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- ▶ Enlarge the scope and content of the Acceptance Criteria to include a **metal roof shingle** with factory-applied adhesive (in lieu of interlocking the shingles)

...and AC166 is the criteria for **metal roof coverings**, including metal roof shingles

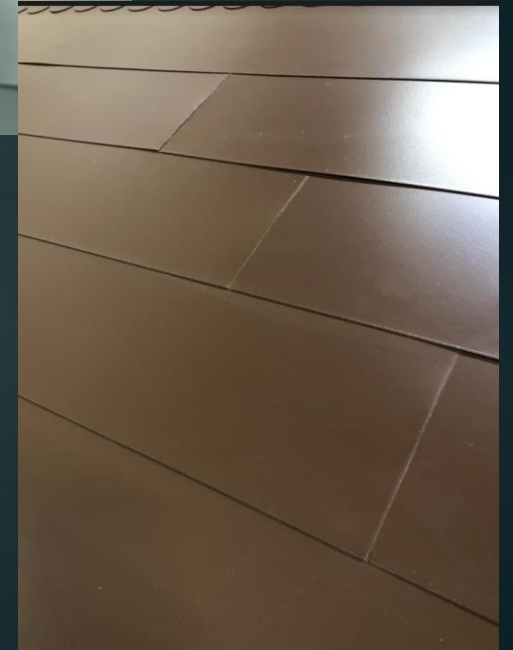
Metal Shingle With Factory-Applied Adhesive

1.3.6 Metal Roof Shingle with Factory-applied Adhesive: Non-interlocking metal roof shingles with factory-applied adhesive, having an installed weather exposure of less than 3 square feet (0.279 m²), that are mechanically attached over roof underlayment to closely fitted decking.



Metal Shingle With Factory-Applied Adhesive

- ❑ Non-interlocking metal roof shingles with factory-applied adhesive
- ❑ Installed weather exposure of less than 3 square feet (0.279 m²)
- ❑ Mechanically attached
- ❑ Over roof underlayment
- ❑ Closely fitted decking



Metal Shingle With Factory-Applied Adhesive Performance Requirements

Wind Performance:

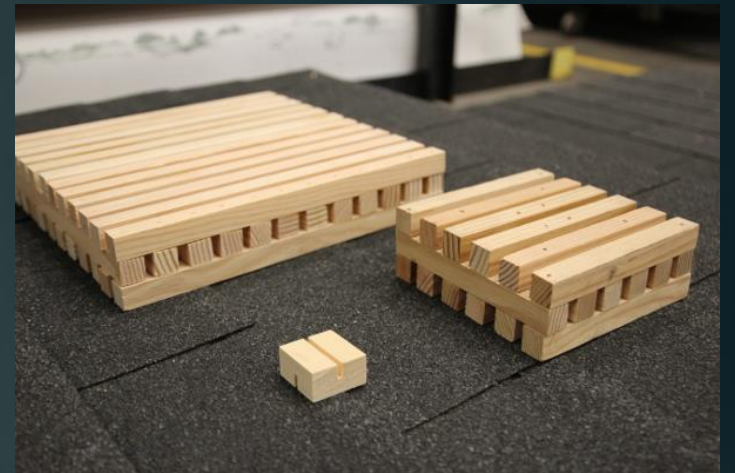
- UL 1897 – Uplift Tests for Roof Covering Systems
 - Applicable products – includes metal and composite shingles
 - Test – 10x10 test panel subjected to uplift static pressure, incrementally raised in 15 psf increments



Metal Shingle With Factory-Applied Adhesive Performance Requirements

Fire Performance:

- UL 790 or ASTM E108
 - Standard test method(s) for external fire exposure resistance of roofing materials



As with other metal roof coverings, there can be no ignition of the decking

Metal Shingle With Factory-Applied Adhesive Performance Requirements

Adhesive Durability:

- ASTM D6381 – with 12 consecutive cycles of temperature cycling exposure
 - Includes water test exposure
 - No less than 90 % retention of uplift resistance of control specimens not exposed to temperature cycling
 - Measure of the uplift resistance by mechanical means for shingles that use a factory-applied adhesive

Metal Shingle With Factory-Applied Adhesive Performance Requirements

Wind Driven Rain:

- As defined for all other metal roof coverings (section 4.2)
- There can be no leaks

Request Approval for the Proposed Change

- ▶ AC166 is the criteria for metal roof coverings, including metal roof shingles
- ▶ AC166 is the proper acceptance criteria to include metal roof shingles with factory-applied adhesive that **meet the performance criteria defined by AC 166 and demonstrate adhesive durability**

Questions?

Thank You
For Your Consideration