



# technical bulletin

Asphalt Roofing  
Manufacturers Association

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## ***Plain Facts About Buckled Shingles***

### **Description**

Buckling is the result of asphalt shingles not laying flat due to the wrinkling of the roofing underlayment or the movement of the wood deck.

### **Causes**

- During the summer months we normally experience high humidity, and as the old roof is torn off the wood deck is exposed and absorbs moisture. As the wood increases in moisture content it can cause movement of the decking.
- As the new roof is installed, moisture is trapped in the system, and roofing felt used as underlayment can absorb moisture and wrinkle.
- Because homes are built tighter and with higher insulation levels they may not be properly ventilated. See individual manufacturer's recommendations for additional ventilation requirements.
- Roof sheathing that is not spaced a minimum of 1/8" can cause buckling due to expansion and contraction.

### **Solutions**

- Allow moisture to escape the roofing system. Once the roofing system reaches the proper moisture content the roof should lay flat and the buckling problem should not return.
- Remove the shingles that are affected, and if the felt is wrinkled repair the felt wrinkles by cutting and re-nailing the felt so that it's flat and replace the shingles.
- Ensure that the attic is properly vented. The minimum requirements are one square foot of free vent area per 150 square feet of attic floor space, or if you have a vapor barrier with a perm rating of 1 or less on the warm side of the ceiling or you can provide 50% of ventilation at the eaves and the other 50% at the upper portion of the roof; you can reduce your ventilation to one (1) square foot of free area per 300 square feet of attic floor space.

### **Prevention**

- Use only wood decking materials approved by the roofing manufacturer that have been properly conditioned to be at moisture equilibrium with the job site environment. These materials should also be roofing manufacturer approved.
- Do not expose decking materials to water either before or after application.

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**Prevention** *(continued from front)*

- Cover wood deck materials with asphalt-saturated felt shingle underlayment (ASTM D 226, ASTM D 4869, ASTM D 6757 or CSA A123.3), then apply shingles.
- Ensure adequate attic ventilation (e.g., a minimum of one square foot net free area per 150 square feet of attic floor space). See individual manufacturer's recommendations for additional ventilation requirements.
- Apply shingles in accordance with shingle manufacturers' recommendations.

**Correction**

- Ventilate the attic space to eliminate excess moisture. The addition of exhaust fans may be necessary.
  - When buckling persists, remove and replace the affected shingles.
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