WHAT IS BUCKLING?

Buckling can be defined as the distortion of asphalt shingles due to movement of the roof deck or underlying materials on which shingles are applied. One of the most common types of buckling is an apparent ridge along the shingle length, usually near the nail or sealant line occurring along the deck board joints.

HOW CAN THE ROOF DECK INFLUENCE BUCKLING?

Buckling, as a cause of the roof deck, generally occurs when shingles are applied over dimensional lumber (e.g. tongue and groove planks, board lumber etc.). Dimensional lumber can expand or contract depending on changes in its moisture content due to “drying out” after manufacture, storage and/or installation. Alternately, if decking materials are too dry upon delivery, they can expand in post-application service, due to water absorption. Since dimensional lumber is not exceptionally stable it is more likely to “move” than plywood sheets.

Shingles that are nailed into lumber decks are held in place by two rows of nails, each row usually fastened into separate boards. This occurs when board width exceeds the shingle exposure, e.g. 8” boards vs. 5 5/8” shingle exposure. Differential shrinking/swelling of adjacent roof boards can therefore result in buckling of the overlying shingles and underlayment materials.

Deck movement is more common where there is inadequate/poor attic ventilation. Warm, moisture-laden air that drifts through the vapor barrier/insulation on the attic floor, will be absorbed by wooden roof substrate components (trusses and decking). The resulting dimensional changes, although very slight, often distort the overlying shingle layer and underlayment materials. Open and thorough ventilation should be ensured for many reasons, including reducing buckling potential.

WHAT ELSE CAN CAUSE BUCKLING?

Various installation practices can increase the likelihood of shingle buckling such as:
The roof deck material could be too thin and the added weight of shingles can cause the deck to distort. As well, the improper spacing of clips can influence movement e.g., they can come loose or fall off. Inadequate roof truss spacing can also leave the deck subject to deflection. IKO recommends that new decks be constructed out of ½” exterior grade plywood. If you wish to roof over a dimensional lumber deck, IKO recommends covering the dimensional lumber with a minimum ¼” of exterior grade plywood to mitigate potential roof deck distortions showing through in the finished shingle layer.

A buckling appearance can also be due to distortions in improperly installed shingle underlayment due to insufficient pre-securement or wrinkling/bunching prior to, or during, shingle application.

Occasionally, the shingles may be installed too closely together contrary to IKO’s published installation instructions, resulting in lifted/buckled shingle areas.

The IKO Asphalt Shingle Limited Warranty, covering manufacturing defects resulting in roof leaks, is still valid. As buckling is a cause of decking/installation IKO cannot accept any liability for buckling roofs. Asphalt shingles do not buckle by themselves.

For additional information on any of IKO’s products or application requirements, visit us on the web at www.iko.com, or contact us in Canada at 1-888-766-2468, or the United States at 1-888-456-7663.