

Product Evaluation

RC248 | 0420

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: RC-248

Effective Date: April 1, 2020

Re-evaluation Date: April 2024

Product Name: Kasselwood Metal Shingles Installed over a Wood Structural Panel Roof Deck

Manufacturer: Kassel and Irons Ltd.
8510 Industry Park Drive
Piqua, OH 45356
(937) 778-5117, ext. 221

General Description:

The Kasselwood shingles are press-formed from 29-gauge (0.0142" thick) G90 galvanized steel. The panels are coated with a baked-on primer and a PVDF topcoat. The shingle has an effective coverage area of 40-5/8" x 8-5/8". There are four (4) integrated nail tabs at the top of each shingle. Panel tabs are fabricated from 29-gauge steel and have overall dimensions of 3-1/2" x 1-3/4" x 1/4". Each nail tab has three holes capable of accommodating the specified fastener.

Limitations:

Roof Slope: The roof shingles must not be installed on roofs with a roof slope less than 3:12.

Roof Deck:

System 1: The roof deck must be solidly sheathed with plywood panels. The minimum required thickness of the plywood panels is 19/32".

System 2 & 3: The roof deck must be solidly sheathed with plywood panels. The minimum required thickness of the plywood panels is 15/32".

Roof Deck Attachment: The roof deck must be secured to the roof framing to resist the required wind uplift design pressures.

Design Pressure: The design uplift wind load resistance must be as specified in Table 1.

Table 1. Kasselwood Metal Shingles Installed on a Wood Structural Panel Roof Deck

System	Roof Deck Type	Attachment Method	Allowable Design Pressure Rating (psf)
1	19/32" thick plywood	11-gauge stainless steel ring shank roofing nails	-74.8
2	15/32" thick plywood	Lag screws	-161.4
3	15/32" thick plywood	11-gauge stainless steel ring shank roofing nails	-61.75

Installation Over an Existing Roof Covering: Installation over an existing roof covering is limited to a maximum of one existing layer of composition shingles or wood shingles or shakes. The minimum thickness of the existing roof deck must be as required for a new roof covering installation. Note: Inspection of the existing roof deck must be made before installing the roof shingles. The condition of the existing roof deck must be acceptable to receive the roof shingles before the roof panel installation can proceed. Note: A new underlayment installation is required when installing panels over an existing roof covering.

Installation:

General Installation Requirements:

The shingles must be installed as specified in this evaluation report and as specified in the Kassel and Irons application guide for Kasselwood shingles.

Underlayment: A minimum of one layer of No. 30 (Type II) or two layers of No. 15 (Type I) asphalt felt or equivalent must be used. The underlayment used must comply with one or more of the following: ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed with minimum 2" laps (No. 30 felt) and 19" laps (No. 15 felt) and minimum 6" end laps. The underlayment must be applied with corrosion-resistant fasteners and plastic caps. The fasteners must be spaced approximately 12" on center horizontally and vertically.

Attachment:

System 1 and 3: Each shingle is mechanically attached to the plywood deck using two (2), 11-gauge x 1-1/4" long with 11/32" diameter head, stainless steel (304) ring shank roofing nails at each of the four nail tabs. The male end of the next shingle is then tucked in the female end of the previous shingle to form a lock. The shingles are placed in a staggered pattern. The first row

of shingles is locked over an edge flashing. The shingles at the ends of the courses are installed into gable flashings, into sidewall flashings, into valley flashings, or under hip caps.

System 2: Each shingle is mechanically attached to the plywood deck using one (1), 14-8 x 1" long Hiform hex washer head lag screw at each of the four nail tabs. The male end of the next shingle is then tucked in the female end of the previous shingle to form a lock. The shingles are placed in a staggered pattern. The first row of shingles is locked over an edge flashing. The shingles at the ends of the courses are installed into gable flashings, into sidewall flashings, into valley flashings, or under hip caps.

Note: Keep the manufacturer's installation instructions available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.