

ICC-ES Evaluation Report

ESR-3432

Reissued September 2023


This report also contains:

- FBC Supplement

Subject to renewal September 2025

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<p>DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION</p> <p>Section: 07 30 05— Roofing Felt and Underlayment</p>	<p>REPORT HOLDER: KWANG SUNG CO., LTD.</p>	<p>EVALUATION SUBJECT: KS ROOFING UNDERLAYMENT</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 and 2009 [International Building Code® \(IBC\)](#)
- 2012 and 2009 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Physical properties
- Fire classification

2.0 USES

KS Roofing Underlayment is a synthetic roofing underlayment intended for use as an alternative to the ASTM D226, Type I and Type II, roofing underlayment specified in Chapter 15 of the IBC and Chapter 9 of the IRC. The underlayment may be used as a component of classified roofing assemblies when installed as described in this report.

3.0 DESCRIPTION

KS Roofing Underlayment consists of a woven, polyolefin core coated on the top side with polyethylene. The underlayment top face is light brown in color. The material has a nominal weight of 2.5 pounds per 100 square feet (122 g/m²) and is produced in rolls of varying lengths and widths.

4.0 DESIGN AND INSTALLATION

4.1 General:

Installation must comply with the applicable code, this evaluation report and the manufacturer’s published installation instructions. The manufacturer’s published installation instructions must be available at all times during installation.

Prior to application of the underlayment, the roof deck surface must be free of frost, dust and dirt, loose nails, and other protrusions. Damaged sheathing must be replaced. For reroofing applications, the same procedures apply after removal of the existing roof covering and roofing felts to expose the roof deck.

4.2 Application:

The underlayment must be installed in accordance with Chapter 15 of the IBC or Chapter 9 of the IRC. The underlayment must be laid printed side up horizontally (parallel to the eave) starting at the lower edge of the roof, with 3-inch (76.2 mm) horizontal (head) laps and 6-inch (152 mm) vertical (end) laps. Minimum roof slope is 2:12 (17 percent).

The underlayment must be fastened to the roof deck using minimum No. 12 gage diameter [0.109 inch (2.8 mm)], corrosion-resistant roofing nails having minimum 1-inch-diameter (25.4 mm) plastic washers or 16 gage cap-staples. The fasteners must be spaced 8 inches (203 mm) on center at vertical and horizontal laps except in areas subject to high winds where underlayment fastening must comply with high wind attachment requirements specified in IBC Section 1507 or IRC Section R905, as applicable. Fasteners must be long enough to penetrate into the sheathing a minimum of $\frac{3}{4}$ inch (19.1 mm) or through the sheathing, whichever is less. When battens are installed over the underlayment, the underlayment need only be preliminarily attached pending attachment of the battens or counterbattens. A single layer of minimum 21-inch-wide (533 mm) underlayment must be installed and centered vertically at all valleys before underlayment is laid in the field, and at all hips and ridges after field placement. The underlayment must be installed over the drip edge flashing along the eaves, and under the drip edge flashing along the rake. At intersections with vertical surfaces such as walls, the underlayment must be installed with 8-inch (203 mm) laps up the vertical surface.

Installation of an approved roof covering can proceed immediately following application of the underlayment. The underlayment must be covered by the roof covering within the time period set forth in the manufacturer's published installation instructions.

For reroofing applications, the same procedures apply after removal of the existing roof covering and roofing felts to expose the deck.

Where the slope is from 2:12 (17 percent slope) up to 4:12 (33 percent slope) and the roof is to be covered with asphalt shingles, or where the slope is from 2 $\frac{1}{2}$:12 (21 percent slope) up to 4:12 (33 percent slope) and the roof is to be covered with concrete or clay roof tiles, the underlayment must be horizontally lapped 24 inches (610 mm), with the centerline of the underlying course forming two layers with 6-inch (152 mm) vertical laps. Seams in laps must be sealed with adhesives complying with ASTM D4586, Type 1. Subsequent courses of underlayment must be installed parallel to the eave, from the lower edge upwards to the ridge, in a shingle manner.

4.3 Ice Barrier:

In areas where the roof is required to have an ice barrier under Chapter 15 of the IBC or Chapter 9 of the IRC, two layers of the underlayment must be cemented together with a roofing cement complying with ASTM D4586, and extend from the lowest edge of all roof surfaces to a point at least 24 inches (610 mm) inside the exterior wall line of the building. KS Roofing Underlayment, in the field of the roof, must overlap the ice barrier protection.

4.4 Flashing:

Flashing must be in accordance with the applicable code. Flashing around protrusions must be over the lower course of the underlayment and under the upper course of the underlayment, to prevent water backup. Metal drip edges must be over the underlayment at gable ends and under the underlayment at eaves.

4.5 Fire Classification:

The roofing underlayment may be used as a component of a classified roof assembly consisting of Class A or C glass fiber mat shingle or Class C asphalt organic felt shingle complying with the applicable code when installed in accordance with this report over a minimum $\frac{3}{8}$ -inch-thick (9.5 mm) plywood deck.

The underlayment may also be used as an alternate to the underlayment specified in the applicable code for roof coverings of brick, masonry, slate, clay or concrete roof tile, exposed concrete roof deck, ferrous or copper shingles or sheets, and metal sheets and shingles where such roof coverings are permitted to be used in lieu of a Class A assembly under the IRC Section R902.1.

5.0 CONDITIONS OF USE:

The KS Roofing Underlayment described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report, the manufacturer's published installation instructions, and the applicable code. In the event of conflict between the published installation instructions and this report, this report governs.

- 5.2 Installation is limited to roofs with a minimum slope of 2:12 (17 percent) or the minimum slope required for the roof covering in accordance with the applicable code, whichever is greater.
- 5.3 Installation is limited to use with roof coverings that do not involve hot asphalt or coal-tar pitch.
- 5.4 Installation is limited to use with approved roof coverings that are mechanically fastened through the underlayment to the sheathing or rafters, or to use with approved roof coverings that are mechanically fastened to battens or counterbattens that are mechanically fastened through the underlayment to the sheathing or rafters.
- 5.5 Installation is limited to roofs with ventilated attic spaces in accordance with the requirements of the applicable code.
- 5.6 The product is manufactured under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the [ICC-ES Acceptance Criteria for Roof Underlayments \(AC188\)](#), dated February 2012.
- 6.2 Report of testing in accordance with ASTM E108.

7.0 IDENTIFICATION

- 7.1 Each roll of the roofing underlayment is marked with the company name (Kwang Sung Co., Ltd.) and address, the name of the product (KS Roofing Underlayment), the manufacturing date code, the evaluation report number (ESR-3432).
- 7.2 The report holder's contact information is the following:

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 30 05—Roofing Felt and Underlayment

REPORT HOLDER:

KWANG SUNG CO., LTD.

EVALUATION SUBJECT:

KS ROOFING UNDERLAYMENT

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the KS Roofing Underlayment, described in ICC-ES evaluation report ESR-3432, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2010 *Florida Building Code—Building*
- 2010 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The KS Roofing Underlayment, described in Sections 2.0 through 7.0 of the evaluation report ESR-3432, complies with the 2010 *Florida Building Code—Building* and the 2010 *Florida Building Code—Residential*, provided the design and installation are in accordance with the *International Building Code*® (IBC) provisions noted in the evaluation report.

Use of the KS Roofing Underlayment for compliance with the High-Velocity Hurricane Zone provisions of the 2010 *Florida Building Code—Building* and the 2010 *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this evaluation report.

For products falling under Florida Rule 9N-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued September 2023.