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DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION

Section: 07 30 05 – Roofing Felt and Underlayment

REPORT HOLDER:

BEM Direct Supply LLC
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REPORT SUBJECT:

SYNSTEP L340, SYNSTEP S360, SYNSTEP G380, SYNSTEP 100, SYNSTEP T440, SYNSTEP V480, SYNSTEP R600, SYNSTEP U640, SYNSTEP PRO 720, and SYNSTEP MAX960 Synthetic Roofing Underlayments

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2024, 2021, 2018 *International Building Code*® (IBC)
- 2024, 2021, 2018 *International Residential Code*® (IRC)
- 2023 *Florida Building Code* (FBC) – Building and Residential Codes, including High Velocity Hurricane Zones (HVHZ) (see Section 9)

NOTE: This report references the most recent Code editions noted. Section numbers in earlier editions may differ.

1.2 SYNSTEP underlayments have been evaluated for the following properties (see Table 1):

- Physical Properties
- Ice Barrier
- Fire Classification

1.3 SYNSTEP underlayments have been evaluated for the following uses (see Table 1):

- Under the 2024 IBC and IRC, the underlayment may be used in the field of roofs where ASTM D8257 compliant underlayments are required as specified in IBC Chapter 15 and IRC Chapter 9.

- Under the 2021 and 2018 Codes, the underlayment may be used as an alternative to the ASTM D226, Type I and Type II, roofing underlayments specified in IBC Chapter 15 and IRC Chapter 9.
- In areas of the roof required by IBC Section 1507 or IRC Section R905 to have an ice barrier as described in Section 4.2 of this report.
- As a component of a classified assembly when installed as described in Section 4.1 of this report.

2.0 STATEMENT OF COMPLIANCE

SYNSTEP underlayments comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

2.1 2024 IBC and IRC Evaluation Reports

The Intertek CCRR is an *Evaluation Report* for approval of an alternate material, design, or method of construction in accordance with Section 104.2.3.6.1 of the 2024 IBC and Section R104.2.2.6.1 of the 2024 IRC.

3.0 DESCRIPTION

SYNSTEP L340, SYNSTEP S360, SYNSTEP G380, SYNSTEP 100, SYNSTEP T440, SYNSTEP V480, SYNSTEP R600, SYNSTEP U640, SYNSTEP PRO 720, and SYNSTEP MAX960 are mechanically attached, four-layered synthetic roofing underlayments comprised of a non-woven fabric on the exposed side, a polymeric laminate/bonding layer, a woven polypropylene base, and a polymeric laminate/coating layer on the sheathing side. They have nominal weights of 1.74, 1.84, 1.95, 2.05, 2.25, 2.46, 3.07, 3.28, 3.69, and 4.92 pounds per 100 square feet, respectively. The standard roll size is 4 feet wide by 250 feet long, or as required. These are also available in different colors as required.



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4.0 PERFORMANCE CHARACTERISTICS

4.1 Fire Classification: When installed in accordance with the assembly described in Table 2 of this report, the roofing underlayment meets Class A fire classification per ASTM E108. Additionally, the underlayment may be used as follows:

- As a component of a classified roof assembly when specifically recognized as such in a Listing Report approved by the Code official.
- As an alternative to the underlayment specified in the Code for roof coverings permitted under Exceptions 1 - 4 to IBC Section 1505.2 and Exceptions 1 - 4 to IRC Section R902.1.
- Where non-classified roofing is permitted in IBC Section 1505.5.

4.2 Ice barrier: In areas of the roof required by IBC Section 1507.1.2 or IRC Section R905.1.2 to have an ice barrier, two layers of the roofing underlayment solidly cemented together may be used provided the ice barrier extends up the roof a minimum distance of 24 inches inside the exterior wall line of the building.

5.0 INSTALLATION

5.1 General:

The SYNSTEP underlayments must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

The underlayment may be installed with the roof coverings specified in IBC Table 1507.1.1(1) and IRC Table R905.1.1(1), where ASTM D8257-compliant underlayments are permitted. The underlayment must be installed in accordance with IBC Table 1507.1.1(2) and IRC Table R905.1.1(2) and fastened in accordance with IBC Table 1507.1.1(3) and IRC Table R905.1.1(3). The underlayment must be laid with the print side up, with laps as required by the applicable Code, evaluation report, or manufacturer's instructions, whichever is more restrictive.

The roof covering may be installed immediately following the underlayments application, and the underlayments must be covered within the time designated in the report holder's published installation instructions.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 Installation is limited to use with approved mechanically attached roof covering systems.

6.3 Installation is limited to roof systems that do not involve hot asphalt or coal-tar pitch.

6.4 Installation is limited to roofs with a slope of 2:12 (17%) or greater.

6.5 Attic ventilation must be provided in accordance with the applicable Code since there are no requirements to evaluate vapor permeability of the underlayment.

6.6 SYNSTEP underlayments are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests demonstrating compliance with ASTM D8257-20 and ASTM E108-20a [17].

7.2 For 2021 and older codes, data in accordance with the Data in accordance with ICC-ES Acceptance Criteria for Roof Underlayments (AC188), dated February 2012 (editorially revised December 2015).

7.3 Intertek Listing Report "BEM Direct Supply LLC - SYNSTEP Roofing Underlayments", on the [Intertek Directory of Building Products](#).





8.0 IDENTIFICATION

The SYNSTEP underlayments are identified with the manufacturer's name, the product name (SYNSTEP L340, SYNSTEP S360, SYNSTEP G380, SYNSTEP 100, SYNSTEP T440, SYNSTEP V480, SYNSTEP R600, SYNSTEP U640, SYNSTEP PRO 720, and SYNSTEP MAX960), the Intertek Mark as shown below, the Intertek Control Number, and the Code Compliance Research Report number (CCRR-0549).



9.0 OTHER CODES

9.1 Florida Building Code:

SYNSTEP underlayments, described in Sections 2.0 through 7.0 of this Research Report, complies with the *Florida Building Code – Building* and *Florida Building Code – Residential*, for the editions indicated in Section 1.1 of this report, subject to the following conditions:

9.1.1 For use outside HVHZ, the underlayment may be installed with the roof coverings specified in FBC (Building) Table 1507.1.1.1 and FBC (Residential) Table R905.1.1.1, where ASTM D8257-compliant underlayments are permitted. The underlayment must be installed in accordance with the provisions of FBC (Building) Section 1507 and FBC (Residential) R905.

When installed as described in Table 2 of this report, the roofing assembly meets Class A fire classification per ASTM E108. Additionally, the underlayment may be used as follows:

- As a component of a classified roof assembly when specifically recognized as such in a Listing Report approved by the Code official.

- As an alternative to the underlayment specified in the Code for roof coverings permitted under Exceptions 1 - 4 to FBC (Building) Section 1505.2 and Exceptions 1 - 4 to FBC (Residential) Section R902.1.
- Where non-classified roofing is permitted in FBC (Building) Section 1505.5.

9.1.2 For use inside HVHZ, the underlayment may be installed with the roof coverings specified in FBC (Building) Table 1518.2.1, where ASTM D8257-compliant underlayments are permitted. The underlayment must be installed in accordance with the provisions of FBC (Building) Section 1518. Evaluation for use with discontinuous roof tile systems in HVHZ is outside the scope of this report.

When installed as described in Table 2 of this report, the roofing assembly may be used where Class A fire classification is required in FBC (Building) Section 1516.2.1. Additionally, the underlayment may be used with roof coverings permitted under the Exception to FBC (Building) Section 1516.2.1.

Intertek is an approved evaluation entity and quality assurance entity pursuant to Florida Statute 553.842 – *Product Evaluation and Approval*.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the <https://bpdirectory.intertek.com> is recommended to ascertain the current version and status of this report.





TABLE 1 - PROPERTIES EVALUATED

PROPERTY	APPLICABLE CODE SECTIONS ¹			
	IBC	IRC	FBC (BUILDING)	FBC (RESIDENTIAL)
Physical Properties	1507	R905	1507 and 1518.2	R904 and R905
Fire Classification	1505	R902.1	1505 1516.2	R902
Ice Barrier	1507.1.2	R905.1.2	N/A	N/A

¹Section numbers pertain to the most recent edition cited in Section 1.1 of this Report

TABLE 2 – FIRE CLASSIFICATION

Classification and Slope	Deck	Underlayment	Roof Covering
Class A 2:12 or greater	Minimum nominal 3/8 in. thick code compliant Exterior grade plywood ¹	Single layer of SYNSTEP Underlayment mechanically fastened to the plywood every 12 in. oc using 1 in. cap nails. Underlayment horizontal joints overlapped by 4 in.	Asphalt shingles Listed per ASTM D3462 with a minimum weight of 190 pounds per 100 square feet installed per manufacturer's installation instructions

1. Ref. DOC PS 1-19.

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