

ICC-ES Evaluation Report

ESR-1601*

Reissued November 1, 2010

This report is subject to renewal in two years.www.icc-es.org | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

**DIVISION: 07 00 00—THERMAL AND MOISTURE
PROTECTION**
Section: 07 30 05—Roofing Felt and Underlayment

REPORT HOLDER:

ALPHA PROTECH ENGINEERED PRODUCTS, INC.
301 SOUTH BLANCHARD STREET
VALDOSTA, GEORGIA 31601
(229) 242-1931
www.alphaprotech.com

EVALUATION SUBJECT:**REX SYNFELT™ SYNTHETIC ROOF UNDERLAYMENT****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

Properties evaluated:

- Physical properties
- Fire classification

2.0 USES

REX SYNFELT™ synthetic roofing underlayments are alternatives to the ASTM D 226, Type I and Type II, roofing underlayment specified in Chapter 15 of the IBC and Chapter 9 of the IRC. The underlayments are also used as components of classified roofing assemblies when installed as described in this report.

3.0 DESCRIPTION

REX SYNFELT™ synthetic roof underlayment is a woven polypropylene fabric with a polypropylene coating on each side. The underlayment has a nominal weight of 2.56 pounds per 100 square feet (125 g/m²), and is produced in rolls of various sizes.

4.0 DESIGN AND INSTALLATION**4.1 General:**

Installation must comply with the applicable code, this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite 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.

Installation of an approved roof covering can proceed immediately following application of the roofing underlayment. The underlayment is to be covered by the roof covering within the time set forth in the underlayment 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 roof deck.

4.2 One-layer Applications:

In areas of the roof where one layer of underlayment is allowed under 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 mm) horizontal (head) laps and 6-inch (152 mm) vertical (end) laps.

The underlayment must be fastened to the roof deck using minimum No. 12 gage [0.109-inch (2.77 mm)] minimum shank diameter, corrosion-resistant roofing nails having minimum 1-inch-diameter (25.4 mm) plastic caps. The fasteners must be spaced 8 inches (203 mm) on center at vertical and horizontal laps, except in areas subject to basic wind speeds (3-second gust) in excess of 110 miles per hour (177 km/hr), where fasteners must be spaced 4 inches (101.6 mm) on center at vertical and horizontal laps. The fasteners must be spaced 24 inches (610 mm) on center vertically and horizontally in a staggered pattern in the field of the underlayment. Fasteners must be long enough to penetrate into the sheathing a minimum of 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 24-inch-wide (610 mm) underlayment must be installed and centered vertically at all valleys before underlayment in the field, and at all hips and ridges after underlayment in the field.

4.3 Two-layer Applications:

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 2¹/₂:12 (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) to the centerline of the underlying course to form two layers with 6-inch (152 mm) vertical laps. Seams in laps must be sealed with adhesives complying with ASTM D 4586, Type 1. Subsequent courses of underlayment must be installed parallel to the eave, from the lower edge

***Revised May 2011**

upwards to the ridge, in a shingle manner. The underlayment must be mechanically fastened as specified in Section 4.2.

In areas of the roof required to have an ice dam membrane or 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 D 4586, for a minimum distance of 24 inches (610 mm) inside the exterior wall line of the building. The REX SYNFEEL™ synthetic roof underlayment, in the field of the roof, must overlap the ice dam 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. When used, metal drip edges must be installed beneath the underlayment at the eaves and over the underlayment at rakes.

4.5 Classified Roofs:

The synthetic roof underlayment may be used as an alternative 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. These roof coverings may be used as indicated in IBC Sections 1505.2 and 1505.3 or IRC Section R902.1, wherever a Class A, B or C roof covering assembly is required.

5.0 CONDITIONS OF USE

The REX SYNFEEL™ synthetic roof underlayments described in this report comply with, or are suitable alternatives 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 and the manufacturer's published installation instructions, and the applicable code. In the event of conflict between the published installation instructions and this report, the more restrictive must govern.

5.2 Installation must be limited to roofs with a minimum slope of 2:12 (17 percent slope) or to the minimum slope required for the roof covering in accordance with the applicable code, whichever is greater.

5.3 Installation must be limited to use with roof coverings that do not involve hot asphalt or coal-tar pitch.

5.4 Installation must be limited to solid substrates complying with the applicable code.

5.5 Installation must be 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.

5.6 Installation must be limited to roofs with ventilated attic spaces in accordance with the requirements of the applicable code.

5.7 The products are manufactured in Valdosta, Georgia, under a quality control program with inspections by RADCO (AA-650).

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Roof Underlayments (AC188), dated July 2007.

6.2 Report of testing in accordance with ASTM E 108 (UL 790).

7.0 IDENTIFICATION

Each roll of the product described in this report must be marked with the manufacturer's name and product name (Alpha Protech Engineered Products, Inc., REX SYNFEEL™) the manufacturer's address, the date of manufacture, the evaluation report number (ESR-1601), and the name of the inspection agency (RADCO).