Code Compliance Research Report
CCRR-1024

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

REPORT HOLDER:
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REPORT SUBJECTS:
TITANIUM™ PSU 30, and TITANIUM™ FR Roofing Underlayments

1.0 SCOPE OF EVALUATION

This Research Report addresses compliance with the following Codes:

- 2024, 2021, 2018 *International Building Code*® (IBC)
- 2024, 2021, 2018 *International Residential Code*® (IRC)

1.1 The underlayments have been evaluated for the following properties (see Table 1):

- Physical Properties
- Fire Classification
- Ice Barrier

1.2 The underlayments have been evaluated for the following uses (see Table 1):

- Use in the field of the roof where self-adhering roof underlayments complying with ASTM D1970 are required as specified in Chapter 15 of the IBC, and Chapter 9 of the IRC
- Use in areas of the roof required by IBC Section 1507 or IRC Section R905 to have an ice barrier roof underlayment, when installed as noted in Section 4.3.
- Use as a component of classified assemblies when installed as described Section 4.2.

2.0 STATEMENT OF COMPLIANCE

TITANIUM™ PSU 30, and TITANIUM™ FR roofing 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 5.0.

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

TITANIUM™ PSU 30 self-adhered roofing underlayment is comprised of an un-reinforced polymer modified bitumen material adhered to the underside of a polymer coated, synthetic woven material. The underside of the membrane (bitumen material) is backed with a release film that is removed prior to application of the membranes to the roof deck. The top surface of the membrane is grey in color. The underlayment weighs 26.5 pounds per 100 square feet and is available in rolls 36 inch wide by 72 feet long rolls.

TITANIUM™ FR self-adhered roofing underlayment is comprised of seven bonded layers. The sequence of layers from the exposed side to the sheathing side is non-woven scrim, Fire-Rated coating, fiberglass mesh, Fire-Rated coating, High-Density Polyethylene (HDPE) film, adhesive coating, and HDPE release film. The underlayment weighs 51.3 pounds per 100 square feet and is available in rolls 36 inches wide by 56 feet long.

4.0 INSTALLATION

4.1 General: TITANIUMTM 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.

4.2 Fire Classification: When installed in accordance with the assembly described in Table 2 of this report, the roofing underlayments meet Class A fire classification per ASTM E108. Additionally, the underlayments may be used as a component of a classified roof assembly when specifically recognized as such in a Listing approved by the Code official. The underlayments may also be used as an alternative to the underlayments specified in the Code for roof coverings permitted under the Exceptions to IBC Section 1505.2 and IRC Section R902.1, and may be used where non-classified roofing is permitted in IBC Section 1505.5.

4.3 Application: The roof deck must be in proper condition to ensure adhesion. Installation is limited to solid-sheathed decks of plywood substrates. The membrane is self-adhered to the substrate after the release liner is removed.

The membrane must be lapped a minimum of 3 inches on horizontal seams and 6 inches on vertical seams. Flashings around protrusions must be installed under the underlayment.

When used as an ice barrier, the membrane is applied from the lower edge of the roof, extending up the roof a distance of 24 inches inside the exterior wall line of the building.

The underlayments may be installed with the roof coverings specified in IBC Table 1507.1.1(1) and IRC Table R905.1.1(1), where ASTM D1970-compliant underlayments are permitted. The underlayments 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 roof covering may be installed immediately following the underlayment application and the underlayments must be covered within the time designated in the report holder's published installation instructions.

5.0 CONDITIONS OF USE

The 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 Research Report, the manufacturer's published installation instructions and the applicable Code. The provisions of this report take precedence over the provisions in the report holder's installation instructions.

5.2 Installation is limited to use with approved mechanically attached roof coverings systems.

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

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

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

5.6 The TITANIUM™ PSU 30 and FR underlayments are manufactured under a quality control program with inspections by Intertek Testing Services NA Inc.

6.0 SUPPORTING EVIDENCE

6.1 Reports of tests in accordance with ASTM D1970 and ASTM E108, and UL 790 as set forth by UL 1703 for the TITANIUM™ FR and PSU 30 self-adhered underlayments.

6.3 Data in accordance with ICC-ES Acceptance Criteria for Roof Underlayments (AC188), dated February 2012 (editorially revised December 2015).

6.2 Intertek Listing Report "OC - Titanium Roofing Underlayments".

7.0 IDENTIFICATION

TITANIUM™ PSU 30, and TITANIUM™ FR roofing underlayments are marked at 48 inch intervals with the product name. Each roll of the product is labeled with the report holder's name (Owens Corning Roofing and Asphalt LLC.), the product name, the manufacturing date code, the Intertek mark, and the Code Compliance Research Report number (CCRR-1024).

8.0 OTHER CODES

This section is not applicable.

9.0 CODE COMPLIANCE RESEARCH REPORT USE

9.1 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.

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

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

TABLE 1 – PROPERTIES EVALUATED

PROPERTY	2024 IBC SECTION	2024 IRC SECTION
Physical Properties	1506 1507	R904 R905
Fire Classification	1505	R902.1
Ice Barrier	1507	R905

Note: Section numbers may be different for earlier versions of the Codes.

TABLE 2 – FIRE CLASSIFICATION

CLASSIFICATION AND SLOPE	DECK	UNDERLAYMENT	ROOF COVERING
Class A 2:12 or greater	Minimum 15/32 in. thick Code Compliant exterior grade plywood	Single layer of Titanium FR underlayment adhered to the deck in accordance with manufacturer's installation instructions.	ASTM C1167 compliant clay roof tile (minimum 6.98 lb/ft2) installed in accordance with the roof tile manufacturer's installation instructions. The roof covering must be recognized in a Listing Report for Class A Spread of Flame per ASTM E108 requirements.
Class A 2:12 or greater	Minimum 15/32 in. thick Code Compliant exterior grade plywood	Single layer of Titanium FR underlayment adhered to the deck in accordance with manufacturer's installation instructions.	ASTM C1492 compliant concrete roof tile (minimum 12.2 lb/ft2) installed in accordance with the roof tile manufacturer's installation instructions. The roof covering must be recognized in a Listing Report for Class A Spread of Flame per ASTM E108 requirements.
Class A 2:12 or greater	Minimum 15/32 in. thick Code Compliant exterior grade plywood	Single layer of Titanium FR underlayment adhered to the deck in accordance with the manufacturer's installation instructions.	Minimum 26-gauge steel roof panels installed in accordance with the roof panel manufacturer's installation instructions. The roof covering must be recognized in a Listing Report for Class A Spread of Flame per ASTM E108 requirements.
Class A 2:12 or greater	15/32 in. thick Code Compliant exterior grade plywood	Two layers of Titanium FR underlayment adhered to the deck in accordance with the manufacturer's installation instructions.	Minimum 0.032 in. aluminum roof panels installed in accordance with the roof panel manufacturer's installation instructions. The roof covering must be recognized in a Listing Report for Class A Spread of Flame per ASTM E108 requirements.

TABLE 1 – FIRE CLASSIFICATION, *Continued*

CLASSIFICATION AND SLOPE	DECK	UNDERLAYMENT	ROOF COVERING
Class A 2:12 or greater	Minimum 3/8 in. thick Code Compliant exterior grade plywood	Single layer of Titanium FR underlayment adhered to the deck in accordance with manufacturer's installation instructions.	ASTM D3462 compliant asphalt shingles installed in accordance with manufacturer's installation instructions. Rack-mounted UL 1703 compliant (Class A, B, or C) PV panels or modules installed over the asphalt shingles in accordance with manufacturer's installation instructions.
Class A 2:12 or greater	Minimum 3/8 in. thick Code Compliant exterior grade plywood	Single layer of Titanium PSU 30 underlayment adhered to the deck in accordance with manufacturer's installation instructions.	ASTM D3462 compliant asphalt shingles installed in accordance with manufacturer's installation instructions. Rack-mounted UL 1703 compliant (Class A, B, or C) PV panels or modules installed over the asphalt shingles in accordance with manufacturer's installation instructions.