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ESR-3624

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Reissued 07/2017
This report is subject to renewal 07/2018.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 30 05—ROOFING FELT AND UNDERLAYMENT

REPORT HOLDER:

GULNAR PLASTICS PVT LTD.

**20 PODAR CHAMBERS, S.A. BRELVI ROAD
FORT MUMBAI, MAHARASHTRA 400 001
INDIA**

EVALUATION SUBJECT:

RAPTOR UNDERLAYMENT



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EVALUATION SUBJECT:

RAPTOR UNDERLAYMENT

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 and 2009 *International Building Code*® (IBC)
- 2012 and 2009 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]

[†]The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Physical properties
- Fire classification

2.0 USES

Raptor Underlayment is 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 also be used as a component of a classified roofing assembly when installed as described in Section 4.5 of this report.

3.0 DESCRIPTION

Raptor Underlayment is a woven polypropylene fabric with a spun-bonded fabric adhered to the bottom side and a non-skid coating on the top side. The underlayment has a nominal weight of 3.25 ounces per square yard and is produced in rolls of various sizes.

4.0 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 Application:

The underlayment must be installed in accordance with IBC Chapter 15 and IRC Chapter 9, as applicable, with the printed side up. The underlayment is applied horizontally (parallel to the eave) starting at the lower edge of the roof, with 4-inch (102 mm) horizontal (head) laps in shingle fashion and 6-inch (152 mm) vertical (end) laps.

The underlayment must be installed using standard roofing nails having a ³/₈-inch-diameter (9.5 mm) heads or low-profile plastic or metal cap nails with 1-inch-diameter (25.4 mm) caps. 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.

For standard application, fasteners must be spaced 12 inches (305 mm) along the top and bottom horizontal (head) laps and vertical (end) laps and 24 inches (610 mm) along two rows staggered and spaced one third and two thirds up into the field of the underlayment, except in areas subject to high winds where underlayment fastening must comply with the high-wind attachment requirements specified in IBC Section 1507 or IRC Section R905, as applicable.

When the underlayment is left exposed for more than three days or if severe weather is predicted before the roof covering is installed, fasteners must be spaced 6 inches (153 mm) along the top and bottom horizontal (head) laps and vertical (end) laps and 12 inches (305 mm) along two rows staggered and spaced one third and two thirds up into the field of the underlayment as marked on the surface of the underlayment, except in areas subject to high winds where underlayment fastening must comply with the high-wind attachment requirements specified in IBC Section 1507 or IRC Section R905, as applicable.

The underlayment must be extended 12 inches (305 mm) past all hips and valleys, with no joints or seams.

Where the underlayment is installed on slopes greater than 2:12 and less than 4:12, the underlayment must be

installed in two layers. A minimum 19-inch-wide (483 mm) strip of underlayment is installed parallel with and starting at the eave, and 36-inch-wide (914 mm) sheets of underlayment overlap successive sheets 19 inches (483 mm). The use of stapling is sufficient and fastening can be through both layers.

When used, drip edges must be installed beneath the underlayment at the eaves and over the underlayment at rakes. Drip edges must be mechanically fastened at a maximum of 12 inches (305 mm) on center.

4.3 Ice Barrier:

In areas of the roof 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, for a minimum distance of 24 inches (610 mm) inside the exterior wall line of the building. The roof underlayment, in the field of the roof, must overlap the ice barrier.

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.

4.5 Classified Roofs:

Under the 2012 and 2009 IBC, the underlayment may be used in Class A roof assemblies that include the roof coverings specified in the exceptions to IBC Section 1505.2.

Under the 2012 and 2009 IRC, the underlayment may be used in Class A roof assemblies that include the roof coverings specified in the exceptions to Section R902.1.

5.0 CONDITIONS OF USE

The Raptor 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 (16.67 percent slope) or to 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 solid substrates complying with the applicable code.
- 5.5** 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.
- 5.6** Installation is limited to roofs with ventilated attic spaces in accordance with the requirements of the applicable code.
- 5.7** The products are manufactured in Silvassa, India, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.5** Data in accordance with the ICC-ES Acceptance Criteria for Roof Underlayments (AC188), dated February 2012.
- 6.6** Report of testing in accordance with ASTM E108 (UL 790).

7.0 IDENTIFICATION

Each roll of the product bears a label with the Gulnar Plastics PVT Ltd. name, the product name (Raptor Underlayment), the manufacturing address, and the evaluation report number (ESR-3624).