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DIVISION: 07 00 00 – Thermal and Moisture Protection
Section: 07 18 13 – Pedestrian Traffic Coatings
Section: 07 54 00 – Thermoplastic Membrane Roofing

REPORT HOLDER:
Tuff Industries Inc.
9570 Bottom Wood Lake Road
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REPORT SUBJECT:
Tufdek® Walkable Vinyl Deck and Roof System

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2018, 2015, and 2012 *International Building Code*® (IBC)
- 2018, 2015, and 2012 *International Residential Code*® (IRC)
- 2017 *Florida Building Code* (FBC) (Excluding High Velocity Hurricane Zones)
- 2015 *National Building Code of Canada* (NBC) (See Section 9)

NOTE: This report references 2018 Code sections. Earlier versions of the Codes may have different section numbers.

1.2 The Tufdek® system has been evaluated for the following properties (see Table 1):

- Physical properties
- Wind resistance
- Fire classification

1.3 The Tufdek® system has been evaluated for the following uses (see Table 1):

- Walking surface applied to wood and concrete deck substrates
- Class A fire classification when applied to noncombustible decks. Refer to Table 3.
- Class A fire classification when applied to combustible decks with noncombustible substrates. Refer to Table 3.

2.0 STATEMENT OF COMPLIANCE

The Tufdek® system complies 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.

3.0 DESCRIPTION

3.1 Tufdek® Membrane: PVC single-ply, polyester weft-scrim reinforced membrane complying with ASTM D4434. The membrane has a nominal thickness of 60 mils (1.52mm) and is available in rolls 64 in. (1626mm) wide by nominal 360 ft. (109.7m) long. The membrane is available in various surface colors and has an embossed surface texture.

3.2 Tuff Low VOC Contact Adhesive: Solvent based, roll- or brush-on adhesive for bonding Tufdek® to flat or vertical wood and concrete surfaces. Coverage rate: 60 sq. ft./gal. The shelf life is one year.

3.3 Tuff Trowel-On Latex Vinyl Adhesive: Water based, for bonding Tufdek to flat, horizontal wood surfaces using a 1/16 in. u-notched trowel. Coverage rate: 130 sq. ft./gal. The shelf life is one year.

3.4 Tuff Roll-On Latex Vinyl Adhesive: Water based, roll- or brush-on adhesive for bonding Tufdek® to wood and concrete surfaces. Coverage rate: 160 sq. ft./gal. The shelf life is one year.

3.5 Tuff Deck-Patch: Cement based, floor-leveling compound used for filling plywood gaps, knotholes, and uneven surfaces.

3.6 Tuff-Clad PVC Laminated Metal Flashing: 21 mil PVC laminated film thickness, laminated to 24 GA G-90 galvanized sheet steel on one side, for use with Tufdek® Membrane. Tuff-Clad is fabricated into metal flashings and edge details.



4.0 PERFORMANCE CHARACTERISTICS

4.1 Physical Properties: The physical properties of the Tufdek® Membrane have been evaluated to ASTM D4434, and are in compliance with IBC Sections 1504.6 and 1507.13, and IRC Section R905.13.

4.2 Wind Resistance: The wind uplift resistance of the Tufdek® system installed in accordance with Section 5.0 of this Report is described in Table 2.

4.3 Impact Resistance: Impact resistance of the Tufdek® system installed on low-slope roofs (roof slope < 2:12) complies with the "Resistance to Foot Traffic Test" in Section 5.5 of FM4470, as required in IBC Section 1507.

4.4 Fire Classification: The Tufdek® system has been tested in accordance with ASTM E108 and has roof classifications as described in Table 3.

5.0 INSTALLATION

5.1 Substrates must be structurally sound and in accordance with the applicable Code. Surfaces shall be dry and free from all debris, with installation being limited to time periods where precipitation is not expected.

5.2 Metal or membrane flashing shall be installed in accordance with the applicable Code and must be applied to all door thresholds, jambs, fascia, and walls.

5.3 The membrane sheets are installed with a minimum 1 in. (25.4mm) overlap and melted together with an approved hot air welding gun and nozzle. A silicone pressure roller is used to bond the overlapping seam of the two surfaces together.

5.4 The Tufdek® system shall be installed in accordance with the manufacturer's instructions using one of the adhesives identified in Section 3.0.

5.5 Repairs to the membrane require that the damaged section of membrane be cut out and removed. Application of a repair membrane patch to proceed following the installation requirements in Section 5.0.

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 of the Tufdek® system as a walking deck is limited to a walking surface having a minimum slope of 1/4:12.

6.3 Use of the Tufdek® system as a Class A roof installation is limited to the assemblies described in Table 3 with a slope of 1:12 or less.

6.4 Wind uplift pressure on any roof area, including edge and corner zones, must not exceed the allowable wind uplift pressure stated in Section 4.2.

6.5 Components of the Tufdek® system are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests in accordance with ASTM D4434-12.

7.2 Fire resistance in accordance with ASTM E108-16, Standard Test Methods for Fire Tests of Roof Coverings.

7.3 Data in accordance with the ICC-ES AC39, Acceptance Criteria for Walking Decks, Approved June 2017, and AC75, Acceptance Criteria for Roofing Membrane Roof-Covering Systems, Approved July 2010, editorially revised March 2018.

7.4 Intertek Listing Report "Tufdek® Walkable Vinyl Deck and Roof System", on the [Intertek Directory of Building Products](#).

8.0 IDENTIFICATION

The Tufdek® Membrane is identified with the manufacturer's name (Tuff Industries Inc.), address and telephone number, the product name (Tufdek®), shelf life, date of manufacture or lot number, the Intertek Mark as shown below, and the Code Compliance Research Report number (CCRR-1122).





9.0 OTHER CODES

9.1 Florida Building Code:

9.1.1 Scope of Evaluation: The Tufdek® Walkable Vinyl Deck and Roof System has been evaluated for compliance with the 2017 *Florida Building Code*.

9.1.2 Conclusion: The Tufdek® Walkable Vinyl Deck and Roof System, described in Sections 2.0 through 8.0 of this Research Report, complies with the requirements of Sections 1504.3, 1504.6, 1505, and 1507.13 of the 2017 *Florida Building Code – Building*, and Sections R902 and R904 of the 2017 *Florida Building Code – Residential*, subject to the following conditions:

- Fasteners used for installation in compliance to 2017 *Florida Building Code – Residential* must meet the requirements of Section R904.5.
- Use of the Tufdek Walkable Vinyl Deck and Roof System for compliance with the High-Velocity Hurricane Zone provision of the 2017 *Florida Building Code* has not been evaluated and is outside the scope of this Research Report.

9.1.3 Intertek is a Florida State Product Evaluation Entity.

9.2 National Building Code of Canada:

9.2.1 Scope of Evaluation: The Tufdek® Walkable Vinyl Deck and Roof System has been evaluated for compliance with the 2015 *National Building Code of Canada*.

9.2.2 Conclusion: The Tufdek® Walkable Vinyl Deck and Roof System, described in Sections 2.0 through 8.0 of this Research Report, complies with the requirements of Division B, Part 3, Article 3.1.15.1, Sentence 3.1.15.2(1), Division B, Part 9, Article 9.26.2.1, of the 2015 *National Building Code of Canada*. Installation in buildings governed by Part 9 as defined in the NBC is to be in accordance to the provisions of Division B, Part 9, Article 9.26.16.1.

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.

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TABLE 1A – PROPERTIES EVALUATED

Property	2018, 2015, and 2012 IBC	2018, 2015, and 2012 IRC	2017 FBC – Building	2017 FBC – Residential
Physical Properties	1504.6, 1507.13	R904, R905.13	1504.6, 1507.13	R904, R905.13
Wind Resistance	1504.3	R905.1	1504.3	R905.1
Fire Classification	1505	R902	1505	R902

TABLE 1B – PROPERTIES EVALUATED (CANADA)

Property	2015 NBC, Division B
Physical Properties	9.26.2.1.
Fire Classification	3.1.15.1, 3.1.15.2(1)

TABLE 2 – WIND UPLIFT RESISTANCE

System	Deck	Roof Covering	Adhesives ²	Maximum Wind Uplift (psf)
1	Plywood; Min. 5/8 in. thick ¹	Tufdek®	Tuff Low VOC Contact Adhesive Tuff Trowel-On Latex Vinyl Adhesive Tuff Roll-On Latex Vinyl Adhesive	170
2	Concrete	Tufdek®	Tuff Trowel-On Latex Vinyl Adhesive	630

¹The joints of the plywood decks must be sealed with Tuff Deck Patch in accordance to the installation instructions provided by the Report Holder.

²The application rate of the adhesives must be as specified by Sections 3.2, 3.3, and 3.4 of this Report.

TABLE 3 – FIRE CLASSIFICATION

System	Deck	Substrate	Adhesives ²	Roof Covering	Slope	Classification
1	AC Grade Fir Plywood; Min. 5/8 in. thick ¹	Permabase Substrate; Min. 1/2 in. thick	Tuff Low VOC Contact Adhesive Tuff Trowel-On Latex Vinyl Adhesive Tuff Roll-On Latex Vinyl Adhesive	Tufdek®	1:12, max.	Class A
2	Concrete	None	Tuff Low VOC Contact Adhesive Tuff Trowel-On Latex Vinyl Adhesive Tuff Roll-On Latex Vinyl Adhesive	Tufdek®	1:12, max.	Class A

¹The joints of the plywood decks must be sealed with Tuff Deck Patch in accordance with the manufacturer's installation instructions.

²The application rate of the adhesives must be as specified by Sections 3.2, 3.3, and 3.4 of this Report.

