



INFORMATION SHEET

NO. FS-01

DATE : February 20, 2015

CATEGORY : Fire Safety

SUBJECT : **Combustible Roof Decks for R-3 Occupancies – Allowable Area and Materials**

SECTIONS INVOLVED

: **2013 San Francisco Building Code (SFBC)**

- Sections 104A.2.8 and 1509.6

2013 California Building Code (CBC)

- Sections 703A.5.1, 703A.5.2, 703A.7, 709A.3, 2303.1.8, 2303.2

California Referenced Standards Code (CRSC) 12-7A-4 and 12-7A-4A

ASTM E-84

California Department of Forestry and Fire Protection Office of the State

Fire Marshal (SFM), Wildland Urban Interface (WUI) Products published by Cal-Fire, Fire Engineering Division, Building Materials Listing Program, revised July 11, 2011

INTENT OF CODE : To establish standards for allowable building materials used in the construction of roof decks that conforms to the minimum standards for the resistance to intrusion and spread of flames.

INTERPRETATIONS : (1) The SFBC allows roof decks to be constructed of wood when "constructed of fire-retardant-treated wood approved for exterior use, or the deck is constructed of 2-inch nominal all heart redwood." SFBC Section 104A.2.8 allows the Building Official to approve alternate materials when the material is "at least the equivalent of that prescribed in the code." All heart redwood has been shown to conform to the ASTM E-84 Class B flame spread index and exhibit a net peak heat release rate in conformance with Decking Standard SFM-12-7A-4 (and 12-7A-4A). As these are equivalent to the minimum standards stated in the CBC Section 709A.3 #4 for decking used in a wild land urban interface situation, materials complying with this section and these standards may be considered equivalent and thus allowed for use in roof deck construction. The material must be installed in conformance with the structural provisions of the code, the manufacturer's installation instructions, and all other relevant code requirements. All such material must be verified by grade stamp, supplier receipt or other approved method prior to final approval by the field inspector. Note: The deck substructure (supporting structure) may be of preservative-treated wood complying with CBC Section 2303.1.8.

(2) SFBC Section 1509.6 allows roof deck to be constructed of wood when "the deck is less than 500 square feet." Hence, the total area of all decks at the same story shall not exceed 500 square feet.

DISCUSSION : In order for decking material to be considered equivalent to the requirements of the SFBC Section 1509.6; the material must conform to the ASTM E-84 Class B flame spread index and must also conform to the requirements of SFM Standard 12-7A-4 (Part A) or SFM 12-7A-4A and shall pass the accelerated weathering test and be identified as exterior type, in accordance with ASTM D 2898 and ASTM D 3201.

The California Department of Forestry and Fire Protection Office of the State Fire Marshal (SFM) Wildland Urban Interface (WUI) Products handbook; published by Cal-Fire, Fire Engineering Division, Building Materials Listing Program, revised July 11, 2011 lists decking material that has shown conformance to SFM 12-7A-4 (Part A) or SFM 12-7A-4A and ASTM D 2898 and ASTM D 3201. Only those material listed in this product manual under decking **that conform to the ASTM E-84 Class B or Class A flame spread index** should be deemed equivalent materials and may be allowed for use in the construction of roof decks. Additionally, materials not listed in the WUI Products Manual that have appropriate documentation showing that they conform to the above standards may also be considered equivalent.

As a convenience, a list of approvable equivalent products from the WUI Product handbook is attached. It must be noted that this list may change from time to time and for a product to qualify, it must be on the most current revision of this handbook available at:

<http://osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf>

Tom C. Hui

2/20/15

Tom C. Hui, S.E., C.B.O.
Director
Department of Building Inspection

Date

Attachment A: Excerpted approvable products from the SFM's WUI Products handbook

This Information Sheet is subject to modification at any time. For the most current version, visit our website at <http://www.sfdbi.org>

Approvable Roof Decking Products

(excerpted from SFM WUI Products Handbook)

Revised: July 11, 2011

CALIFORNIA DEPARTMENT of FORESTRY
and FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL

WILDLAND URBAN
INTERFACE (WUI)
PRODUCTS

Published by CAL-FIRE
FIRE ENGINEERING DIVISION
BUILDING MATERIALS LISTING PROGRAM

Revised July 11, 2011

<http://osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducs.pdf>

Approvable Roof Decking Products

(excerpted from SFM WUI Products Handbook)

Revised: July 11, 2011

- * Company Name: AZEK BUILDING PRODUCTS
801 East Corey Street, Scranton, PA 18505
Product Description: "AZEK Deck" composite deck board, all colors, 1" thick x 5.5" width.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B
- * Company Name: AZEK BUILDING PRODUCTS
801 East Corey Street, Scranton, PA 18505
Product Description: "AZEK Deck" composite deck board, all colors, 1" thick x 3.5" width.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B
- * Company Name: AZEK BUILDING PRODUCTS
801 East Corey Street, Scranton, PA 18505
Product Description: "AZEK Deck" "Harvest, Arbor and Terra Collections" composite deck board, all colors, 1" thick x 3.5" width or 5.5" width
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B
- * Company Name: AZEK BUILDING PRODUCTS
801 East Corey Street, Scranton, PA 18505
Product Description: "AZEK Porch" tongue and groove composite deck board, all colors, 1" thick x 3 1/8" width.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B
- * Company Name: BLUELINX
901 Bay Marina Dr., National City, CA 91950
Product Description: "Bluelinx Mangaris Diamond", Merbau hardwood deck board, 3/4" thick x 5-1/2" wide, 1.63 lb/lineal foot (57 lb/cu.ft), reddish brown color.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class A
- * Company Name: CALI BAMBOO
9365 Waples Street, Suite D, San Diego, CA 92121
Description: "CaliBamboo® BamDeck™" deck board, edge-grooved with grooved surfaces, 0.8" thick (nominal) x 5.5" wide, 1.8 lb/lineal foot.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class A

Approvable Roof Decking Products

(excerpted from SFM WUI Products Handbook)

Revised: July 11, 2011

- * Company Name: FIBER COMPOSITES, LLC
181 Random Drive, New London, NC 28127
Product Description: "Fiberon" composite deck board, 1" thick x 5 1/8" width.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B
- * Company Name: FIBER COMPOSITES, LLC
181 Random Drive, New London, NC 28127
Product Description: "Portico" composite deck board, 1" thick x 5 1/8" width.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B
- * Company Name: FIBER COMPOSITES, LLC
181 Random Drive, New London, NC 28127
Product Description: "Veranda" composite deck board, 1" thick x 5 1/8" width.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B
- * Company Name: FIBER COMPOSITES, LLC
181 Random Drive, New London, NC 28127
Product Description: "WeatherBest™" composite deck board, 1" thick x 5 1/8" width.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B
- * Company Name: FIBER COMPOSITES, LLC
181 Random Drive, New London, NC 28127
Product Description: "Sensibuilt™" cellular PVC composite deck board, squared edge, 1" thick x 5 1/2" width, 1.73 lbs/lineal foot.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class A
- * Company Name: GAF-ELK CORPORATION
9806 Lackman Road, Lenexa, KS 66219
Product Description: "CrossTimbers Professional Grade FR" composite deck board, 1" thick x 5.5" width (nominal 1" x 6").
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B
- * Company Name: GAF-ELK CORPORATION
9806 Lackman Road, Lenexa, KS 66219

Approvable Roof Decking Products

(excerpted from SFM WUI Products Handbook)

Revised: July 11, 2011

Product Description: "DuraLife™" composite deck board, edge-grooved, solid,
15/16" thick x 5-3/8" wide, 2.7 lb/lineal foot (nominal).
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

* Company Name: GAF-ELK CORPORATION
9806 Lackman Road, Lenexa, KS 66219

Product Description: "DuraLife™" composite deck board, non-grooved, solid,
15/16" thick x 5-3/8" wide, 2.7 lb/lineal foot (nominal).
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

* Company Name: GAF-ELK CORPORATION
9806 Lackman Road, Lenexa, KS 66219

Product Description: "Veranda™" composite deck board, solid, 15/16" thick x
5-1/4" wide, 2.7 lb/lineal foot (nominal).
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

* Company Name: GOSSEN CORPORATION
2030 W. Bender Road, Milwaukee, WI 53209

Product Description: "Passport" Cellular PVC deck board, brown color, 1" thick x 5
1/2" width, rounded edges.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

Company Name: GOSSEN CORPORATION
2030 W. Bender Road, Milwaukee, WI 53209

Product Description: "Weather Ready" Cellular PVC deck board, mocha color, 1"
thick x 5 1/2" width, rounded edges.
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

* Company Name: INTEPLAST WORLD-PAK
9 Peach Hill Rd, Livingston, NJ 07039

Product Description: "TUF DECK™" extruded PVC composite square edge deck
board, 15/16" thick x 5-7/16" width, 1.65 lb/lineal foot
Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class A

* Company Name: LIFETIME COMPOSITES LLC
2121 Palomar Airport Rd., Suite 320, Carlsbad, CA 92024

Approvable Roof Decking Products

(excerpted from SFM WUI Products Handbook)

Revised: July 11, 2011

Product Description: "LifeTime Lumber" composite deck board, 1-1/2" thick x 5 1/2" width.
 Test Protocol 12-7A-4, Part A only, Accelerated weathering.
 Flame Spread Class B

* Company Name: NEW FOREST STRATEGY
 P.O. Box 212, Sonoma, CA 95476
 Product Description: "DreamDex" scientifically enhanced performance lumber deck board, 1" thick x 5-1/2" width.
 Test Protocol 12-7A-4, Part A only, Accelerated weathering.
 Flame Spread Class A

* Company Name: NOVA USA WOOD PRODUCT
 1022 NW Marshall Street #480, Portland, OR 97209
 Product Description: "Batu" solid wood decking material, 5/4" thick x 6" width or 1" thick x 6" width.
 Test Protocol 12-7A-4A
 Flame Spread Class A
 Issued Date June 14, 2011

* Company Name: NOVA USA WOOD PRODUCT
 1022 NW Marshall Street #480, Portland, OR 97209
 Product Description: "Ipe" solid wood decking material, 5/4" thick x 6" width or 1" thick x 6" width.
 Test Protocol 12-7A-4A
 Flame Spread Class B
 Issued Date June 14, 2011

* Company Name: REDWOOD EMPIRE
 10 Madrone Avenue, Morgan Hills, CA 95038
 Product Description: Redwood Empire Brand "IPE" Hardwood decking materials. Dimensions 1" x 6" or 5/4" x 6" x 2". (June 20, 2011)
 Test Protocol 12-7A-4A
 Flame Spread Class B

* Company Name: TIMBERTECH
 894 Prairie Avenue, Wilmington, OH 45177
 Product Description: "DockSider™ Plank" wood plastic composite (WPC) deck board, square edge, 1-1/4" thick x 5-1/2" wide, 3-1/2 lb/lineal foot.
 Test Protocol 12-7A-4A, Accelerated weathering.
 Flame Spread Class B

Approvable Roof Decking Products

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Revised: July 11, 2011

* Company Name: TIMBERTECH
894 Prairie Avenue, Wilmington, OH 45177
Product Description: "Earthwood™ Plank" wood plastic composite (WPC) deck board, square edge and grooved, 1" thick x 5-7/16" wide, 2.7 to 2.8 lb/lineal foot.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B

* Company Name: TIMBERTECH
894 Prairie Avenue, Wilmington, OH 45177
Product Description: "ReliaBoard™" HDPE composite deck board, square edge, scalloped back surface, 3/4" at thinnest portion, 15/16" at thickest, 5-3/8" wide and nominally 2.4 lb/lineal foot.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B

* Company Name: TIMBERTECH
894 Prairie Avenue, Wilmington, OH 45177
Product Description: "TwinFinish™ Plank" wood plastic composite (WPC) deck board, square edge and grooved, 1" thick x 5-7/16" wide, 2.7 to 2.8 lb/lineal foot.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B

* Company Name: TIMBERTECH
894 Prairie Avenue, Wilmington, OH 45177
Product Description: "TimberTech XLM™" plastic composite deck board, square edge and grooved, 1" thick x 5-1/2" wide, nominal 1.6 lb/lineal foot.
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class A

* Company Name: TREX COMPANY, INC.
245 Capitol Avenue, Winchester, VA 22601
Product Description: "Trex® Accents®: Fire Defense" wood and polyethylene composite deck board, nominal 5/4" thick x 5-1/2" width, nominal density of 0.036 lb/in³ .
Test Protocol: 12-7A-4, Part A only, Accelerated weathering.
Flame Spread: Class B

* Company Name: TREX COMPANY, INC.
245 Capitol Avenue, Winchester, VA 22601

Approvable Roof Decking Products

(excerpted from SFM WUI Products Handbook)

Revised: July 11, 2011

Product Description: "Trex® Escapes®" cellular PVC composite deck board, nominal 1" thick x 5-1/2" width, nominal density of 1.6 lbs/linear ft.

Test Protocol 12-7A-4, Part A and B, Accelerated weathering.
Flame Spread Class A

* Company Name: TREX COMPANY, INC.
245 Capitol Avenue, Winchester, VA 22601

Product Description: "Trex® Transcend®" composite deck board, square edge, nominal 1" thick x 5-1/2" width, density of 4.85lbs/linear ft.

Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

* Company Name: SABRA INTERNATIONAL INC.
300 71st Street, Suite 430, Miami Beach, FL 33141

Product Description: Sabra Brand "IPE" square edge deck board, 3/4" thick x 5.3" width, nominal density of 63.2 lb/in³.

Test Protocol 12-7A-4, Part A only, Accelerated weathering.
Flame Spread Class B

* Company Name: Various Manufacturers

Product Description: Solid "Wood" decking, when installed over minimum 2" x 6" solid "Douglas Fir" or better joists, spaced 24" or less on center, and decking and joists complying with American Softwood Lumber Standard PS 20 as follows:
Minimum nominal 5/4" thick and nominal 6" wide decking boards with a maximum 3/8" radius edges made of: "Redwood", "Western Red Cedar", "Incense Cedar", "Port Orford Cedar", or "Alaska Yellow Cedar". Lumber grades: construction common, commercial or better grades for Redwood; #3 common, commercial or better grades for Cedars. The above species are having a Class B Flame Spread rating when tested in accordance with ASTM E84.

Test Protocol 12-7A-4, Part A only, Accelerated weathering.