Code Compliance Research Report
CCRR-0351

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DIVISION: 07 00 00 – Thermal and Moisture Protection
Section: 07 31 00 – Roof Shingles and Shakes

REPORT HOLDER:
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REPORT SUBJECT:
Tesla Solarglass Roof Photovoltaic Shingles, Models SR60T-1, SR72T-1, SR72T-2, SRNFT 1, SRNFT 1/6, SRNFT 1/3, SRNFT 1/2, SRNFT 2/3, and SRNFT 5/6

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2021, 2018 and 2015 *International Building Code®* (IBC)
- 2021, 2018, and 2015 *International Residential Code®* (IRC)
- 2023 and 2020 *Florida Building Code* (FBC) (see Section 9)
- 2022 *California Building Code®* (CBC) (see Section 9)

NOTE: This report references the most recent Code sections cited. Section numbers in earlier versions of the Codes may differ.

1.2 The Tesla Solarglass Roof roof covering system has been evaluated for the following properties (see Table 1):

- Fire Classification
- Wind Resistance
- Wind Driven Rain
- Impact Resistance

1.3 The Tesla Solarglass Roof roof covering system consisting of BIPV Model SR60T-1 and non-energy SRNFT shingles has been evaluated for the following uses (see Table 1):

- Class A, B, or C Fire Classified roof covering
- Class F wind resistant roof covering

2.0 STATEMENT OF COMPLIANCE

The Tesla Solarglass Roof roof covering 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 Tesla Solarglass Roof System: Building-integrated photovoltaic (BIPV) roof covering system consisting of photovoltaic shingles and non-energy producing shingles.

3.2 Models SR60T-1, SR72T-1 and SR72T-2: Energy producing BIPV roof shingle that serves as a roofing shingle and solar panel. Major components include a fiberglass substrate, film layers, silicon solar cells, textured and tempered superstrate cover glass, wiring, and various plastic and stainless-steel mounting components. Each module/shingle is 1140 mm x 430 mm x 5 mm thick. The total height including bottom mounting items is 34.5 mm. Model SR60T-1, SR72T-1, and SR72T-2 BIPV shingles are listed with UL LLC as complying with ANSI/UL 61730-1 and 61730-2, (Supersedes standard: *Flat-Plate Photovoltaic Modules and Panels* UL 1703), as required in IBC Section 1507.17.6.

3.3 Models SRNFT 1, SRNFT 1/6, SRNFT 1/3, SRNFT 1/2, SRNFT 2/3, and SRNFT 5/6: Tesla Solarglass roofing shingles are glass roof shingles used in non-energy producing areas of the roof. These shingles are tempered and textured glass with black bottom coating to provide similar appearance and overall thickness to the laminated Tesla Solarglass PB modules. These shingles include plastic and stainless-steel mounting components. Dimensions of the full glass tile is 1140 mm x 398 mm x 5 mm. In addition to full length 1140 mm tiles, these tiles are available in 1/6, 1/3, 1/2, 2/3, and 5/6 lengths to accommodate roof edges and obstructions. The total height of the glass shingle including bottom mounting items is 34.5 mm.

4.0 PERFORMANCE CHARACTERISTICS

Performance characteristics listed are for the Tesla Solarglass Roof Shingles that have been installed per manufacturer's installation instructions and per this code report.

4.1 Fire Classification: Class "A" and Class "C" fire classification as a roof covering when evaluated in accordance with UL 790.

4.2 Wind Resistance: Class "F" as a photovoltaic shingle roof covering when evaluated in accordance with ASTM D3161 and TAS 107.

4.3 Wind-driven Rain: Passing wind-driven rain resistance performance per requirements of TAS 100.

4.4 Impact Resistance: Class 3 in accordance with FM 4473. Note, this information is provided for information only. There are no requirements in the IBC, IRC, CBC, or FBC for hail impact when the structure is designed for HVHZ loads and the minimum roof decks are present.

5.0 INSTALLATION

5.1 General: The Tesla Solarglass Roof roof covering system 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.

The roof covering system must be protected at edges and penetrations at eave, rake, and other flashing conditions per methods described in the Tesla installation instructions.

5.2 Application: The Tesla Solarglass Roof system is for steep slope roof applications at a minimum roof slope of 2:12, installed over minimum 15/32-inch-thick plywood or minimum 7/16-inch-thick OSB complying with the applicable requirements of the code.

For Class "A" fire classification, the deck must be covered with one of the following:

a. Two layers of Firestone Clad-Gard SA-FR underlayment.
b. One layer of FT Synthetics Cobalt FR Self-Adhered (CCRR-0356).
c. One layer of Tesla Solar Roof Self-Adhered Roofing Underlayment Model SR-SAUL-1 (CCRR-0386).

For Class "C" fire classification, the deck must be covered with one layer of Tesla Solar Roof Self-Adhered Roofing Underlayment Model SR-SAUL-2 (CCRR-0386).

Underlayment must be installed in accordance with IBC Section 1507.1.1 or IRC Section R905.1.1.

The shingles are attached by snap engagement to plastic mounting components that are mechanically fastened to prepared roofing. The mounting components are fastened to the roof deck with two corrosion-resistant, ring shank roofing nails complying with ASTM F1667, with 3/8-inch heads and 11-gauge (0.120 inch) shanks. Fastener length shall be sufficient to achieve 3/4-inch of embedment into the sheathing, or 3/16-inch penetration through the sheathing, whichever is less.

The Solarglass Roof roof covering system is permitted for use in areas with wind speeds designated for ASTM D3161, Class F, in accordance with IBC Table 1504.1.1 and IRC Table R904.2.4.1.

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 The Tesla Solarglass Roof shingles and components 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 D3161 (2015 and 2016a), UL 790 (2014), TAS 100 (2023), TAS 107 (2020), and FM 4473 (2011).

7.2 UL Certificate of Compliance 20191115-E491360 to ANSI/UL 61730-1 and 61730-2 (Supersedes standard: *Flat-Plate Photovoltaic Modules and Panels* UL 1703).

7.3 Intertek Listing Report Spec ID 52115 "Tesla Solarglass Roof ", on the Intertek Directory of Building Products.

8.0 IDENTIFICATION

The Tesla Solarglass Roof shingles are identified on the bottom side with the Tesla name and logo, Tesla website, product name "Tesla Solarglass Roof," product Model Number, Serial Number that identifies manufacturing location and date, the Intertek Mark as shown below, and the Code Compliance Research Report number (CCRR-0351).



9.0 OTHER CODES

9.1 Florida Building Code:

9.1.1 Scope of Evaluation: The Tesla Solarglass Roof system was evaluated for compliance with the 2023 and 2020 *Florida Building Code – Building* and *Florida Building Code – Residential.*

9.1.2 Conclusion: The Tesla Solarglass Roof roof covering system described in Sections 2.0 through 7.0 of this Research Report, comply with the 2023 and 2020 *Florida Building Code – Building and Florida Building Code – Residential*, including High-Velocity Hurricane Zones, subject to the following conditions:

- Underlayment must comply with FBC – Building Section 1507.1.1, or FBC – Residential, Section R905.1.1
- The maximum mean roof height is 33 feet
- The maximum roof slope is 20:12
- The Tesla Solarglass Roof system is classified in accordance with ASTM D3161, Class F, and TAS 107, and therefore is acceptable for use in all wind speeds in accordance with FBC – Building, Section 1507.2.7.1 or FBC – Residential, Section R905.2.6.1.

Intertek is an approved evaluation entity and quality assurance entity pursuant to Florida Statute 553.842 – Product Evaluation and Approval.

9.2 California Building Code:

9.2.1 Scope of Evaluation: The Tesla Solarglass Roof system was evaluated for compliance with the 2022 *California Building Code* and *California Residential Code.*

9.2.2 Conclusion: The Tesla Solarglass Roof roof covering system described in Sections 2.0 through 7.0 of this Research Report, comply with the 2022 *California Building Code* and *California Residential Code,* including Wildland-urban Interface Fire Areas regulated by Chapter 7A, subject to the following conditions:

- When installed on roofs of structures in Wildland-Urban Interface Areas, accessory items, (such as trims, gutters, flashings, vents, and flashings) must comply with CBC Sections 705A and 706A or CRC Section R337.5
- When installed in Wildland-Urban Interface Areas, roof covering assembly must be installed as described for Class "A" in Section 5.2
- Roofs of structures in Wildland-Urban Interface Areas must comply with CRC Section R337.5
- Installation of the Tesla Solarglass Roof must comply with CRC Section R324 provisions for structural roof design, roof access, pathway, setback and electrical
- Installation of the Tesla Solarglass Roof must comply with the California Electrical Code

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

TABLE 1 - PROPERTIES EVALUATED

PROPERTY	2021 IBC SECTION[1]	2021 IRC SECTION[1]	2023 FLORIDA BUILDING CODE – Building and Residential	2022 CBC SECTION	2022 CRC SECTION
Fire Classification	1505.1	R902.1	1505.1 R902.1	1505.1 705A (WUI)	R902.1 R337.5 (WUI)
Photovoltaic Shingles	1507.16	R905.16	1507.17 1518.11 R905.16 R4402	1507.17	R905.16 R324.5 R337.5

[1] Section numbers may be different for earlier versions of the Codes.

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