**General notes**

FL 22267 - ES-SGD2020 (the “SGD Product”) and FL 17897.5 – ES-8000T Jumbo (the “Commercial Window Wall Product”)

**Issue/complaint/PGT Innovations, Incorporated (“PGTI”) – Daniel DeLeo, Esq.:**

**FL 22267:**

* E.S. Windows has failed to properly certify its SGD product and may have misrepresented its SGD Product’s performance capabilities.
* E.S. Windows is still actively offering past dated product revisions for sale on the market.
* PGTI firmly suggests the PA POC initiate an investigation into FL 22267, revoke such product approval until such time as it is determined the product actually complies with the Florida Building Code, issue a recall of all units installed since initial approval in 2017, and commence an examination of the Florida Product Approval’s quality control and oversight processes.
* Misapplication of the glazed PVB interlayer system.
* PGTI tested three separate systems of FL 22267 through independent testing as follows:

1. Dry glazed 57X102, 2 panel SGD. PVB interlayer, level 1 reinforcement – units failed during the fifth sequence of TAS 203.
2. Dry glazed 57X102, 2 panel SGD, PVB interlayer, level 2 reinforcement – unit failed during the sixth sequence of TAS 203 testing.
3. Wet glazed 142X120, 2 panel SGD, PVB interlayer level 3 reinforcement – unit failed very early in the first sequence of an eight-sequence test.

**FL 17897.5**

* E.S. Windows maintains a Miami-Dade Notice of Acceptance, 20-118.02 and Florida Product Approval, 17897.5, for its ES-80000T Jumbo Aluminum Window Wall System, (the “Commercial Window Wall Product”).
* E.S. Windows has failed to properly certify its Commercial Window Wall Product and may have misrepresented its Commercial Window Wall product’s performance capabilities.
* PGTI firmly suggests the PA POC initiate an investigation into FL 17897.5, revoke such product approval until such time as it is determined the product actually complies with the Florida Building Code, issue a recall of all units installed since initial approval in 2021, and commence an examination of the Florida Product Approval’s quality control and oversight processes.
* It is claimed the Commercial Window Wall Product can perform up to 76 square feet, which equate to nearly 90% above Kuraray’s PVB performance guidance. When evaluating the claimed performance capability of the Commercial Window Wall Product against other Florida manufacturers, much like the SGD product, it is clear that such capabilities are vastly overstated.

**Response/ E.S. Windows, LLC – Phillip Hudson III, P.A.**

* PGT’s allegations are unverified and lack merit for at least three reasons:

1. Approved Products where thoroughly tested and approved in accordance with all state laws, rules, and regulations governing the Florida Product Approval System.
2. PGT does not offer any real proof that the Approved Products do not meet the applicable standards for approval. This is because it cannot.
3. PGT’s reliance on marketing materials from the manufacturer of the PVB interlayers utilized in the Approved Products as allegedly establishing a strict limitation on the Interlayer’s use in the products is also without basis.

* In connection with the FPA application and review process, ES Windows necessarily had the Approved Products tested by independent third-party laboratories approved by the Commission. The testing followed all applicable protocols from the then-latest TAS 201/202/203 to fully compliant with impact and HVHZ requirements.
* The test reports that support FPA 22267 (Ref. BT-ESW-18-002 issued on May 17. 2018, Ref. BT-ESW-16-010 issued on April 20, 2017, and Ref. FTL-12390 issued on December 18, 2020 clearly indicate sufficient testing and review to support all applicable requirements.
* The interlayer marketing materials are not relevant to the FPA application review and approval process. Rather, the review is based on the actual performance of an assembled system, which includes the interlayer – not the performance of the interlayer alone. The assembled systems of course passed all required tests and were confirmed by supporting engineering calculation.
* Miami-Dade County denied complaint filed by PGT that is very similar to the complaint before the FBC. Notice of Acceptance 23-014.13. The product at issue in the MDC Complaint is different from the products at issue here, but PGT’s allegations are nearly identical.
* PGT tested a glass specimen size (142” X 120”) to which FPA 22267 is inapplicable. FPA 22267, as originally issued, was applicable to the 142” X 120” glass size. This applicability was based on a calculation error that ES windows discovered and voluntarily brought to the FBC’s attention in 2023 so that FPA 22267 could be revised. The revised FPA 22267, was approved by the FBC and issued on September 8, 2023.

**Code edition:** 7th Edition (2020) Florida Building Code

8th Edition (2023) Florida Building Code

**Application: FL 22267-R10 (Approved under the 2020 FBC)**

**FL22267- R11 (Approved under the 2023 FBC)**

**1st Approved – June 2017**

Manufacturer: E.S. Windows, Inc.

Category of product: Exterior Door

Subcategory: Sliding Exterior Door Assemblies

Limits of Use: Approved for use in HVHZ and Non-HVHZ

Impact Resistant

Design Pressure Rating: +150/-150 PSF

Glass description: ¼” Clear Temp Glass – 3/8” air space - .090 SentryGlas by Kuraray American, Inc. (Interlayer) – 3/16” HS Clear Glass

Compliance Method: Evaluation Report from a Florida Registered Architect or a licensed Florida Professional Engineer

Evaluation Engineer: Yiping Wang, PE

Compliance test standards: (AAMA 1304, ASTM E283, ASTM E 331, TAS 201, 202, 203)/ as required by the FBC.

**Testing**: By Fenestration Testing Laboratories/Blackwater Testing Inc./Commission approved labs

Quality Assurance Entity: Keystone Certifications, Inc.

Validation entity: Xiaojun Gu, PE.

**Application: FL 17897.5-R13 (Approved under the 2020 FBC)**

**FL 17897.5- R14 (Approved under the 2023 FBC)**

**1st Approved – October 2017**

Manufacturer: E.S. Windows, Inc.

Category of product: Panel Walls

Subcategory: Storefronts

Limits of Use: Approved for use in HVHZ and Non-HVHZ

Impact Resistant

Design Pressure Rating: +70/-70 PSF

Glass description: ¼” HS glass– 1/2” air space - .090 SentryGlas by Kuraray American, Inc. (Interlayer) – 1/4” HS Clear Glass – ¼” Temp Glass

Compliance Method: Evaluation Report from a Florida Registered Architect or a licensed Florida Professional Engineer

Evaluation Engineer: Jalal Farooq, PE

Compliance test standards: (AAMA 501, TAS 201, 202, 203)/ as required by the FBC.

**Testing**: By Fenestration Testing Laboratories/Blackwater Technical Services, Inc./Commission approved labs

Quality Assurance Entity: Keystone Certifications, Inc.

Validation entity: Javad Ahamd, PE.

**8th Edition (2023) Florida Building Code – Building “the Code” – code related sections:**

**1709.5.1 Exterior windows and doors.** Exterior windows and sliding doors shall be tested and labeled as conforming to AAMA/WDMA/CSA101/I.S.2/A440 or TAS 202 (HVHZ shall comply with TAS 202 and ASTM E1300 or Section 2404). Exterior side-hinged doors shall be tested and *labeled* as conforming to AAMA/WDMA/CSA101/ I.S.2/A440 or comply with Section 1709.5.2. Products tested and *labeled* as conforming to AAMA/WDMA/CSA 101/I.S.2/A440 shall not be subject to the requirements of Sections 2403.2 and 2403.3.

**1709.8.4** Glazed curtain wall, window wall and storefront systems shall be tested in accordance with the requirements of this section and the laboratory test requirements of the American Architectural Manufacturers Association (AAMA) Standard 501, HVHZ shall comply with Section 2411.3.2.1.1.

**1708.2 Test standards.** Structural components and assemblies shall be tested in accordance with the appropriate referenced standards. In the absence of a standard that contains an applicable load test procedure, the test procedure shall be developed by a *registered design professional* and *approved*. The test procedure shall simulate loads and conditions of application that the completed structure or portion thereof will be subjected to in normal use.

**1609.1.2 Protection of openings.** In *wind-borne debris regions*, glazed openings in buildings shall be impact

resistant or protected with an impact-resistant covering meeting the requirements of ANSI/DASMA 115 (for

garage doors and rolling doors) or TAS 201, 202 and 203, AAMA 506, ASTM E1996 and ASTM E1886 referenced

herein, or an approved impact-resistant standard as follows: …

**TESTING APPLICATION STANDARD (TAS) 202-94**

**CRITERIA FOR TESTING IMPACT & NONIMPACT RESISTANT**

**BUILDING ENVELOPE COMPONENTS USING UNIFORM STATIC AIR PRESSURE**

**Scope:**

1.1 This protocol covers procedures for conducting a uniform static air pressure test for materials and products such as wall cladding, glass block, exterior doors, garage doors, skylights, exterior windows, storm shutters, and any other external component which help maintain the integrity of the building envelope. For the purposes of the testing required in TAS 202 Section 5.2, design pressures calculated in accordance with ASCE 7 are permitted

to be multiplied by 0.6.

3.2.3 *Maximum Deflection—*The maximum displacement measured to the nearest 1/8 inch attained from an original position while a maximum load is being applied.

3.2.6 *Test load—*One and one-half (1.5) times the design pressure (positive or negative) as determine by Section 1620 of the *Florida Building Code, building* for which the specimen is to be tested, expressed in psf.

**Notes:**

* As approved via the State Product Approval Program, the products in question have demonstrated compliance with the testing and evaluation requirements of the FBC and the administrative requirements of the State Product Approval Rule.
* There is no specific specification or requirements in the FBC pertaining to the makeup or the performance of the interlayer in question. Therefore, the application and performance of the interlayer in question is tied to the performance of the said products systems/assemblies as tested in accordance with FBC’s prescribed testing standards.
* The FBC requires that the Storefronts and the Sliding Exterior Door Assemblies in question be tested and evaluated for compliance with the FBC as a system/assembly.
* Staff is not aware of any specific consumer complaint regarding the products in question.