



## PRI Construction Materials Technologies LLC

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### Laboratory Test Report

**Report for:** Evgeny Ognevenko  
Metal Zone Roofing and Fencing LLC  
5585 Reistertown Rd.  
North Port, FL 34291

**Product Name:** Queentile Shake

**Project No.:** 2213T0007

**Dates Tested:** Jun. 23 – Jul. 6, 2022

**Test Methods:** UL 580-06  
UL 1897-12

**Results Summary:** Specimen No. 1: -307psf; UL 580 Class 90

**Purpose:** Determine the uplift resistance of Queentile Shake in accordance with **UL 580-06 Test for Uplift Resistance of Roof Assemblies** and **UL 1897-12 Uplift Tests for Roof Covering Systems**.

**Test Methods:** Testing was completed as described in UL 580-06 *Test for Uplift Resistance of Roof Assemblies* and UL 1897-12 *Uplift Tests for Roof Covering Systems*. Specimens were tested to the loading schedule as described in UL 580, and where applicable, incrementally loaded in accordance with UL 1897 using the TAS 125 combined loading schedule until failure.

**Sampling:** The following materials were received by PRI.

| <u>Product</u>       | <u>Source</u> | <u>Date</u>   | <u>Sampling</u> |
|----------------------|---------------|---------------|-----------------|
| Queentile Shake      | Tampa, FL     | Jun. 23, 2022 | Metal Zone      |
| #9 x 2.5" HWH screws | Tampa, FL     | Jun. 22, 2022 | Metal Zone      |

All other roofing components were procured by PRI Construction Materials Technologies LLC through local distribution.

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|                             |                       |                                                                                                                                                                                                                                                   |
|-----------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Description:</b> | Queentile Shake:      | 1175mm wide x 420mm long 26ga. stone coated metal panel installed with 1100mm x 370mm exposure                                                                                                                                                    |
|                             | #9 x 2.5" HWH screws: | #9 x 2.5" Teks Roofing Screws; Sharp Point; HWH; 0.5" O.D. sealing washer                                                                                                                                                                         |
| <b>Deck Description:</b>    | Underlayment:         | ASTM D 226 Type II felt installed with minimum 4" side-lap and 6" end-laps and fastened using 12 ga., 1-1/4" ring shank nails and 32 ga., 1-5/8" tin caps spaced 6" o.c. along the laps and two staggered rows 12" o.c. in the field of the roll. |
|                             | Deck:                 | CAT 15/32 PS 1-09, APA span rated CDX plywood sheathing installed over No. 2 lumber supports spaced 24" o.c. Decking attached with 0.113" x 2-3/8" ring shank nails spaced 3" o.c. along the perimeter and intermediate supports.                 |
|                             | Specimen Sealing:     | Polyethylene film placed under the metal roof panels; tape <sup>1</sup>                                                                                                                                                                           |

<sup>1</sup>It is the judgment of the test engineer that the film and tape used to seal the specimen against air leakage did not influence the results of the test.

**Results:** Test data are contained in Appendix A. Photographs after testing are shown in Appendix C.

Table 1. Summary of Test Results

| Specimen No. | Panel           | Attachment                                                                                                                                                                                                                                                                                                                                                  | Passing Uplift Pressure (psf) | Failure Mode |
|--------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------|
| 1            | Queentile Shake | (14) #9 x 2.5" HWH screws installed in each panel. Seven (7) screws were installed 7" o.c. across the back shelf of the panel beginning adjacent to the edge of the sidelap. Seven (7) screws were installed 7" o.c. at a 45degree angle offset 0.5" from the edge of the sidelap through the headlap at the apex of the vertical to horizontal transition. | 307                           | None         |

**Classification:**

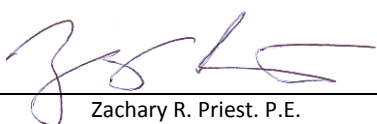
Specimen No. 1 installed as described herein meet **Class 90** requirements.

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**Statement of Attestation:**

Testing was conducted in accordance with **UL 580-06 Test for Uplift Resistance of Roof Assemblies** and **UL 1897-12 Uplift Tests for Roof Covering Systems**. The test results and interpretations presented herein are representative of the materials supplied by the client.

Signed:   
\_\_\_\_\_  
Zachary R. Priest, P.E.  
Director

**Report Issue History:**

| Issue #  | Date       | Pages | Revision Description (if applicable) |
|----------|------------|-------|--------------------------------------|
| Original | 08/15/2022 | 8     | NA                                   |

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## Appendix A: Test Data

### Specimen No. 1 (UL 580 Load Schedule)

| Class 30 Loading Sequence (UL 580) |                      |                      |                                 |       |       |       |        |
|------------------------------------|----------------------|----------------------|---------------------------------|-------|-------|-------|--------|
| Duration<br>(min)                  | Positive<br>Pressure | Negative<br>Pressure | Max Deflection Under Load (in.) |       |       |       | Result |
|                                    |                      |                      | 1                               | 2     | 3     | 4     |        |
| 5                                  | 0.0                  | 16.2                 | 0.050                           | 0.050 | 0.150 | 0.050 | Pass   |
| 5                                  | 13.8                 | 16.2                 | 0.050                           | 0.050 | 0.150 | 0.100 | Pass   |
| 60                                 | 13.8                 | 8.1-27.7             | 0.100                           | 0.150 | 0.200 | 0.050 | Pass   |
| 5                                  | 0.0                  | 24.2                 | 0.050                           | 0.050 | 0.150 | 0.100 | Pass   |
| 5                                  | 20.8                 | 24.2                 | 0.100                           | 0.150 | 0.250 | 0.100 | Pass   |
| Permanent Set:                     |                      |                      | 0.000                           | 0.050 | 0.050 | 0.000 | Pass   |

| Class 60 Loading Sequence (UL 580) |                      |                      |                                 |       |       |       |        |
|------------------------------------|----------------------|----------------------|---------------------------------|-------|-------|-------|--------|
| Duration<br>(min)                  | Positive<br>Pressure | Negative<br>Pressure | Max Deflection Under Load (in.) |       |       |       | Result |
|                                    |                      |                      | 1                               | 2     | 3     | 4     |        |
| 5                                  | 0.0                  | 32.3                 | 0.100                           | 0.150 | 0.150 | 0.100 | Pass   |
| 5                                  | 27.7                 | 32.3                 | 0.150                           | 0.200 | 0.200 | 0.200 | Pass   |
| 60                                 | 27.7                 | 16.2-55.4            | 0.150                           | 0.200 | 0.200 | 0.200 | Pass   |
| 5                                  | 0.0                  | 40.4                 | 0.050                           | 0.050 | 0.150 | 0.150 | Pass   |
| 5                                  | 34.6                 | 40.4                 | 0.150                           | 0.150 | 0.200 | 0.200 | Pass   |
| Permanent Set:                     |                      |                      | 0.050                           | 0.050 | 0.050 | 0.050 | Pass   |

| Class 90 Loading Sequence (UL 580) |                      |                      |                                 |       |       |       |        |
|------------------------------------|----------------------|----------------------|---------------------------------|-------|-------|-------|--------|
| Duration<br>(min)                  | Positive<br>Pressure | Negative<br>Pressure | Max Deflection Under Load (in.) |       |       |       | Result |
|                                    |                      |                      | 1                               | 2     | 3     | 4     |        |
| 5                                  | 0.0                  | 48.5                 | 0.100                           | 0.150 | 0.150 | 0.200 | Pass   |
| 5                                  | 41.5                 | 48.5                 | 0.150                           | 0.200 | 0.200 | 0.250 | Pass   |
| 60                                 | 41.5                 | 24.2-48.5            | 0.200                           | 0.250 | 0.300 | 0.250 | Pass   |
| 5                                  | 0.0                  | 56.5                 | 0.150                           | 0.150 | 0.250 | 0.200 | Pass   |
| 5                                  | 48.5                 | 56.5                 | 0.250                           | 0.150 | 0.400 | 0.300 | Pass   |
| Permanent Set:                     |                      |                      | 0.100                           | 0.100 | 0.150 | 0.150 | Pass   |

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Specimen No. 1 (UL 1897 Load Schedule)

| Ultimate Loading Sequence (UL 1897) |                                    |                                 |       |       |       |        |
|-------------------------------------|------------------------------------|---------------------------------|-------|-------|-------|--------|
| Duration<br>(min)                   | Combined Test<br>Pressure<br>(psf) | Max Deflection Under Load (in.) |       |       |       | Result |
|                                     |                                    | 1                               | 2     | 3     | 4     |        |
| 1                                   | 112                                | 0.250                           | 0.150 | 0.450 | 0.350 | Pass   |
| 1                                   | 127                                | 0.330                           | 0.200 | 0.450 | 0.350 | Pass   |
| 1                                   | 142                                | 0.300                           | 0.450 | 0.550 | 0.400 | Pass   |
| 1                                   | 157                                | 0.350                           | 0.600 | 0.610 | 0.450 | Pass   |
| 1                                   | 172                                | 0.400                           | 0.610 | 0.610 | 0.500 | Pass   |
| 1                                   | 187                                | 0.450                           | 0.610 | 0.610 | 0.610 | Pass   |
| 1                                   | 202                                | 0.450                           | 0.710 | 0.710 | 0.610 | Pass   |
| 1                                   | 217                                | 0.500                           | 0.760 | 0.710 | 0.660 | Pass   |
| 1                                   | 232                                | 0.550                           | 0.810 | 0.760 | 0.710 | Pass   |
| 1                                   | 247                                | 0.610                           | 0.910 | 0.960 | 0.810 | Pass   |
| 1                                   | 262                                | -                               | -     | -     | -     | Pass   |
| 1                                   | 277                                | -                               | -     | -     | -     | Pass   |
| 1                                   | 292                                | -                               | -     | -     | -     | Pass   |
| 1                                   | 307                                | -                               | -     | -     | -     | Pass   |

ASTM E 8 Tensile Properties

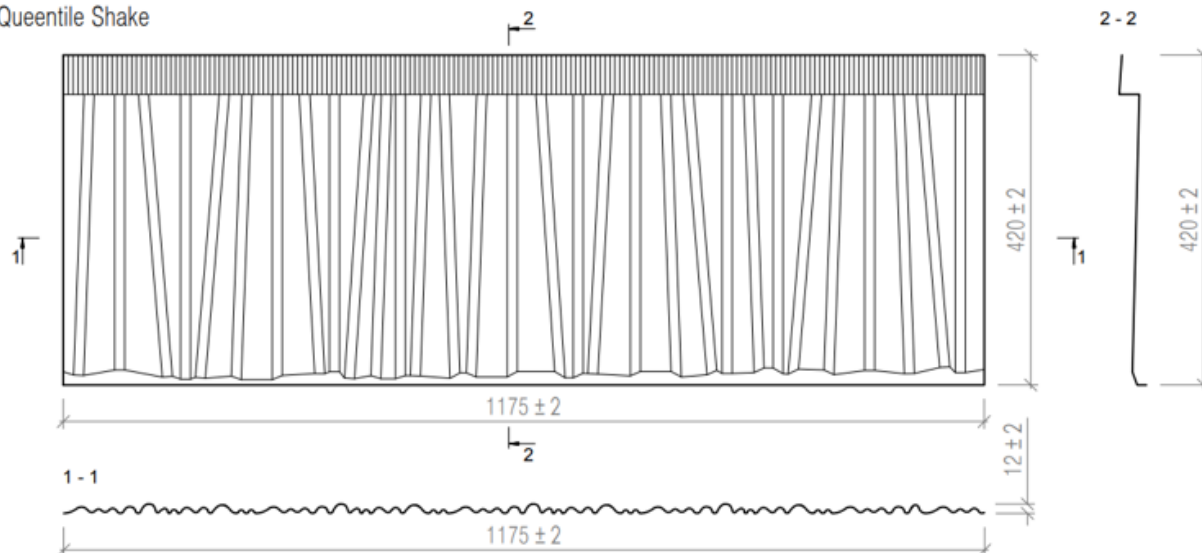
| Specimen | Width | Thickness | Gage Length | Yield Strength | Tensile Strength | Elongation at Break |
|----------|-------|-----------|-------------|----------------|------------------|---------------------|
| 1        | 0.5   | 0.0184    | 2           | 49.8           | 60.9             | 38.0                |
| 2        | 0.5   | 0.0184    | 2           | 52.6           | 60.7             | 36.1                |
| 3        | 0.5   | 0.0184    | 2           | 54.4           | 62.2             | 31.3                |
| 4        | 0.5   | 0.0184    | 2           | 56.8           | 62.3             | 34.6                |
| 5        | 0.5   | 0.0184    | 2           | 50.0           | 55.0             | 33.8                |
| Average  |       |           |             | 52.7           | 60.2             | 34.8                |
| St.Dev.  |       |           |             | 49.8           | 60.9             | 38.0                |

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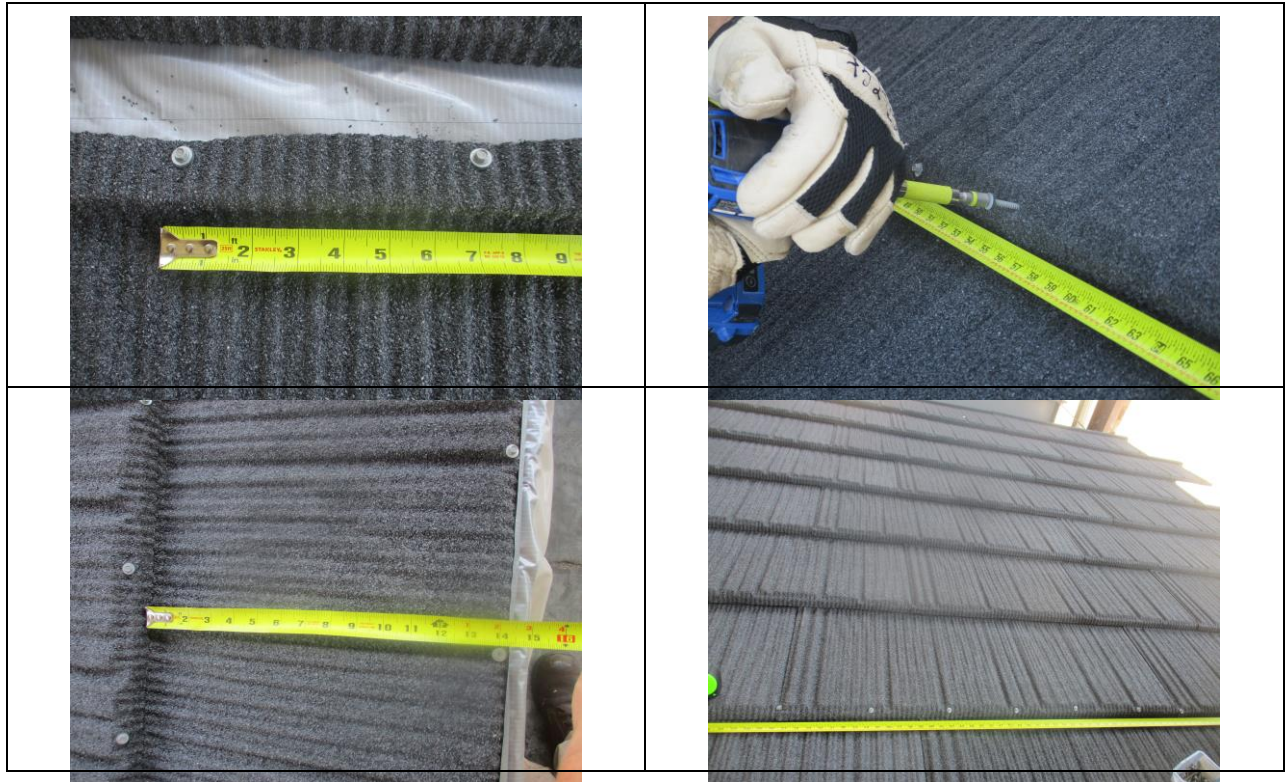
## Appendix B: Materials/Drawings

Queentile Shake



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**Fastening for Specimen No. 1**

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**Appendix C: Photograph(s)**



**Specimen No. 1 After Testing – No Failure**

**END OF REPORT**

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