*L. Roberto Lomas P.E.*
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# Engineering Evaluation Report

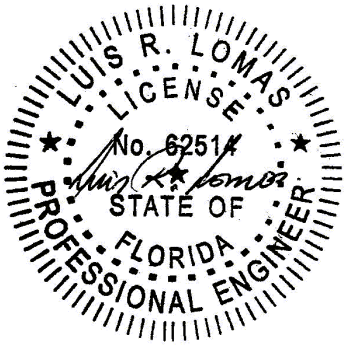
**Report No.: 515086**

**Manufacturer:** **Therma-Tru Corporation**
**1750 Indian Wood Circle**
**Maumee, OH 43537**

**Product Line:** Series V-2 FGW 3X8 Panel Outfold Aluminum Reinforced – Impact - HVHZ

***Compliance:***
The above mentioned product has been evaluated for compliance with the requirements of Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61G20-3.005 method 1 (d). The product listed herein complies with requirements of the Florida Building Code.

***Supporting Technical Documentation:***
1. Approval document: drawing number 08-03863, prepared, signed and sealed by Luis Roberto Lomas P.E.
2. Test Report No.: NCTL 110-15005-1 signed and sealed by Robert Zeiders, P.E.
   National Certified Testing Laboratories, York, PA.
   TAS 201/TAS 203 Large Missile Impact Test
   Cyclic Pressure loading Outfold and Infold ±80.0psf design pressure
   TAS 202 Uniform Static Air Pressure, ±80.0psf design pressure, 9.0psf water
3. Test Report No.: NCTL 110-15135-1 signed and sealed by Robert Zeiders, P.E.
   National Certified Testing Laboratories, York, PA.
   TAS 201/TAS 203 Large Missile Impact Test
   Cyclic Pressure loading Outfold and Infold ±65.0psf design pressure
   TAS 202 Uniform Static Air Pressure, ±65.0psf design pressure.
4. Test report No.: NCTL 110-15540-1 signed and sealed by Robert H Zeiders P.E.
   National Certified Testing Laboratories, York, PA
   TAS 201/TAS 2303 Large Missile Impact Test, Level D, Wind Zone 4
   Cyclic Pressure loading ±80.0psf design pressure
   TAS 202 Uniform Static Air Pressure, ±70.0psf design pressure, 9.0psf water penetration.
5. I-Strut Testing:
   a. Test report ETC-07-1043-19094.0, signed and sealed by Joseph Labora Doldan P.E.
      ETC Laboratories, Rochester, NY, ASTM D638
      Tensile strength of unexposed samples 10,390psi
      Tensile strength of 4500 hour Xenon Arc exposed samples 11,004psi
   b. Test report ETC-08-1043-20974.0 signed and sealed by Joseph Labora Doldan P.E.
      ETC Laboratories, Rochester, NY, ASTM D1929 Self ignition 740°F
   c. Test report ATI 61261.01-106-18 signed and sealed by Joseph Reed P.E.
      Architectural Testing Inc. York, PA
      ASTM D635 Rate of burning classification: CC1 (23.9mm/min, .94in/min)
      ASTM D2843 Smoke density rating: 2.1



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6. EPDM testing:
   Test report No.: PN 105435 Signed by Jim Drummond
   Akron Rubber Development Laboratory, Inc. Akron OH an A2LA accredited testing laboratory
   Certificate numbers 255.01 and 255.02

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|---|---|
| ASTM D2240 | Hardness, Shore A: 71 durometer |
| ASTM D395 | Compression set, 22 h @ 100 C, max. %: 22 |
| ASTM D1149 | Ozone resistance, 100 MPa, 100 h @ 40 C, 20% elongation: No cracks |
| ASTM D412 | Tensile strength: 1410 psi |
| ASTM D412 | Elongation @ rupture, min. %: 266 |
| ASTM D573 | Heat aging, 70 h @ 100 C: +4 |
| ASTM D573 | Hardness increase, max. duro. Points |
| | Change in tensile strength, max. %: +8% |
| | Change in elongation, max. %: -21% |
| ASTM D624 | Tear strength, min: 126.2 lbf/in |
| ASTM D746 | Brittleness temperature, 3 minutes @ -40 C: No cracks |
| ASTM D925 | Non-staining: No migratory stain |
| ASTM C1166 | Flame propagation: No limit |

7. Anchor calculations and comparative analyses, report number 515086-1 prepared, signed and sealed by Luis Roberto Lomas P.E.

***Limitations and Conditions of use:***

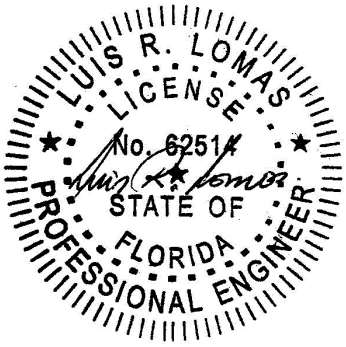
- Maximum design pressure: Refer to approval drawing.
- Approved configurations: Unlimited number of panels in unlimited configurations are approved as long as individual panel area does not exceed 24.06 ft² and uses vertical conditions as shown in approval document.
- Units must be glazed per ASTM E1300, according with glazing details in approval drawing.
- This product is rated to be used in the HVHZ.
- This product is impact resistant and does not require impact protection in wind borne debris regions.
- Frame and panel material to be extruded Aluminum 6063-T6.

***Installation:***

Units must be installed in accordance with manufacturer's installation details and approval document 08-03863.

***Certification of Independence:***

Please note that I do not have nor will acquire a financial interest in any company manufacturing or distributing the product(s) for which this report is being issued. Also, I do not have nor will acquire a financial interest in any other entity involved in the approval process of the listed product(s).



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