



**ENGCO Inc.**  
Engineering Services

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**PRODUCT EVALUATION REPORT**  
**RULE 61G20-3 – EVALUATION REPORT FROM A PROFESSIONAL ENGINEER**  
**Report Number: 20-151**

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**1- Date:** 09/12/2020

**2- Association of Manufacturers:** National Approved Shutter Association LLC - (N.A.S.A.)  
15701 SW 29<sup>th</sup> Street ste 100  
Miramar, Florida 33027

**3- Product Name:** RE 1000, 1500, 600 and 400 Series  
Extruded Aluminum Roll Up Shutter  
Large & Small Missile Impact Rated

**4- Evaluation Entity:** Florida Professional Engineer  
Pedro Paulo M. De Figueiredo – PE 52609  
9715 West Broward Blvd. 247  
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**5- Statement of Compliance:**

This product evaluation report is being issued per Rule 61G20-3 of the Florida Department of Business and Professional Regulation. The products covered by this report have proven to be in compliance with the Florida Building Code 2020 – 7<sup>th</sup> edition, not limited to the following standards: ASTM E330, E1886, E1996; TAS 201, 202, 203; Aluminum Design Manual 2015 and AF&PA NDS 2018.

**6- Product Description:**

This product is an Aluminum Roll-up Shutter designed, constructed and erected to easily enclose an area, providing protection from hurricane force winds and large missile windborne debris within the allowable designed pressures and limitations stated in this approval. Specification for design, fabrication and installation is found in drawings 20-151 and 20-151 MS.

**7- Supporting Technical Data:**

**7.1- Approval Document:** Drawings number 20-151 (12 sheets), 20-151 MS (22 sheets) prepared by Engco, Inc. on 09/12/2020, titled “RE 400 & 600”, RE 1500 & 1000” and “ Storm Bars, Headers & Mullions”, signed and sealed by Pedro De Figueiredo, PE.

**7.2- Test Reports** – Product has been tested at HETI, CTC and FTL as per attached documents. Edmundo Largaespada, PE 56915

**7.3- Calculations:**

Original calculations and design 11-144 RE1000, RE1500 for slats and track anchorage, prepared on 7/19/2011.

Revised calculations and design 12-031 RE600, RE400 for slats and track anchorage, prepared on 2/23/2012.

Revised anchorage calculations 15-143, prepared on 04/28/2015.

All documents prepared, signed and sealed by Pedro De Figueiredo, PE.

Editorial drawings revision numbered 20-151 and 20-151MS in compliance with the FBC 2020 – 7<sup>th</sup> edition

**8- Limitation and Conditions of use:**

**8.1** – Use proper sheets marked as “HVHZ” for installations under High Velocity Hurricane Zones (Miami and Broward Counties) as defined in the Florida Building Code. Glazing separation is mandatory.

**8.2** – Product to be manufactured, designed and installed as per drawing specifications 20-151 & 20-151 MS, prepared by Engco, Inc dated on 09/12/2020 and signed and sealed by Pedro De Figueiredo, PE.

**9- Others:**

Letter of authorization from Roller Star providing Engco Inc release to use test data and calculations for reproducing drawings under N.A.S.A. association.



SEP 12 2020

Pedro De Figueiredo

Fl. P.E. License: 52609

System ID: 2504

### Extruded Aluminum Roll-up Slats

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Table B  
Tests performed on RE 1500 SLAT

Extruded Aluminum Roll-up Slats

| DATE       | TEST REPORT  | SAMPLE | FINISHED WIDTH | FINISHED HEIGHT | Track to Track | SLAT LENGTH | BITE  | Load       | PROTOCOL                    | Load Deflection | Impact Deflection | LEFT MOUNT | LEFT SUBSTRATE | SCREW TYPE            | ANCHOR SPACING | RIGHT MOUNT | RIGHT SUBSTRATE | SCREW TYPE            | ANCHOR SPACING | ASSEMBLY SCREWS       | Note                 |
|------------|--------------|--------|----------------|-----------------|----------------|-------------|-------|------------|-----------------------------|-----------------|-------------------|------------|----------------|-----------------------|----------------|-------------|-----------------|-----------------------|----------------|-----------------------|----------------------|
| 10/6/1999  | HETI 99-841  | I      | 65             | 89              | 59             | 61.375      | 1.188 | -75, +75   | TAS 202, ASTM E330          | +2.16 / -2.32   | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 12             | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 12             | NA                    | PER-U24              |
| 10/14/1999 | HETI99-842   | II     | 65             | 94              | 59             | 61.375      | 1.188 | -75, +75   | TAS 201, 203                | NA              | 3.75              | WALL       | HOLLOW BLOCK   | 1/4" x 1-3/4" TAPCONS | 9              | WALL        | HOLLOW BLOCK    | 1/4" x 1-3/4" TAPCONS | 9              | NA                    | PER-U24              |
|            |              | III    | 65             | 94              | 59             | 61.375      | 1.188 | -75, +75   | TAS 201, 203                | NA              | 3.88              | BO         | HOLLOW BLOCK   | 1/4" x 1-3/4" TAPCONS | 9              | BO          | HOLLOW BLOCK    | 1/4" x 1-3/4" TAPCONS | 9              | #14X1 AT 12"OC        | PER-U24 ON 2X2 TUBE  |
|            |              | IV     | 65.5           | 94              | 59.5           | 61.375      | 0.938 | -75, +75   | TAS 201, 203                | NA              | 4.13              | INSET      | HOLLOW BLOCK   | 1/4" x 1-3/4" TAPCONS | 9              | INSET       | HOLLOW BLOCK    | 1/4" x 1-3/4" TAPCONS | 9              | #14X1 AT 12"OC        | PER-U24 ON 2X2 ANGLE |
|            |              |        |                |                 |                |             |       |            |                             |                 |                   |            |                |                       |                |             |                 |                       |                |                       |                      |
| 10/21/1999 | HETI 99-849  | V      | 47             | 89              | 41             | 43.25       | 1.125 | -200, +145 | TAS 202, ASTM E330          | +1.52 / -1.53   | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 6              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 6              | NA                    | PER-U24              |
|            |              | VI     | 56             | 89              | 50             | 52.25       | 1.125 | -110, +110 | TAS 202, ASTM E330          | +1.69 / -1.72   | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 9              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 9              | NA                    | PER-U24, FAIL        |
|            |              | VII    | 78             | 89              | 72             | 74.25       | 1.125 | -40, +40   | TAS 202, ASTM E330          | +2.35 / -2.39   | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 12             | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 12             | NA                    | PER-U24              |
| 11/1/1999  | HETI 99-850  | VII    | 78             | 89              | 72             | 74.25       | 1.125 | NA         | TAS 201                     | NA              | 3.88              | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 12             | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 12             | NA                    | PER-U24              |
| 6/23/2000  | HETI 00-898A | A1     | 72             | 90              | 65.82          | 68.07       | 1.125 | -80        | TAS 202, ASTM E330          | -2.726          | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 9              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 9              | NA                    | GUI-S24              |
| 6/23/2000  | HETI 00-898B | B1     | 72             | 90              | 64.256         | 68.07       | 1.907 | -100       | TAS 202, ASTM E330          | -3.68           | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 9              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 9              | NA                    | GUI-S26              |
| 11/6/2001  | HETI 01-1096 | A2     | 64.5           | 96              | 58.32          | 61.125      | 1.403 | -75, +75   | TAS 201, TAS 202, ASTM E330 | +2.10 / -1.92   | 4.50              | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 3.375          | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 3.375          | NA                    | GUI-S24              |
| 5/24/2002  | HETI 02-1187 | A3     | 46.1875        | 84              | 40             | 42.625      | 1.313 | -200       | TAS 202, ASTM E330, SST12   | -1.25           | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 6              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 6              | NA                    | GUI-S24              |
| 5/24/2002  | HETI 02-1194 | A4     | 98.1875        | 84              | 92             | 94.75       | 1.375 | -30        | TAS 202, ASTM E330, SST12   | -2.96           | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 12             | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 12             | NA                    | GUI-S24              |
| 5/21/2002  | HETI 02-1188 | A5     | 98.1875        | 84              | 92             | 94.625      | 1.313 | NA         | TAS 201, SST12              | NA              | 4.63              | INSET      | WOOD           | 1/4" x 1" TAPCONS     | 12             | INSET       | WOOD            | 1/4" x 1" TAPCONS     | 12             | #14-20 & NUT AT 12"OC | GUI-S24              |
| 5/22/2002  | HETI 02-1189 | B2     | 103.75         | 48              | 96             | 100.125     | 2.063 | NA         | TAS 201, SST12              | NA              | 4.88              | INSET      | WOOD           | 1/4" x 1" TAPCONS     | 12             | INSET       | WOOD            | 1/4" x 1" TAPCONS     | 12             | #14-20 & NUT AT 12"OC | GUI-S26              |
| 5/22/2002  | HETI 02-1190 | B3     | 47.75          | 84              | 40             | 44.125      | 2.063 | -210       | TAS 202, ASTM E330, SST12   | -1.13           | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 6              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 6              | NA                    | GUI-S26              |
| 6/4/2002   | HETI 02-1198 | B4     | 103.75         | 84              | 96             | 100.125     | 2.063 | -65        | TAS 202, ASTM E330, SST12   | -5.6            | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 6              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 6              | NA                    | GUI-S26              |
| 8/1/2002   | HETI 02-1708 | B5     | 67.75          | 84              | 60             | 64.125      | 2.063 | -145, +145 | TAS 202, ASTM E330, SST12   | +3.04 / -3.57   | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 3              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 3              | NA                    | GUI-S26              |
| 8/1/2002   | HETI 02-1709 | B6     | 91.75          | 84              | 84             | 88.125      | 2.063 | -123       | TAS 202, ASTM E330, SST12   | -8.3            | NA                | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 3              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 3              | NA                    | GUI-S26              |
| 10/31/2002 | CTC 02-043   | B7     | 126            | 84              | 120            | 124.07      | 2.035 | -41.6      | TAS 201, TAS 202, ASTM E330 | -7.141          | 3.63              | WALL       | WOOD           | #14x1-1/2" PHSSSMS    | 3              | WALL        | WOOD            | #14x1-1/2" PHSSSMS    | 3              | NA                    | GUI-S26              |

**Table A**  
**Tests performed on RE400 Slat**

**Extruded Aluminum Roll-up Slats**

| DATE      | TEST REPORT | SAMPLE | FINISHED WIDTH | FINISHED HEIGHT | Track to Track | SLAT LENGTH | BITE  | Load       | PROTOCOL           | Load Deflection | Impact Deflection | LEFT MOUNT | LEFT SUBSTRATE | SCREW TYPE            | ANCHOR SPACING | RIGHT MOUNT | RIGHT SUBSTRATE | SCREW TYPE            | ANCHOR SPACING | ASSEMBLY SCREWS | Note      |
|-----------|-------------|--------|----------------|-----------------|----------------|-------------|-------|------------|--------------------|-----------------|-------------------|------------|----------------|-----------------------|----------------|-------------|-----------------|-----------------------|----------------|-----------------|-----------|
| 5/21/2004 | FTL4195     | I      | 48             | 84              | 42.814         | 45.314      | 1.250 | -80, +80   | TAS 202, ASTM E330 | +1.16 / -1.19   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
|           |             | II     | 48             | 84              | 42.814         | 45.314      | 1.250 | -80        | TAS 202, ASTM E330 | -1.23           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
|           |             | III    | 48             | 84              | 42.814         | 45.314      | 1.250 | -80        | TAS 202, ASTM E330 | -1.25           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
| 5/24/2004 | FTL4196     | I      | 40             | 84              | 34.814         | 37.314      | 1.250 | -160, +160 | TAS 202, ASTM E330 | +0.69 / -0.74   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
| 5/25/2004 | FTL4198     | I      | 65             | 84              | 59.814         | 62.314      | 1.250 | NA         | TAS 201            | NA              | 0.50              | INSET      | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14x3/4         | STD TRACK |
| 6/2/2004  | FTL4202     | I      | 53             | 84              | 47.814         | 50.314      | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.38              | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
| 6/2/2004  | FTL4203     | I      | 65             | 84              | 59.814         | 62.314      | 1.250 | -25, +25   | TAS 202, ASTM E330 | +2.72 / -2.81   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
| 6/2/2004  | FTL4208     | I      | 53             | 84              | 47.814         | 50.314      | 1.250 | -160, +160 | TAS 201, 203       | NA              | 0.38              | BO         | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | BO          | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14x3/4         | STD TRACK |
| 6/10/2004 | FTL4228     | I      | 71             | 84              | 65.814         | 68.314      | 1.250 | NA         | TAS 201            | NA              | 0.38              | INSET      | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14x3/4         | STD TRACK |
| 6/10/2004 | FTL4230     | I      | 53             | 84              | 47.814         | 50.314      | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.50              | INSET      | WOOD           | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | WOOD            | 1/4" x 1 3/4" TAPCONS | 6              | #14x3/4         | STD TRACK |

|           |         |   |    |    |        |        |       |            |                    |               |    |      |         |                       |   |      |         |                       |   |    |          |
|-----------|---------|---|----|----|--------|--------|-------|------------|--------------------|---------------|----|------|---------|-----------------------|---|------|---------|-----------------------|---|----|----------|
| 5/24/2004 | FTL4197 | I | 53 | 84 | 47.614 | 50.114 | 1.250 | -80, +80   | TAS 202, ASTM E330 | +1.86 / -1.88 | NA | WALL | H BLOCK | 1/4" x 1 3/4" TAPCONS | 9 | WALL | H BLOCK | 1/4" x 1 3/4" TAPCONS | 9 | NA | HD TRACK |
| 5/26/2004 | FTL4199 | I | 71 | 84 | 65.614 | 68.114 | 1.250 | -25, +25   | TAS 202, ASTM E330 | +2.92 / -2.63 | NA | WALL | WOOD    | 1/4" x 1 3/4" TAPCONS | 9 | WALL | WOOD    | 1/4" x 1 3/4" TAPCONS | 9 | NA | HD TRACK |
| 5/26/2004 | FTL4200 | I | 41 | 84 | 35.614 | 38.114 | 1.250 | -160, +160 | TAS 202, ASTM E330 | +0.82 / -0.93 | NA | WALL | H BLOCK | 1/4" x 1 3/4" TAPCONS | 9 | WALL | H BLOCK | 1/4" x 1 3/4" TAPCONS | 9 | NA | HD TRACK |

**Table B**  
**Tests performed on RE600 Slat**

**Extruded Aluminum Roll-up Slats**

| DATE      | TEST REPORT | SAMPLE | FINISHED WIDTH | FINISHED HEIGHT | Track to Track | SLAT LENGTH | BITE  | Load       | PROTOCOL           | Load Deflection | Impact Deflection | LEFT MOUNT | LEFT SUBSTRATE | SCREW TYPE            | ANCHOR SPACING | RIGHT MOUNT | RIGHT SUBSTRATE | SCREW TYPE            | ANCHOR SPACING | ASSEMBLY SCREWS | Note      |
|-----------|-------------|--------|----------------|-----------------|----------------|-------------|-------|------------|--------------------|-----------------|-------------------|------------|----------------|-----------------------|----------------|-------------|-----------------|-----------------------|----------------|-----------------|-----------|
| 6/3/2004  | FTL4204     | I      | 90             | 84              | 84.1           | 86.6        | 1.250 | -25, +25   | TAS 202, ASTM E330 | +2.83 / -2.46   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
| 6/3/2004  | FTL4205     | I      | 66             | 84              | 60.1           | 62.6        | 1.250 | -80, +80   | TAS 202, ASTM E330 | +2.02 / -2.08   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
|           |             | II     | 66             | 84              | 60.1           | 62.6        | 1.250 | -80        | TAS 202, ASTM E330 | -2.12           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              |           |
|           |             | III    | 66             | 84              | 60.1           | 62.6        | 1.250 | -80        | TAS 202, ASTM E330 | -2.06           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              |           |
|           |             | IV     | 66             | 84              | 60.1           | 62.6        | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.25              | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              |           |
| 6/6/2004  | FTL4212     | I      | 90             | 84              | 84.1           | 86.6        | 1.250 | NA         | TAS 201            | NA              | 0.50              | INSET      | WOOD           | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | WOOD            | 1/4" x 1 3/4" TAPCONS | 6              | #14X3/4         | STD TRACK |
| 6/8/2004  | FTL4214     | I      | 55             | 84              | 49.1           | 51.6        | 1.250 | -160, +160 | TAS 202, ASTM E330 | +1.95 / -1.99   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | STD TRACK |
| 6/8/2004  | FTL4215     | I      | 66             | 84              | 60.1           | 62.6        | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.50              | BO         | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | BO          | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | #14X3/4         | STD TRACK |
| 6/9/2004  | FTL4221     | I      | 66             | 84              | 60.1           | 62.6        | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.50              | INSET      | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14X3/4         | STD TRACK |
| 6/3/2004  | FTL4206     | I      | 69             | 84              | 62.752         | 65.252      | 1.250 | -80, +80   | TAS 202, ASTM E330 | +1.71 / -1.72   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | HD1 TRACK |
|           |             | II     | 69             | 84              | 62.752         | 65.252      | 1.250 | -80        | TAS 202, ASTM E330 | -1.84           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              |           |
|           |             | III    | 69             | 84              | 62.752         | 65.252      | 1.250 | -80        | TAS 202, ASTM E330 | -1.93           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              |           |
| 6/9/2004  | FTL4217     | I      | 58             | 84              | 51.752         | 54.252      | 1.250 | -25, +25   | TAS 202, ASTM E330 | +26 / -0.27     | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | HD1 TRACK |
| 6/9/2004  | FTL4219     | I      | 94             | 84              | 87.752         | 90.252      | 1.250 | NA         | TAS 201            | NA              | 0.38              | INSET      | WOOD           | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | WOOD            | 1/4" x 1 3/4" TAPCONS | 6              | #14X3/4         | HD1 TRACK |
| 6/9/2004  | FTL4223     | I      | 80             | 84              | 73.752         | 76.252      | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.50              | INSET      | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14X3/4         | HD1 TRACK |
| 6/10/2004 | FTL4226     | I      | 94             | 84              | 87.752         | 90.252      | 1.250 | -25, +25   | TAS 202, ASTM E330 | +32 / -.33      | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | HD1 TRACK |
| 6/10/2004 | FTL4229     | I      | 109            | 84              | 102.752        | 105.252     | 1.250 | NA         | TAS 201            | NA              | 0.50              | INSET      | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14X3/4         | HD1 TRACK |
| 6/23/2004 | FTL4258     | I      | 80             | 84              | 73.752         | 76.252      | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.50              | INSET      | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | INSET       | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14X3/4         | HD1 TRACK |
| 6/6/2004  | FTL4211     | I      | 109            | 84              | 101.16         | 103.66      | 1.250 | -25, +25   | TAS 202, ASTM E330 | +4.39 / -4.36   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 9              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 9              | NA              | HD2 TRACK |
| 6/6/2004  | FTL4224     | I      | 80             | 84              | 72.16          | 74.66       | 1.250 | -80, +80   | TAS 202, ASTM E330 | +3.94 / -3.82   | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | NA              | HD2 TRACK |
|           |             | I      | 80             | 84              | 72.16          | 74.66       | 1.250 | -80        | TAS 202, ASTM E330 | -3.64           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | NA              |           |
|           |             | I      | 80             | 84              | 72.16          | 74.66       | 1.250 | -80        | TAS 202, ASTM E330 | -3.56           | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | NA              |           |
| 6/10/2004 | FTL4227     | I      | 60             | 84              | 52.16          | 54.66       | 1.250 | -145, +145 | TAS 202, ASTM E330 | +3.0 / -3.06    | NA                | WALL       | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | WALL        | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | NA              | HD2 TRACK |
| 6/10/2004 | FTL4239     | I      | 80             | 84              | 72.16          | 74.66       | 1.250 | -80, +80   | TAS 201, 203       | NA              | 0.38              | BO         | H BLOCK        | 1/4" x 1 3/4" TAPCONS | 6              | BO          | H BLOCK         | 1/4" x 1 3/4" TAPCONS | 6              | #14X3/4         | HD2 TRACK |



Five Star Quality Manufacturing Corporation  
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September 12, 2014

**Pedro Figueiredo, PE**  
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Davie, Florida 33314  
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Re: JL PROTECTION SYSTEMS, LLC. and NATIONAL APPROVED SHUTTER ASSOCIATION

Dear Pedro,

Please allow this letter to grant JL PROTECTION SYSTEMS, LLC. and NATIONAL APPROVED SHUTTER ASSOCIATION permission to use Five Stars' testing, engineering and installation drawings as contained in our file with ENGCO.

This permission includes drawings 12-031B, 12-028, 12-029 and 12-031MS.

If you have any questions, please contact me at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "David Ceccofiglio", is written over a horizontal line.

David Ceccofiglio  
President  
Five Star Quality Manufacturing Corporation  
DBA **Roller Star USA**

Copy: JL PROTECTION SYSTEMS LLC  
12311 Crystal Commerce Loop Unit # 1  
Fort Myers, FL 33966

Copy: NATIONAL APPROVED SHUTTER ASSOCIATION  
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