

AAMA 507-15 THERMAL PERFORMANCE REPORT

Rendered to:

GAMCO CORPORATION

SERIES/MODEL: FG451T Flush Glaze Thermal Storefront

TYPE: Glazed Wall System

Report No: G2028.01-116-45
Report Date: 9/9/2016



AAMA 507-15 THERMAL PERFORMANCE REPORT

Rendered to:

GAMCO CORPORATION
131-10 Maple Avenue
Flushing, New York 11355

Report No: G2028.01-116-45
Report Date: 9/9/2016
Simulation Date: 09/09/16

Project Summary:

Architectural Testing, Inc., a subsidiary of Intertek (Intertek-ATI), was contracted by Gamco Corporation to provide U-Factor and Solar Heat Gain Coefficient thermal performance ratings on the FG451T Flush Glaze Thermal Storefront Glazed Wall System. The thermal performance ratings were determined in accordance with AAMA 507-15, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in

Reference Documents:

AAMA 507-15, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings

ANSI/NFRC 100-2014, *Procedure for Determining Fenestration Product U-Factors*

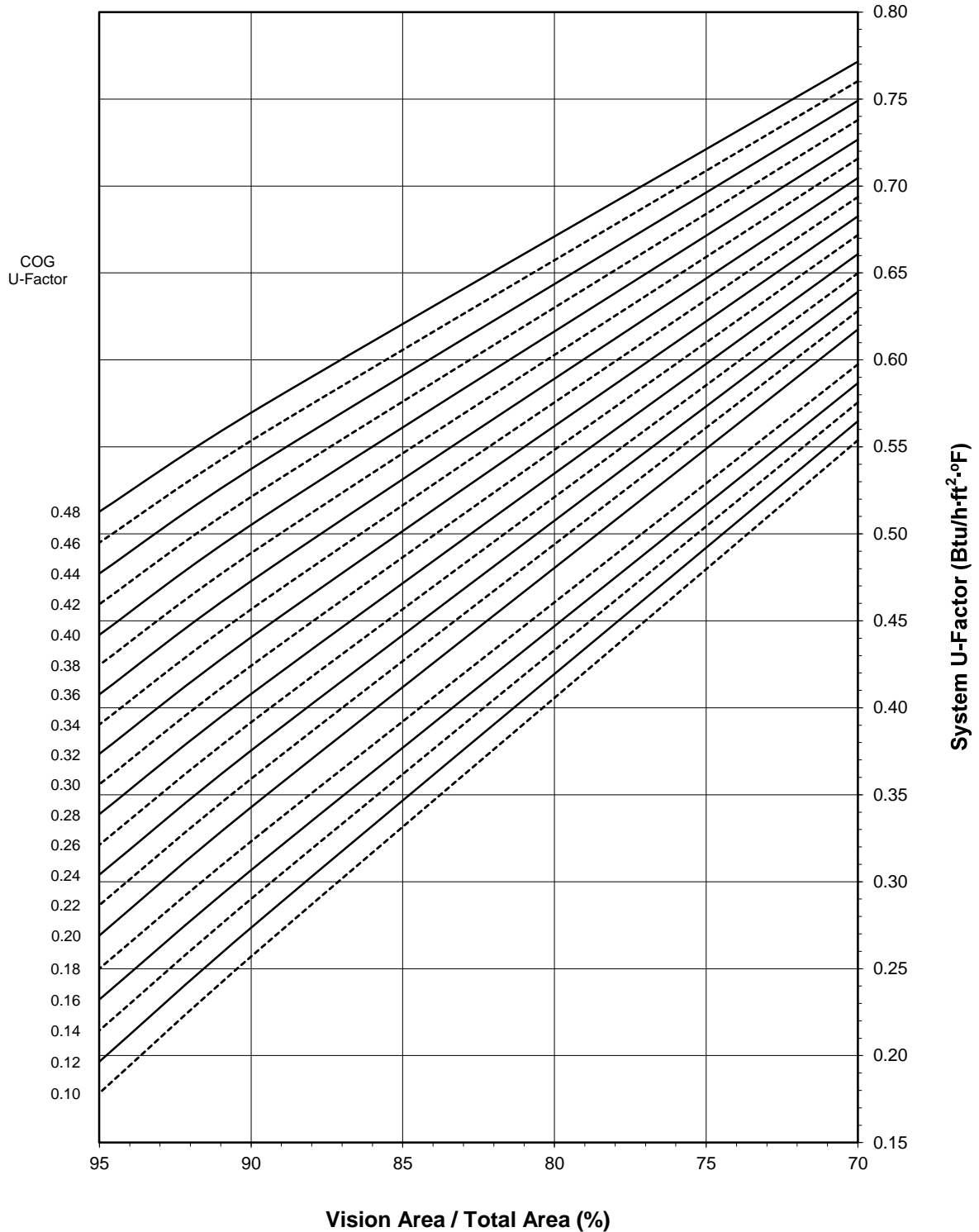
ANSI/NFRC 200-2014, *Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*

Simulation Specimen Description:

Series/Model: FG451T Flush Glaze Thermal Storefront
Type: Glazed Wall System
Frame Material: Aluminum Thermally Broken Framing System
Material Finish: Painted Aluminum
Specimen Size: 2000mm wide by 2000mm high (78-3/4" by 78-3/4")
Configuration: Two vision lites separated by one intermediate vertical
Drawing Reference: Gamco Drawing Flush Glazing FG451T Series w/ Mullion, dated 07-29-2016

**Gamco Corporation
FG451T Flush Glaze Thermal Storefront - Glazed Wall System**

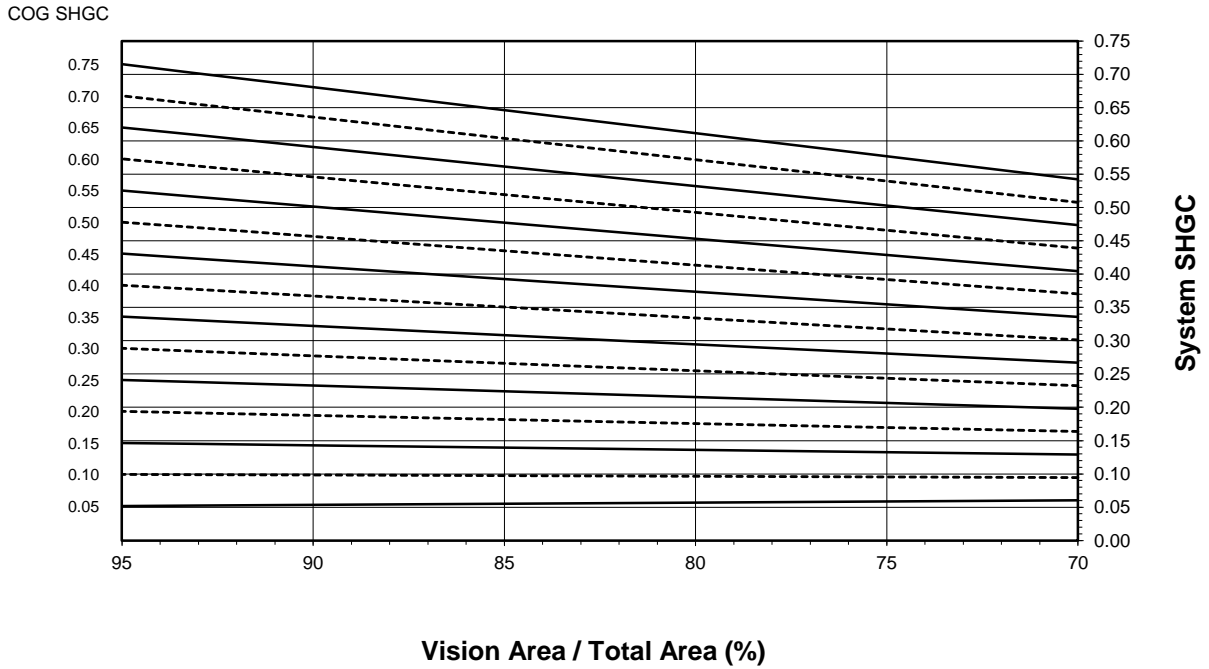
System U-Factor vs. Percentage of Vision Area



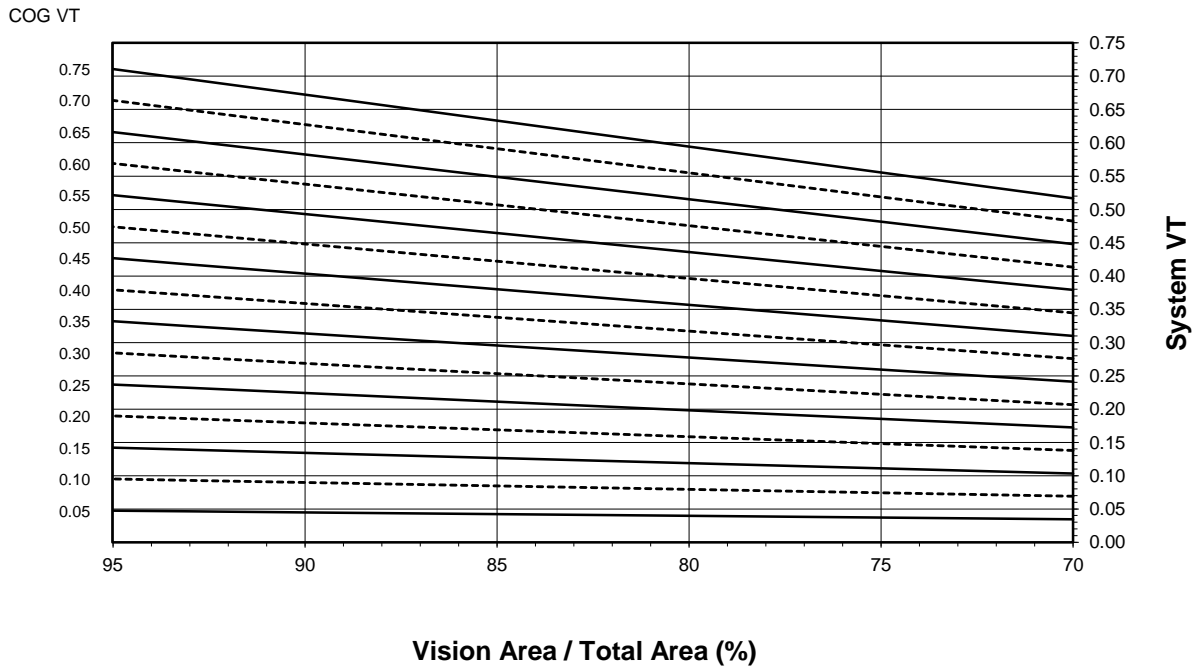
Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer, Dual Glazed Glass with Heat Mirror (0.18-0.10 COG) with Aluminum Spacer

Gamco Corporation
FG451T Flush Glaze Thermal Storefront - Glazed Wall System

System SHGC vs. Percentage of Vision Area



System VT vs. Percentage of Vision Area



**Gamco Corporation
FG451T Flush Glaze Thermal Storefront - Glazed Wall System**

Size Specific U-Factor Matrix*

| Glazing Option | Center of Glass U-Factor | Overall U-Factor |
|-----------------------|---------------------------------|-------------------------|
| 1 | 0.48 | 0.57 |
| 2 | 0.46 | 0.56 |
| 3 | 0.44 | 0.54 |
| 4 | 0.42 | 0.53 |
| 5 | 0.40 | 0.51 |
| 6 | 0.38 | 0.49 |
| 7 | 0.36 | 0.48 |
| 8 | 0.34 | 0.46 |
| 9 | 0.32 | 0.45 |
| 10 | 0.30 | 0.43 |
| 11 | 0.28 | 0.41 |
| 12 | 0.26 | 0.40 |
| 13 | 0.24 | 0.38 |
| 14 | 0.22 | 0.37 |
| 15 | 0.20 | 0.35 |
| 16 | 0.18 | 0.33 |
| 17 | 0.16 | 0.31 |
| 18 | 0.14 | 0.30 |
| 19 | 0.12 | 0.28 |
| 20 | 0.10 | 0.26 |

Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer, Dual Glazed Glass with Heat Mirror (0.18-0.10 COG) with Aluminum Spacer

**Gamco Corporation
FG451T Flush Glaze Thermal Storefront - Glazed Wall System**

Size Specific SHGC Matrix*

| Center of Glass SHGC | Overall SHGC |
|----------------------|--------------|
| 0.75 | 0.68 |
| 0.70 | 0.63 |
| 0.65 | 0.59 |
| 0.60 | 0.54 |
| 0.55 | 0.50 |
| 0.50 | 0.45 |
| 0.45 | 0.41 |
| 0.40 | 0.37 |
| 0.35 | 0.32 |
| 0.30 | 0.28 |
| 0.25 | 0.23 |
| 0.20 | 0.19 |
| 0.15 | 0.14 |
| 0.10 | 0.10 |
| 0.05 | 0.05 |

Size Specific VT Matrix*

| Center of Glass VT | Overall VT |
|--------------------|------------|
| 0.75 | 0.67 |
| 0.70 | 0.62 |
| 0.65 | 0.58 |
| 0.60 | 0.53 |
| 0.55 | 0.49 |
| 0.50 | 0.45 |
| 0.45 | 0.40 |
| 0.40 | 0.36 |
| 0.35 | 0.31 |
| 0.30 | 0.27 |
| 0.25 | 0.22 |
| 0.20 | 0.18 |
| 0.15 | 0.13 |
| 0.10 | 0.09 |
| 0.05 | 0.04 |

*Size Specific U-Factor, SHGC, and VT Matrices are based on the standard Glazed Wall System specimen size of 2000mm wide by 2000mm high (78-3/4" by 78-3/4"). This represents 89.5% Vision Area / Total Area.

Vision Area Data

| Option No. | COG U-Factor | COG Temperature | Cross Section | Frame Height | Frame U-Factor | Edge U-Factor | Total Product U-Factor | | |
|------------|--------------|-----------------|---------------|--------------|----------------|---------------|------------------------|------------------------|--------------------------|
| | | | | | | | 70% Vision Area | NFRC 100-2010 | 95% Vision Area |
| | | | | | | | 25.97" by 25.97" | 78.74" by 78.74" | 167.36" by 167.36" |
| 1 | 0.48 | 43.7 | Head | 2.0571 | 1.3433 | 0.5185 | 0.7715 | 0.5747 | 0.5128 |
| | | | L. Jamb | 1.0571 | 1.5812 | 0.5212 | | | |
| | | | R. Jamb | 1.0571 | 1.6290 | 0.5122 | | | |
| | | | Mullion | 2.1142 | 1.6051 | 0.5167 | | | |
| | | | Sill | 2.5408 | 1.0157 | 0.5120 | | | |
| 2 | 0.46 | 44.8 | Head | 2.0571 | 1.3435 | 0.5053 | 0.7602 | 0.5586 | 0.4950 |
| | | | L. Jamb | 1.0571 | 1.5811 | 0.5078 | | | |
| | | | R. Jamb | 1.0571 | 1.6290 | 0.4988 | | | |
| | | | Mullion | 2.1142 | 1.6050 | 0.5033 | | | |
| | | | Sill | 2.5408 | 1.0155 | 0.4986 | | | |
| 3 | 0.44 | 45.8 | Head | 2.0571 | 1.3438 | 0.4922 | 0.7490 | 0.5426 | 0.4773 |
| | | | L. Jamb | 1.0571 | 1.5810 | 0.4945 | | | |
| | | | R. Jamb | 1.0571 | 1.6290 | 0.4854 | | | |
| | | | Mullion | 2.1142 | 1.6050 | 0.4900 | | | |
| | | | Sill | 2.5408 | 1.0154 | 0.4852 | | | |
| 4 | 0.42 | 46.8 | Head | 2.0571 | 1.3441 | 0.4794 | 0.7379 | 0.5267 | 0.4596 |
| | | | L. Jamb | 1.0571 | 1.5809 | 0.4816 | | | |
| | | | R. Jamb | 1.0571 | 1.6290 | 0.4724 | | | |
| | | | Mullion | 2.1142 | 1.6050 | 0.4770 | | | |
| | | | Sill | 2.5408 | 1.0153 | 0.4722 | | | |
| 5 | 0.40 | 47.9 | Head | 2.0571 | 1.3444 | 0.4662 | 0.7267 | 0.5106 | 0.4420 |
| | | | L. Jamb | 1.0571 | 1.5809 | 0.4682 | | | |
| | | | R. Jamb | 1.0571 | 1.6291 | 0.4591 | | | |
| | | | Mullion | 2.1142 | 1.6050 | 0.4637 | | | |
| | | | Sill | 2.5408 | 1.0152 | 0.4589 | | | |
| 6 | 0.38 | 48.9 | Head | 2.0571 | 1.3447 | 0.4535 | 0.7157 | 0.4946 | 0.4246 |
| | | | L. Jamb | 1.0571 | 1.5809 | 0.4554 | | | |
| | | | R. Jamb | 1.0571 | 1.6292 | 0.4462 | | | |
| | | | Mullion | 2.1142 | 1.6050 | 0.4508 | | | |
| | | | Sill | 2.5408 | 1.0151 | 0.4460 | | | |
| 7 | 0.36 | 50.0 | Head | 2.0571 | 1.3450 | 0.4406 | 0.7046 | 0.4786 | 0.4077 |
| | | | L. Jamb | 1.0571 | 1.5809 | 0.4424 | | | |
| | | | R. Jamb | 1.0571 | 1.6293 | 0.4332 | | | |
| | | | Mullion | 2.1142 | 1.6051 | 0.4378 | | | |
| | | | Sill | 2.5408 | 1.0144 | 0.4333 | | | |
| 8 | 0.34 | 51.0 | Head | 2.0571 | 1.3453 | 0.4278 | 0.6936 | 0.4624 | 0.3904 |
| | | | L. Jamb | 1.0571 | 1.5810 | 0.4294 | | | |
| | | | R. Jamb | 1.0571 | 1.6295 | 0.4202 | | | |
| | | | Mullion | 2.1142 | 1.6053 | 0.4248 | | | |
| | | | Sill | 2.5408 | 1.0150 | 0.4200 | | | |
| 9 | 0.32 | 52.0 | Head | 2.0571 | 1.3457 | 0.4151 | 0.6826 | 0.4465 | 0.3735 |
| | | | L. Jamb | 1.0571 | 1.5811 | 0.4166 | | | |
| | | | R. Jamb | 1.0571 | 1.6297 | 0.4073 | | | |
| | | | Mullion | 2.1142 | 1.6054 | 0.4119 | | | |
| | | | Sill | 2.5408 | 1.0150 | 0.4071 | | | |

Vision Area Data

| Option No. | COG U-Factor | COG Temperature | Cross Section | Frame Height | Frame U-Factor | Edge U-Factor | Total Product U-Factor | | |
|------------|--------------|-----------------|---------------|--------------|----------------|---------------|------------------------|------------------------|--------------------------|
| | | | | | | | 70% Vision Area | NFRC 100-2010 | 95% Vision Area |
| | | | | | | | 25.97" by 25.97" | 78.74" by 78.74" | 167.36" by 167.36" |
| 10 | 0.30 | 53.1 | Head | 2.0571 | 1.3460 | 0.4024 | 0.6717 | 0.4303 | 0.3560 |
| | | | L. Jamb | 1.0571 | 1.5812 | 0.4038 | | | |
| | | | R. Jamb | 1.0571 | 1.6299 | 0.3945 | | | |
| | | | Mullion | 2.1142 | 1.6056 | 0.3992 | | | |
| | | | Sill | 2.5408 | 1.0150 | 0.3943 | | | |
| 11 | 0.28 | 54.2 | Head | 2.0571 | 1.3464 | 0.3898 | 0.6608 | 0.4142 | 0.3388 |
| | | | L. Jamb | 1.0571 | 1.5814 | 0.3911 | | | |
| | | | R. Jamb | 1.0571 | 1.6302 | 0.3817 | | | |
| | | | Mullion | 2.1142 | 1.6058 | 0.3864 | | | |
| | | | Sill | 2.5408 | 1.0150 | 0.3816 | | | |
| 12 | 0.26 | 55.2 | Head | 2.0571 | 1.3468 | 0.3772 | 0.6499 | 0.3980 | 0.3213 |
| | | | L. Jamb | 1.0571 | 1.5815 | 0.3783 | | | |
| | | | R. Jamb | 1.0571 | 1.6305 | 0.3689 | | | |
| | | | Mullion | 2.1142 | 1.6060 | 0.3736 | | | |
| | | | Sill | 2.5408 | 1.0150 | 0.3688 | | | |
| 13 | 0.24 | 56.3 | Head | 2.0571 | 1.3472 | 0.3646 | 0.6391 | 0.3819 | 0.3040 |
| | | | L. Jamb | 1.0571 | 1.5817 | 0.3657 | | | |
| | | | R. Jamb | 1.0571 | 1.6308 | 0.3562 | | | |
| | | | Mullion | 2.1142 | 1.6063 | 0.3609 | | | |
| | | | Sill | 2.5408 | 1.0150 | 0.3561 | | | |
| 14 | 0.22 | 57.3 | Head | 2.0571 | 1.3477 | 0.3520 | 0.6282 | 0.3657 | 0.2867 |
| | | | L. Jamb | 1.0571 | 1.5822 | 0.3529 | | | |
| | | | R. Jamb | 1.0571 | 1.6313 | 0.3434 | | | |
| | | | Mullion | 2.1142 | 1.6068 | 0.3481 | | | |
| | | | Sill | 2.5408 | 1.0152 | 0.3433 | | | |
| 15 | 0.20 | 58.4 | Head | 2.0571 | 1.3481 | 0.3395 | 0.6175 | 0.3495 | 0.2691 |
| | | | L. Jamb | 1.0571 | 1.5825 | 0.3403 | | | |
| | | | R. Jamb | 1.0571 | 1.6317 | 0.3308 | | | |
| | | | Mullion | 2.1142 | 1.6071 | 0.3355 | | | |
| | | | Sill | 2.5408 | 1.0152 | 0.3307 | | | |
| 16 | 0.18 | 59.5 | Head | 2.0571 | 1.3361 | 0.3169 | 0.5975 | 0.3299 | 0.2501 |
| | | | L. Jamb | 1.0571 | 1.5643 | 0.3167 | | | |
| | | | R. Jamb | 1.0571 | 1.6156 | 0.3050 | | | |
| | | | Mullion | 2.1142 | 1.5900 | 0.3108 | | | |
| | | | Sill | 2.5408 | 1.0042 | 0.3068 | | | |
| 17 | 0.16 | 60.6 | Head | 2.0571 | 1.3366 | 0.3040 | 0.5866 | 0.3135 | 0.2322 |
| | | | L. Jamb | 1.0571 | 1.5647 | 0.3037 | | | |
| | | | R. Jamb | 1.0571 | 1.6161 | 0.2920 | | | |
| | | | Mullion | 2.1142 | 1.5904 | 0.2978 | | | |
| | | | Sill | 2.5408 | 1.0043 | 0.2938 | | | |
| 18 | 0.14 | 61.7 | Head | 2.0571 | 1.3376 | 0.2903 | 0.5756 | 0.2971 | 0.2145 |
| | | | L. Jamb | 1.0571 | 1.5662 | 0.2898 | | | |
| | | | R. Jamb | 1.0571 | 1.6177 | 0.2782 | | | |
| | | | Mullion | 2.1142 | 1.5920 | 0.2840 | | | |
| | | | Sill | 2.5408 | 1.0049 | 0.2800 | | | |

Vision Area Data

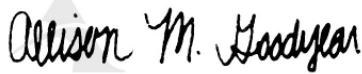
| Option No. | COG U-Factor | COG Temperature | Cross Section | Frame Height | Frame U-Factor | Edge U-Factor | Total Product U-Factor | | |
|------------|--------------|-----------------|---------------|--------------|----------------|---------------|------------------------|------------------------|--------------------------|
| | | | | | | | 70% Vision Area | NFRC 100-2010 | 95% Vision Area |
| | | | | | | | 25.97" by 25.97" | 78.74" by 78.74" | 167.36" by 167.36" |
| 19 | 0.12 | 62.8 | Head | 2.0571 | 1.3380 | 0.2774 | 0.5647 | 0.2807 | 0.1965 |
| | | | L. Jamb | 1.0571 | 1.5664 | 0.2768 | | | |
| | | | R. Jamb | 1.0571 | 1.6181 | 0.2652 | | | |
| | | | Mullion | 2.1142 | 1.5923 | 0.2710 | | | |
| | | | Sill | 2.5408 | 1.0050 | 0.2670 | | | |
| 20 | 0.10 | 63.9 | Head | 2.0571 | 1.3385 | 0.2644 | 0.5538 | 0.2642 | 0.1785 |
| | | | L. Jamb | 1.0571 | 1.5668 | 0.2637 | | | |
| | | | R. Jamb | 1.0571 | 1.6185 | 0.2521 | | | |
| | | | Mullion | 2.1142 | 1.5927 | 0.2579 | | | |
| | | | Sill | 2.5408 | 1.0051 | 0.2540 | | | |

Intertek-ATI will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Intertek-ATI for the entire test record retention period. The test record retention end date for this report is September 9, 2021.

Results obtained are simulated values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the product simulated. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For INTERTEK-ATI:

SIMULATED BY:



Digitally Signed by: Allison M. Goodyear

Allison M. Goodyear
Simulation Technician

REVIEWED BY:



Digitally Signed by: Kevin Louder

Kevin S. Louder
Manager - Thermal Testing & Simulations

AMG:AMG

G2028.01-116-45

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix A: Drawings and Bills of Material (7)

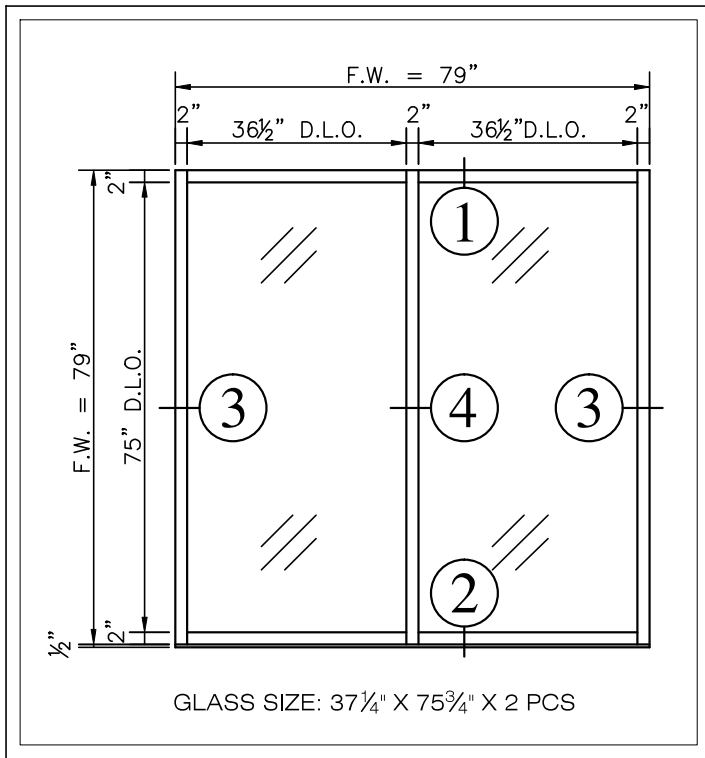
Revision Log

| <u>Rev. #</u> | <u>Date</u> | <u>Page(s)</u> | <u>Revision(s)</u> |
|---------------|-------------|----------------|---|
| .01R0 | 09/09/16 | All | Original Report Issued to Gamco Corporation |

All drawings and Bills of Material used in simulating this product are enclosed in this Appendix.

Appendix A

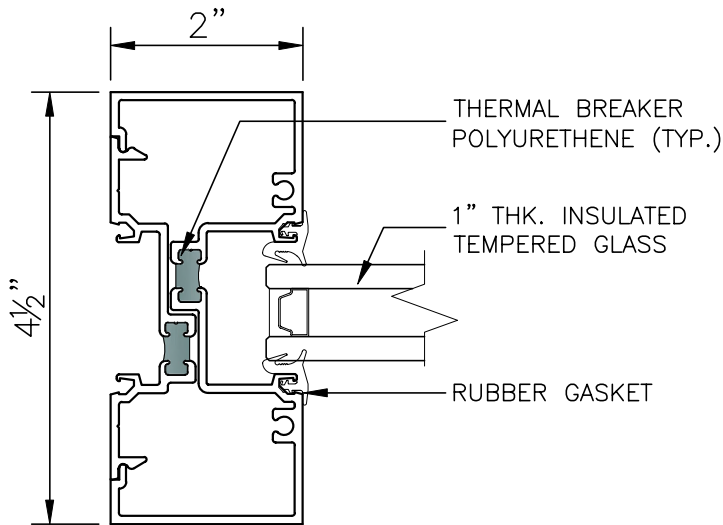
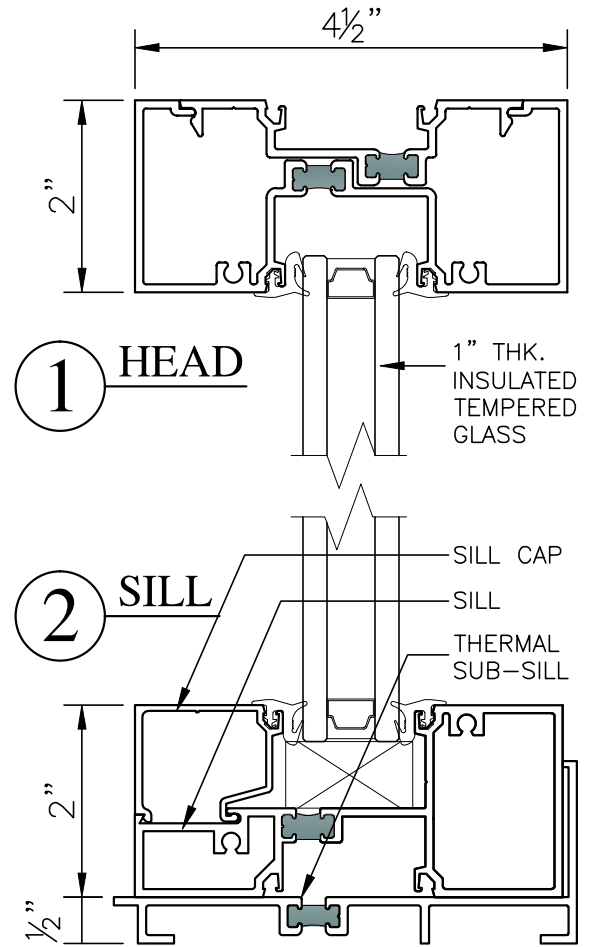
G2028.01-116-45



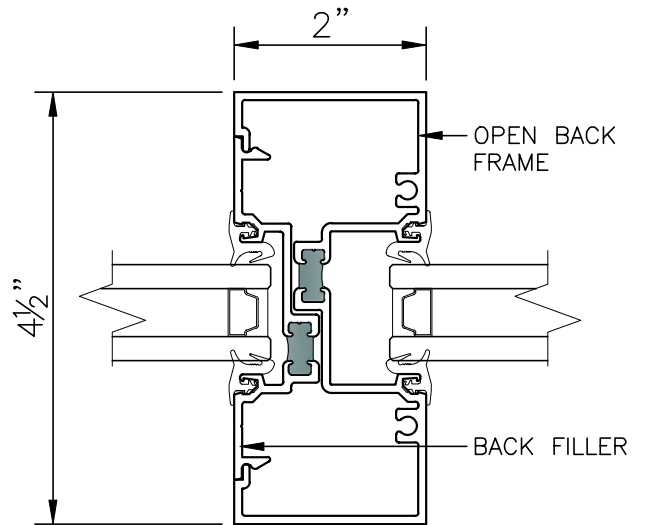
FLUSH GLAZING
FG451T SERIES W/ MULLION

Report #: G2028-116-45
Date: 09/09/16
Verified by: *Allison M. Goodfear*

Intertek IBCB MT



3 JAMB



4 MULLION

| | | | | | |
|---------------------|--|----------|-----------|------|-------------|
| SHEET # | Drawn by: HOWARD N. | Customer | Revisions | | |
| | Checked by: CHARLIE C. | | No. | Date | Description |
| Date: 07-29-2016 | Project: THERMAL PERFORMANCE TESTING SAMPLE | | | | |
| Scale: 1:2 | | | | | |



GAMCO CORPORATION
MANUFACTURERS OF FENESTRATION PRODUCTS
131-10 MAPLE AVE. FLUSHING, N.Y. 11355
TEL: (718)359-8833 FAX: (718)359-8661
info@gamcocorp.com www.gamcocorp.com

| | | |
|--|----------|----|
| 01 TRANSFER | 09-26-95 | 11 |
| 02 REV. A - BARBS REMOVED | 08-09-96 | 12 |
| 03 PRINT REDRAWN SJS - A1 | 03-18-97 | 13 |
| 04 I.V. ADDED (SJS) | 12-31-99 | 14 |
| 05 PRINT REDRAWN JR - A2 | 06-25-04 | 15 |
| 06 REV. B - F&D POCKET FLIPPED | 04-02-07 | 16 |
| 07 REV. C - F&D POCKET FLIPPED BACK (AD) | 10-17-14 | 17 |
| 08 | | 18 |
| 09 | | 19 |
| 10 | | 20 |

S-15300

Notes:
 6 HRS.
 SHORT AT 900 DEG.
 REGULAR
 Bolster in Box NO
 Use Gauge

Time in Box 6

Start Billet
 2nd Billet

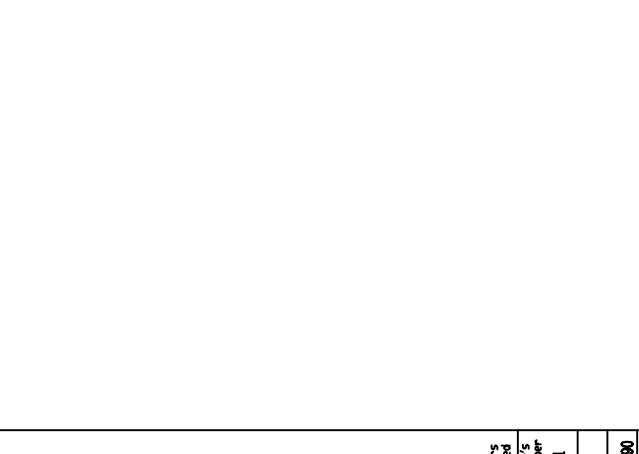
Die DATA

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

REGULAR RING

Notes:
 F GLAZE 4.500
 2.000
 VERT/HEAD

Notes:
 S-15300
 Die Number
 Temp. Number
 Design Number



S-15300

Die Number
 Temp. Number
 Design Number

STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

UNSPECIFIED WALL THICKNESS .085

KEYMARK CORPORATION
 FONDIA, NY TEL. (518) 858-3421
 LAKELAND, FL TEL. (888) 858-6600
 WWW.KEYMARKCORP.COM

Break Ext. Corners
 All Breaks or as Noted

Customer's Part Number 052001

Job Work
 PC-451T

| Rev. | Print Revision | Date |
|------|-------------------------|----------|
| A | BARBS REMOVED | 08-09-96 |
| B | F&D POCKET FLIPPED | 04-02-07 |
| C | F&D POCKET FLIPPED BACK | 10-17-14 |

Scale 1:1

Area (in²) 1.104
 Weight (lbs) 3.380
 Order Size (in) 27.479
 Customer's Part Number 052001

| | | | |
|-------------------|-------------|--------------|------------|
| Estimated For: | Ly. = 0.477 | Area = 2.882 | Type: 00 |
| Reference Factor: | Sx = 0.989 | Sy = 1.269 | Factor: 20 |
| Weight: | | | |
| Material: | | | |
| Finish: | | | |

Material: Painted or Anodized Aluminum

REGULAR RING

| | | | |
|----|-----------------------------------|----------|----|
| 01 | TRANSFER | 10-25-96 | 11 |
| 02 | PRINT REDRAWN SJS - A1 | 03-18-97 | 12 |
| 03 | REV. A - SNAPS REVISED | 12-09-97 | 13 |
| 04 | I.V. CORRECTED (SJS) | 01-19-00 | 14 |
| 05 | PRINT REDRAWN JR - A2 | 06-28-04 | 15 |
| 06 | REV. B - F&D POCKET FLIPPED (DSS) | 09-03-04 | 16 |
| 07 | I.V. ADDED (SJS) | 11-18-04 | 17 |
| 08 | | | 18 |
| 09 | | | 19 |
| 10 | | | 20 |

| S-15916 | | DIE DATA | | | | |
|---------------|----------|----------|---|---|---|---|
| SUB NUMBER(S) | 1 | 2 | 3 | 4 | 5 | 6 |
| PRESS | IV | | | | | |
| DIE | 10 X 1 | | | | | |
| | Holes | | | | | |
| BACKER | 10 X 4 | | | | | |
| Number | 13438 | | | | | |
| WELD | 10 X 1 | | | | | |
| Number | 00802 | | | | | |
| CHAMBER | 15 X 7.5 | | | | | |
| Number | 00802 | | | | | |
| BOLSTER | 15 X 1.5 | | | | | |
| Number | 00092 | | | | | |

Notes:
 S-15916 Time in Box 6 HRS
 REGULAR AT 900 DEG.
 REGULAR
 Bolster in Box NO
 Use Gauge

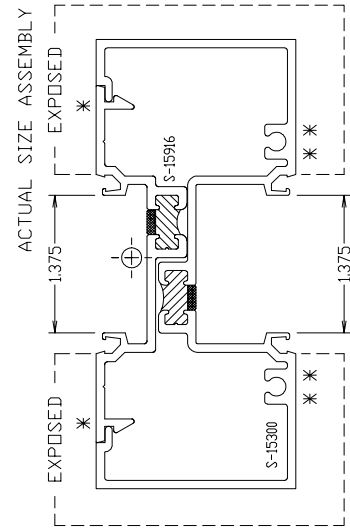
.116
 508100

S-15916
 HARMON INC.

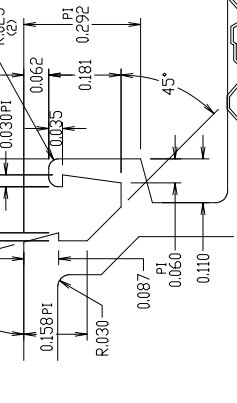
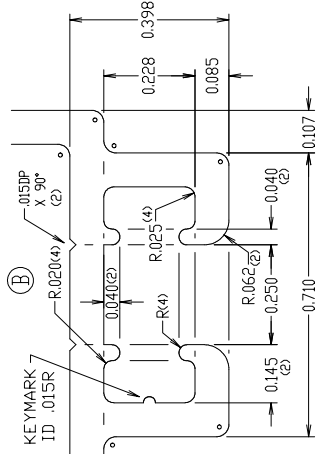
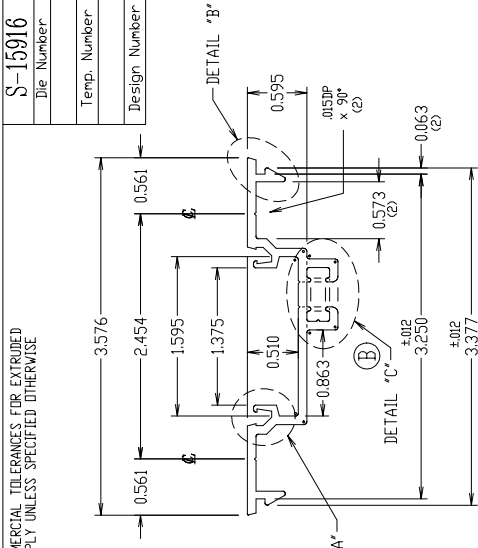
STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFIED OTHERWISE

UNIFORM PAINT COVERAGE NOT EXPECTED IN THIS AREA

STRUCTURAL STREAKING IS EXPECTED



FILL CROSSHATCHED AREA WITH KEYLOCK MATERIAL/ DEBRIDGE SHADED AREA



S-15916 MATES WITH:
 S-15300 052001

Intertek Report #: G2028-116-45
 Date: 09/09/16
 Verified by: *Quam Thi Leong*

Material: Painted or Anodized Aluminum

KEYMARK CORPORATION
 FONDA, NY TEL. (518) 853-3421
 LAKELAND, FL TEL. (863) 856-5500
 WWW.KEYMARKCORP.COM

| | | | |
|----------------------------------|------------------------|--|----------------------|
| Estimated I _x = 0.040 | I _y = 0.549 | Alodine | Type: 00 |
| Reference S _x = 0.072 | S _y = 0.297 | Crmp | Factor: 20 |
| Revisions | | <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Semi-Hollow <input type="checkbox"/> Class: <input type="checkbox"/> Hollow <input type="checkbox"/> Class: | |
| Sym | Date | Area (Sq") | Finish Penmeter (In) |
| A | 11-18-04 | 6063 | 1.801 |
| B | 06-28-04 | Wt./Pz (Lbs) | Total Penmeter (In) |
| | 12-09-97 | 0.689 | 13.427 |
| | 09-03-04 | Circle Size (In) | Circle Size (In) |
| | | AA | 3.6 |
| Customer's Part Number | | Scale | 1:1 |
| 052002 | | Drawn | 05-31-90 |
| Customer's Part Number | | Checked | M.C.M. |
| 052002 | | S.J.S. | |

FGLAZE
 4.500
 2.000
 MULL ADAPTER

S-15916
 HARMON INC.
 REED/3678
 TREMCD/TR-2860-E
 REED/3678
 TREMCD/TR-2860-E

Break Ext. Corners
 0.05 Radius or as Noted



| | | | |
|----|------------------|----------|----|
| 01 | DIM. ADDED (SJS) | 08-15-98 | 11 |
| 02 | I.V. ADDED (SJS) | 07-19-99 | 12 |
| 03 | | | 13 |
| 04 | | | 14 |
| 05 | | | 15 |
| 06 | | | 16 |
| 07 | | | 17 |
| 08 | | | 18 |
| 09 | | | 19 |
| 10 | | | 20 |

| | | | |
|----------------|-----------|----------|---|
| S-25397 | | DIE DATA | |
| SUB NUMBERS(S) | 1 | 2 | 3 |
| II | 4 | 5 | 6 |
| Size | 9 X 2 | | |
| Holes | 2 | | |
| Size | 9 X 3 | | |
| Number | 27647 | | |
| Size | .5 POCKET | | |
| Number | 13 X 6.5 | | |
| Number | 00792 | | |
| Number | 13 X 1.5 | | |
| Number | 00790 | | |

Notes:
 5 HRS.
 REGULAR AT 900 DEG.
 REGULAR
 Bolster in Box ND
 Use Gauge

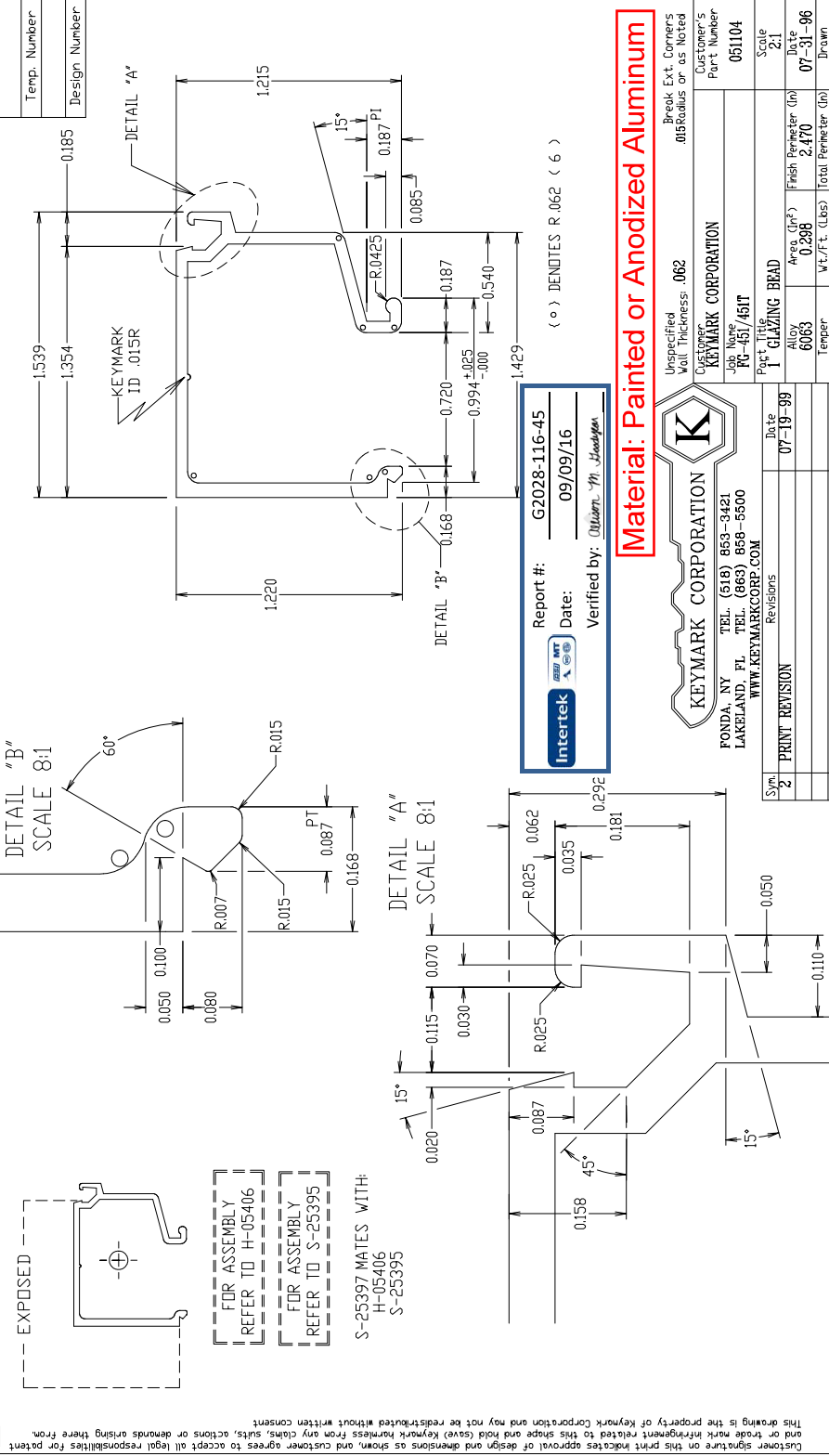
FGLAZE
 4.500
 2.000
 BEAD

HARMON INC.
 051501
 HF G451

S-25397
 HARMON INC.
 508100

| | |
|---------------|---------|
| S-25397 | |
| Die Number | S-25397 |
| Temp. Number | |
| Design Number | |

A2-00



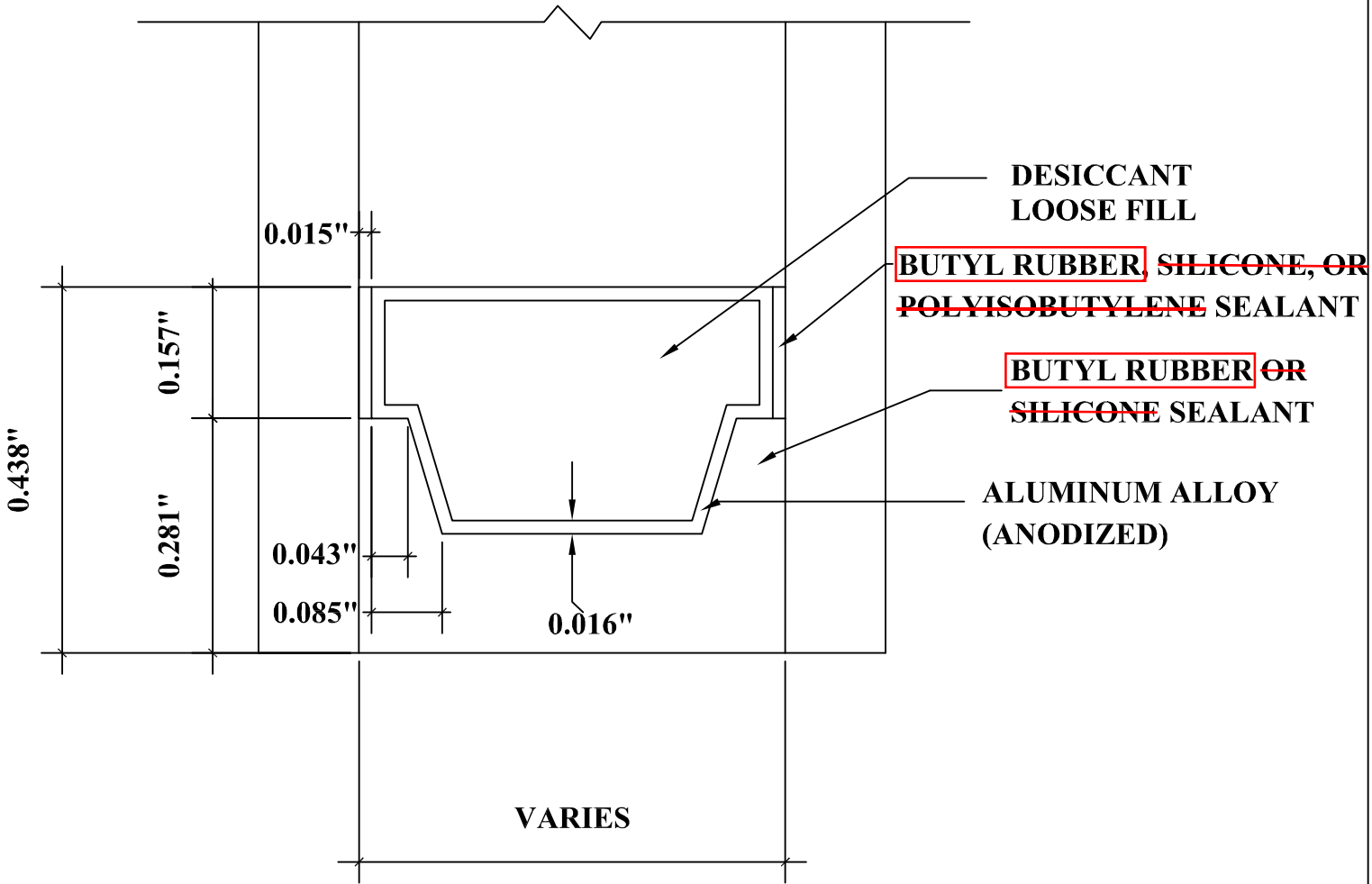
S-25397
 HARMON INC.

REED/3678
 TREMCD/TR-2860-E
 REED/3678
 TREMCD/TR-2860-E

FG451
 FG451T
 HOFFERS INC.

451-004

EMPIRE ARCH.
 600/700
 KEYMARK CORPORATION
 FG451/FG451T



DETAIL FOR THERMAL MODELING OF ALUMINUM SPACER (A1-D)