

EP #300

TYPE A
1200
TYPE A
FIX
500

CLIENT: Falbo Aluminum Systems Ltd.
66 Rivalda Rd.
North York, ON
M9M 2M3
Canada

| | |
|---------------------------------|----------------------------------|
| Test Report No: T1282-1C | Issue Date: July 31, 2018 |
|---------------------------------|----------------------------------|

SAMPLE ID: Falbo Aluminum 500RS Series Fixed Window

SAMPLING DETAIL: Falbo Aluminum Systems Ltd. provided the drawings and glazing options for the aforementioned window. Thermal modeling of this window was performed by QAI.

DATE OF RECEIPT: Documentation was received on June 27, 2018 from Falbo Aluminum Systems Ltd.

TESTING PERIOD: Evaluation was conducted June 27, 2018 through July 30, 2018.

AUTHORIZATION: Signed Work Order by Issac Walter, dated June 27, 2018

TEST PROCEDURE: Thermal simulation evaluation was performed following the methods outlined in the following standard:

CSA A440.2-14 Fenestration Energy Performance.

TEST RESULTS: The evaluation conducted by QAI. Energy performance values for Falbo Aluminum Systems Ltd. 500RS Series Fixed thermally broken aluminum window are as found in the Test Results section of this report for glazing options evaluated.

Prepared By



David Wren
Senior Technician

Signed for and on behalf of QAI Laboratories Ltd.

Reviewed By



Alex Pankov
Thermal Simulations Reviewer

TEST METHODS:

CSA A440.2-14

QAI Laboratories Ltd. has performed energy performance thermal modeling in accordance with ANSI/NFRC 100-2017, ANSI/NFRC 200-2017 and CSA A440.2-14. This thermal modeling was performed using software THERM 7.4 and WINDOW 7.4, with inputs outlined below for the noted 500RS Series Fixed Window evaluated. The thermal modeling files are kept on file at QAI.

Table 1. Falbo Aluminum Systems Ltd. 500 RS Series Fixed thermally broken aluminum window evaluated to CSA A440.2-14.

| PRODUCT | WIDTH (mm) | HEIGHT (mm) |
|--------------|------------|-------------|
| Fixed Window | 1200 | 1500 |

For the above noted products, the U-value was determined for the glazing options outlined in the Test Results section below, in accordance with CSA A440.2-14 with the software noted.

The above product was not evaluated for Air Leakage therefore the Energy Rating (ER) calculation was not performed.

Cross-section and Die drawings used in the modeling of the above noted fenestration product can be found in appendix A of this report.



TEST RESULTS SUMMARY:

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|--------------|-------------|---|----------------------|----------------------|---|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|---|---|----|------------|------|--------------------------------------|------|---------------------------|------|-------------|------|
| Product Type | Fixed Window | 1200 x 1500 | 2 | 4 Cardinal LoE272 | 4 Clear | - | Emissivity Surface 1 | 0.042 | Emissivity Surface 2 | - | Emissivity Surface 3 | - | Emissivity Surface 4 | - | Cavity (mm) and Gas Fill Type and % | TG | Grille Bar | 0.61 | Visual Transmittance Total Window | 1.73 | Window U-Value (W/m2K) | 0.35 | Window SHGC | 0.35 |
| | Fixed Window | 1200 x 1500 | 2 | 6 Cardinal LoE272 | 6 Clear | - | Emissivity Surface 1 | 0.042 | Emissivity Surface 2 | 0.042 | Emissivity Surface 3 | - | Emissivity Surface 4 | - | 13.4 97% Argon 3% Air | TG | - | 0.59 | 1.70 | 0.34 | | | | |
| | Fixed Window | 1200 x 1500 | 2 | 5 Cardinal LoE272 | 5 Clear | - | Emissivity Surface 1 | 0.042 | Emissivity Surface 2 | 0.042 | Emissivity Surface 3 | - | Emissivity Surface 4 | - | 15.4 97% Argon 3% Air | TG | - | 0.60 | 1.72 | 0.35 | | | | |
| | Fixed Window | 1200 x 1500 | 2 | 4 Clear | 6 Cardinal LoE272 | - | Emissivity Surface 1 | - | Emissivity Surface 2 | - | Emissivity Surface 3 | 0.042 | Emissivity Surface 4 | - | 15.0 97% Argon 3% Air | TG | - | 0.60 | 1.72 | 0.42 | | | | |
| | Fixed Window | 1200 x 1500 | 2 | 4 Cardinal LoE272 | 6 Clear | - | Emissivity Surface 1 | 0.042 | Emissivity Surface 2 | 0.042 | Emissivity Surface 3 | - | Emissivity Surface 4 | - | 15.0 97% Argon 3% Air | TG | - | 0.60 | 1.72 | 0.35 | | | | |

Notes: Surfaces are numbered from Exterior (1) to Interior.
 Overall Insulated Glass Unit thickness is 25.4 mm.
 The Insulated Glass Unit gas fill method is evacuated chamber with 97% Argon fill.
 All glazing surface emissivities are assumed to be 0.840 unless otherwise stated.
 Spacer Type: TG = Technoform TGI Spacer M Glass Insulation Spacer Bar

THIS REPORT IS THE CONFIDENTIAL PROPERTY OF THE CLIENT ADDRESSED. THE REPORT MAY ONLY BE REPRODUCED IN FULL. PUBLICATION OF EXTRACTS FROM THIS REPORT IS NOT PERMITTED WITHOUT WRITTEN APPROVAL FROM QAI. ANY LIABILITY ATTACHED THERETO IS LIMITED TO THE FEE CHARGED FOR THE INDIVIDUAL PROJECT FILE REFERENCED. THE RESULTS OF THIS REPORT PERTAIN ONLY TO THE SPECIFIC SAMPLE(S) EVALUATED.

APPENDIX A

| Page | Title |
|-------------|-------------------|
| 5-6 | Assembly Drawings |
| 7-11 | Die Drawings |

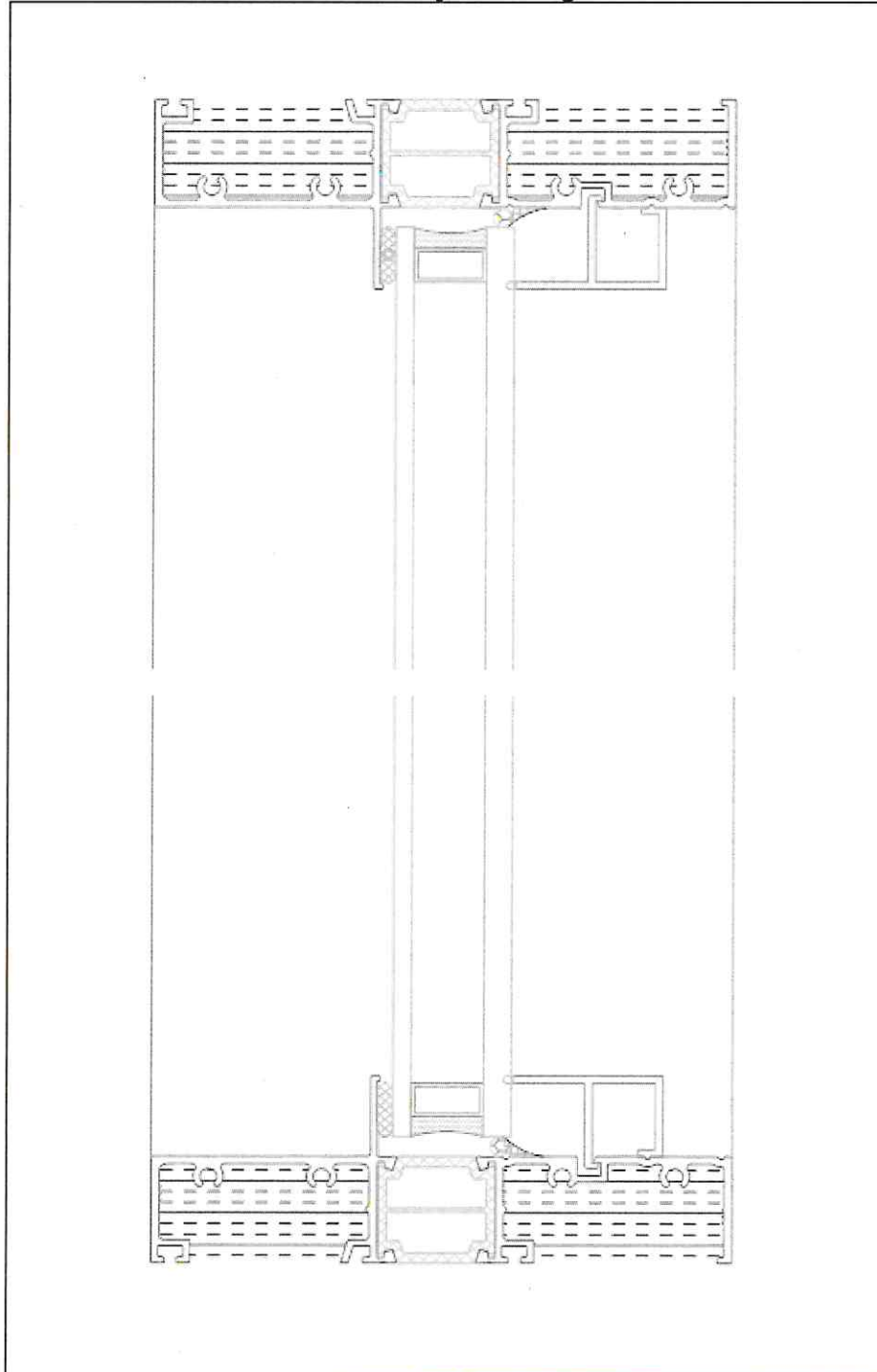
APPENDIX B

| Page | Title |
|-------------|---------------------------|
| 12 | Spacer Bar Specifications |

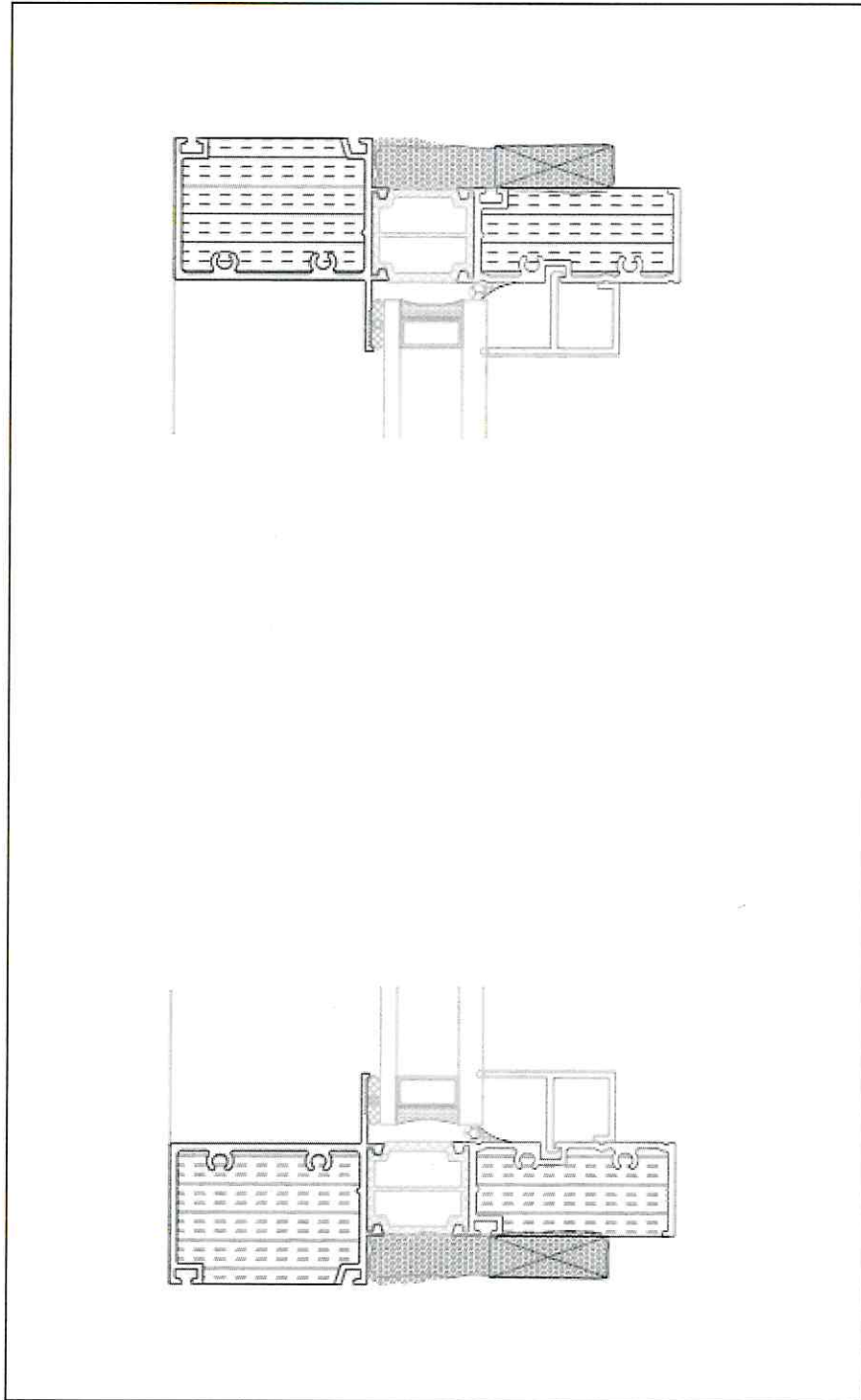
APPENDIX C

| Page | Title |
|-------------|-------------------------|
| 13 | Report Revision History |

APPENDIX A
Assembly Drawings



500RS Series Fixed Window – Vertical Cross-section



500RS Series Fixed Window– Horizontal Cross-section