



**NFRC U-FACTOR & SHGC / VT  
COMPUTER SIMULATION REPORT**

**Rendered to:  
Global Products International Group, LLC**

**SERIES/MODEL:  
T-Astragal Comparison in Generic Fiberglass and Steel Doors**

**Report No.: E1742.01-116-45  
Report Date: 10/17/14**



**NFRC U-FACTOR & SHGC / VT**  
**SIMULATION REPORT**

Rendered to:

GLOBAL PRODUCTS INTERNATIONAL GROUP, LLC  
2765 Bankers Industrial Drive  
Atlanta, Georgia 30360

Report No: E1742.01-116-45  
Simulation Date: 10/17/14  
Report Date: 10/14/14

**Project Summary:**

Architectural Testing, Inc. was contracted to perform U-Factor, Solar Heat Gain Coefficient, and Visible Transmittance computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed below.

**Standards:**

*NFRC 100-2010: Procedure for Determining Fenestration Product U-Factors*  
*NFRC 200-2010: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*

**Simulations Specimen Description:**

**Series/Model:** T-Astragal Comparison in Generic Fiberglass and Steel Doors  
**Type:** Swinging Door, Single Leaf Entrance Door  
**Frame Material:** WD Wood  
**Sash Material:** FG, GS Fiberglass, Galvanized Steel  
**Standard Size:** 960mm x 2090mm



**Software:**

**Frame and Edge Modeling:** THERM 6.3.46  
**Center-of-Glass Modeling:** WINDOW 6.3.74  
**Total Product Calculations:** WINDOW 6.3.74  
**Spectral Data Library:** 37.0

**Validation Matrix:**

The following products are part of a validation matrix. Only one is required for validation testing.

<i>Product Line</i>	<i>Report Number</i>

**Modeling Assumptions/Technical Interpretations:**

- 1) To prevent air infiltration, tape was applied to all interior sash crack locations.
- 2) The NFRC default frames were used for simulation.

**Specialty Products Table:**

The specialty products method allow the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 6.3.74. The method gives overall product SHGC and VT indexed on center of glass properties. All values used in the calculations are truncated to six decimal place precision.

***NO LITE / Aluminum Astragal-Fiberglass Door***

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.007813	N/A	N/A
SHGC1	0.007813		
VT0	0.000000		
VT1	0.000000		

***NO LITE / Fiberglass Astragal-Fiberglass Door***

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.006422	N/A	N/A
SHGC1	0.006422		
VT0	0.000000		
VT1	0.000000		

***NO LITE / Aluminum Astragal-Steel Door***

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.008888	N/A	N/A
SHGC1	0.008888		
VT0	0.000000		
VT1	0.000000		

***NO LITE / Fiberglass Astragal-Steel Door***

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.006775	N/A	N/A
SHGC1	0.006775		
VT0	0.000000		
VT1	0.000000		

$$SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)$$

$$VT = VT0 + VTc (VT1 - VT0)$$





**Gas Filling Technique Description:**

<i>Fill Type</i>	<i>Method</i>
None	

**Reinforcement Option Description:**

<i>Location</i>	<i>Material</i>
None	

**Edge-of-Glass Construction:**

<i>Interior Condition</i>	None
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<i>Exterior Condition</i>	None
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**Weatherstripping:**

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
Foam bulb gasket	1 row	Head, jambs

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
Vinyl sweep	1 row	Bottom of sill panel

**Frame/Sash Materials Finish:**

<i>Interior</i>	Fiberglass panel with default wood frame
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<i>Exterior</i>	Fiberglass panel with default wood frame
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**NFRC 100/200 Summary Sheet**  
**Global Products International Group, LLC**  
**T-Astragal Comparison in Generic Fiberglass and Steel Doors**

ID	Description	Pane Thickness 1	Low-e Pane 1	Gap Width 1	Gap Fill 1	Pane Thickness 2	Low-e Pane 2	Gap Width 2	Gap Fill 2	Pane Thickness 3	Low-e Pane 3	Tint	Spacer	Grid Type	U-Factor	SHGC - No Grids	VT - No Grids	SHGC - Grids < 1"	VT - Grids < 1"	SHGC - Grids > 1"	VT - Grids > 1"
1	Fiberglass Door, Aluminum Astragal, No Lite											OT	N	N	0.16	0.01	0.00				
2	Fiberglass Door, Fiberglass Astragal, No Lite											OT	N	N	0.13	0.01	0.00				
3	Steel Door, Aluminum Astragal, No Lite											OT	N	N	0.18	0.01	0.00				
4	Steel Door, Fiberglass Astragal, No Lite											OT	N	N	0.14	0.01	0.00				

Cross Section Frame U-Factor		
1	Aluminum Astragal, Fiberglass Panel	0.6243
2	Fiberglass Astragal, Fiberglass Panel	0.2379
3	Aluminum Astragal, Steel Panel	0.8603
4	Fiberglass Astragal, Steel Panel	0.2736



Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The ratings values were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy.

Architectural Testing is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The NFRC procedure requires that the computational results be verified through actual test results.

This report is reissued in the name of Kohltech International Ltd through written authorization of Therma-Tru Corporation, to whom the original report was rendered. The original Therma-Tru Corporation report number is D0503.02-116-45.

Architectural Testing 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 Architectural Testing, Inc. for the entire test record retention period. The test record retention end date for this report is October 17, 2018.

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 Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

Digitally Signed by: Dale C. White

Dale C. White  
Simulation Technician  
NFRC Certified Simulator

DCW:dcw  
E1742.01-116-45

REVIEWED BY:

Digitally Signed by: Kristen Louder

Kristen L. Louder  
Senior Simulation Technician  
Simulator In Responsible Charge

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

Appendix A: Color Infrared Heat Flow Plots(2)

Appendix B: Drawings and Bills of Material (4)

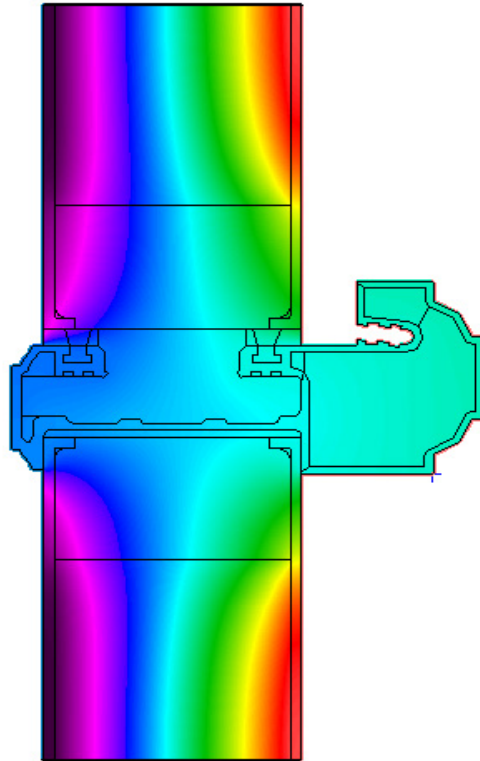




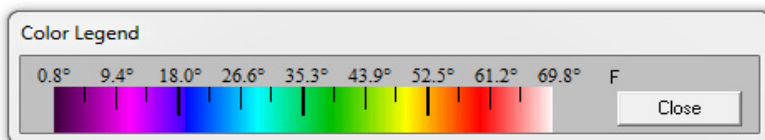
### Revision Log

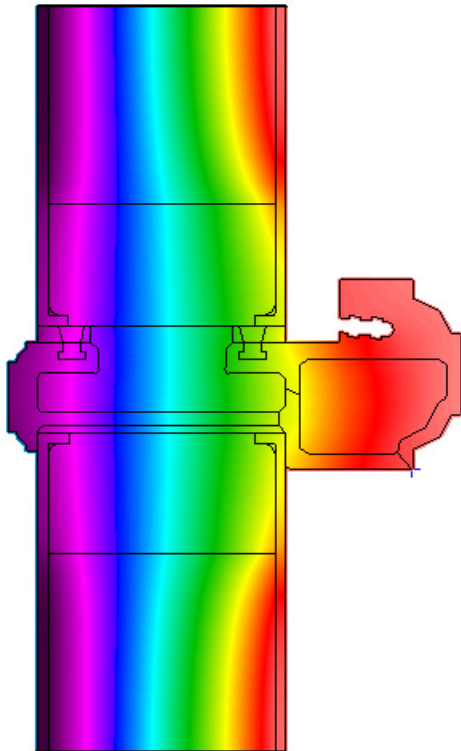
<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
.01R0	10/17/14	All	Original Report Issued to Global Products International Group, LLC

Color infrared heat flow plots are included this appendix

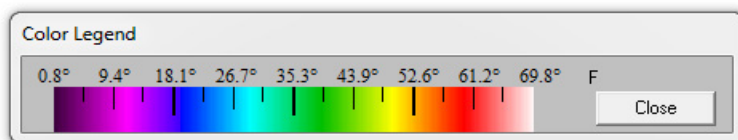


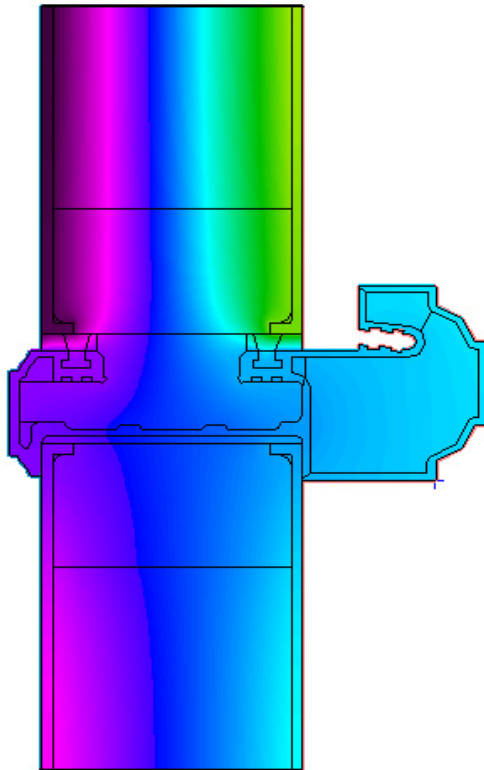
**Aluminum T-Astragal, Fiberglass Panel**



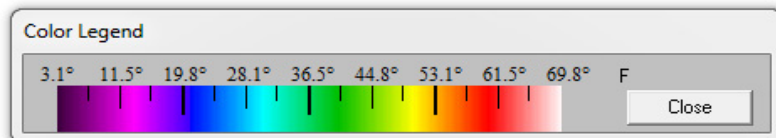


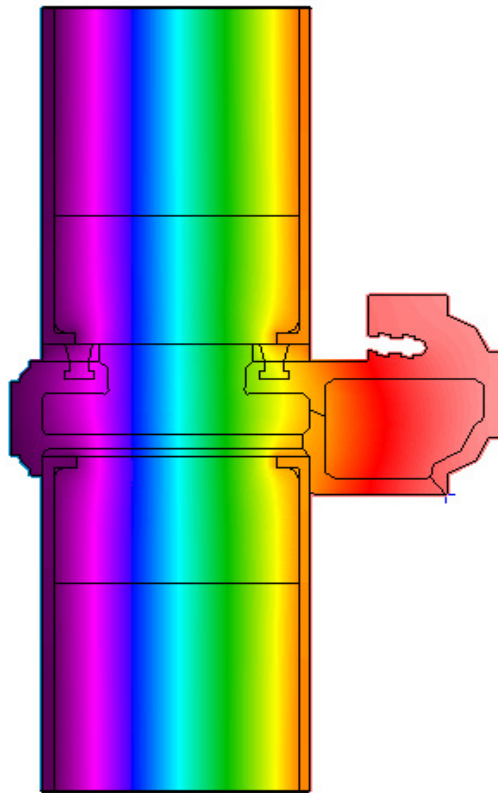
**Fiberglass T-Astragal, Fiberglass Panel**



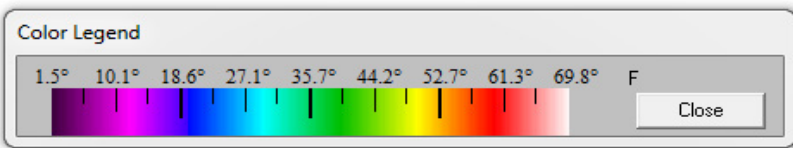


**Aluminum T-Astragal, Steel Panel**



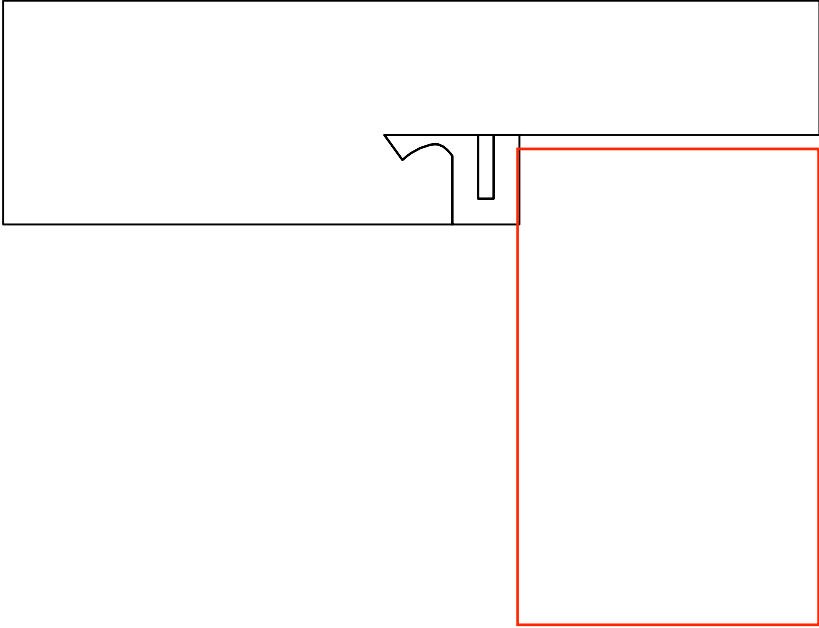


**Fiberglass T-Astragal, Steel Panel**

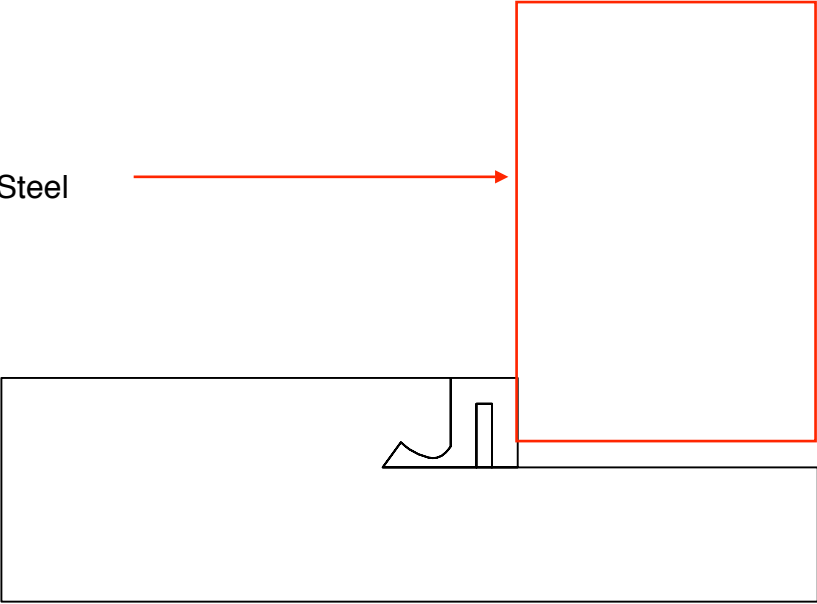


All drawings and Bills of Material used to simulate this product are enclosed in this Appendix

Head



Jambs

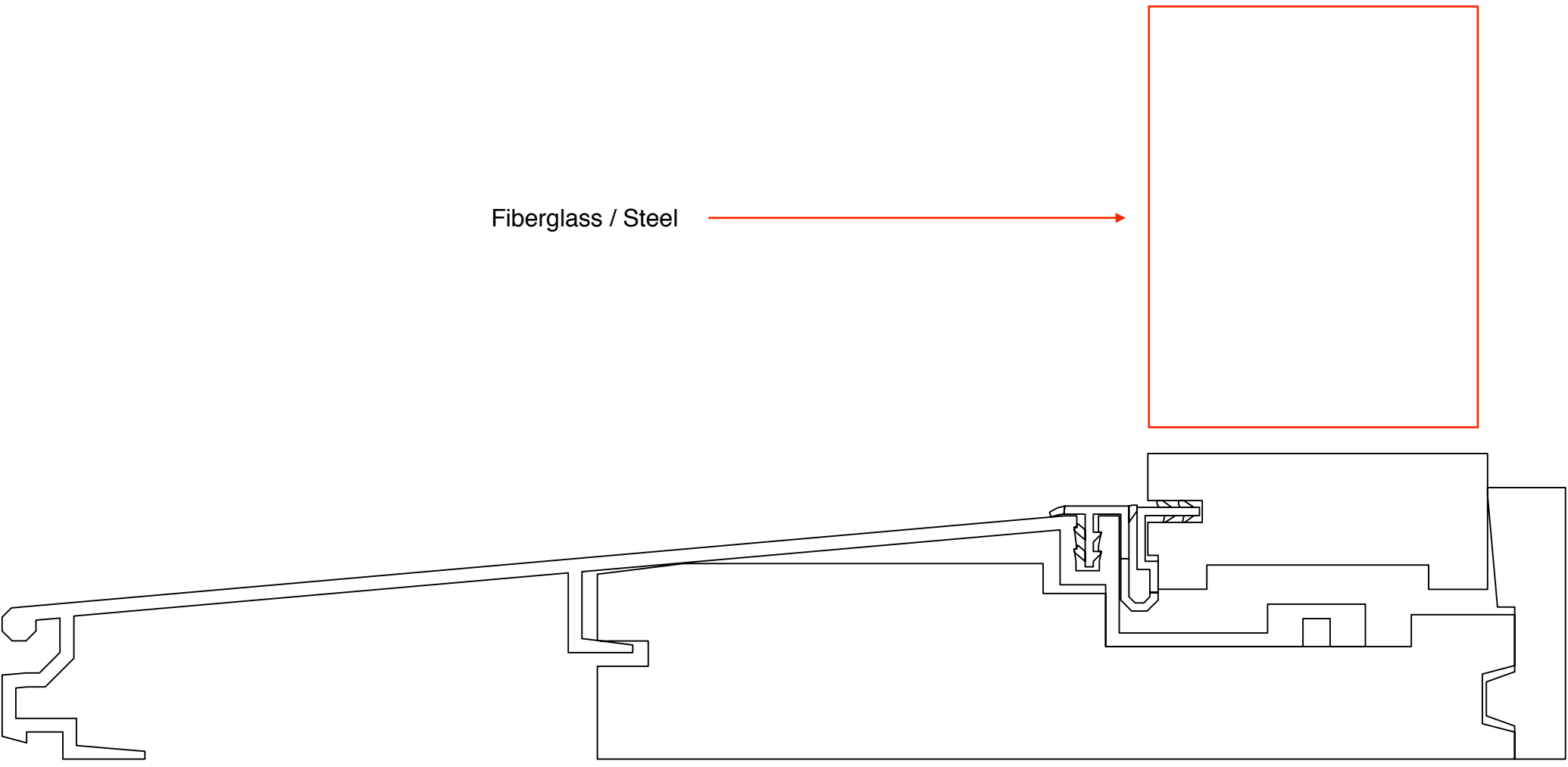
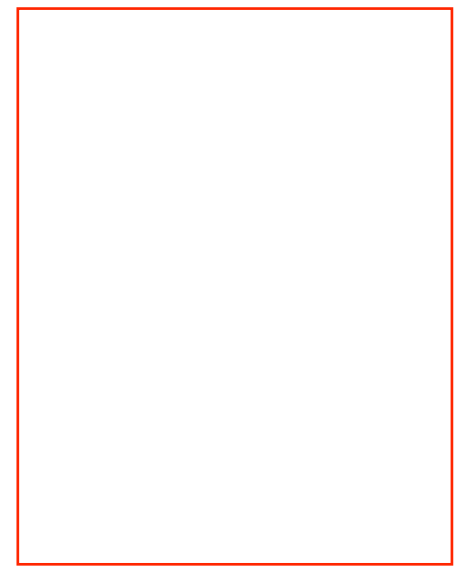


Fiberglass / Steel





Fiberglass / Steel



Sill