ETC Laboratories

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Simulation Test Report
Rendered To:

Door & Access Systems Manufacturers Association
1300 Sumner Avenue
Cleveland, OH 44115

Productline Series/Model
Insulated 4-Panel Garage Door (1-3/4 Thick)

Report Number
ETC-05-1005-16558.1

Report Number: ETC-05-1005-16558.1
Job Number: ETC-05-1005-16558-3
Simulation Date: November 20, 2005
Report Date: November 20, 2005
Revision Date: December 13, 2006

Simulation Report

Rendered To:

Door & Access Systems Manufacturers Association
1300 Sumner Avenue
Cleveland, OH 44115

Product Series/Model	**Operating Type**	**Model Size (in x in)**
Insulated 4-Panel Garage Door (1-3/4 Thick)	Garage Door	108 x 84

Door Description

Item	Unit	Value
Skin Material	-	26 Gauge Galvanized Steel (Painted)
Insulation	-	Polyureathane Foam (Spray Applied)
Number of Panels	-	4
Height of Panel	in.	20.875
Glazing Sections	-	None

Results

Item	Unit	Value
Simulated U-Factor	**Btu/hr-ft^2-^{o}F**	**0.21**

Software Used

THERM 5.2
Excel Area Weighting Spreadsheet

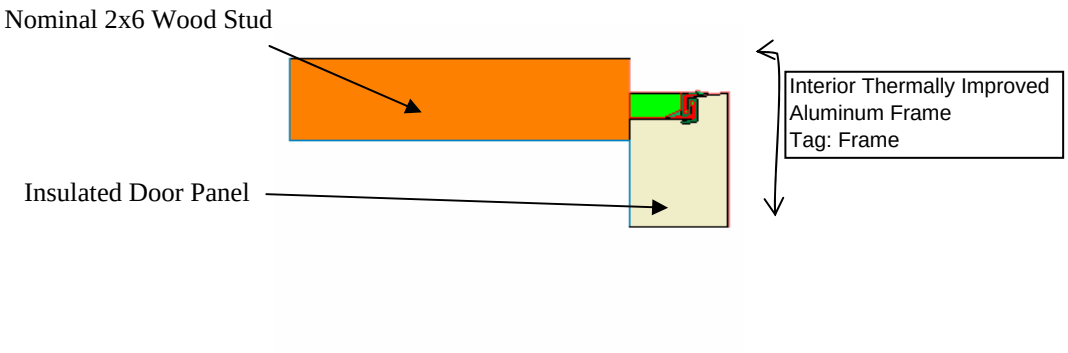
Assumptions

1. Generic Polyureathane Foam Insulation with 0.166 Btu-in/hr-ft2-F is used as panel core material.
2. Nominal 2x8 wood stud is used in the bottom rail simulation model, and nominal 2x6 wood stud is used in the stile and top rail simulation models.
3. Brackets, rollers, reinforcement plates are non-continuous and thus are not included in the simulation. The torsion spring assembly is also not included in the simulation.
4. Emissivity of painted steel door skin material is 0.9.
5. Door core model is combined with the meeting rail model.
6. See simulation model figures for interior boundary condition details.

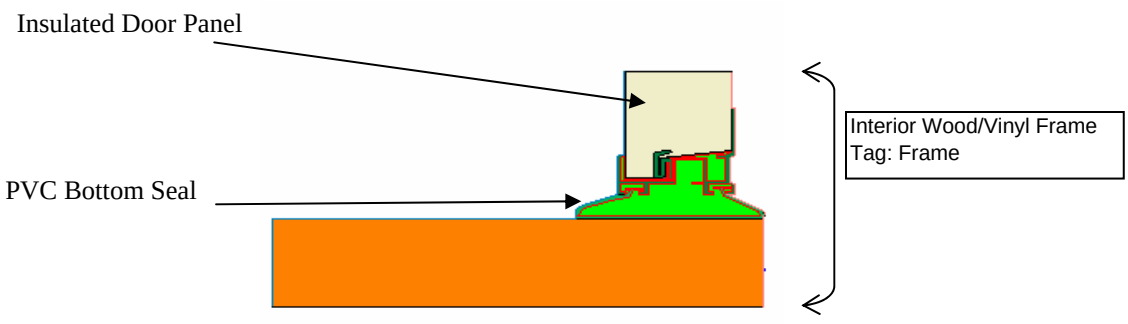
Simulation Models

Report Number: ETC-05-1005-16558.0

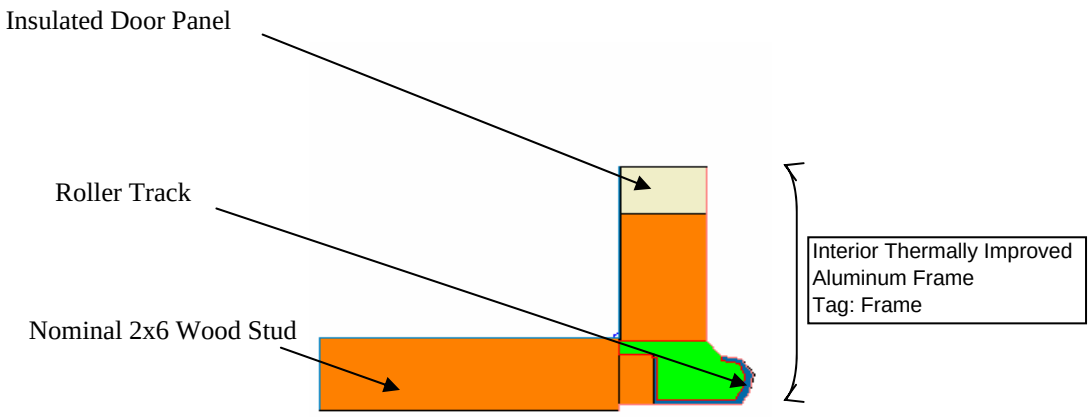
Top Rail Model:



Bottom Rail Model:



Stile Model:



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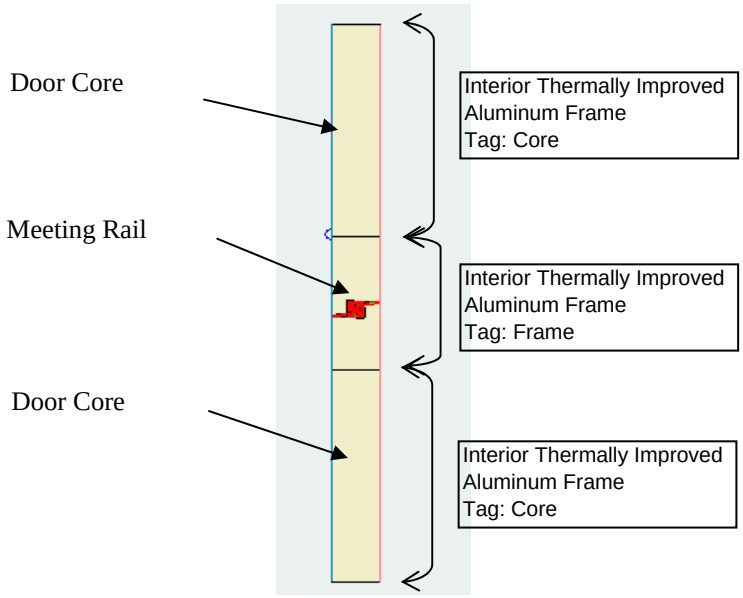
Meeting Rail and Door Core Model:



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Conditions, Terms, and General Notes Regarding The Simulation

The individual products were simulated using NFRC approved programs THERM 5.2. All window specifications were received from drawings and bill of materials supplied by the manufacturer. This report may not be reproduced except in full, without the approval of ETC Laboratories. This report relates only to the items simulated. Rounding is per NFRC unit conversion and rounding Policy.

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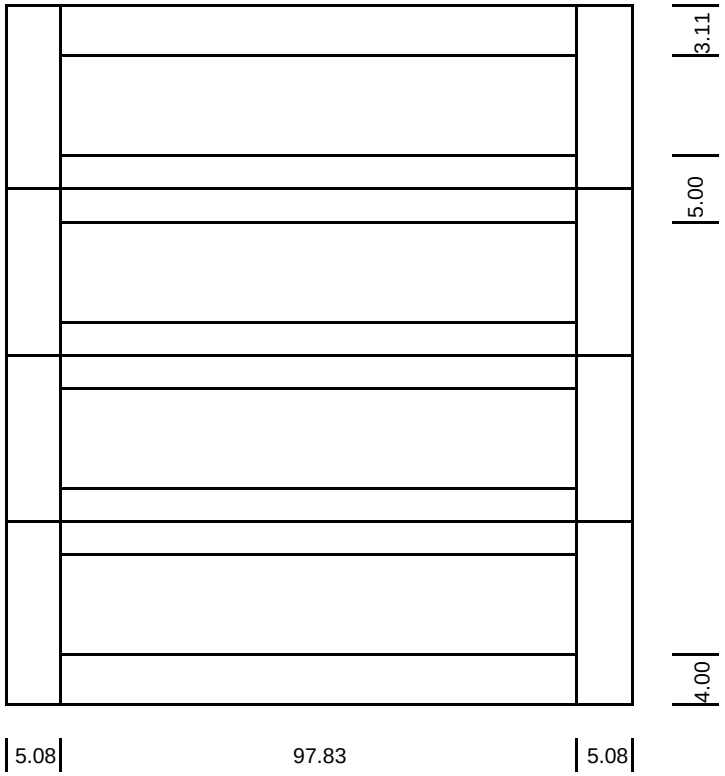
FOR ETC LABORATORIES

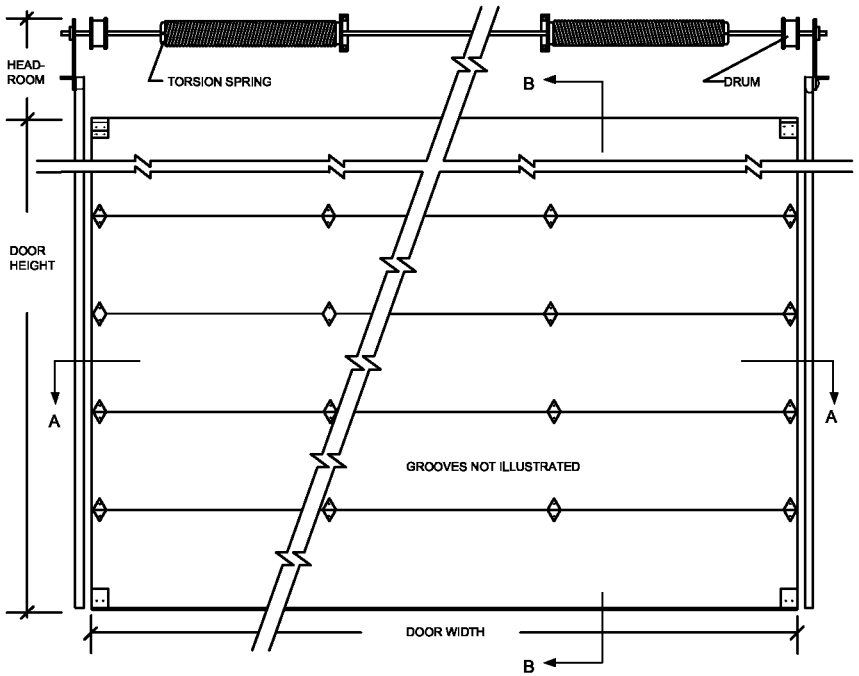
Gurjinder Singh, Simulation Engineer, NFRC Certified Simulator
Thermal Simulation Department

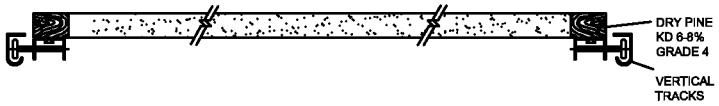
Product:	Insulated Garage Door	
Width:	108	in
Height:	84	in

	Area	U-Factor	A*U
Top Rail:	304.08	0.58	175.12
Bottom Rail:	391.33	0.40	156.49
Stile:	854.00	0.40	341.43
MT:	1467.50	0.33	487.80
Core:	6055.08	0.13	788.37

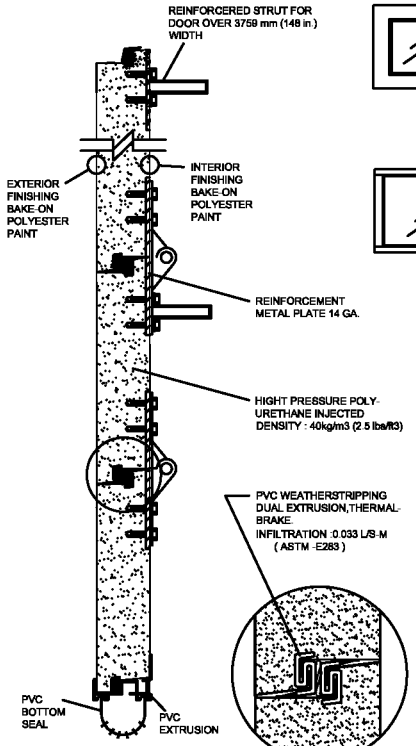
Total U-Factor: 0.21 Btu/hr-ft2-F



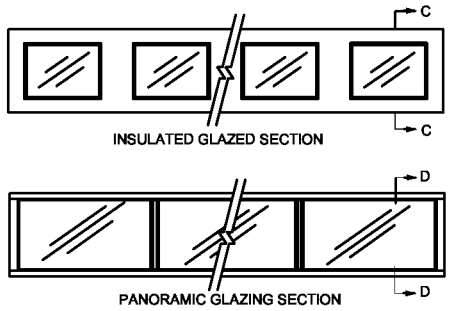


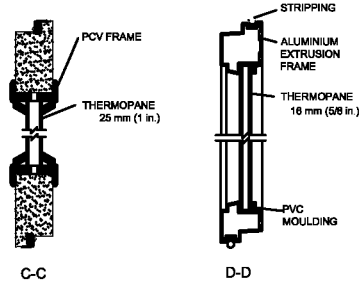


A-A



B-B





Door model :	G5000
Thickness:	45mm (1-3/4")
RSI :	2.8 (R16)
Exterior finishing :	26 ga. Steel
Interior finishing :	26 ga. Steel
Finish :	Woodgrain
Exterior colour :	
Interior colour :	

GARAGA INC.

OVERHEAD GARAGE DOOR

PROJECT:

DISTRIB. :

ARCHITECT :

CONTRACTOR :

DATE :

# DOOR	QTY	WIDTH	HEIGHT	NB OF SECTION	GLAZED SECTIONS					OPERATION	OPTIONS
					NB OF GLAZED SECTION	MODEL	QTY PANES	SIZES			
								WIDTH	HEIGHT		