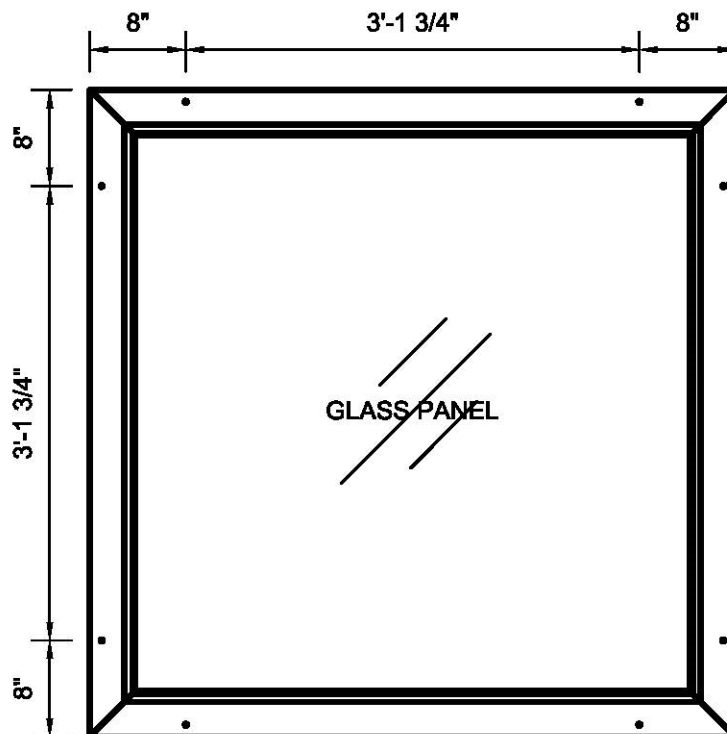




Glass Flooring System Inc.:
48" X 48" Aluminum Skylight Rafter System
Typical Attachments

General Notes and Assumptions:

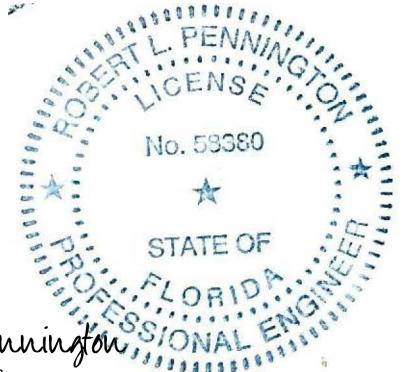
1. Calculations based on ASCE7/16, ACI 318.14, AISC Steel Construction Manual 15 Edition and NDS 2015
2. Uplift Pressure based on roof wind zone 3 (80 psf uplift)
3. Mullions and structural members and components of system are 6063-T6 un-welded aluminum (min)
4. "I" and "T" Rafters shall have section properties as shown on the following sheet
5. Anchoring calculation are for reference only, project specific engineering shall be required for attachment conditions and loading
- 6.



CONCRETE:
 (8) 3/16" X 1 1/4" IN MIN.
 TAPCON (BY BUILDEX OR
 EQUAL) W/2000 PSI
 CONCRETE. MIN. 1"
 FROM EDGE

STEEL:
 (8) 1/4" X 1 1/2" GRADE 5
 MACHINE BOLT W/
 TAPERED FLAT HEAD

WOOD:
 (8) #14 X 2.5" FLAT
 COUNTER SUNK
 SCREWS TAPERED FLAT
 HEAD



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Robert L. Pennington

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Steel Bolted Connection

General Information

Calculations based on ASCE7/16 and AISC Steel Construction Manual 15 Edition

Uplift Pressure based on roof wind zone 3 (80 psf uplift)

Mullions and structural members and components of system are 6063-T6 un-welded aluminum

Calculations are based on Allowable design method (ASD)

Loads

Dead Load is assumed a max of 30 psf

Live Load is assumed a max of 100 psf

Wind uplift is assumed a max of 80 psf

Forces and reactions are assumed to be equally distributed to all bolts

Connection

The Glass system is attached using (8) 1/4" bolts Grade 5 Machine bolts as shown in submittal

Tensile strength of Grade 5 Machine bolts = 120 ksi

Shear strength of Grade 5 Machine bolts = 72 ksi

$A_b = 0.05 \text{ in}^2$

Analysis

From Load combinations $U = DL + LL = 130 \text{ psf}$ Governs

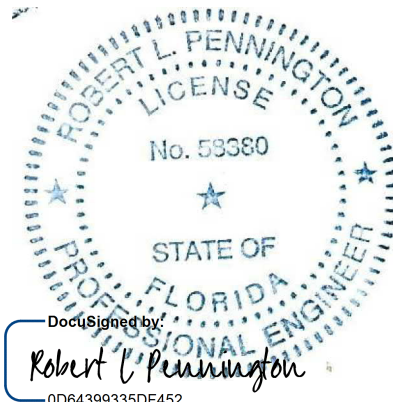
Reaction on a single bolt = $(130 \times 4 \text{ ft} \times 4 \text{ ft}) / 4 = 560 \text{ lb}$ (Conservatively Assume one way slab action and only 4 bolts are resisting the force applied)

Available shear strength of bolt = $R_n / \Omega = F_{nv} \times A_b / 2$
= 1800 lb

Therefore : Okay

Therefore 1/4" bolts are okay

The above mentioned product has been evaluated for compliance with the requirements of the Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61G20-3.005 method 1(d). The product listed herein complies with requirements of the Florida Building Code.



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10/19/2021