TERRA UNIVERSAL.COM
Critical Environment Solutions

Installation Guide   *Document No. 1790-20*

Fire-Rated CleanMount® Cleanroom Windows

Your Comprehensive Equipment Source

Particle Filtration
Laminar Flow Control
Ultra-Pure Water

Vibration Isolation
Ergonomics
Process Gas Generation

Temperature Control
Biohazard Containment
Sterilization

Static Control
Chemical Vapor Removal
Anti-Microbial Treatments

Humidification/ Dehumidification
Vacuum Control
Exhaust Fume Ventilation

Proprietary Notice

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Safety Notice

A thorough familiarity with all operating guidelines is essential to safe operation of the product. Failure to observe safety precautions could result in poor performance, damage to the system or other property, or serious bodily injury or death.

The following symbols are intended to call your attention to two levels of hazard involved in operation:

The information presented here is subject to change without notice.

CAUTION — Cautions are used when failure to observe instructions could result in significant damage to equipment.

WARNING — Warnings are used when failure to observe instructions or precautions could result in injury or death.

1. Introduction

Terra Universal's Fire-Rated CleanMount® Cleanroom Window is Certified to ANSI/UL 9 (positive pressure) for 45-minute fire exposure.

The design features medical-grade, USP-compliant 316L stainless steel, compatible with all areas of hospitals and aseptic environments. The easy-to-clean seamless and flush-mount frame eliminates crevices where particles and contaminants can accumulate.

This manual provides information to safely and properly install the fire-rated window assembly. Read it thoroughly before unpacking and commencing work.

2. Specifications

<u>Listings</u>
Classified and labeled by Underwriters Laboratories, Inc.® (UL).
Frame tested in accordance with UL 9 Fire Tests of Window Assemblies, UL File No. R39784:

Single Pane Flush Mount Fire Window Frame Assemblies intended for 45 min. Tested under positive pressure conditions, with hose stream.

Window assemblies may be installed in steel stud/gypsum board, masonry or concrete assemblies having a minimum of 1 hour fire rating.

- o The 1 hour fire rated steel stud/gypsum board wall assembly is to be constructed in accordance with UL Wall Design No. U419 as described in UL's ProductiQ. The wall assembly should be minimum No. 20 steel studs (structural steel), minimum 3-5/8 in. wide, spaced maximum 16 in. OC and faced with a single layer of nominal 5/8 in. thick Type X (Classified for Fire Resistance) gypsum board.

<u>Glass Sizes</u>
Max. Exposed Area: 3,302 sq.in.
Max. Exposed Width: 70-5/8″
Max. Exposed Height: 46-3/4″

<u>Fire-Rated Glazing Options</u>
Pilkington PyroStop 60-101, nominal 7/8″ thick

<u>Window Assembly Model Designation</u>
Powder-coated steel: 6612-02-PC
Stainless steel: 6612-02-SS

⚠️ <u>IMPORTANT INSTALLATION NOTES</u>

Terra Universal does not accept any warranty or liability for installations not in compliance with this document, or use in any application other than that for which it is specified.

Due to widely varying building codes, it is the responsibility of the architect/owner and installer to ensure the window assembly, glazing material, and other hardware complies with all applicable local building codes and laws.

3. Installation

Exploded View
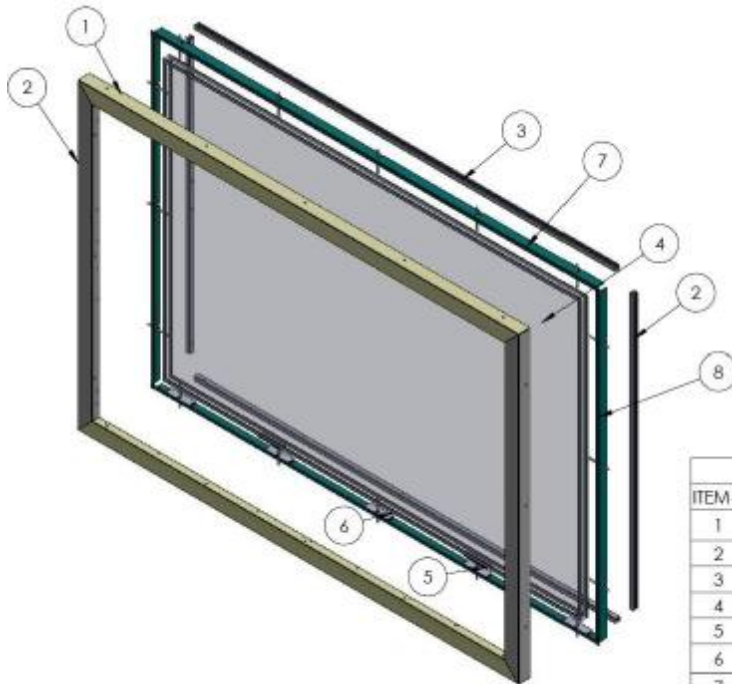
FRAME COMPONENTS		
ITEM#	DESCRIPTION	QTY
1	WINDOW FRAME	1
2	RETAINER, LEFT & RIGHT	2
3	RETAINER, TOP & BOTTOM	2
4	FIRE RATED GLASS	1
5	SETTING BLOCK	2
6	SHIMS	N/A
7	TRIM, TOP & BOTTOM	2
8	TRIM, LEFT & RIGHT	2

1. **INSPECT ALL CRATES FOR DAMAGE IMMEDIATELY UPON ARRIVAL**. Carefully check for any concealed damage. If glass or frame is damaged, take photos and notes and immediately contact Terra.

   ⚠️ WARNING: Read separate instructions for unpacking glass before opening crate with glass. Any glass or frame damage must be recorded and reported to Terra immediately.

2. Rough Opening:
   Rough opening size may be 1/4″ to 1″ greater than overall dimensions of frame (1/8″-1/2″ gap on each side).
   Ensure the rough opening is dry, clean, and free of any loose debris.
   Check the opening for plumb and level.
   Confirm frame will fit in the rough opening.

3. Install frame into rough opening
   a. Unpack frame from crate
   b. Place the frame into the rough opening with the "Clean" side of the window mounted flush against the drywall of the "Clean" side of the wall.
   c. To center the frame in the rough opening, sandwich fire-resistant shims between the outer trim and the window frame. Horse-shoe opening of shims should face the "clean" side aka "flush-mount" side.
   d. Install 4 trim pieces around perimeter of the window frame. The flat portion of the shim should be touching the rough opening of the wall, with the bend facing the flush mount side aka fire- side. The shims should be stacked between the window frame and the trim. See green highlighted trim in below screenshot, and below photos for reference.
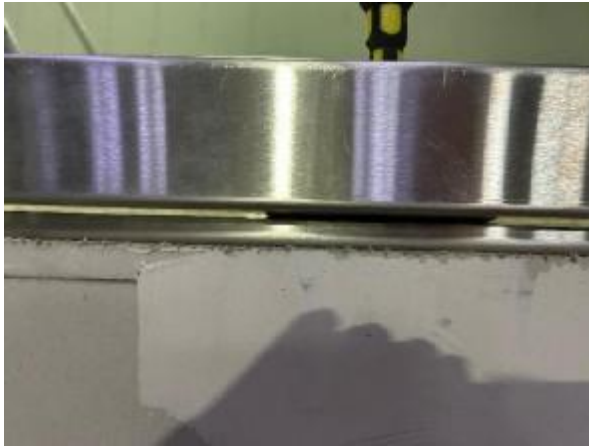   e. Measure to make sure frame is level and straight.
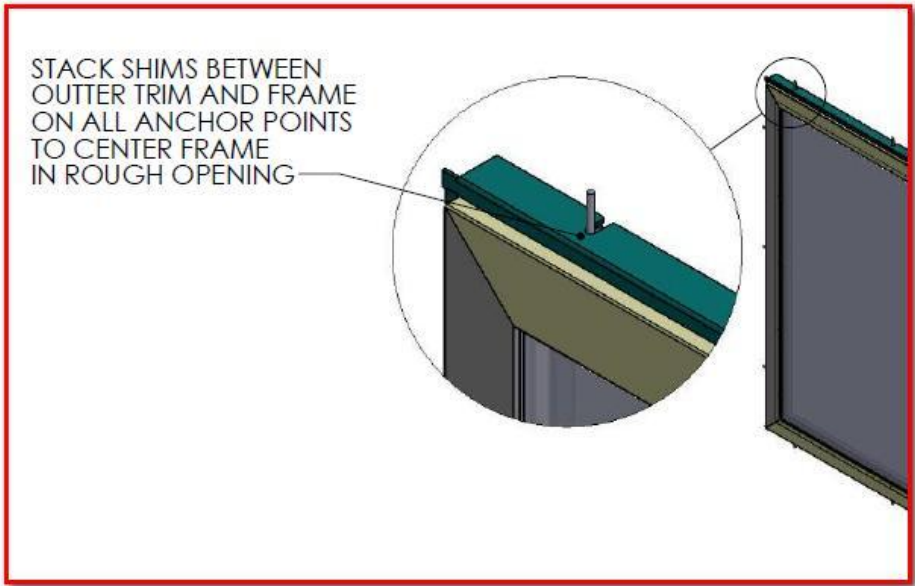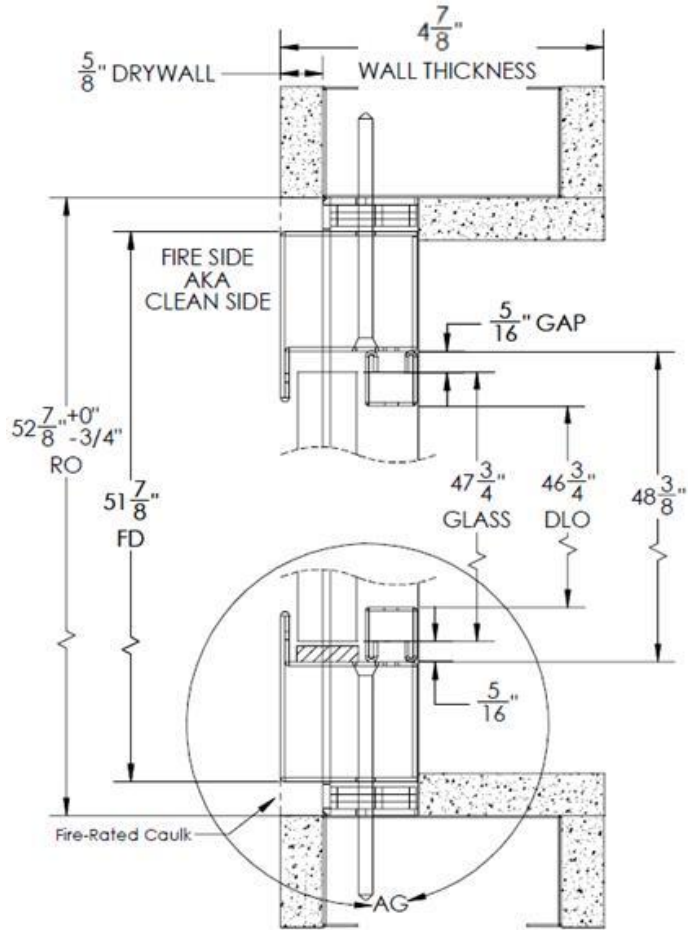
STACK SHIMS BETWEEN OUTTER TRIM AND FRAME ON ALL ANCHOR POINTS TO CENTER FRAME IN ROUGH OPENING

View of unfinished wall from "Clean" side AKA "Flush-Mount" side.

View of unfinished wall from "Dirty" side. The stacked shims are circled in red.

⚠ CAUTION: Unlevel frame can compromise safety of glass.

f. Loosely install anchor screws to allow for adjustment.
    Recommended anchor screws:
    > Steel stud/gypsum board: Flat Head Drilling Screw for Metal, 410 Stainless Steel, Number 12 Size, 4"
    > Long
    > Concrete/masonry: Flat Head Drilling Screw for Concrete/Masonry, 410 Stainless Steel, 1/4 in. Size, 4″
    > Long. To be installed after pre-drilling with appropriate masonry drill bit.
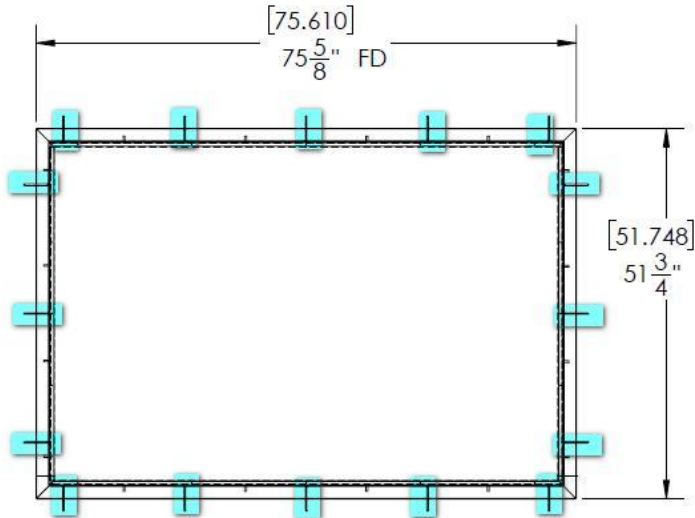
g. Use diagonal measurements to make sure frame is 100% square. Make adjustments as needed until frame
    is perfectly square.
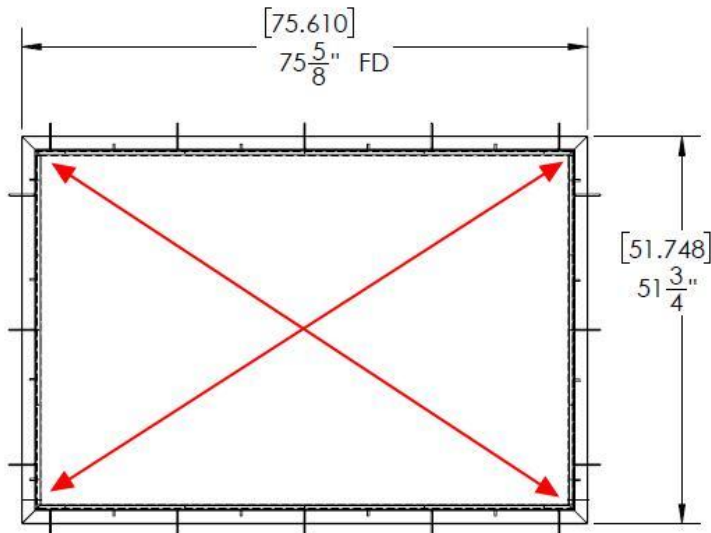
4. Remove glass from Crate as shown in below diagram:

    The crate is designed to be opened from only one side. Position the crate against a wall. Place 4″x4″ blocks underneath on one side to tilt back and prevent the glass from falling forward/out.

   WARNING: To safely uncrate glass, see separate **glass handling instructions** included with glass.
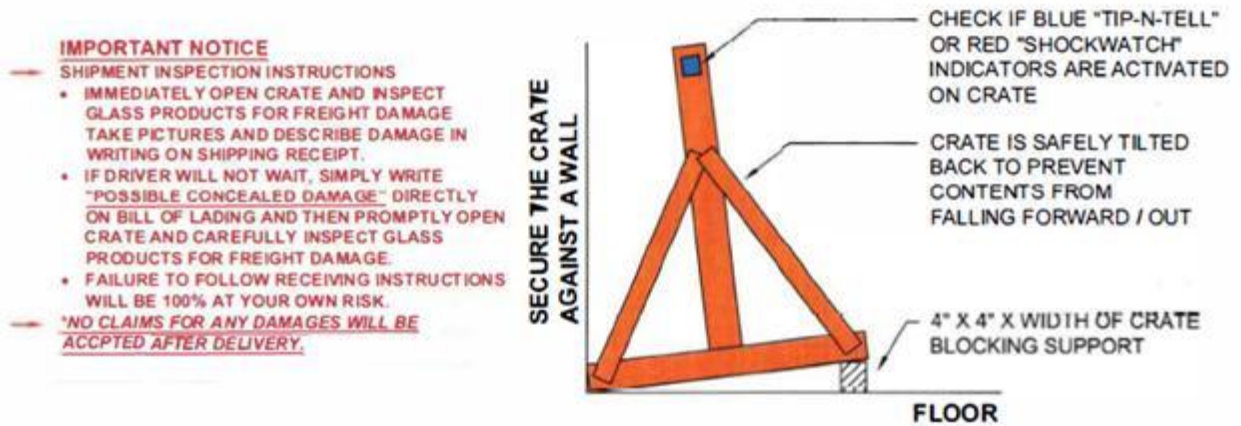
5. Before installing Glass:
    a. Unscrew and remove the 4 glazing beads from the frame.
    b. Install white glazing tape Kerafix 2000 to the frame and glazing beads
        i. Before installing glazing tape, wipe down and dry the sheet metal surfaces to ensure proper adhesion. Apply white glazing tape to the entire inside perimeter of the frame, and to all 4 metal glazing beads, as highlighted in below diagram.
        ii. Check that the glazing tape is not damaged. Replace any sections of damaged glazing tape.
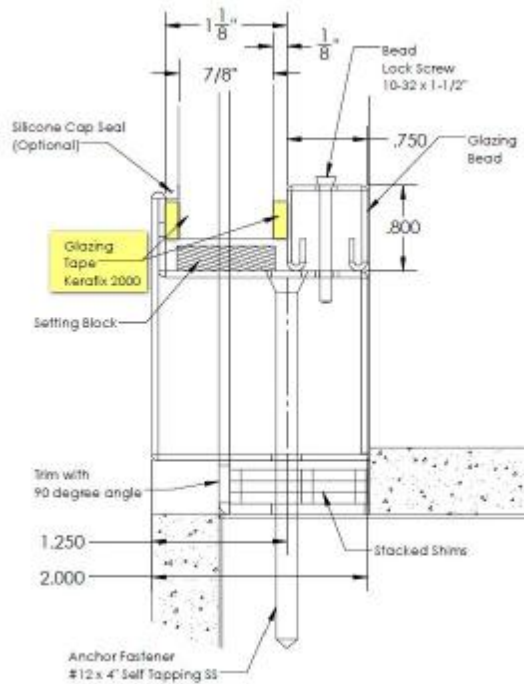
c. To properly support the glass, use the supplied setting blocks at quarter points of daylight opening. Setting blocks must rest flush on the frame. Ensure the setting blocks are centered underneath the glazing. The glazing should not overhang.
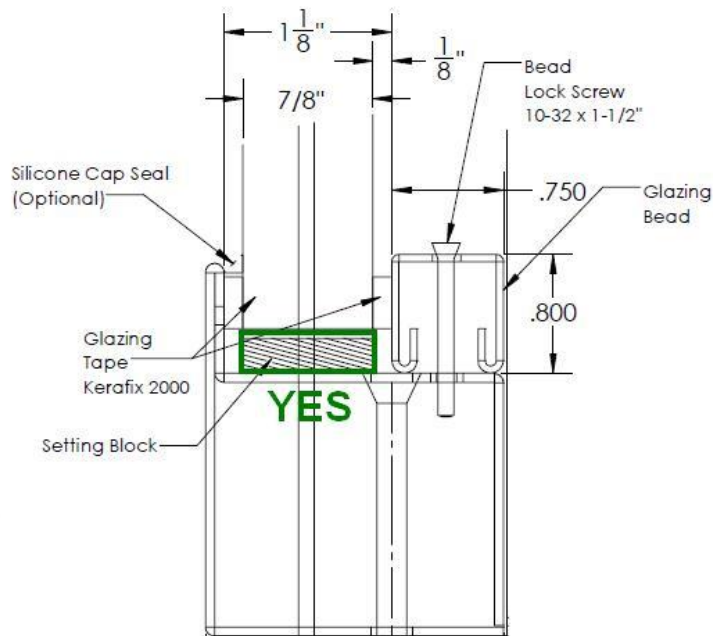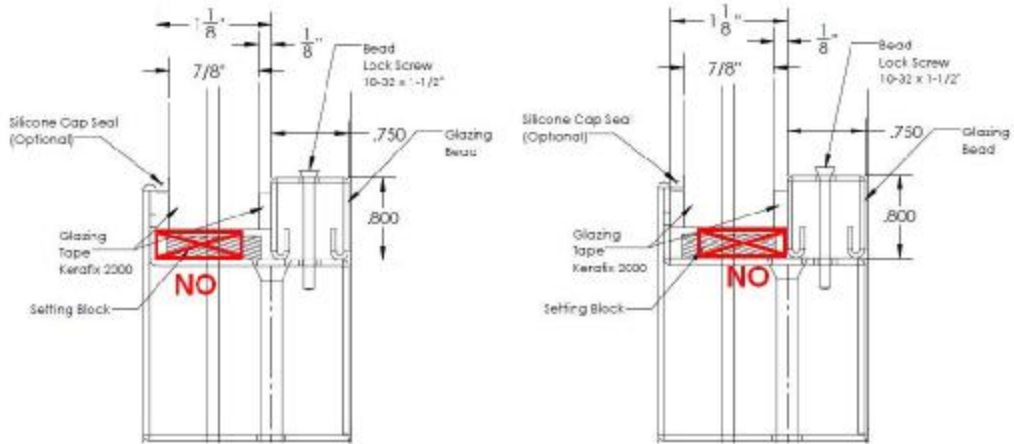
⚠️ CAUTION: DO NOT PEEL OR TAMPER WITH GREY TAPE AROUND GLASS. It is intumescent tape part of the fireproofing on the glass

6. Install Glass

⚠️ CAUTION: 7/8″ thick glass is very heavy (10.86 lb / ft^2 or 53.00 kg / m^2). Check weight of the glazing and if necessary, use special equipment to safely lift the glass into the frame.

a. If using suction-cup glass-lifter, check the glass-lifter meets the necessary weight capacity and lifting height requirements.
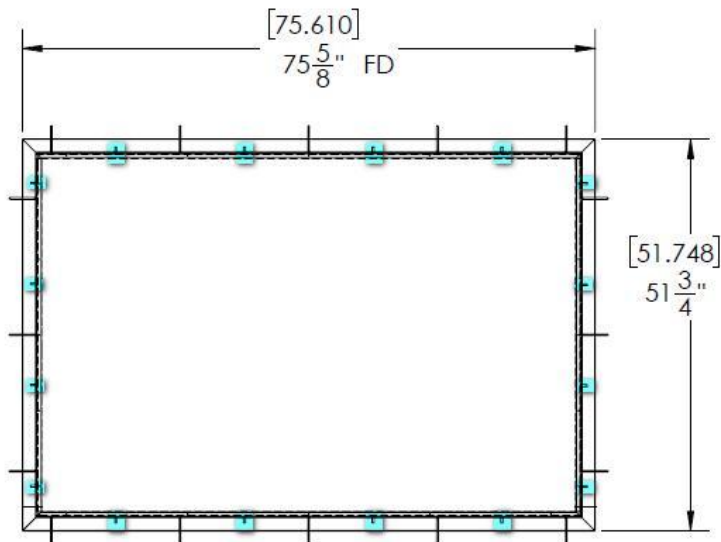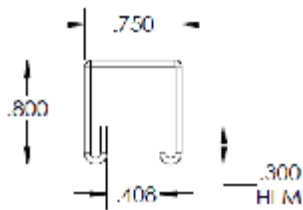
b.   Carefully raise glass into frame, place centered in frame, and on top of setting blocks.

c.   Check glass is centered inside frame and that edges are not in contact with the steel frame. There should be approx. ¼″ gap on each side between the glass edge and the frame
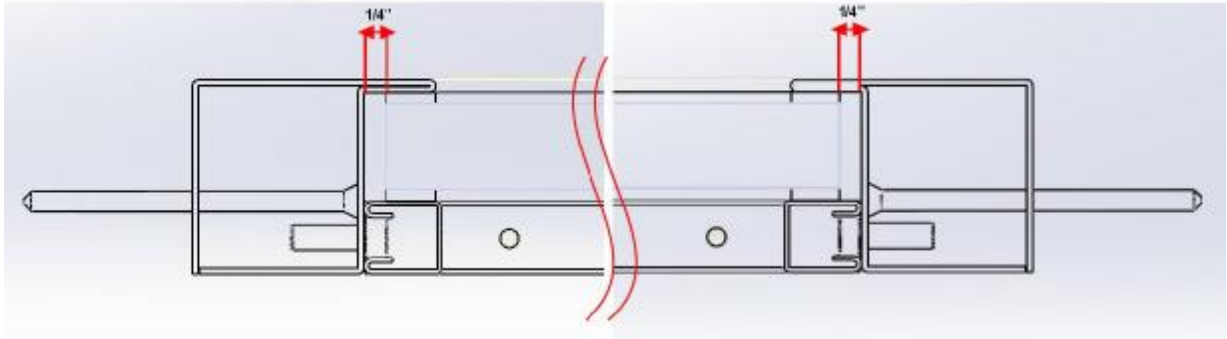
d.   Secure glass into frame with qty(4) retainer brackets around perimeter of frame

i. Press retainer brackets to form a SNUG fit on glass, so there is no extra space for glass to "wiggle" inside frame. Once snug fit is achieved, tighten screws on retainer brackets.

⚠️ WARNING: GLASS MUST NOT BE OVERLY TIGHTENED OR PINCHED. Eliminate large gaps between glass and glazing tape, but apply very minimal pressure. Any pressure must be low and uniform, no greater than 11.5lbf/in.

7. Tightly pack empty cavities between wall and frame with ceramic fiber insulation or fire-rated caulk. Repeat around entire perimeter of frame.
   a. For gaps smaller than 3/8″, install fire-rated 3M CP25 intumescent caulk.
   b. For gaps larger than 3/8″, install fire-rated ceramic fiber insulation
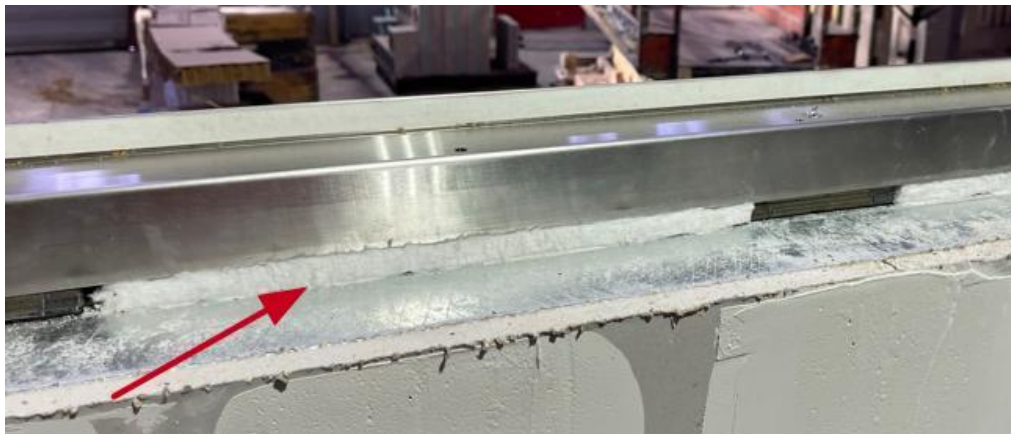
8. Apply fire-rated caulk to the front "Clean" side, on top of the trim (see below photo for example).

   10.1 fl. oz. Red Fire Barrier CP 25WB Plus Sealant
   https://www.homedepot.com/p/3M-10-1-fl-oz-Red-Fire-Barrier-CP-25WB-Plus-Sealant-CP25WB-10/100166701#overlay

9. Install drywall ledge on "dirty side" of window, around entire perimeter of window (see below screenshot and photo for example).
   a. For masonry or concrete walls, in lieu of a drywall ledge, a stainless steel trim can be applied around the perimeter of the "dirty" side to cover shims and insulation/caulking.

Drywall-stud wall   Masonry wall
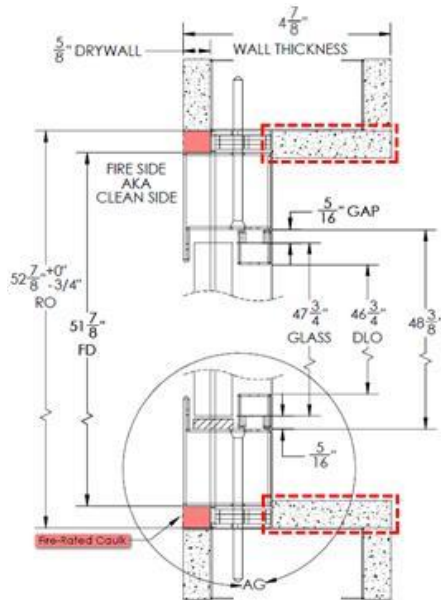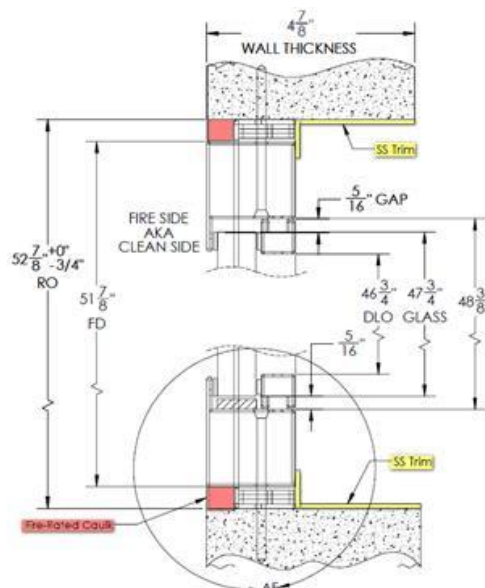
10. Apply final paint to drywall and finishing touches to frame, such as silicone caulking. Make sure all sealants are compatible with materials they come in contact with.

11. Clean glass after installation. See separate glass cleaning and maintenance instructions.

4. Warranty

https://www.terrauniversal.com/warranty/