Features
• Trifab® VersaGlaze® 450 is 4-1/2" (114.3) deep with a 1-3/4" (44.5) sight line
• Front, Center, Back or Multi-Plane glass applications
• Flush glazed from either the inside or outside
• Screw Spline, Shear Block, Stick or Continuous Head and Sill fabrication
• SSG / Weatherseal option
• 1/8" (3.2), 1/4" (6.4), or 3/8" (9.5) infill options
• Permanodic® anodized finishes in seven choices
• Painted finishes in standard and custom choices

Optional Features
• Profit$Maker® Plus die sets available

Product Applications
• Storefront, Ribbon Window or Punched Openings
• Single-span
• Integrated entrance framing allowing Kawneer standard entrances or other specialty entrances to be incorporated
• Kawneer windows or GLASSvent® Windows for Storefront Framing are easily incorporated

For specific product applications, consult your Kawneer representative.
Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses ( ) are millimeters unless otherwise noted.

The following metric (SI) units are found in these details:

- m – meter
- cm – centimeter
- mm – millimeter
- s – second
- Pa – pascal
- MPa – megapascal
The split vertical in the **Screw Spline** system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members. The individual units are then snapped together to form a complete frame.

The **Shear Block** system of fabrication allows a frame to be pre-assembled as a single unit. Horizontals are attached to the verticals with shear blocks.

The **Stick** system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

**NOTE:**
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 14)
The split vertical in the **Screw Spline** system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members. The individual units are then snapped together to form a complete frame.

**SCREW SPLINE ASSEMBLY**

- Mullion
- Snap-in filler
- Spline screws
- Head
- Glass stop
- Horizontal
- Flat filler
- Glass stop
- Sill
- Sill flashing

The **Shear Block** system of fabrication allows a frame to be pre-assembled as a single unit. Horizontals are attached to the verticals with shear blocks.

**SHEAR BLOCK ASSEMBLY**

- Mullion
- Shear block
- Head
- Glass stop
- Horizontal
- Flat filler
- Glass stop
- Sill
- Sill flashing

The **Stick** system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

**STICK ASSEMBLY**

- Head receptor
- Head insert
- Glass stop
- Shear block
- Horizontal
- Glass stop
- Sill insert
- Sill receptor
- Mullion

**NOTE:**
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 31)
The **Stick** system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

**NOTE:**
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 31)
The **CONTINUOUS HEAD AND SILL** punched opening fabrication allows a frame to be pre-assembled and installed as a single unit. Screws are driven through the back of the head and sill members into splines extruded in the vertical framing members. Intermediate horizontals are attached to the verticals with shear blocks.

The **Punched Opening** fabrication allows a frame to be pre-punched and installed as a single unit. Screws are driven through the back of the head and sill members into splines extruded in the vertical framing members. Intermediate horizontals are attached to the verticals with shear blocks.
THE SPLIT VERTICAL IN THE SCREW SPLINE SYSTEM ALLOWS A FRAME TO BE INSTALLED FROM UNITIZED ASSEMBLIES. SCREWS ARE DRIVEN THROUGH THE BACK OF THE VERTICALS INTO SPLINES EXTRUDED IN THE HORIZONTAL FRAMING MEMBERS. THE INDIVIDUAL UNITS ARE THEN SNAPPED TOGETHER TO FORM A COMPLETED FRAME.

SCREW SPLINE ASSEMBLY

THE SHEAR BLOCK SYSTEM OF FABRICATION ALLOWS A FRAME TO BE PRE-ASSEMBLED AND INSTALLED AS A SINGLE UNIT. HORIZONTALS ARE ATTACHED TO THE VERTICALS WITH SHEAR BLOCKS.

SHEAR BLOCK ASSEMBLY

STICK ASSEMBLY

The Stick system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

NOTE:
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 41)
SCREW SPLINE ASSEMBLY

The split vertical in the **Screw Spline** system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members. The individual units are then snapped together to form a complete frame.

**FILLER SILL FLASHING CLIP**

**MULLION USED AS SILL**

**MULLION FILLER**

**MULLION**

**GLASS STOP**

**WIDE SIDELIGHT BASE**

**FILLER SILL FLASHING CLIP**

**SILL FLASHING**

**REGLET SILL FLASHING CLIP**

**BRAKE METAL ADAPTER**

**MULLION USED AS SILL**

**MULLION FILLER**

**MULLION**

**SILL FLASHING**

**REGLET SILL FLASHING CLIP**

**BRAKE METAL ADAPTER**

**MULLION USED AS SILL**

**MULLION FILLER**

**MULLION**

**FILLER SILL FLASHING CLIP**

**SILL FLASHING**

**REGLET SILL FLASHING CLIP**

**SHEAR BLOCK ASSEMBLY**

The **Shear Block** system of fabrication allows a frame to be pre-assembled as a single unit. Horizontals are attached to the verticals with shear blocks.

**FILLER SILL FLASHING CLIP**

**MULLION USED AS SILL**

**MULLION**

**SHEAR BLOCK**

**GLASS STOP**

**WIDE SIDELIGHT BASE**

**FILLER SILL FLASHING CLIP**

**SILL FLASHING**

**REGLET SILL FLASHING CLIP**

**BRAKE METAL ADAPTER**

**MULLION USED AS SILL**

**MULLION FILLER**

**MULLION**

**SILL FLASHING**

**REGLET SILL FLASHING CLIP**

**BRAKE METAL ADAPTER**

**MULLION USED AS SILL**

**MULLION FILLER**

**MULLION**

**FILLER SILL FLASHING CLIP**

**SILL FLASHING**

**REGLET SILL FLASHING CLIP**

**SHEAR BLOCK**
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Additional information and CAD details are available at www.kawneer.com

SCREW SPLINE

<table>
<thead>
<tr>
<th>1 HEAD</th>
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<tbody>
<tr>
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<th>4 JAMB</th>
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<tbody>
<tr>
<td>5 VERTICAL</td>
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</table>

* HP Sill Flashing shown with optional gasket.
Additional information and CAD details are available at www.kawneer.com

SCREW SPLINE

SHEAR BLOCK

STICK

* HP Sill Flashing shown with optional gasket.

* HP Sill Flashing shown with optional gasket.
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

MISCELLANEOUS FRAMING (CENTER)

EC 97911-237

NOVEMBER, 2020

Additional information and CAD details are available at www.kawneer.com

NOTE:
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional Mullion Anchors must be used.

NOTE:
Mullion Anchor not used with Lightweight Receptor.
Additional information and CAD details are available at www.kawneer.com
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline
CORNERS (CENTER)

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

Additional information and CAD details are available at www.kawneer.com
Additional information and CAD details are available at www.kawneer.com
**TRIFAB® VERSAGLAZE® 450 FRAMING INCORPORATING KAWNEER “190” DOORS.**

**NOTE:** OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert with or without steel reinforcing.
TRIFAB® VERSAGLAZE® 450 FRAMING INCORPORATING KAWNEER “190” DOORS.

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert with or without steel reinforcing.

SINGLE ACTING

DOUBLE ACTING

Additional information and CAD details are available at www.kawneer.com
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

GLASSvent® WINDOW for STOREFRONT FRAMING (CENTER)

EC 97911-237

NOVEMBER, 2020

Additional information and CAD details are available at www.kawneer.com

*INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (FRONT - Outside Glazed)

NOVEMBER, 2020

Additional information and CAD details are available at www.kawneer.com

ELEVATION IS NUMBER KEYED TO DETAILS

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* HP Sill Flashing shown with optional gasket.

ADMC020EN
Additional information and CAD details are available at www.kawneer.com

ELEVATION IS NUMBER KEYED TO DETAILS
Additional information and CAD details are available at www.kawneer.com

STICK SYSTEM (INSIDE GLAZED)
TWO COLOR OPTION
STANDARD RECEPTOR with SSG ADAPTOR

ELEVATION IS NUMBER KEYED TO DETAILS

Structural Silicone Sealant (by Others)*

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

EC 97911-237

BASIC FRAMING DETAILS (FRONT)

Additional information and CAD details are available at www.kawneer.com

1 1A

4 5

2

3

ELEVATION IS NUMBER KEYED TO DETAILS

STICK SYSTEM (INSIDE GLAZED)

SSG RECEPTOR

1-3/4" (44.5) TYP.

SSG JAMB

5 SSG VERTICAL

WEATHERSEAL VERTICAL

Structural Silicone Sealant (by Others)*

450SSG005 450SSG005 450SSG005

SSG RECEPTOR

Structural Silicone Sealant (by Others)*

450SSG005 450SSG005 450SSG005

STICK SYSTEM (OUTSIDE GLAZED)

4 SSG JAMB

5 SSG VERTICAL

1-3/4" (44.5) TYP.

WEATHERSEAL VERTICAL

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.

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Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

Additional information and CAD details are available at www.kawneer.com

ELEVATION IS NUMBER KEYED TO DETAILS

STICK SYSTEM (INSIDE GLAZED)
SSG RECEPTOR
TWO COLOR OPTION

Structural Silicone Sealant (by Others)*

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

ELEVATION IS NUMBER KEYED TO DETAILS

CONTINUOUS HEAD AND SILL (INSIDE GLAZED)
PUNCHED OPENING

Additional information and CAD details are available at www.kawneer.com
Additional information and CAD details are available at www.kawneer.com

CONTINUOUS HEAD AND SILL
MULTI-LITE PUNCHED OPENINGS
(20 FEET MAXIMUM UNIT WIDTH)

ELEVATION IS NUMBER KEYED TO DETAILS

CONTINUOUS HEAD AND SILL (INSIDE GLAZED)
SSG \ WEATHERSEAL

PUNCHED OPENING

Structural Silicone Sealant (by Others)*

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.
Additional information and CAD details are available at www.kawneer.com

NOTE:
If the end reaction of the mullion [mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two] is more than 500 lbs., the optional Mullion Anchors must be used.
Additional information and CAD details are available at www.kawneer.com

NOTE:
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional Mullion Anchors must be used.

NOTE:
Mullion Anchor not used with Lightweight Receptor.

Seal over Stool Trim fasteners to prevent water infiltration.
Additional information and CAD details are available at www.kawneer.com

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

ENTRANCE FRAMING (FRONT)

NOVEMBER, 2020

EC 97911-237

Additional information and CAD details are available at www.kawneer.com

TRIFAB® VERSAGLAZE® 450 FRAMING INCORPORATING KAWNEER “190” DOORS.

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.
Additional information and CAD details are available at www.kawneer.com
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Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (BACK - Outside Glazed)

EC 97911-237

NOVEMBER, 2020

Additional information and CAD details are available at www.kawneer.com

SCREW SPLINE

SHEAR BLOCK

STICK

* HP Sill Flashing shown with optional gasket.
Additional information and CAD details are available at www.kawneer.com

---

**SCREW SPLINE**

- **4 JAMB**
- **5 VERTICAL**

---

**SHEAR BLOCK**

- **1 HEAD**
- **2 HORIZONTAL**
- **3 SILL**
  - 450BG004
  - 450BG014
  - 450BG037

---

**STICK**

- **1 HEAD**
- **2 HORIZONTAL**
- **3 SILL**
  - 451VG130
  - 451VG106

---

* HP Sill Flashing shown with optional gasket.

---

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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Additional information and CAD details are available at www.kawneer.com
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

MISCELLANEOUS FRAMING (BACK)

Additional information and CAD details are available at www.kawneer.com

NOTE:
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional Mullion Anchors must be used.

NOTE:
Mullion Anchor not used with Lightweight Receptor.

BRAKE METAL ADAPTOR
AT VERTICAL

BRAKE METAL ADAPTOR
AT HORIZONTAL

STOOL TRIM CLIP
WITH HIGH PERFORMANCE
FLASHING

STOOL TRIM CLIP
FOR STICK ASSEMBLY
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline
CORNERS (BACK)

Additional information and CAD details are available at www.kawneer.com

4-1/2" x 4-1/2" (114.3 x 114.3) TUBE

TWO PIECE NO POCKET CORNER
ONE POCKET CORNER

90° OUTSIDE BRAKE METAL CORNER
TWO POCKET BRAKE METAL POST
VARIABLE DEGREE BRAKE METAL OUTSIDE CORNER

90° INSIDE BRAKE METAL CORNER
VARIABLE DEGREE BRAKE METAL INSIDE CORNER
TRIFAB® VERSAGLAZE® 450 FRAMING INCORPORATING KAWNEER “190” DOORS.

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert.

Single Acting

Double Acting

Additional information and CAD details are available at www.kawneer.com
BASIC FRAMING DETAILS ......................................................... 46-51
(See appropriate Center, Front or Back Section for Miscellaneous Details.)
Additional information and CAD details are available at www.kawneer.com

SCREW SPLINE ASSEMBLY

ELEVATION IS NUMBER KEYED TO DETAILS

See Pages 23 thru 35 for all FRONT details.

See Pages 38 thru 43 for all BACK details.

See Pages 12 thru 21 for all CENTER details.

Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline
BASIC FRAMING DETAILS (MULTI-PLANE - Outside Glazed)

NOVEMBER, 2020
EC 97911-237
### SCREW SPLINE ASSEMBLY

**ELEVATION IS NUMBER KEYED TO DETAILS**

- **FRONT**
  - See Pages 23 thru 35 for all FRONT details.

- **BACK**
  - See Pages 38 thru 43 for all BACK details.

- **CENTER**
  - See Pages 12 thru 21 for all CENTER details.

---

**FRONT**

1. **HEAD**
   - 450VG001 450VG003
   - 450VG104
   - 4-1/2" (114.3) TYP.

2. **HORIZONTAL**
   - 450VG111
   - 450VG104

3. **SILL**
   - 450FG014
   - 450VG037

---

**BACK**

4. **HEAD**
   - 450VG001
   - 450CG002
   - 4-1/2" (114.3) TYP.

5. **HORIZONTAL**
   - 450VG011
   - 450VG026

6. **SILL**
   - 450BG014
   - 450VG037

---

**CENTER**

7. **HEAD**
   - 450CG003 450CG004
   - 4-1/2" (114.3) TYP.

8. **HORIZONTAL**
   - 450CG011 450CG004

9. **SILL**
   - 450CG004
   - 450VG037

---

**Additional Information and CAD Details**

Additional information and CAD details are available at www.kawneer.com.
Additional information and CAD details are available at www.kawneer.com

SHEAR BLOCK ASSEMBLY

Note: Transition verticals are required to be two piece.

See Pages 23 thru 35 for all FRONT details.

See Pages 38 thru 43 for all BACK details.

See Pages 12 thru 21 for all CENTER details.

TRIFAB® VERSAGLAZE® 450 FRAMING SYSTEM 1-3/4" SIGHTLINE

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

Kawneer Company, Inc.

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Additional information and CAD details are available at www.kawneer.com

Shear Block Assembly

Elevation is number keyed to details

Note: Transition verticals are required to be two piece
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (MULTI-PLANE - Outside Glazed)

EC 97911-237

November, 2020

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

Additional information and CAD details are available at www.kawneer.com

STICK ASSEMBLY

ELEVATION IS NUMBER KEYED TO DETAILS

Note: Transition verticals are required to be two piece.
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (MULTI-PLANE - Inside Glazed)

Additional information and CAD details are available at www.kawneer.com

STICK ASSEMBLY

ELEVATION IS NUMBER KEYED TO DETAILS

Note: Transition verticals are required to be two piece

FRONT

See Pages 23 thru 35 for all FRONT details.

BACK

See Pages 38 thru 43 for all BACK details.

CENTER

See Pages 12 thru 21 for all CENTER details.

1 HEAD

2 HORIZONTAL

3 SILL

4 HEAD

5 HORIZONTAL

6 SILL

7 HEAD

8 HORIZONTAL

9 SILL

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WINDLOAD CHARTS

CENTER ................................................................. 55-57
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WIND LOAD CHARTS

Mullions are designed for deflection limitations in accordance with AAMA TIR-A11 of L/175 up to 13'-6" and L/240 +1/4" above 13'-6". These curves are for mullions WITH HORIZONTALS and are based on engineering calculations for stress and deflection. Allowable wind load stress for ALUMINUM 15,152 psi (104MPa), STEEL 30,000 psi (207MPa). Charted curves, in all cases are for the limiting value. Wind load charts contained herein are based upon nominal wind load utilized in allowable stress design. A conversion from Load Resistance Factor Design (LRFD) is provided. To convert ultimate wind loads to nominal loads, multiply ultimate wind loads by a factor of 0.6 per ASCE/SEI 7. A 4/3 increase in allowable stress has not been used to develop these curves. For special situations not covered by these curves, contact your Kawneer representative for additional information.

If the end reaction of the mullion [mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two] is more than 500 lbs., the optional Mullion Anchors must be used. Consult Application Engineering. *(Mullion Anchor not used with Lightweight Receptor.)*

DEADLOAD CHARTS

Horizontal or deadload limitations are based upon 1/8" (3.2) maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1/4" (6.4) thick glass supported on two setting blocks at the loading points shown.
<table>
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<th>Allowable Stress</th>
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<td>25 PSF (1200)</td>
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<td>D</td>
<td>30 PSF (1440)</td>
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<td>E</td>
<td>40 PSF (1920)</td>
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WITH HORIZONTALS
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WITHOUT HORIZONTALS
WIDTH IN METERS

WITH HORIZONTALS
WIDTH IN METERS

WITHOUT HORIZONTALS
WIDTH IN METERS
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

WITH HORIZONTALS

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Allowable Stress

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LRFD Ultimate Design Load

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<td>1580</td>
<td>2000</td>
<td>2400</td>
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</table>

I = 4.481 (186.51 x 10⁴)
S = 1.991 (32.63 x 10³)
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

Allowable Stress Design Load
A = 15 PSF (720) 25 PSF (1200)
B = 20 PSF (960) 33 PSF (1580)
C = 25 PSF (1200) 42 PSF (2000)
D = 30 PSF (1440) 50 PSF (2400)
E = 40 PSF (1920) 67 PSF (3200)

WITH HORIZONTALS
WIDTH IN METERS

WITHOUT HORIZONTALS
WIDTH IN METERS

WITH HORIZONTALS
WIDTH IN FEET

WITHOUT HORIZONTALS
WIDTH IN FEET

I = 2.523 (105.01 x 10^4)
S = 1.121 (18.37 x 10^3)

I = 1.935 (80.54 x 10^4)
S = 0.938 (15.37 x 10^3)

450CG005

Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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<tr>
<td>A = 15 PSF (720)</td>
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<td>50 PSF (2400)</td>
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<tr>
<td>E = 40 PSF (1920)</td>
<td>67 PSF (3200)</td>
</tr>
</tbody>
</table>

WITH HORIZONTALS
WIDTH IN METERS

WITHOUT HORIZONTALS
WIDTH IN METERS

450VG005
I = 2.978 (123.95 x 10^4)
S = 1.192 (19.53 x 10^3)

I_A = 2.978 (123.95 x 10^4)
S_A = 1.192 (19.53 x 10^3)

I_S = 1.302 (54.19 x 10^4)
S_S = 1.042 (17.08 x 10^3)

WITH HORIZONTALS
WIDTH IN METERS

WITHOUT HORIZONTALS
WIDTH IN METERS

450VG005
with 1" x 2-1/2" STEEL BAR

I_s = 2.978 (123.95 x 10^4)
S_s = 1.192 (19.53 x 10^3)

I_s = 1.302 (54.19 x 10^4)
S_s = 1.042 (17.08 x 10^3)
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

WINDLOAD CHARTS (SSG/WEATHERSEAL)

WITH HORIZONTALS

WIDTH IN METERS

450SSG005

\[ I = 2.445 \times 10^4 \]
\[ S = 1.352 \times 10^4 \]

WITHOUT HORIZONTALS

WIDTH IN METERS

450SSG005

WITH 1" x 2-1/2" STEEL BAR

\[ I = 2.445 \times 10^4 \]
\[ S = 1.352 \times 10^4 \]
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WITH HORIZONTALS
WIDTH IN METERS

WITHOUT HORIZONTALS
WIDTH IN METERS

WITH HORIZONTALS
WIDTH IN FEET

WITHOUT HORIZONTALS
WIDTH IN FEET

WITH 450110 STEEL
WITH 450110 STEEL

I_a = 2.813 (117.08 x 10^3)
S_a = 1.250 (20.48 x 10^3)

I_b = 1.935 (80.57 x 10^3)
S_b = 0.938 (15.37 x 10^3)
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

WINDLOAD CHARTS (ENTRANCES)

Allowable Stress Design Load | LRFD Ultimate Design Load
--- | ---
A = 15 PSF (720) | 25 PSF (1200)
B = 20 PSF (960) | 33 PSF (1580)
C = 25 PSF (1200) | 42 PSF (2000)
D = 30 PSF (1440) | 50 PSF (2400)
E = 40 PSF (1920) | 67 PSF (3200)

WITH HORIZONTALS

WIDTH IN METERS

WITH 450110 STEEL

I_w = 3,226 (134.28 x 10^4)
S_w = 1.467 (24.04 x 10^3)
I_h = 1,935 (80.57 x 10^4)
S_h = 0.938 (15.37 x 10^3)

450599
450CG002

45064
450CG002

WITHOUT HORIZONTALS

WIDTH IN METERS

I = 3,226 (134.28 x 10^4)
S = 1.467 (24.04 x 10^3)
Trifab® VersaGlaze® 450 Framing System 1-3/4" Sightline

**Allowable Stress Design Load | LRFD Ultimate Design Load**

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**WITHOUT HORIZONTALS**

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**WITH 1" x 2-1/2" STEEL BAR**

**450VG019**

\[
I_a = 2.985 \times (124.24 \times 10^4) \\
S_a = 1.244 \times (20.38 \times 10^3)
\]

**450VG019**

\[
I_a = 1.302 \times (54.19 \times 10^4) \\
S_a = 1.042 \times (17.08 \times 10^3)
\]
Horizontal or deadload limitations are based upon 1/8" (3.2) maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1/4" (6.4) thick glass supported on two setting blocks at the loading points shown.

A = (1/4 POINT LOADING)
B = (1/6 POINT LOADING)
C = (1/8 POINT LOADING)
Horizontal or deadload limitations are based upon 1/8” (3.2) maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1/4” (6.4) thick glass supported on two setting blocks at the loading points shown.

\[ \begin{align*}
A &= (1/4 \text{ POINT LOADING}) \\
B &= (1/6 \text{ POINT LOADING}) \\
C &= (1/8 \text{ POINT LOADING})
\end{align*} \]

---

**DEADLOADS ON ENTRANCE TRANSOM BARS**

Height limitations for transom glass over a doorway are based upon a 1/16” (1.6) maximum allowable deflection at the center of a transom bar. The accompanying charts are calculated for 1/4” (6.4) thick glass supported on two setting blocks placed at the loading points shown.

\[ \begin{align*}
A &= (1/4 \text{ POINT LOADING}) \\
B &= (1/6 \text{ POINT LOADING}) \\
C &= (1/8 \text{ POINT LOADING})
\end{align*} \]
For each application, end reactions MUST be checked. These charts are used to verify that the end reactions at the head and sill receptors are 500 lbs. (2224N) or less and will meet the specified windload.

A = 15 PSF  (720 Pa)  
B = 20 PSF  (960 Pa)  
C = 25 PSF  (1200 Pa)  
D = 30 PSF  (1440 Pa)  
E = 40 PSF  (1920 Pa)

500 lbs. Max. End Reaction
Generic Project Specific U-factor Example Calculation

(Percent of Glass will vary on specific products depending on sitelines)

Example Glass U-factor = 0.42 Btu/hr·ft²·°F

Total Daylight Opening = 3(5’ x 7’) + 3(5’ x 2’) = 135ft²

Total Projected Area = (Total Daylight Opening + Total Area of Framing System) = 15’-8” x 9’-6” = 148.83ft²

Percent of Glass = (Total Daylight Opening + Total Projected Area) = (135 + 148.83)100 = 91%

System U-factor vs Percent of Glass Area

Based on 91% glass and Center of Glass (COG) U-factor of 0.42
System U-factor is equal to 0.49 Btu/hr·ft²·°F
Notes for System U-Factor, SHGC and VT charts:
For glass values that are not listed, linear interpolation is permitted.
Glass properties are based on center of glass values and are obtained from your glass supplier.
TRIFAB® VERSAGLAZE® 450 (CENTER)

System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area

System Visible Transmittance (VT) vs Percent of Vision Area
**Thermal Transmittance** \(^1\) (BTU/hr \(\cdot\) ft \(^2\) \(\cdot\) °F)

<table>
<thead>
<tr>
<th>Glass U-Factor (^3)</th>
<th>Overall U-Factor (^4)</th>
</tr>
</thead>
<tbody>
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<td>0.99</td>
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<td>0.92</td>
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<td>1.03</td>
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<td>0.98</td>
<td>1.05</td>
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<td>1.00</td>
<td>1.07</td>
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<tr>
<td>1.02</td>
<td>1.08</td>
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<tr>
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<td>1.10</td>
</tr>
<tr>
<td>10.6</td>
<td>1.11</td>
</tr>
</tbody>
</table>

**TRIFAB® VERSAGLAZE® 450 (CENTER)**

**SHGC Matrix** \(^2\)

<table>
<thead>
<tr>
<th>Glass SHGC (^3)</th>
<th>Overall SHGC (^4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90</td>
<td>0.81</td>
</tr>
<tr>
<td>0.85</td>
<td>0.77</td>
</tr>
<tr>
<td>0.80</td>
<td>0.72</td>
</tr>
<tr>
<td>0.75</td>
<td>0.68</td>
</tr>
<tr>
<td>0.70</td>
<td>0.63</td>
</tr>
<tr>
<td>0.65</td>
<td>0.59</td>
</tr>
<tr>
<td>0.60</td>
<td>0.64</td>
</tr>
<tr>
<td>0.55</td>
<td>0.50</td>
</tr>
<tr>
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<td>0.45</td>
</tr>
<tr>
<td>0.45</td>
<td>0.41</td>
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<tr>
<td>0.40</td>
<td>0.37</td>
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<tr>
<td>0.35</td>
<td>0.32</td>
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<tr>
<td>0.30</td>
<td>0.28</td>
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<tr>
<td>0.25</td>
<td>0.23</td>
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<tr>
<td>0.20</td>
<td>0.19</td>
</tr>
</tbody>
</table>

**Visible Transmittance** \(^2\)

<table>
<thead>
<tr>
<th>Glass VT (^3)</th>
<th>Overall VT (^4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90</td>
<td>0.81</td>
</tr>
<tr>
<td>0.85</td>
<td>0.76</td>
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<tr>
<td>0.80</td>
<td>0.72</td>
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<tr>
<td>0.75</td>
<td>0.67</td>
</tr>
<tr>
<td>0.70</td>
<td>0.63</td>
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<tr>
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<tr>
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<tr>
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<td>0.25</td>
<td>0.22</td>
</tr>
<tr>
<td>0.20</td>
<td>0.18</td>
</tr>
</tbody>
</table>

**NOTE:** For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matrices are based on the standard NFRC specimen size of 2000mm wide by 2000mm high (78-3/4" by 78-3/4").

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Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.