**Features**
- Trifab™ VG 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 Type-B 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.
Laws and building and safety codes governing the design and use of 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.
Laws and building and safety codes governing the design and use of glass 
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.

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Laws and building and safety codes governing the design and use of 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.

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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.

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.

THE STICK SYSTEM ALLOWS ON-SITE ASSEMBLY. 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 14)
Laws and building and safety codes governing the design and use of 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.

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**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 completed frame.

**SHEAR BLOCK 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.

**STICK ASSEMBLY**

The stick system allows on-site assembly. 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 STICK SYSTEM ALLOWS ON-SITE ASSEMBLY. 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 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-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-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.
Laws and building and safety codes governing the design and use of 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.

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MARCH, 2019

Trifab™ VG 450 Framing System 1-3/4" Sightline

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.

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.

THE STICK SYSTEM ALLOWS ON-SITE ASSEMBLY. HEAD AND SILL RECEPITORS ARE FASTENED TO THE SURROUND. VERTICAL MULLIONS ARE THEN INSTALLED IN THESE RECEPITORS 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 41)
Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

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Laws and building and safety codes governing the design and use of 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.

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

Trifab™ VG 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (CENTER - Inside Glazed)

ELEVATION IS NUMBER KEYED TO DETAILS

SCREW SPLINE

SHEAR BLOCK

STICK

* HP Sill Flashing shown with optional gasket.
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.
Laws and building and safety codes governing the design and use of 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.

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

NOTE: SIDELITE BASES SHOWN ARE FOR USE WITH SCREW SPLINE AND SHEAR BLOCK SYSTEMS ONLY.
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Additional information and CAD details are available at www.kawneer.com
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Trifab™ VG 450 Framing System 1-3/4" Sightline

ENTRANCE FRAMING (CENTER)

EC 97911-179

MARCH, 2019

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

TRIFAB™ VG 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.

ELEVATIONS ARE NUMBER KEYED TO DETAILS

SINGLE ACTING

DOUBLE ACTING

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™ VG 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.

SINGLE ACTING

DOUBLE ACTING

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.

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

TRIFAB™ VG 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.
Laws and building and safety codes governing the design and use of 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.

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

MARCH, 2019

Trifab™ VG 450 Framing System 1-3/4" Sightline

7225 NON-THERMAL WINDOWS (CENTER)

ELEVATION IS NUMBER KEYED TO DETAILS

PROJECT-OUT
VERTICAL SECTION

PROJECT-OUT
HORIZONTAL SECTION

7225 NON-THERMAL WINDOW SHOWN
NOTE: OTHER VENT TYPES CAN BE ACCOMMODATED, CONSULT YOUR KAWNEER REPRESENTATIVE FOR OTHER OPTIONS

ADMC020EN

EC 97911-179

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Trifab™ VG 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (FRONT - Inside Glazed)

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

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

Trifab™ VG 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (FRONT)

MARCH, 2019

EC 97911-179

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

1 HEAD
2 HORIZONTAL
3 SILL
4 JAMB
5 VERTICAL
5A SSG VERTICAL
5B WEATHERSEAL VERTICAL
4A SSG JAMB

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

**STICK SYSTEM (INSIDE GLAZED) SSG RECEPTOR**

1. **HEAD**
   - 450SSG008
   - 450SSG104

2. **HORIZONTAL**
   - 450SSG004
   - 450VG104

3. **SILL**
   - 450SSG007
   - 450SSG106

4. **SSG JAMB**
   - 450SSG129

5. **WEATHERSEAL VERTICAL**
   - 450SSG005

**STICK SYSTEM (OUTSIDE GLAZED) SSG RECEPTOR**

1. **HEAD**
   - 450SSG106
   - 450SSG007

2. **HORIZONTAL**
   - 450SSG004
   - 450VG104

3. **SILL**
   - 450SSG007
   - 450SSG106

**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.
Laws and building and safety codes governing the design and use of 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.

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

Trifab™ VG 450 Framing System 1-3/4" Sightline

BASIC FRAMING DETAILS (FRONT)

MARCH, 2019

EC 97911-179

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

TYPE-B MULTI-LITE PUNCHED OPENINGS
(20 FEET MAXIMUM UNIT WIDTH)

ELEVATION IS NUMBER KEYED TO DETAILS

TYPE-B (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

TYPE-B (INSIDE GLAZED)
SSG/WEATHERSEAL
PUNCHED OPENING

* 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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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.
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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
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™ VG 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.

ELEVATIONS ARE NUMBER KEYED TO DETAILS

SINGLE ACTING DOOR

DOUBLE ACTING DOOR

Additional information and CAD details are available at www.kawneer.com
Laws and building and safety codes governing the design and use of 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.

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*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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Additional information and CAD details are available at www.kawneer.com
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ENTRANCE FRAMING.............................................................43
Additional information and CAD details are available at www.kawneer.com

ELEVATION IS NUMBER KEYED TO DETAILS

SCREW SPLINE

SHEAR BLOCK

STICK

* HP Sill Flashing shown with optional gasket.

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

**SCREW SPLINE**

1. HEAD
   - 450VG001
   - 450VG003
   - 450VG004
   - 450VG011
   - 450VG014
   - 450VG037
   - 450BG004
   - 450BG014
   - 450BG017

2. HORIZONTAL
   - 450VG012
   - 450VG026
   - 450VG029
   - 450VG037
   - 450VG005
   - 450VG006
   - 450VG008
   - 450VG009
   - 450VG011
   - 450VG014
   - 450VG017

3. SILL
   - 450BG007
   - 450BG008
   - 450BG010
   - 450BG016
   - 450BG017

**SHEAR BLOCK**

4. JAMB
   - 450VG001
   - 450VG005
   - 450VG006
   - 450VG007
   - 450VG009
   - 450VG011
   - 450VG014
   - 450VG017

5. VERTICAL
   - 450VG026
   - 450VG029
   - 450VG037
   - 450VG005
   - 450VG006
   - 450VG008
   - 450VG009
   - 450VG011
   - 450VG014
   - 450VG017

**STICK**

1. HEAD
   - 450VG001
   - 450VG005
   - 450VG006
   - 450VG007
   - 450VG009
   - 450VG011
   - 450VG014
   - 450VG017

2. HORIZONTAL
   - 450VG012
   - 450VG026
   - 450VG029
   - 450VG037
   - 450VG005
   - 450VG006
   - 450VG008
   - 450VG009
   - 450VG011
   - 450VG014
   - 450VG017

3. SILL
   - 450BG004
   - 450BG014
   - 450BG017
   - 450BG007
   - 450BG008
   - 450BG016
   - 450BG017

* HP Sill Flashing shown with optional gasket.
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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.

STOOL TRIM CLIP
WITH HIGH PERFORMANCE FLASHING

STOOL TRIM CLIP
FOR STICK ASSEMBLY

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.
Laws and building and safety codes governing the design and use of 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
**TRIFAB™ VG 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.

Additional information and CAD details are available at www.kawneer.com
Laws and building and safety codes governing the design and use of 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.

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BASIC FRAMING DETAILS ......................................................... 46-51
(See appropriate Center, Front or Back Section for Miscellaneous Details.)
Laws and building and safety codes governing the design and use of 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.

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

Screw Spline Assembly

Elevation is number keyed to details

Trifab™ VG 450 Framing System 1-3/4" Sightline
Basic Framing Details (Multi-Plane - Outside Glazed)

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.

1 HEAD

2 HORIZONTAL

3 SILL

4 HEAD

5 HORIZONTAL

6 SILL

7 HEAD

8 HORIZONTAL

9 SILL

10 JAMB

11 VERTICAL

12 VERTICAL

13 VERTICAL

14 JAMB

Trifab™ VG 450 Framing System 1-3/4" Sightline

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement. For product specifications, see www.kawneer.com

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

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.

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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.

BACK

See Pages 38 thru 43 for all BACK details.

FRONT

See Pages 23 thru 35 for all FRONT details.

CENTER

See Pages 12 thru 21 for all CENTER details.
Additional information and CAD details are available at www.kawneer.com

### SHEAR BLOCK ASSEMBLY

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**ELEVATION IS NUMBER KEYED TO DETAILS**

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Trifab™ VG 450 Framing System 1-3/4" Sightline

STICK ASSEMBLY

ELEVATION IS NUMBER KEYED TO DETAILS

Note: Transition verticals are required to be two piece.

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

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

Note: Transition verticals are required to be two piece

---

**Trifab™ VG 450 Framing System 1-3/4" Sightline**

**STICK 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.
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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.
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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 HORIZONTALS
WIDTH IN FEET

WITHOUT HORIZONTALS
WIDTH IN FEET

Trifab™ VG 450 Framing System 1-3/4" Sightline

Allowable Stress Design Load LRFD Ultimate Design Load

<table>
<thead>
<tr>
<th></th>
<th>Allowable Stress Design Load</th>
<th>LRFD Ultimate Design Load</th>
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<tbody>
<tr>
<td>A</td>
<td>15 PSF (720)</td>
<td>25 PSF (1200)</td>
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<td>B</td>
<td>20 PSF (960)</td>
<td>33 PSF (1580)</td>
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<td>25 PSF (1200)</td>
<td>42 PSF (2000)</td>
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<tr>
<td>D</td>
<td>30 PSF (1440)</td>
<td>50 PSF (2400)</td>
</tr>
<tr>
<td>E</td>
<td>40 PSF (1920)</td>
<td>67 PSF (3200)</td>
</tr>
</tbody>
</table>

\[ I = 4.481 \times 10^4 \]
\[ S = 1.991 \times 10^4 \]
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**Allowable Stress Design Load**

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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>
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</tbody>
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**Windload Charts (Center)**

**Allowable Stress**

- **Design Load**
- **LRFD Ultimate Design Load**

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

---

**WITH HORIZONTALS**

**WIDTH IN METERS**

**HEIGHT IN FEET**

- **I** = 2.523 \( \times 10^3 \)
- **S** = 1.121 \( \times 10^3 \)

**WITHOUT HORIZONTALS**

**WIDTH IN METERS**

**HEIGHT IN FEET**

- **I** = 2.523 \( \times 10^3 \)
- **S** = 1.121 \( \times 10^3 \)

**WITH HORIZONTALS**

**WIDTH IN METERS**

**HEIGHT IN FEET**

- **I** = 1.935 \( \times 10^4 \)
- **S** = 0.938 \( \times 10^3 \)

**WITHOUT HORIZONTALS**

**WIDTH IN METERS**

**HEIGHT IN FEET**

- **I** = 1.935 \( \times 10^4 \)
- **S** = 0.938 \( \times 10^3 \)
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Trifab™ VG 450 Framing System 1-3/4" Sightline

WITH HORIZONTALS

WIDTH IN METERS

WITH HORIZONTALS

WIDTH IN FEET

HEIGHT IN FEET

HEIGHT IN METERS

WITHOUT HORIZONTALS

WIDTH IN METERS

WITHOUT HORIZONTALS

WIDTH IN FEET

HEIGHT IN FEET

HEIGHT IN METERS

I = 3.074 (127.95 x 10^4)
S = 1.192 (19.53 x 10^3)

I_A = 3.074 (127.95 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)

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 HORIZONTALS

WIDTH IN FEET

HEIGHT IN FEET

HEIGHT IN METERS

450VG012
450VG026

WITH HORIZONTALS

WIDTH IN METERS

WITH HORIZONTALS

WIDTH IN FEET

HEIGHT IN FEET

HEIGHT IN METERS

450VG012
450VG026

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

I_L = 3.074 (127.95 x 10^4)
S_L = 1.192 (19.53 x 10^3)

I_L = 1.302 (54.19 x 10^4)
S_L = 1.042 (17.08 x 10^3)
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Windload Charts (Front or Back)

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<th>LRFD Ultimate Design Load</th>
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</tr>
<tr>
<td>E = 40 PSF (1920)</td>
<td>67 PSF (3200)</td>
</tr>
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WITH HORIZONTALS
WIDTH IN METERS

WITHOUT HORIZONTALS
WIDTH IN METERS

450VG005

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

WITH HORIZONTALS
WIDTH IN METERS

WITHOUT HORIZONTALS
WIDTH IN METERS

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

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

I = 1.302 (54.19 x 10^3)
S = 1.042 (17.08 x 10^3)
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<td>50 PSF (2400)</td>
</tr>
<tr>
<td>E = 40 PSF (1920)</td>
<td>67 PSF (3200)</td>
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</tbody>
</table>

WITH HORIZONTALS
WIDTH IN METERS

450SSG005
I = 2.445 (101.76 x 10^4)
S = 1.352 (22.15 x 10^3)

WITHOUT HORIZONTALS
WIDTH IN METERS

WITH HORIZONTALS
WIDTH IN FEET

450SSG005
with 1" x 2-1/2" STEEL BAR
I_y = 2.445 (101.76 x 10^4)
S_y = 1.352 (22.15 x 10^3)
I_x = 1.302 (54.19 x 10^3)
S_x = 1.042 (17.08 x 10^3)

WITHOUT HORIZONTALS
WIDTH IN FEET

Trifab™ VG 450 Framing System 1-3/4" Sightline
WINDLOAD CHARTS (SSG/WEATHERSEAL)
MARCH, 2019
EC 97911-179
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Windload Charts (Multi-Plane)

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WITH HORIZONTALS

WIDTH IN METERS

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WITH HORIZONTALS

WIDTH IN FEET

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WITH HORIZONTALS

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WITH HORIZONTALS

WIDTH IN FEET

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Windload Charts ( Entrances )

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Trifab™ VG 450 Framing System 1-3/4" Sightline

WINDLOAD CHARTS (ENTRANCES)

MARCH, 2019

EC 97911-179

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**With 450110 STEEL**

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Iₐ = 3,226 (134.28 x 10⁴)
Sₐ = 1.467 (24.04 x 10³)

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Trifab™ VG 450 Framing System 1-3/4" Sightline

<table>
<thead>
<tr>
<th>Allowable Stress Design Load</th>
<th>LRFD Ultimate Design Load</th>
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<tbody>
<tr>
<td>A  = 15 PSF (720)</td>
<td>25 PSF (1200)</td>
</tr>
<tr>
<td>B  = 20 PSF (960)</td>
<td>33 PSF (1580)</td>
</tr>
<tr>
<td>C  = 25 PSF (1200)</td>
<td>42 PSF (2000)</td>
</tr>
<tr>
<td>D  = 30 PSF (1440)</td>
<td>50 PSF (2400)</td>
</tr>
<tr>
<td>E  = 40 PSF (1920)</td>
<td>67 PSF (3200)</td>
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</table>

WINDLOAD CHARTS (ENTRANCES)

WITH HORIZONTALS

WITHOUT HORIZONTALS

With 1" x 2-1/2" steel bar

$I_x = 2.985 \times 10^4$  

$S_x = 1.244 \times 10^3$

$I_y = 1.302 \times 10^3$  

$S_y = 1.042 \times 10^2$
Laws and building and safety codes governing the design and use of 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.

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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)

Trifab™ VG 450 Framing System 1-3/4" Sightline

MARCH, 2019

DEADLOAD CHARTS

EC 97911-179

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.

\[ A = \text{1/4 POINT LOADING} \]
\[ B = \text{1/6 POINT LOADING} \]
\[ C = \text{1/8 POINT LOADING} \]
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.

<table>
<thead>
<tr>
<th>A = 15 PSF  (720 Pa)</th>
<th>B = 20 PSF  (960 Pa)</th>
<th>C = 25 PSF  (1200 Pa)</th>
<th>D = 30 PSF  (1440 Pa)</th>
<th>E = 40 PSF  (1920 Pa)</th>
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**WITH HORIZONTALS**

**HEIGHT IN FEET**

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**WITHOUT HORIZONTALS**

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500lbs. Max. End Reaction
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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') = 135 ft²

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

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
TRIFAB™ VG 450 (CENTER)

System U-factor vs Percent of Glass Area

Percent of Glass = Vision Area/Total Area
(Total Daylight Opening / Projected Area)

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™ VG 450 (CENTER)

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

System Visible Transmittance (VT) vs Percent of Vision Area
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### THERMAL PERFORMANCE MATRIX

#### TRIFAB™ VG 450 (CENTER)

<table>
<thead>
<tr>
<th>Glass U-Factor</th>
<th>Overall U-Factor</th>
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<tr>
<td>0.90</td>
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**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").

#### SHGC Matrix

<table>
<thead>
<tr>
<th>Glass SHGC</th>
<th>Overall SHGC</th>
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<td>0.90</td>
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#### Visible Transmittance

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10.6